JUNE, 1959

ORTHOPEDIC & PROSTHETIC APPLIANCE JOURNAL

The Journal of the Limb and Brace Profession

An American Prosthetist in World War I
Captain William E. Isle in his British Red Cross Uniform
(Article, page 33)

publishers: Orthopedic Appliance & Limb Mfrs. Assn. and American Board for Certification

DATES TO REMEMBER

1959 *What • When • Where*

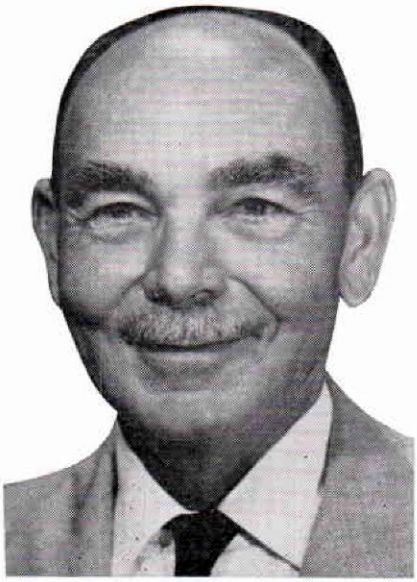
AUGUST

29-30	National Amputee Golf Tournament	*Savannah, Georgia*
	Congress of Physical Medicine and Rehabilitation—Annual Session (Adjourns September 4)	*Leamington Hotel Minneapolis, Minn.*

OCTOBER

16-17	Certification Examinations—Conducted by the American Board for Certification	*Adolphus Hotel Dallas, Texas*
18-21	OALMA National Assembly	*Dallas, Texas*
22-25	Second OALMA Pan-American Session	*Mexico City, Mex.*

COVER PICTURE—Our cover picture shows William E. Isle as he looked during the stirring days of World War I. He is wearing the uniform of Captain of the British Red Cross, which he wore during his work in England and his trip of June 1917 to Russia. In his capacity as Technical Advisor on Prostheses, Mr. Isle held the rank of Captain.



"MAKE THE ASSEMBLY PART OF YOUR VACATION"

A Suggestion From OALMA President Karl Buschenfeldt

Plan your vacation around our Assembly—many of our members do this every year, combining attendance at their professional convention with a well-deserved vacation. Since many of you are now planning vacations let me urge you to consider the advantages of this when you're working out vacation plans with your family:

For many of our members, the demands of their facility are so heavy that only at Assembly time can they arrange to be away. And this year Fred Quisenberry in planning the program has lined up some wonderful inducements to bring you down Texas way.

These are just a few of the events to which he can point with pride:

1. A session on "Back Disorders and Their Bracing" led by Dr. Paul Williams, noted orthopedic surgeon who has handled this subject at many meetings of the Academy of Orthopaedic Surgeons.

2. "Bracing of the Neck"—Here we are fortunate in having Dr. Ruth Jackson of the Jackson Clinic in Dallas. Dr. Jackson paid us and our Assembly a very real compliment when she wrote that because of the importance of bracing of the neck, she was delaying her departure to the Meeting of the Western Orthopedic Association in Denver, in order to appear on our program Monday, October 18.

There are many technical programs which merit your attention as a member of the limb and brace profession. There are just as many entertainment features in store for you as will please you and your family. For instance, the Texas State Fair, internationally famous, will be on while you are in Dallas. October is the best month of the year in the Southwest. Those of you who are planning to drive will delight in those wonderful Texas roads. And for a postconvention treat, the second OALMA Pan-American Session at Mexico City runs from October 22 to October 30. Here for a very moderate cost you'll have an opportunity to see Mexico City, one of the most beautiful capital cities in the world. Visit the new Mexican Rehabilitation Center, and enjoy yourself fishing at Acapulco, which has been called one of the seven wonders of the world.

Orthopedic and Prosthetic Appliance Journal

(Title registered U. S. Patent Office)

VOLUME 13 • JUNE, 1959 • NO. 2

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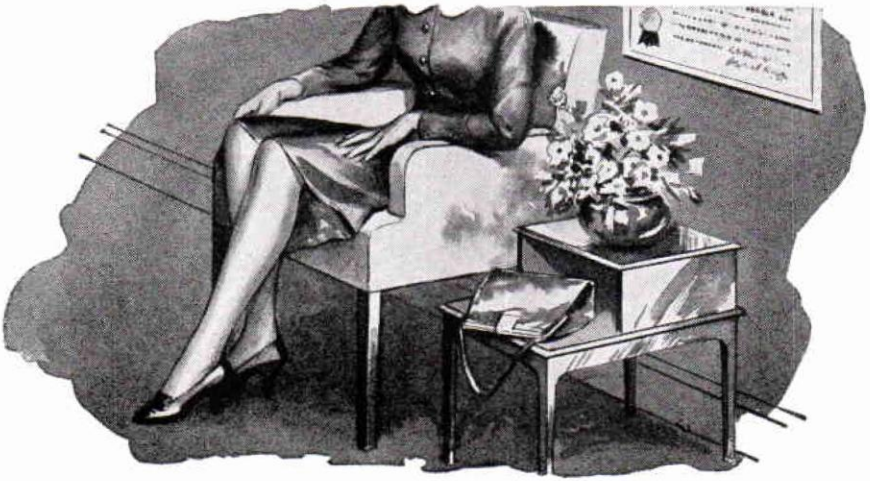

Your Varicose Patients

Help them to a more active and comfortable life with Kendrick designed elastic stockings.

Kendrick has developed elastic stockings for the many types of varicosities, from the mildest to the most severe. Stockings are available in one and two-way stretch models, from sheer extra light to heavy weight and in proportioned lengths to the groin.

And, all Kendrick stockings are knitted of *live* rubber to provide the resilience necessary for proper vein support at all times.

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Prescribe KENDRICK — over 100 years experience in manufacturing Elastic Stockings and Elastic Supports for all parts of the body.

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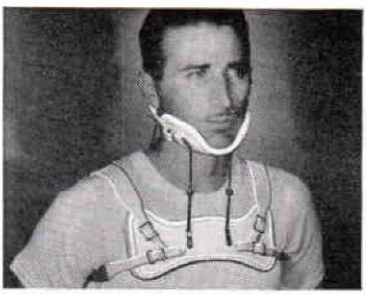
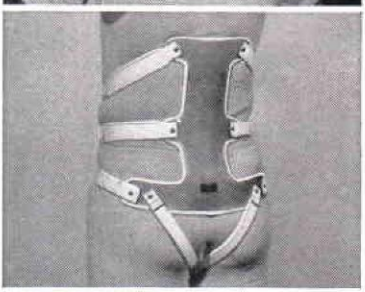
CAMP TRADE MARK BRACES AND COLLARS

FOR EVERY MAJOR SUPPORT NEED



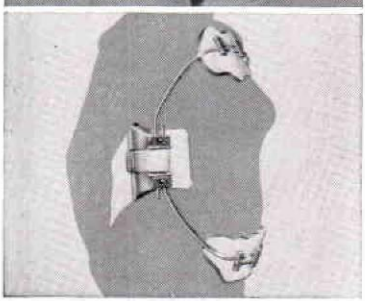
CERVICAL BRACE

Camp's plastic cervical brace provides complete immobilization of the cervical vertebrae and features full posterior and anterior adjustment. The brace is cool, comfortable, light, clean, odorless, washable, easy to apply and equipped with snap-on adjustable non-elastic straps for easy application. A sliding fabric casing covers the foam rubber for comfort . . . foam rubber pads are fused and sandwiched between soft cotton fabric. These advantages mean profitable business from doctors who know Camp is the finest brace they can prescribe for their patients.



GOLDTHWAIT BRACE

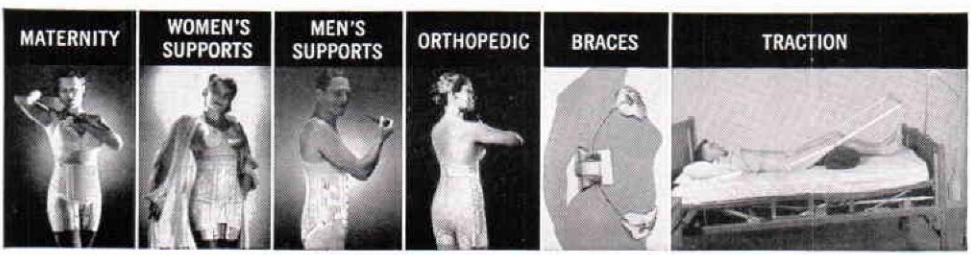
Every sale of this plastic Camp Goldthwait type brace assures you a profit and the patient a quality product expertly designed to help him in treatment. The Goldthwait brace helps relieve conditions of subluxation or arthritis and in ambulatory treatment of pelvic and sacral fractures. The back plate (which can be shaped as the doctor wishes) stabilize the lower lumbar spine while the abdominal plate exerts an upward and backward pressure, straightening the spine. Economical and functionally correct, it is available in 12" and 14" heights in three circumferences.



SPINAL HYPEREXTENSION BRACE

The Blair spinal hyperextension brace is a doctor demanded item recommended for cases of compression fractures, osteoporosis with kyphosis, spinal arthritis and osteochondritis. In many cases, it eliminates the need for body casts, offers positive hyperextension with least patient discomfort and is easily adjusted to prescription by telescoping frames for height and width. Rotating pads at sternal and pubic areas eliminate pressure edges. Washable and odorless. Get your share of the market by stocking Camp's complete line of braces.

SERVE YOUR MEDICAL MARKET WITH A WIDE VARIETY OF SUPPORTS

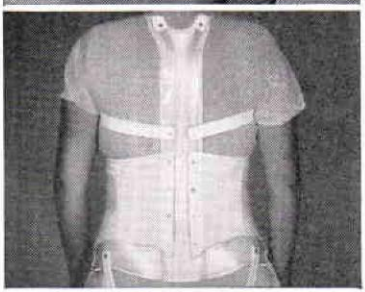


CHAIR BACK BRACE

The plastic easily-shaped Camp Chair Back brace is indicated for support of the lower lumbar spine to limit lateral and rotary motion. By increasing the pressure of the back bars, this brace can produce mild hyperextension or, by eliminating this bar pressure, some flexion can be produced. Top and bottom bands increase as the sizes increase from small to medium to large and easy adjustment permits decreasing the size, as well as hip and waist development. Front belt is of cream coutil.

TAYLOR BRACE

Doctors have readily accepted and prescribed this Camp brace, which is a combination of the Taylor and Knight Spinal braces, when they feel the patient requires more rigid stability over a larger portion of the spine. The brace is also designed to control lateral motion. The two steel uprights and pelvic band are covered with plastic, easily-washable. Apron is detachable for cleaning purposes.

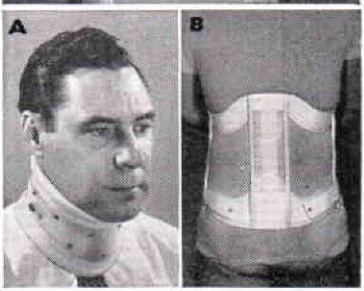


THOMAS HYPEREXTENSION COLLAR (a)

A non-toxic, washable, lightweight, plastic collar for intermediate cervical support. Lock buckle and snap button clasp affords simple, quick adjustment. Naugalite covered foam rubber edge. Available in five heights, three sizes with a size for youths.

KNIGHT SPINAL BRACE (b)

A chair back type brace that has been engineered to give maximum support and fixation of the lumbar region and lower thoracic region without the use of lateral bars. The steel uprights and bands are plastic covered. Available in five sizes—small, medium, large, medium long, and large short.

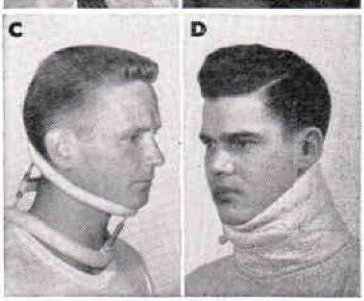


CAMP VICTORIA COLLAR (c)

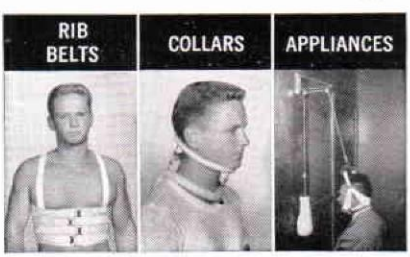
A new collar offering more rigid support plus all season wearing comfort. Adjustable for flexion and extension . . . also for various neck heights by front and back turnbuckles. Suggested where cervical syndrome, subluxations, arthritis or cervical radiculitis injuries are indicated. Small, medium, large sizes.

LEWIN COLLAR (d)

A wrap around collar offering (1) prevention of further injury (2) protection from air draft (3) body heat retention (4) comfort (5) mild traction. Three sizes — small 66", medium 78", large 96" long.



AND APPLIANCES FROM **CAMP**



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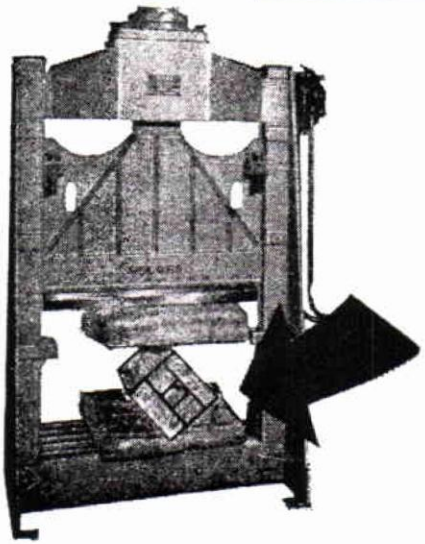

HIGHEST LOAD STRENGTH

SIZES

LARGE
7¾"x11"
All walls 3"

MEDIUM
7¼"x10"
All walls 3"

SMALL
6"x7½"
All walls 2"

Yes—

Nine times the normal load supporting capacity required to take both static loads and the extra loads imposed by sudden shocks.

Here's why: STERLING QUADRILATERAL SOCKET BLOCKS have a delicately machined glue surface that raises the wood fibers (an exclusive Ohio Willow Wood Company development) and interlocks them under tremendous pressure. What's more, these precision engineered thigh blocks are kiln dried of the finest Northern Basswood available, are light in weight and light in color. All sizes in stock—priced right—immediate delivery.

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The Quality knee providing
Knee Stability at low cost

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*Attractively finished in color

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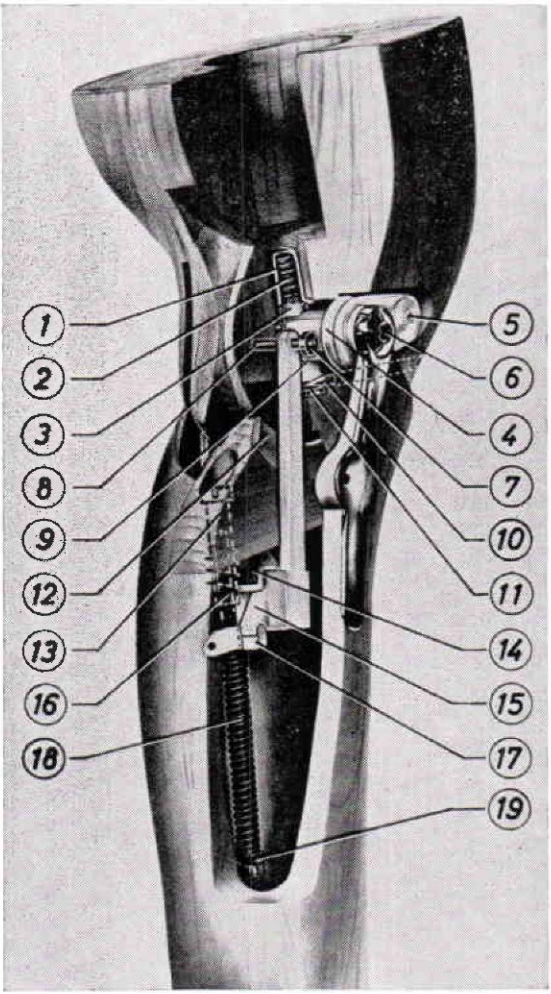

1. Compressor spring housing. 2. Compressor spring. 3. Compressor block. 4. Rubber ring. 5. Inside Knee-Bolt Bushing with swing lever and swing bolt of Plastic material. 6. Knee Bolt with friction brake. 7. Round Nut M4x10 for forward bolt. 8. Forward Bolt without nut. 9. Shocks Absorber of Plastic Material. 10. Brace Distance Regulator Screw with nut. 11. Brake Distance Regulator Platform. 12. Braking Segment of Plastic material. 13. Guiding Tube of Steel with wooden thread. 14. Stop Rubber for forward bow. 15. Forward Bow of plastic material with container for stop rubber. 16. Guiding Bolt of Steel covered with Plastic Material. 17. Glide Piece of Plastic Material. 18. Compressor Spring. 19. Nut M6.

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SAFETY KNEE

Now Provides

- Adjustable Cadence
- Maximum Stability

AT NO INCREASE IN COST!

In swing phase provides controlled heel rise . . . gives smooth, automatic forward shin action . . . and eliminates terminal jar as shin reaches full extension.

In stance phase locks as weight is applied at heel contact . . . remains locked during mid-stance . . . unlocks immediately after push-off.

The Otto Bock Safety Knee permits the amputee to walk with a natural gait . . . with less effort . . . and with assurance of maximum stability.

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Louis C. Weld, President, G. W. Chesbrough Co. . . . "My own personal experience led to the development of Chesbrough Orthopedic Pre-Walkers, club-foot, open toe and closed toe Surgicals."

"Chesbrough Pre-Walkers mean NEW business for you"

"Here are orthopedic shoes parents can afford. Orthopedic surgeons in 45 states and many foreign countries are now prescribing them. Spectacular sales figures prove it. This important referral business can be yours.

"When a child in my own family needed a corrective shoe, I discovered what a strain it can mean to a family budget, because 1) corrective footwear is expensive and 2) frequent purchase of new corrective shoes is required. Then and there I decided there was a real need for a moderately priced corrective shoe—a shoe parents could afford. That's why and when Chesbrough Orthopedic Pre-Walkers were born.

"Our 60 years of shoe-making experience resulted in corrective Pre-Walkers of scientific design, expert workmanship, fine leathers combined with orthopedically correct lasts to provide necessary correction at an economical price."

All shoes in unlined white elk, sizes 000 to 4, narrow and wide. Available in full pairs, split pairs or single shoes (no extra charge for half pairs).

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No. 1300 CLOSED TOE. Lace-to-toe design permits snug, gentle fit. Perfectly smooth inside.

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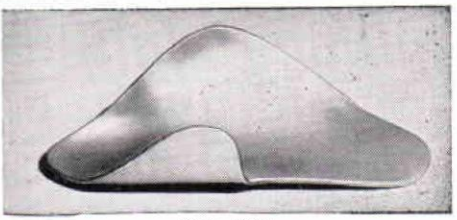
A Combination Support with Both Inner and Outer Flange, Made with One or More Springs, Women's, Men's and Children's Sizes.

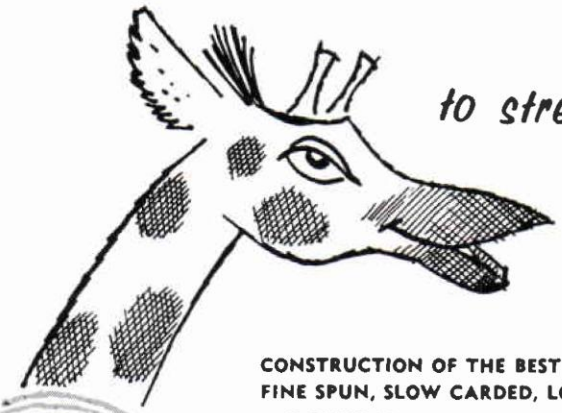
Style 803

Stainless Steel Support with Moderate Inner Flange, Women's, Men's and Children's Sizes. The Above Style also available in Specially Treated Dural.



Style 900

Most Popular Metal Whitman, Made of High Grade Stainless Steel. Women's, Men's and Children's Sizes.



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This excellent grade of BESSCO Orthopedic Stockinette of double thickness has a close knit elastic rib stitch. It is used in the manufacture of prosthesis . . . under plaster casts, producing a firmer, smoother cast and compensating for plaster shrinkage . . . for dressings . . . for skin protection during operations. It is also invaluable as wristlets on Surgeons' Gowns . . .

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Bessco AMPUTEE STUMP SOCKS

All are durable, soft and seamless . . . and are laboratory tested periodically to insure uniform top notch quality and perfect fit . . .

your customers will appreciate also their low cost . . . the lowest in the industry, effected because BESSCO makes nothing but surgical knitwear . . .

Your customers will appreciate the completeness of the BESSCO Amputee Stump Sock line. It includes socks of 100% Virgin Natural Zephyr Wool, 100% Virgin Natural Cotton and 100% Virgin White DuPont Stretch or Staple Nylon and many other fabrics . . .

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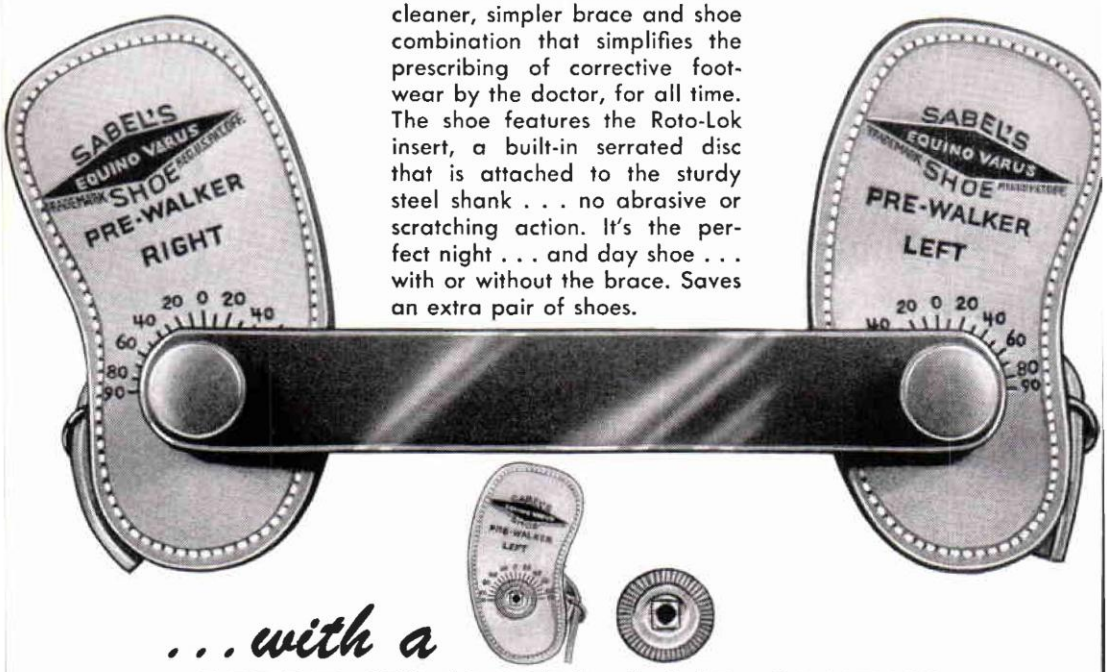
New SABEL'S EQUINO-VARUS TRADE MARK REG. U.S. PAT. OFF.

CONVERTIBLE
BRACE SHOE

Sabel introduces a newer, cleaner, simpler brace and shoe combination that simplifies the prescribing of corrective footwear by the doctor, for all time. The shoe features the Roto-Lok insert, a built-in serrated disc that is attached to the sturdy steel shank . . . no abrasive or scratching action. It's the perfect night . . . and day shoe . . . with or without the brace. Saves an extra pair of shoes.



. . . with a

BUILT-IN ROTO-LOK INSERT

The setting of the splint on the shoe is made easy by a protractor that is stamped on the sole of each shoe.

EMBOSSED PROTRACTOR STAMPED ON SOLES

The brace has a matching serrated disc and smooth knurled nut that screws into the disc in the sole of the shoe, holding it firmly in the position the doctor desires.

This smoother brace has no protruding arms or edges to cut or tear bed clothing.

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These descriptives on Sierra prosthetic products are available for the asking. They tell in detail how to use to best advantage the many specialized features embodied in, and exclusively with, Sierra. Check the descriptives desired. Be sure and write your name and correct address. Upon receipt of this order form, the material requested will be mailed you without delay.

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Three adjustable positions for greater maneuverability when used with any standard hook. Sturdily built of double strength aluminum alloy for day-to-day use by the unilateral as well as the bi-lateral amputee.

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The self-locking closing feature enables an amputee to hold an object securely with a minimum of effort and without restraint of body movements.

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To facilitate safe driving of auto, motor boat or airplane, Sierra has developed a ring of durable nylon with a chromed base and two set screws for position lock. Sturdy, yet easy to handle.

☐ **SIERRA 1959 MODEL "C" ELBOW**
Offers new advantages to both the prosthetist and the amputee . . . improved mechanical features such as the outside cable pull, polished metal parts, smoother locking action, new laminating ring and new locking tooth angle.

☐ **SIERRA NEW MODEL 44 HAND**
A positive locking hand. Smoother action, precision control and more natural appearance when used with the cosmetic glove. Easily controlled and reliable in performance.

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123 EAST MONTECITO SIERRA MADRE, CALIFORNIA

Name _____

Firm Name _____

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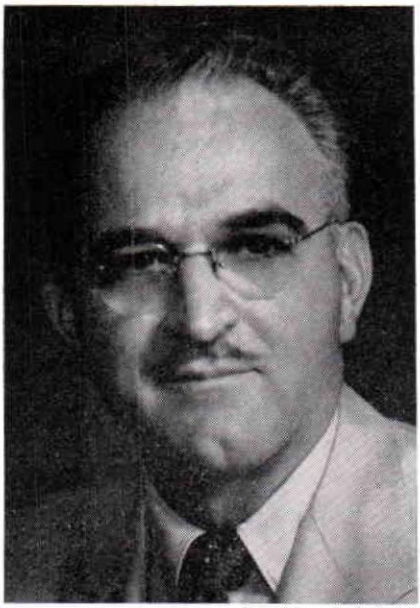


ASSEMBLY HEADLINERS—Dr. Paul Williams and Dr. Ruth Jackson of Dallas are two of the noted authorities who will appear at the 1959 Assembly.

QUISENBERRY REVEALS PROGRAM
TOPFLIGHT TALENT TO SPEAK

Noted names from the limb and brace field join with key rehabilitation personnel and leading physicians in the National Assembly program for 1959. Fred Quisenberry of Los Angeles, Program Chairman, in releasing the preliminary program, calls special attention to these features:

The Scientific and Technical Sessions, both at Dallas and the Pan-American session in Mexico City, will be headed by authorities recognized internationally as outstanding in orthotics and prosthetics. A question and answer period at the end of each session increase the value of the session to the individual prosthetist and orthotist.

The Technical, Scientific and Supply Exhibits arranged by Chairman David McGraw of Shreveport, are sufficient in themselves to make the trip to Dallas worthwhile. At the present writing, three-fourths of the available space has been reserved. The scientific displays include one on "Design and Beauty in Orthotic Appliances," from the Orthotic Department of Baylor University. The official VA Exhibit, "Clinical Approaches to Difficult Prosthetic and Orthotic Cases" describe six unusual cases for which various clinical principles have produced significant improvements.

The joint session at Mexico City with the Mexican Rehabilitation Association, will afford Assembly visitors a double dividend: opportunities to confer with prosthetic-orthotic specialists, and to enjoy with their families the recreational and rehabilitational aspects of our great sister Republic.

'59 ASSEMBLY — WHAT, WHEN, WHY AND WHERE

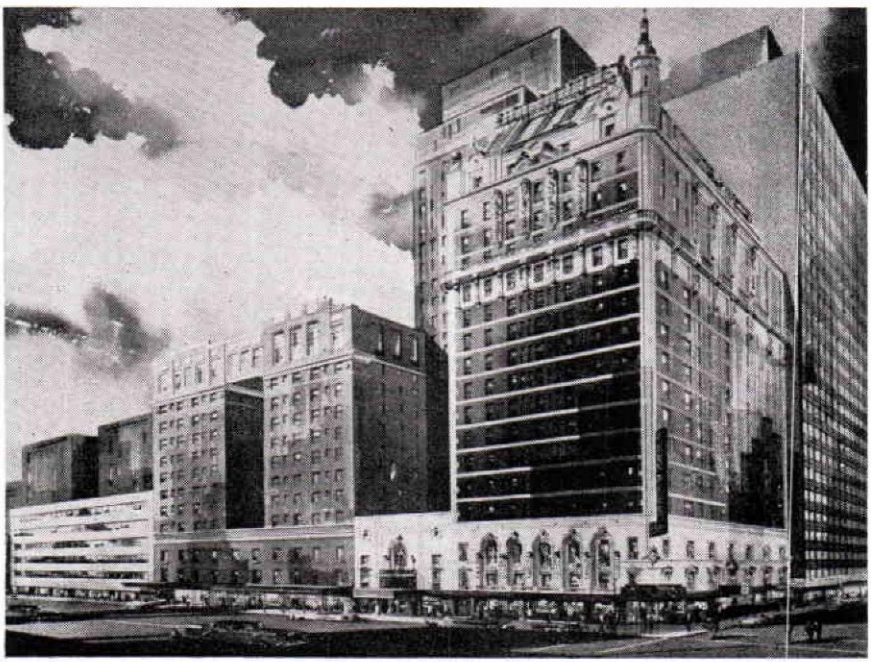
I. What: Two technical sessions—at Dallas, October 19-22, and at Mexico City, October 23-26.

II. When: October 18-22 (Mexican session: October 23-26).

III. Why: To give the practicing orthotist and prosthetist the latest in techniques, supplies and fitting procedures.

IV. How: Apply to OALMA headquarters, 919 18th St., N.W., Washington 6, D. C., for the necessary registration papers, so that you may be listed as a delegate to the Assembly.

V. Who: Leading authorities of the United States, Canada and Mexico will take part in the sessions. Fred Quisenberry of Los Angeles is Program Chairman, David McGraw of Shreveport is Exhibits Chairman, J. Morgan Greene of Los Angeles, Arrangements Chairman for the Mexican session and Charles A. Hennessy of Los Angeles is Program Chairman for the Mexico City Meetings.



ASSEMBLY HEADQUARTERS — Shown above is the one thousand room Adolphus Hotel in Dallas, Texas where the 1959 Assembly will be held. The building at the extreme left is the Adolphus motor garage.

Men with "Know-how" are the fundamentals of a good program. For the Dallas session, Mr. Quisenberry listed these specialists (others will be announced in the next *Journal* and in the Assembly Program):

Dr. Ruth Jackson, orthopedic surgeon with the Jackson Clinic in Dallas, will discuss "Neck Bracing." Dr. Jackson's book, *The Cervical Syndrome*, is now in its second edition and attracting wide attention. M. J. Benjamin of Los Angeles is to be moderator for this session.

"Bracing of the Back" is to be discussed by Dr. Paul Williams, orthopedic surgeon of Dallas, with the assistance of orthotist William Miller. This is a subject which Dr. Williams has handled with distinction at many meetings of the Academy of Orthopaedic Surgeons.

Dr. Robert E. Stewart, head of the VA Prosthetic and Sensory Aids Service, heads a panel on "Improving Our Service to the Veteran." He will be assisted by W. W. Anderson, head of the Operations Section of the VA Supply Service, and other key figures from the Veterans Administration.

Anthony Staros, Chief of the VA Prosthetics Center, will report on "New Devices and Techniques Available From the Prosthetics Research Program." This session will cover new materials, devices, and techniques, including descriptions of hydraulic principles and some hydraulic devices now, or soon to become, available. A brief description of some of the major projects currently in the research program will also be given.

Colin A. McLaurin and Fred Hampton, of Northwestern University's Prosthetics Research Center, present a Seminar on "The Canadian Symes' Prosthesis." Mr. McLaurin and Mr. Hampton did some of the first work with this when they were on the staff of the Canadian Government's Prosthetics Offices—this experience has extended from the earliest conception of the prosthesis to the present day.

William Hitchcock will give a seminar on "Plastic Reinforcement of Wooden Prostheses." John Bray, prosthetics instructor, gives a seminar on "Anatomy for the Orthotist and Prosthetist (Upper Extremity)." Mr. Bray is instructor in Prosthetics at the University of California, Los Angeles.

Several other important Assembly sessions and programs are now being arranged and will be announced in the September *Journal* and the various issues of the OALMA *Almanac*.

NEW GIFTS FOR OALMA LIBRARY

Mr. and Mrs. Frank O. Peterson of Los Angeles have once more presented valuable historical material to OALMA Headquarters Library. The gifts include the rare "Handbook on Amputations" published by the American Medical Association and now out of print. Also included in the gift are "Amputations from the Standpoint of Successful Prosthesis," published by OALMA's predecessor, the Association of Limb Manufacturers of America.

THE ZOCALO OR MAIN SQUARE IN MEXICO CITY—Visitors to the OALMA Assembly in Mexico City will visit the Cathedral at the left, a famous landmark and one of the oldest churches in the Western Hemisphere.

Mexico City will be the scene of a Joint Meeting of the Mexican Rehabilitation Association and the Orthopedic Appliance and Limb Manufacturers Association. This Pan-American session is to be held immediately following the 1959 National Assembly.

Jay Greene has been named Chairman of the OALMA Committee on Arrangements. Charles A. Hennessy will play the Program at Mexico City in cooperation with officials of the Mexican Association.

Arrangements call for members of OALMA and their guests to leave Dallas the afternoon of October 22, arriving in Mexico City that evening where the Del Prado Hotel will be convention headquarters. The first Scientific and Technical Session will be held the following morning at the new Rehabilitation Center in Mexico City.

Mr. David Amato, the Rehabilitation Counselor assigned by the United States Government to the American Embassy, and Dr. Rofolfo Herrejon y Martinez, will work with Messrs. Greene and Hennessy in arranging program details. There will be opportunity to visit the Federal Palace, the famous National Cathedral and other attractions in the Capital City.

The itinerary which has been arranged provides that members may either return to the United States Sunday evening October 25, or remain in Mexico for an extended visit to such beautiful and picturesque cities as Cuernavaca, Taxco and Acapulco.

Arrangements for the visit to Mexico are being handled by *American Airlines* with Lester A. Smith, Assistant Director of OALMA serving as Tour Secretary and conductor.

ITINERARY FOR MEXICO SESSION OF THE ORTHOPEDIC APPLIANCE AND LIMB MANUFACTURERS ASSOCIATION

Thursday
October 22 Arrive Mexico City, transfer to Del Prado Hotel

Friday
October 23 Morning: Assembly Program (OALMA and Mexican Rehabilitation Association) Afternoon visits to include Federal Palace, Cathedral, National Museum and Castle of Chapultepec, etc.

Saturday
October 24 Morning Assembly Program (OALMA and Mexican Rehabilitation Association) Afternoon visit to Shrine of Our Lady of Guadalupe, Pyramids of the Sun and the Moon and Temple of Quetzalcoatl.

Sunday
October 25 Morning visit to Palace of Fine Arts and see the famous Tiffany Glass Curtain. Drive to Floating Gardens of Xochimilco for boat ride on the canals. Attend bullfight in the afternoon. Part of the OALMA group will return to the United States this evening; another group will visit Taxco and Acapulco before returning.

Monday
October 26 Drive to Cuernavaca, visit Borda Gardens, Palace of Cortez and Cathedral. Continue to Taxco, picturesque town of Spanish Colonial period. Remain in Taxco overnight.

Tuesday
October 27 Drive to Acapulco. Accommodations at Del Monte Hotel.

Wednesday
October 28 Free in Acapulco

Thursday
October 29 Return to Mexico City

Friday
October 30 Free in Mexico City, Transfer to airport in evening to depart via American Airline Flight 630 at 1:05 a.m., Saturday, October 31, for the U.S.A.

COMMITTEE ON ADVANCES IN PROSTHETICS OF OALMA—This OALMA Committee, which will be guiding the Research Project, goes over plans at its Washington Meeting June 12. Left to right: Fred J. Eschen of New York City, Dr. Robert E. Stewart, head of the VA Prosthetics and Sensory Aids Service, who was a guest of the Committee, Chairman Carlton Fillauer, Howard Thranhardt of Atlanta, M. P. Cestaro of Washington and Charles A. Hennessy of Los Angeles.

OALMA TO MAKE STUDY SERVICES FOR THE ORTHOPEDICALLY HANDICAPPED O.V.R. MAKES $30,000 GRANT

The Orthopedic Appliance & Limb Manufacturers Association has received a grant from the U.S. Government to conduct a research project to "Determine the State of Services Available to Amputees and Orthopedically Disabled Persons." The grant, in the amount of $29,500 was recommended for approval by the National Advisory Council to the U.S. Office of Vocational Rehabilitation, and formal approval by the Department of Health, Education and Welfare was received June 2.

The project is also approved by two additional years after May 31, 1960, provided funds are appropriated by the Congress and provided satisfactory progress is made on the project.

Mr. E. E. Ferebee, Acting Director of Office of Vocational Rehabilitation, reports that the Advisory Council expressed considerable interest in the general objectives of the proposed study, and in the fact that the Orthopedic Appliance and Limb Manufacturers through their Association, have a desire to gather information which would result in better service to disabled persons.

The survey will be made under the general guidance of the OALMA Committee on Advances in Prosthetics, of which Carlton Fillauer is Chairman. OALMA Director Glenn Jackson will serve as project director, and OALMA's treasurer, M. P. Cestaro has been named project financial officer. Staff members who will also work on the project include A. Bennett Wilson, Jr., Secretary of the Committee on Advances, and LeRoy William Nattress, Jr., Special Assistant in the Washington Headquarters of OALMA. Details of the survey and description of the methods to be used will be reported in the next issue of the *Journal*.

TO ALL CERTIFIED ORTHOTISTS AND PROSTHETISTS

Greetings from

Roy M. Hoover, M.D.

President of the American

Board for Certification

For the past few years, during my association with the Certification Board, there has been a growing concern regarding the education of prosthetists and orthotists. Their education in the past has been dependent upon the individual learner as well as upon his employer and supervisor. The result was an emphasis upon the mechanical to almost the exclusion of the theoretical.

More recently, with the revision of the Certification Examination, the absence of a theoretical foundation in our Candidates has led to a higher percentage of failures than the Board would like. This also has been a concern. In 1959 these examinations will be even more comprehensive for our National program can only go in one direction if the respect of our profession is to be maintained.

As a result of these two concerns, two developments have recently occurred. The first is a correspondence course for prosthetists and orthotists which is announced in this issue of the *Journal*. This course will be available in the Fall, and, while designed primarily for those preparing for Certification, it will offer numerous units for Certified personnel as well as for facility managers.

The second is the revision of the Application for Examination and the more strict screening of these Applications by the Committee on Credentials of the Board. The process is directed at allowing only those candidates whom the Committee feels are fully qualified by their previous experience to stand for Examination. In this, the Committee is guided by the general tenet that a Certified Prosthetist or Orthotist must have a well rounded background in all areas of the art-science he intends to practice.

These developments are not separate. Considered together they mean that those who have not been able to prepare completely for Certification will now have the opportunity to secure training in an organized way. Much, of course, still remains to the individual himself, but this is a needed preliminary step in our goal of professionally trained personnel.

THE AMERICAN BOARD FOR CERTIFICATION CONFERS—Shown above are the members of the Board with their guests OALMA President Buschenfeldt and consultant Chester Haddan at the Annual Meeting in Washington June 10 and 11. Left to right: President Buschenfeldt, Treasurer M. P. Cestaro, Board members Herbert Hart, Dr. Vernon Nickel, Howard Thranhardt, Consultant Chester C. Haddan of Denver, and Board members Frank Harmon, Dr. Roy M. Hoover, who presided as President, and Dr. Eugene Record. Mr. Haddan was one of the founding members of the Board and served as its first President.

PROSTHETIC AND ORTHOPEDIC APPLIANCES DONATIONS WANTED

The Church World Service which operates a prosthetic establishment in the Republic of Korea, welcomes contributions, either of parts and orthopedic supplies or of money donations to advance the work.

Materials and appliances donated may be sent to any of the following warehouses:

Church World Service Center
New Windsor, Maryland

Church World Service Center
Nappanee, Indiana

Church World Service Center
110 East 29th Street
New York 16, New York

Church World Service Center
4165 Duncan Avenue
St. Louis 10, Missouri

Church World Service Center
919 Emerald Avenue
Modesto, California

The Service asks that all contributors forward their contributions prepaid and whenever possible provide an additional gift in money of 8¢ per pound to cover the costs of export packing and handling and marking. Cash donations should be forwarded to Church World Service at any of the addresses above and marked for the attention of Dr. A. Russell Stevenson, Director of the Church's Overseas Program.

INSTITUTE FOR THE CRIPPLED AND DISABLED

Announces

Nine-Month Training Program

For Orthetic And

Prosthetic Technicians

September 14, 1959—June 24, 1960

FOR ADDITIONAL INFORMATION:

CHARLES R. GOLDSTINE, C.P.O.
Director, Prosthetic and Orthetic Laboratories
Institute for the Crippled and Disabled
400 First Avenue
New York 10, New York, U.S.A.

THE STORY OF WILLIAM EDGAR "BILLY" ISLE

A Biographical Sketch and Appreciation, by His Daughter,
Mrs. Loraine Isle Dillard

NOTE: *The author is indebted to her associates, Ted W. Smith and Lee J. Fawver, and to Jocelyn Dougherty for helpful suggestions on this article.*

When war in Europe broke out in 1914, none of Billy Isle's family dreamed the conflict would affect their lives. It seemed so far away . . . more than 3,000 miles . . . and at least 12 days travel time!

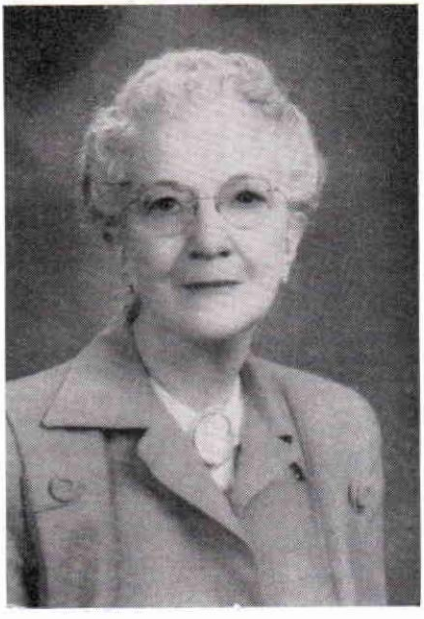
But the French Red Cross needed emergency help. They were frantically trying to care for hundreds of war amputees. It was decided to call Billy Isle, manager of the Kansas City branch of the J. F. Rowley Company.

He was a logical choice. Those he had helped knew him as the man who said, "you are not handicapped unless you are handicapped in your head!"

His colleagues in the prosthetic field knew he was a natural organizer. He was a born leader, and they knew he could do the job for the Red Cross. Urgently, they asked him: Would he go to Paris? He replied that he would think it over. That night, he looked at his wife, Anna, thinking of how he would hate to part with her.

He remembered their early horse-and-buggy courtship in Bucklin, Missouri. At that time he had been working as a brakeman on the Santa Fe. One 4th of July, he gently told his fiancee goodbye, and boarded the train for Marceline, Missouri, the Santa Fe division point where he lived.

WILLIAM EDGAR ISLE
1884-1953



ANNA COEN ISLE
1886-1953

As Billy hopped on the slowly moving freight, his brown-haired fiancee spoke to him. He stepped off to ask what she had said, and after a few minutes he started to board the train. Suddenly he slipped and fell, and, as Anna screamed, the train rolled over his left foot. The local doctor took one look at his crushed foot and said it had to be amputated. The operation was done in the doctor's office.

The next three months were dark days, but they helped Billy Isle later when he could truthfully say to an amputee, "I know it is hard but it's not what you've lost that counts; it's what you have left!" Within this time, he had been fitted with his first prosthesis. With characteristic energy, he became the newest apprentice at the Fit-Well Artificial Limb Company in Kansas City, starting a vocation he was to follow all his life. The next month an equally important event took place. He married Anna Coen, who was to help him in his chosen work.

Looking at Anna the night of their decision, he thought of what an extraordinary woman she was. Beginning at the age of 16, she had taught two years in country schools, going to Kirksville, Missouri, for further training in the teachers college during the summer months.

Later she had showed rare dash and spunk as a teenager, becoming editor and manager of the *Bucklin Herald*. He remembered how she enjoyed riding the trains on her press pass.

Throughout their marriage, he always confided in her completely, and the night he had to decide whether to go to Paris, he asked Anna what she thought. "You must do your duty," she said thoughtfully. "Your knowledge and skill are needed."

On May 8, 1915, he sailed from New York with his employer, J. F. Rowley. He already knew the urgency of his mission. The day before the *Lusitania* had been sunk by a German submarine.

Arriving in Paris, he began negotiating with French officials to make plans for the amputees. Soon a prosthetic facility was activated. Then Mr. Isle was called by the British Government. England was gravely concerned about her war amputees.

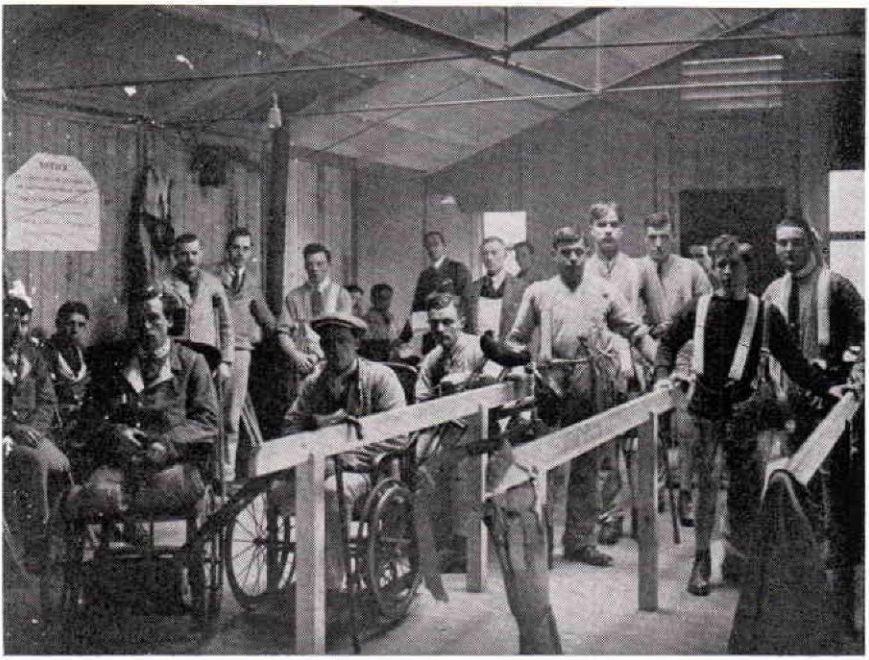
He journeyed to Roehampton House, London, where limbmakers from all over the world had been invited to attend the International Exposition of Artificial Limbs. In competition with representatives from 39 firms, Mr. Isle ran the length of the exhibit hall and performed many other agile feats. The judges, all members of the Royal College of Surgeons, awarded him the first prize for lower extremity prostheses, the only gold medal given.

Contracts from the British Government were quickly offered to J. F. Rowley, Ltd., with Mr. Isle as general manager. Starting from the bare ground, he proceeded to lay out a plant that could produce hundreds of prostheses each month. The plant was built on the grounds of Roehampton House, a convalescent hospital and rehabilitation center for amputees.

Cabinetmakers came to help from all parts of London. Other skilled woodworkers came from the provinces to join the staff. Experienced prosthetists from the United States joined the group.

The staff grew to more than 100 and the plant began to operate at maximum production. Each morning Mr. Isle received a telephone call from the hospital: "How many fittings can you do today?" Later five additional facilities were established in England, and four in Scotland.

The feverish pace was sustained throughout the war.



WORLD WAR I FACILITY—A group of patients and some of the employees at the British facility managed by Mr. Isle.

Frequent visitors to the facility were King George V and Queen Mary. Both showed tremendous interest in fitting and fabricating limbs. Billy Isle showed the royal couple the same courtesy he exhibited to everyone. He found them well informed and gracious to the amputee patients and the staff.

At night he wrote to his wife:

"These people do business by giving their word. They just shake hands to bind the contract. No written document is needed!" Perhaps he felt akin to the British, for his grandfather had come from England.

Finally he wrote the letter he had been aching to write since he had left Kansas City. "Come to London," he told his wife and daughters.

Mrs. Isle and their three daughters arrived in January, 1916. They moved into a comfortable, furnished flat across from Bishop's Park.

The three schoolgirls saw their father's work with amputees, and though they did not know it then, an indelible impression was being made in their minds. Much later, in Kansas City, Mrs. Loraine Isle Dillard, Mrs. Verona Isle Davis and (before moving to California, and marrying there), Billie Isle Hakman were working in their father's business.

But while the little girls were in school, Zeppelin raids were increasing in frequency and intensity. At the end of three months, Billy Isle had to make a heartbreaking decision. He sent his wife and the girls back to the United States.

Mr. Isle remained at his post in Europe, where he had just been asked to confer with officials of the Italian Government. The conference led to the establishment of another prosthetic facility in Rome, under Mr. Isle's direction.

In June, 1917, the British Red Cross organized a party to make a trip to Russia. The Russian Government needed prostheses for their war amputees. In his capacity as technical advisor on prostheses, Mr. Isle was given the honorary rank of Captain.

When the group arrived in Petrograd, they were met by a number of Russian officials under the provisional government headed by Alexander Kerensky. The Russians seemed curiously preoccupied, Mr. Isle noted at that time. From Petrograd, the party continued on to Moscow for several days of conferences.

The British Red Cross offered the Russians 500 prostheses for their war amputees. The Russian officials stalled, refusing to make an agreement, even though the prostheses were to be an outright gift.

In his hotel room that night, Mr. Isle tried to imagine the answer to the Russian lack of cooperation. Suddenly, a knock on the door startled him. It was one of the Russians. The agent entered the room and whispered that he wanted what amounted to a "kick-back" for each limb the British Red Cross proposed to give them.

Without hesitation, Mr. Isle refused. He immediately reported the matter to the Red Cross officials. They stopped negotiations, withdrew their offer, and left Russia at once.

They soon learned how fortunate they were to have left Petrograd when they did. Within 24 hours after they crossed the Russian border, the second Bolshevist Revolution was in full swing.

The return route was through Lapland, Stockholm, and Edinburgh. At Edinburgh, they took stock of their finances, knowing the trip had been more costly than they expected. To their dismay, they found they did not have enough money for train fare to London.

With his typical ability to land with his feet on the ground, Billy Isle saved the day. He had become friends with a Scotsman at the hotel after finding out they were both Masons. The Scotsman cashed a sizable check for him.

Back in London, Mr. Isle continued his work at Roehampton until 1918, when he resigned. He was urged to stay, but he was homesick for his family. One point reassured him: He knew the staff was qualified to carry on the work. When he left, the Board of Directors of the Rowley Company presented him an antique silver butter server. His staff crowded in the room to give him a silver rosebowl as a token of their esteem.

Mr. Isle returned to his family and they took a vacation together. Anna had bought a Chevrolet touring car and had been driving it for several months. She taught Billy to drive it too. Even though she was a good driver, she never had a chance when Billy was in the car, for he always took the wheel.

At this time, his company needed a plant in New York, and he was sent to establish the facility. Later in Toronto, Ontario, he established the J. E. Hanger facility.

But suddenly, in 1920, Billy Isle became homesick for Kansas City. He decided to buy the Rowley facility there.

He returned to find the successful little business he had left had suffered under a succession of managers and that he had bought "a pig in a poke." Although extremely discouraged, he started to build the company back to its original proportions.

Within three years, the business began to thrive. At that time Mr. and Mrs. Isle became interested in producing stump socks. This sideline expanded rapidly. By 1925, Knit-Rite stump socks were being sold to other facilities.

They are still the most important product of The Knit-Rite Company. From this beginning the wholesale division expanded as complete lines of components for prosthetic and orthopedic appliances were added. While the wholesale part of the company was growing, the retail portion, The W. E. Isle Company, was also expanding its service to physicians and patients in the area immediately surrounding Kansas City.

As the need to promote the sale of Knit-Rite products became apparent, Mrs. Isle began traveling all over the United States by car, sometimes as much as 50,000 miles a year, calling on prosthetic and orthopedic appliance facilities.

She was caught by the Bank Holiday in Erie, Pennsylvania, without any money. She had planned to cash a check. With all banks closed, she called on a customer, telling him her predicament. "I don't have enough money to get out of town!" she told him. "Mrs. Isle," the man answered, "I have just $10.00 myself. I know you need it, but I do too. I'll divide it with you." It was enough for the capable Mrs. Isle to drive to Cleveland, where she stayed with a member of the family while waiting for money from home.

The depression had dealt a crushing blow to the business. One year in the 30's was so slow, the business volume was less than half the *monthly* sales volume of the company today.

Determined to keep the company going, the Isles sold their home and moved into the company offices. They put in a bathtub and a range, and entertained their friends in their temporary quarters.

A loyal staff of 15 persons continued to work for the company though sometimes payday was postponed. Teamwork was the order of the day.

Mr. Isle at that time began to work for the national good of prosthetists. Long a staunch supporter of the A.L.M.A., he had always wanted a closer relationship between prosthetists, orthotists, and the prescribing physicians. He advocated a professional status for prosthetists and orthotists. He was among the first of the "old time limbmakers" to preach that to gain professional status and recognition by the medical profession, prosthetists and orthotists must earn it by improving their standards.

He was appointed to serve on a new committee made up of representatives of the American Medical Association and representatives of the A.L.M.A. He served from 1938 to 1942. The work of this joint committee culminated in the publication of a book, *Handbook on Amputations.*

The most important accomplishment of the committee, possibly, was the rapport established between the members of the A.L.M.A. and the A.M.A. This first mutual understanding of their community of interest later led to the establishment of the American Board for Certification of Prosthetists and Orthotists. Mr. Isle's dream of professional status was well on its way toward the reality it is today. It was a proud day in his life when he was certified as a Prosthetist and Orthotist and when seven of his associates and his facility were certified.

Mr. Isle traveled extensively throughout the United States and Canada. Everywhere he made friends, for he had a ready smile, and a sincere, outgoing personality. Everyone called him "Billy" and gave him a hearty welcome.

In 1945, he decided to form a partnership of the persons most closely associated with him. Mrs. Isle and two of their daughters, Mrs. Dillard and Mrs. Davis, became partners along with Lee J. Fawver and Ted W. Smith.

Billy Isle at his favorite sport.

It is said that each enterprise is the lengthened shadow of one man. That is true of The Knit-Rite and Isle Companies, where the principles and policies laid down by the founder, William E. Isle, are followed today by his chosen associates, to whom he taught the heart of his craft and his philosophy of service.

Lee J. Fawver, C.P.&O., Past President of O.A.L.M.A., began prosthetic fabrication under Mr. Isle in 1928. Ted W. Smith, C.O., Regional Director of O.A.L.M.A., began in 1935 in public relations and sales. Loraine Isle Dillard in 1926 began knitting stump socks. Each has expanded his area of interest and skill so that there is scarcely a job in the whole plant, employing 80 persons, that one of the three would not be qualified to fill. The talents and efforts of each partner complement the efforts of the others in management. Now inactive for health reasons, Verona Isle Davis had served 25 years before her retirement.

Mr. Isle would have been proud today to see the two young men, representing the third generation of company-builders like himself, active on the staff! Bill Brady, the son of Mrs. Davis, began work full time after he was graduated from the University of Kansas City in 1957. Bill Smith, son of Ted Smith, came to the company with a degree from the University of Missouri in 1958. Billy had a deep personal interest in both of these young men as he watched them grow up. Both had worked part time at the company from the time they were teen-agers and he had the highest confidence in them and their future in a profession that he loved.

Two years after the partnership was formed, Billy Isle suffered a severe stroke. Further strenuous activity was impossible. However, he recovered enough to enjoy spending several weeks each summer fishing on the lakes in Ontario and Minnesota. Mrs. Isle enjoyed fishing too, and with their house trailer, boat and motor, the couple made the most of the leisure they had earned.

In 1948, the O.A.L.M.A. gave Billy Isle an honorary life membership. He was at the top of a long and useful career. Much had happened to him, he realized, since he was born in Chariton County, Missouri, between the villages of Pat and Mike.

His own misfortune had brought him to a field where he had helped more than 20,000 persons. This was most important to him. He had appreciated every tribute he ever received, but the everyday drama of seeing an amputee come in on crutches and then walk out on two legs was the most rewarding achievement of Billy Isle's life of service.

HELPFUL NEW DEVICES; NOTES FROM THE P. W. HANICKE FACILITY

By Erich Hanicke, C.P. & O., Kansas City, Missouri

Number 1

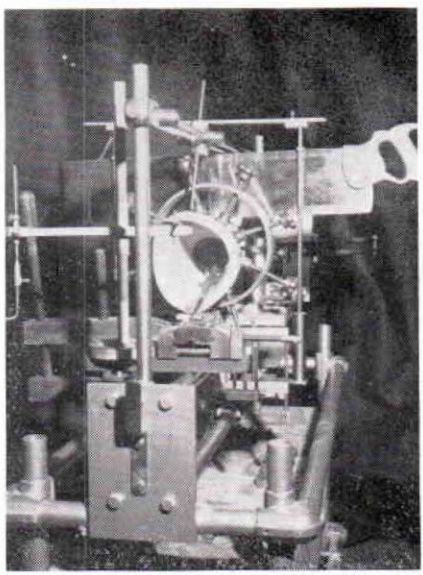
This mechanism shows a powerful, accurate and easily adjustable stretching device for severe contractions of the knee. It consists of bilateral drop ring locks mounted on swivel plates. These swivel plates are provided with circular slots about 2″ from the center of the knee bolt, following the radius of same. The slots are provided with milled grooves and hardened washers which have triangular ridges. These ridges engage into the grooves of the swivel plates and are held tight by Allen socket screws. This feature allows for very fine or gradual adjustment and fixation of position.

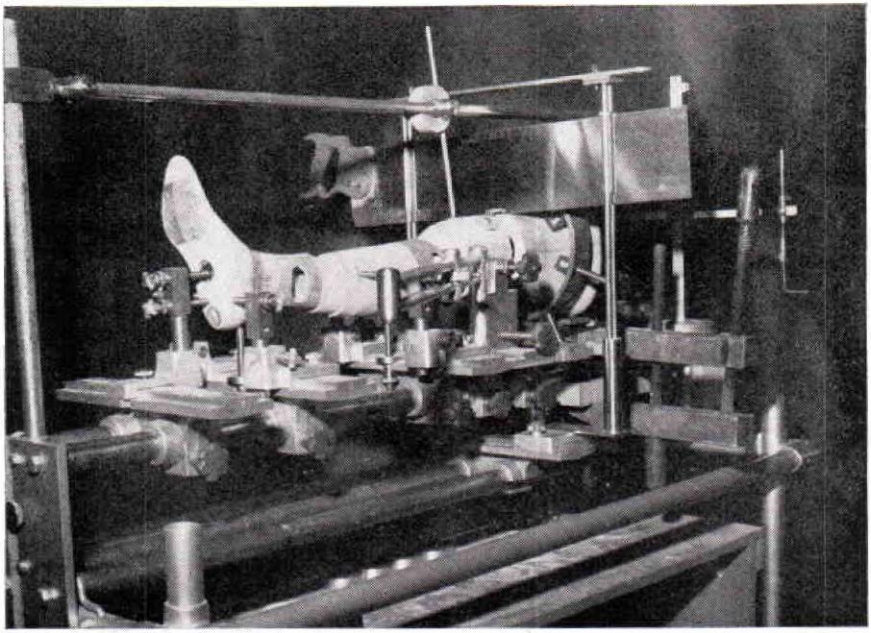
The force required to stretch or straighten a knee is derived by turn buckles or strong elastic pull straps. These are hooked into detachable anterior bows, which insert into metal loops attached to the thigh and garter band. This entire unit is part of a long leg brace attached to the shoe, with adjustable upper bars for control of weight bearing area as tuberosity of ischium. The cuffs at garter and thigh are held close to knee to prevent loss of efficiency or counter pressure. A well molded knee cap with a large opening for patella is also used with great advantage.

A broad, wide, soft padded posterior strap over the tendon achilles above counter of shoe provides definite counter pressure at the distal end of this leverage mechanism and protects the anatomical ankle joint from posterior subluxation at the astragalus.

Number 2

Looking at this photograph, you may question its identity and reason for existence. This introduction sounds about as good as any more elaborate means of trying to explain the illustration in one word. While necessity is supposed to be the mother of invention, it seems as if she has outdone herself just a little. There may also be a good many camps of criticizers who might just glance at this and brush it aside with a shrug of the shoulders which means "crazy." But, looking into this mechanism a





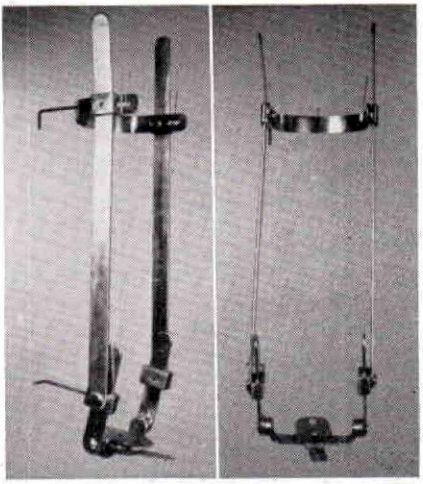
No. 2

bit closer, we find quite an assortment of fixtures, clamps, gages and special tools to be a part of a rather unique measuring and duplicating jig. Its main function is to assist in recording a set of assimilated parts in relationship to each other so that they may be classified and recorded as to degrees or linear proportions, etc. In ordinary machine work one has a certain advantage to measure everything one sees just as it is. With many multi-faced surfaces on an artificial leg or other types of congenital or other special appliances, it becomes rather difficult to get a good foothold or bearing surface and maintain same during the coming operation of dismantling, realigning or just replacing certain parts which have become obsolete during fitting procedures and also for the purpose of duplicating a test leg or fitting leg to a new ankle mechanism.

This jig is constructed from various components. The main base, a Trautman type duplicating jig, is used in conjunction with walking jigs. This has been machined and squared up to obtain level surfaces for gages, squares, squaring blocks, height gages, clamps, etc. A lower deck has been added to facilitate movement of saw carriage from end to end. Detachable lower center indicators can be fitted whenever needed. An upper or anterior center marking rail has been added which can be lowered and tilted to meet the occasion. A detachable rail with scribe or pencil has been added into recessed openings at either side of knee joint towers. This can be detached and used for medial or lateral below-knee as well as above-knee measurements. A footboard can be attached to record position of foot or shoe in relationship to previous recordings and permit accurate duplication. A ring vise which encircles the socket and holds it in proper position is a great help should this socket have to be turned, abducted, adducted or tilted into flexion or extension.

This apparatus is a blessing to anyone in our field who has had and will have the opportunity to create something rather unique for a pa-

tient. This so-called something, taken so lightly, yet demanding much knowledge, engineering, patience, experimentation, ingenuity and financial support as the construction of an artificial leg, or any other complicated appliance, if you expect it to function as well as is humanly possible, includes revamping of a patient's brain pattern to establish a new gait and habit of handling his prosthesis. This may require a few months to a year but when these Test or Model legs are ready to be duplicated into the permanent prosthesis this last operation would be quite hazardous without the proper protective devices to assure us a well executed appliance of master workmanship.



Adjustable Ankle Brace

Number 3

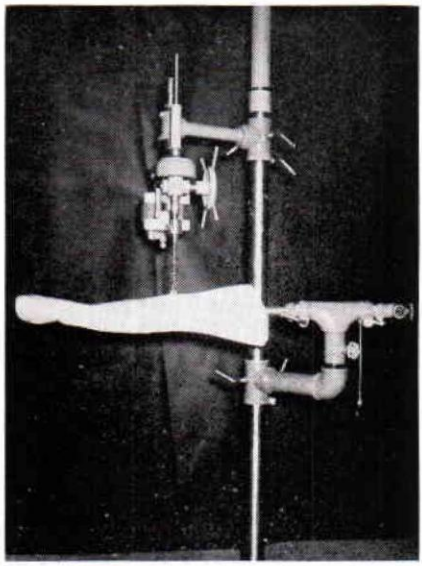
This photograph illustrates a very simple test brace. It is adaptable to most any shoe — mens or ladies'. It is screwed to the shank of the shoe with short wood screws or machine screws passing through the shank of the shoe. The plate to which this brace is attached can follow the conventional lines of the shank of the shoe. This brace is used to determine the functional position of the mechanical ankle joint in relation to the anatomical joint. Joint location can be duplicated by loosening all moving parts and then tightening one by one. It will indicate how low the joints should be. This will be a surprise to most investigators. It will show how far forward or backward the joint should be located (or placed). It will also show the rotation of the axis of the ankle joint in relation to the longitudinal axis of the foot, or so-called tibial torsion. It will show how far the joint can be erected or inverted in order to help correct a certain condition of clubfoot or flatfoot in conjunction with polio or fracture cases. The shank plate is provided with serrated discs at medial and lateral sides. The stirrup bars are anchored to the discs which engage with the ones mentioned above.

It is interesting to find that by turning the stirrup back and forward (parallel with the longitudinal axis of the foot or shoe) one can control the maneuverability of a pair of leg braces. Placing the mechanical ankle joint in position will either ground a patient or endeavor to make him walk with much greater ease. Placing the downward force of a body behind the anatomical ankle joint will have a tendency to raise the forefoot. Placing the same force ahead of the anatomical ankle joint will create a terrific downward pull with the result that this patient can hardly lift his foot or clear his toes. While this is nothing particularly new, this test brace will give us fairly accurate information as to what we may expect from this patient, and the effort or energy he has within himself to manage braces and walking. In low fractures of the tibia it is important to obtain as accurate duplication of ankle joint movement as possible to maintain proper immobilization of the site of the fracture.

Anyone experiencing cases with heel and counter movement will welcome this device, as it will eliminate a good percentage of this troublesome occurrence, especially where there is need for built-in elevations with elevated stirrups. The ankle joint proper and its upright bar are mounted on a drop ring lock type of sleeve, adjustable by an Allen socket head screw. The metal garter band can be raised or lowered as well as deepened and flattened as the various conditions may require. It can also be tilted to follow the taper of the area of the calf muscles, which are found in reverse occasionally. While this particular test brace does not conform to the contours of a human leg, its skeleton design is primarily used to locate the position of the anatomical joint to the most advantageous position for the mechanical joint.

Number 4

This drill press is used primarily to bore holes through plaster of paris leg models. Most small drill presses have a downward excursion of about 4½″, while this particular one has a 9″ drop. This means that a drill can bore through most any diameter of knee without having to be reset. The upper or motor section is attached to a long bracket which in turn can be raised or lowered on a 4″ steel tubing. A separate clamping ring gives us a rotary motion on the main steel tube area. The proper height has been established. This enables us to swing the drill itself with about a 15″ radius or 30″ from minimum to maximum horizontal excursion. At the end of this arm is another vertical adjustment feature. A solid rod is mounted in such a way that it can be raised or lowered to a very fine degree. Around this rod at the lower end is the attachment for the drill press itself, so that there are two rotary motions possible: the first motion to move the drill from one side to the other in an arc; the second to move the drill in and out or closer and farther away from the central steel tube. This allows very fine maneuverability of this upper section.



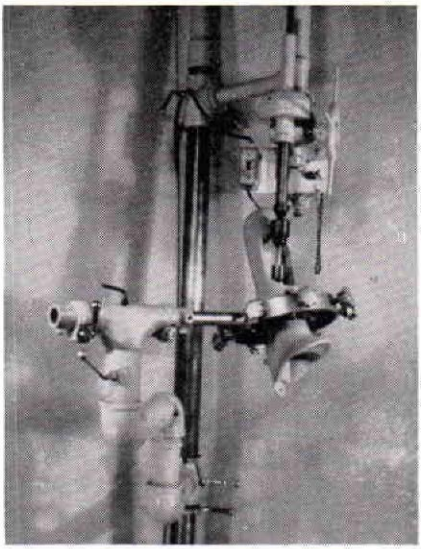
Drill Press

The lower section, called bed, on most drill presses, is constructed in the form of swivel brackets. The first one rotates on the main steel tubing and rests on a separate clamping ring. The head or main section of the lower assembly is set in a 4″ tube and held in place by a shallow circular groove to maintain its position and obtain another rotary advantage and maneuverability. This bronze head is provided with machined ferule which can be rotated and clamped tight by flanges and drill press handles. The entire unit makes a very strong and dependable machine.

This press is used to maintain proper alignment of joints with respect to their basic position depending on center of gravity and position of abduction of entire leg during stance phase on appliance and prior to dynamic action of leg to foot and floor during weight bearing cycle.

This particular plaster of paris model was made from a patient with ununited fracture at lower 3rd of tibia with a 2″ shortening of lower leg. Since the patient was heavy and active, it was necessary to use heavy molded cuffs due to the excessive posterior curve of the lower leg and the marked cone-shaped outline of his thigh. A strong inside shoe with a celastic and fiberglas counter was used to hold the foot rigid. Special bars $1\frac{1}{8}$ x $\frac{1}{4}$ with tapered section in between joint areas were used to allow for ball bearing races, screw heads and locking screws.

In order to bend and fit the individual members, including the medial and lateral stirrup upright and obtain a proper parallelism or opposition of joints which had to be fitted at either side of the cast, it was decided to penetrate the cast in proper locations and insert a specially devised clamping mechanism which would enable the mechanic to lift the entire appliance off the cast without altering or dismantling the mechanism. Because the bars were of such heavy caliper, it would have been highly improbable to make such a brace and guarantee a good molded fit over leather cuffs and still keep all joint surfaces in proper relationship



to each other, without the aid of proper protective measures. In ordinary braces, small alterations in the shape of the bars or diameter of knee and ankle joint can be handled with bending irons. This, however, was impossible to use in this case as these bars had to be annealed and hardened and rechecked after this procedure.

The other picture shows this press performing another duty — to bore a rather large hole into an area of a leg — knee block, etc., the article is held tight in this special ring vise. In this manner it is possible to clamp this article in almost any position and hold it there until operations are completed. Drill position does not have to be changed in order to exchange borers or other auxiliary tools needed to accomplish this task. The ring vise protects the socket in this instance from being crushed; the entire setup protects the mechanic and his hands and guarantees safer and more accurate workmanship.

THE NEWINGTON BRACE FOR CEREBRAL PALSY

Russell V. Fuldner, M.D., and Josef Rosenberger, C.O.*

EDITOR'S NOTE: *This article is reprinted, by permission of the authors and the editor, from "Clinical Orthopaedics," No. 12, Fall 1958, pages 151-157 (published by the J. B. Lippincott Company, Philadelphia, Pennsylvania).*

As a form of treatment in cerebral palsy, bracing has yet to meet universal acceptance.[2,5,6] Besides published opinions slighting the value of braces, in practice one frequently encounters a prejudice against prescribing them in "spastic" disease. This attitude, it must be granted, is not groundless. Phelps,[4] a proponent of braces, refers to the danger of aggravating spasticity with braces of poor design. Our own experience has taught us that attempts to brace spastic muscles in correction beyond tolerance succeed only in alienating the patient and frustrating the doctor. Design problems and the simple difficulty of knowing where to lay one's hands on a mechanically sound brace have also militated against full recognition of the value of braces in cerebral palsy. Often the mechanical requirements for effective bracing in a spastic or an athetoid patient are such as to tax the ingenuity of bracemaker and orthopaedist alike.

So far as objections in principle to bracing are concerned we find dogma difficult to sustain in a condition where progress in the course of treatment is scarcely separable from progress in the course of time. In any event, a well-designed brace has such a variety of uses in cerebral palsy that physicians objecting to one application may perhaps find another quite helpful. This description of an adaptable lower-extremity brace has been prepared in the hope of interesting physicians not presently employing braces in cerebral palsy, as well as others who may wish to compare the brace that they are now using with the Newington model. It is perhaps unnecessary to add that bracing is not in itself a system of treatment and must be co-ordinated with physical therapy and other lines of training. Our approach to habilitation in cerebral palsy is similar in general outline to that described by Deaver.[3]

The Newington brace receives its name from the institution where it was developed—The Newington Home and Hospital for Crippled Children, in Newington, Connecticut. The present model results from progressive redesigning of the brace used for meeting the needs of our more severely handicapped children. The only brace available to us 10 years ago, a polio caliper model, was adapted initially to cerebral palsy use by substituting uprights of rigid aluminum alloy for steel and mounting ball bearings in all pivotal joints. After experimenting with various devices to hold the medial thigh uprights apart we attained the more satisfactory solution of eliminating them altogether. This was accomplished by increasing hip-joint diameters and using adequately heavy stock for the lateral uprights. We found that knee caps could be dispensed with if thigh and calf cuffs were of sufficient length. Before discussing the brace in detail a brief note should be made of basic concepts involved in its use.

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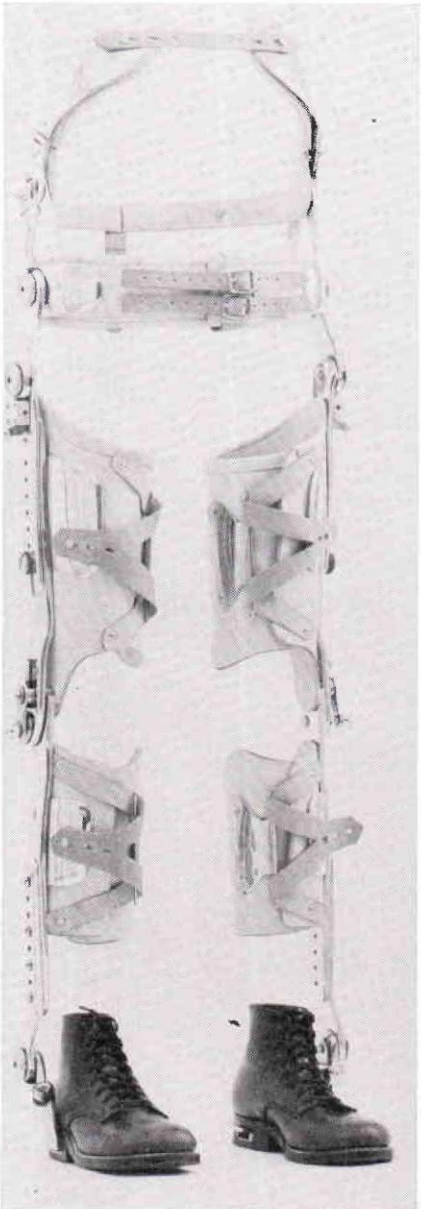

Fig. 1. The Newington brace for cerebral palsy is made of 24 ST4 aluminum with steel double-race ball-bearing joints at pelvic band, hip, knee and ankle. Locks at 180° are provided at the hip and the knee. Pelvic band and leg cuffs are of nylon-treated calfskin with russet leather straps; linings are horsehide. The pelvic band is padded with sponge rubber. A spring steel catch engages a heel slot incorporated in a full-length steel sole plate, permitting ready removal of the shoe. By changing screw positions in the uprights, the brace may be lengthened approximately 6 inches to keep up with the child's growth.

A Note on Gait Training

Attainment of serviceable gait should be regarded as a prime goal in the treatment of the cerebral palsied child, ranking in importance with speech training, self-care and the acquisition of school subjects. Indeed, the extent to which these latter accomplishments can be utilized and enjoyed by the patient depends on his ability to get about. While we cannot begin to cover the subject of gait training here, it is pertinent that among a variety of factors determining gait acquisition in cerebral palsy two of fundamental importance are the ability to balance and a sense of independence or confidence on the part of the patient. The child must attain these if he is to walk. To be sure, he must also attain a gait pattern,

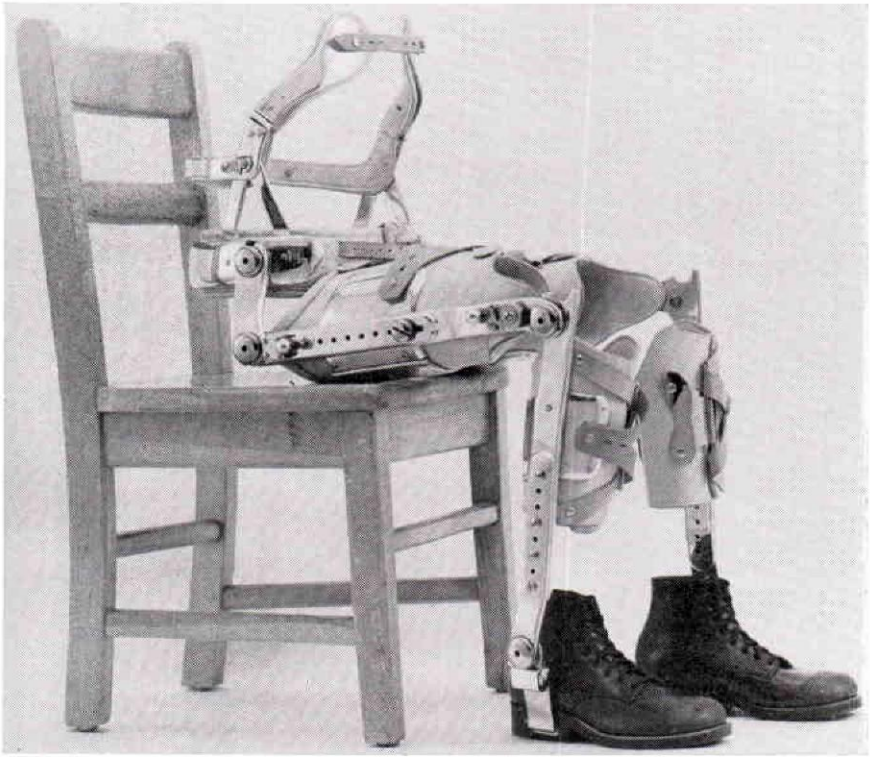

Fig. 2. Properly designed, a brace should fit as well in the sitting as in the standing position. The hip joints should block at 90° of flexion to offset slump; if they can be locked in this position, as in the Newington brace, trunk balance is aided. 90° knee locks (not illustrated) help children with uncontrollable quadriceps overflow to sit comfortably. Observe how posterior hinging of the thigh band permits adaptation to a flat surface, enhancing comfort and fit in the sitting position.

yet reciprocal motions learned on a plinth are of little use to the child lacking sufficient balance, confidence or control to utilize the motions when upright. Balance and confidence are dynamically acquired, not taught; for the severely involved child they may be painfully slow acquisitions requiring years of effort. In training these children, therefore, it is worth while to introduce lower-extremity bracing early. Braces, unlike walkers, readily accommodate to the patient's body image and facilitate the acquisition of balance, free stance and gait: partly because they bring these attainments within the child's comprehension and mental reach; partly because they aid him to integrate postural and equilibratory reflexes into functionally useful patterns.

Brace Requirements

In treating large groups of cerebral palsied children, a range of lower-extremity braces and splints is required to meet varying indications—ankle calipers, foot-drop models, night braces, various splints based on the Denis Browne principle. For severe forms of paraplegia and quadriplegia, brace-shop operations can be geared conveniently to a general utility brace meeting the usual needs of this class of patients. In developing the Newington brace, one objective was a single model for both spasticity and athetosis.

This was not, in itself, a difficult goal to attain, since basic brace requirements, such as lightness, strength and rigidity, free joint mobility and positive locking, comfort in all positions, ease of application and presentable appearance, are alike in both forms of cerebral palsy. These requirements have been met satisfactorily in our present model, which has been used by 108 patients. Additionally, the brace has other desirable features to be referred to later.

Construction of the Newington Brace

Except for steel stirrups and small parts, the Newington brace is of alluminum alloy construction throughout (Figs. 1 & 2). The average 6-year-old celebral palsied child requires a brace weighing approximately 6 pounds; children in the 10- to 14-year-old group demand a brace weighing 8½ pounds (without shoes). As already indicated, scissoring is offset by eliminating the medial uprights of conventional braces and building stress resistance into the lateral uprights and hip joints. Larger hip joints and heavier uprights may be substituted for stock sizes in children with a strong scissoring tendency. (Among our patients, the only one for whom this design proved inadequate in maintaining leg alignment was a ruggedly built young man, nearly 6 feet tall, with unusually severe adductor spasm.) The hip joints of the Newington brace, as well as knee, ankle and pelvic band joints, are of double-race ball-bearing construction, permitting free mobility even in the presence of torsional and lateral strains. As further stress protection of brace joints and uprights, a hinge which allows slight lateral excursion is incorporated in the shoe assembly immediately below the ankle joint (Fig. 3).

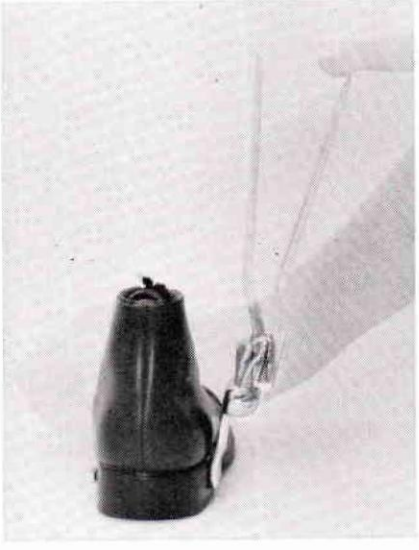

Fig. 3. Although desirable from the patient's standpoint, lateral rigidity may give rise to brace stress in older patients or those with strong involuntary movements. The double-exposure photograph shows how the hinge below the ankle joint in the Newington brace reduces stress on the hip and the knee joints by allowing lateral play. In any instance where this motion may be detrimental, the hinge can be sealed. Occasionally, a medial as well as a lateral upright is required to control the ankle or the foot or to offset internal rotation of the tibia. In such case the medial upright is attached to the calf band above and an ankle joint below, the hinge being omitted. Braced children require regular check of their leg alignment to guard against the development of tibial rotation.

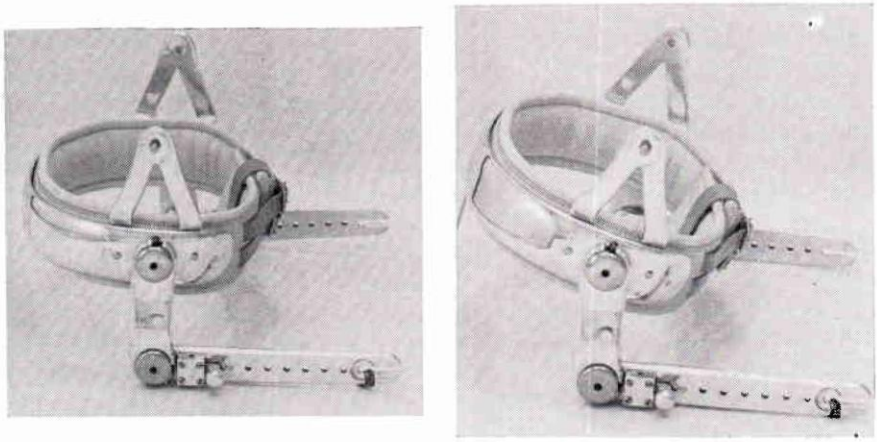

Fig. 4. A limited swivel introduced at the upper end of the hip section allows flexibility in the pelvic band. With flexion of the lumbar spine in sitting, the pelvic band moves in an accommodating arc of approximately 20°. This prevents digging in of the lower rim of the pelvic band posteriorly and permits some freedom of the trunk.

A limited swivel at the attachment of the pelvic band to the hip section, permitting flexion of the pelvic band, accommodates flexion of the lumbar spine in sitting, thus obviating the sometimes annoying complaint of pressure from the inferior rim of a pelvic band (Fig. 4). Further construction details are illustrated in Figure 5.

Attainment of Balance

The trunk unit of the Newington brace (Fig. 6) is not intended for passive support but as a training aid in developing balance. Its design is based on the concept that posture maintenance is essentially reflex in character and that exteroceptive stimuli are of value as reminders of trunk position in children with deficient balance mechanisms. Our knowledge of the reflex basis of postural muscular contraction affords little reason to suppose that these children can be taught balance as a voluntary skill.[1] So far as posture is "learned" at all, the process is one of integrating or modifying postural reflexes on the basis of experience in the upright position. Standing tables and stabilizers are helpful to the child in beginning balance; a trunk support, like that of the Newington brace, advances his concept of

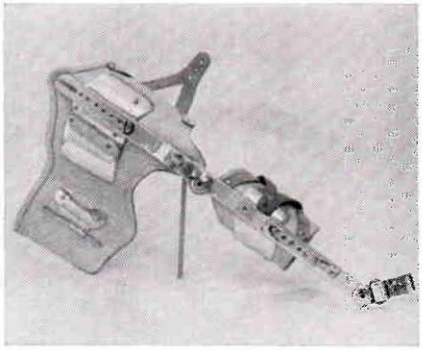

Fig. 5. Simplicity of brace application and removal conserves the therapist's time when the patient receives physical therapy. An easily managed brace also encourages the patient in self-care. The illustrated fastener for thigh and calf bands can be closed or released with one hand. However, laced cuffs are preferable for children with severe spasm or involuntary movement. The flip knee lock can be managed by quadriplegic patients and opened even in the presence of strong hamstring spasm.

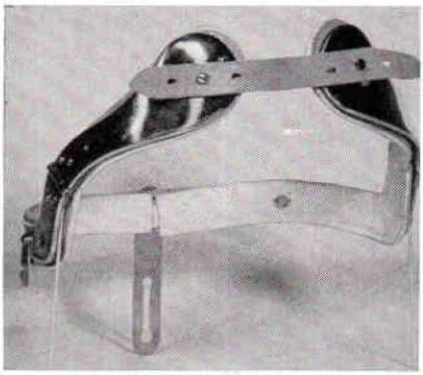

Fig. 6. Balance is a dynamic acquisition, achieved by the severely involved cerebral palsied child only through prolonged and repetitive practice. The conventional back brace, passively slinging the trunk, discourages balance attainment. In the Newington brace the trunk unit has been designed not for support but as a constant reminder of trunk position. The pressure exerted by the pectoral wings on the patient's chest can be controlled by the vertical tie link (illustrated) through a screw attachment to the pelvic band. While ordinarily the trunk unit is mounted as shown in Figure 1, it can be attached in reverse, with the pectoral wings in posterior position, for children with retropulsive movements of the trunk.

free standing, at the same time assisting him to achieve this goal.* The child's active contribution is implicit in the design of the brace: it will not stand up by itself, nor will the pelvic and trunk units maintain an erect carriage. Nevertheless, considerable help is given the child in developing sitting and standing balance by such devices as the hip-joint lock (shown in Fig. 4), which is designed to engage in both the 90° and the 180° positions. These locks, together with those at the knees, simplify initial training through mechanical control of the lower extremities while the patient is developing neck and trunk balance. As improvement in balance is achieved, the hips and the knees are unlocked for increasingly longer training periods.

Disassembly

In keeping with its primary function as a training aid, the Newington brace can be completely disassembled (Fig. 7). Our objective in physical habilitation is to give the child all the independence that his handicap allows, eventually including independence from the brace. While, unfortunately, it is impossible to accomplish this latter aim in many severely involved children, the majority are able to omit sections of the brace on a progressive basis over a greater or a lesser period of time. The trunk unit is first omitted during treatment periods, later entirely, to be followed by the pelvic band. These sections are always removed for comfort in bed when the leg sections are used for night splinting.

Indications for the Newington Brace

Full lower-extremity bracing has been an indispensable adjunct in our clinic to treatment of moderate and severe forms of paraplegic and quadriplegic cerebral palsy. While this applies to children for whom the possibility of walking and standing can reasonably be thought to exist, the Newington brace is also useful in chairbound patients with uncontrollable movements or postural slump. In the latter cases a Taylor back brace may be attached to the pelvic band in lieu of the trunk unit. For trainable children, as already mentioned, the brace has served as an integral feature of our physical therapy

*Braces are sometimes objected to on the ground that they "weaken" muscles. Without attempting to discuss this contention, it may be noted that the fit of trunk unit and pelvic band in the Newington brace is sufficiently loose to allow free contraction of paraspinal, chest and abdominal musculature.

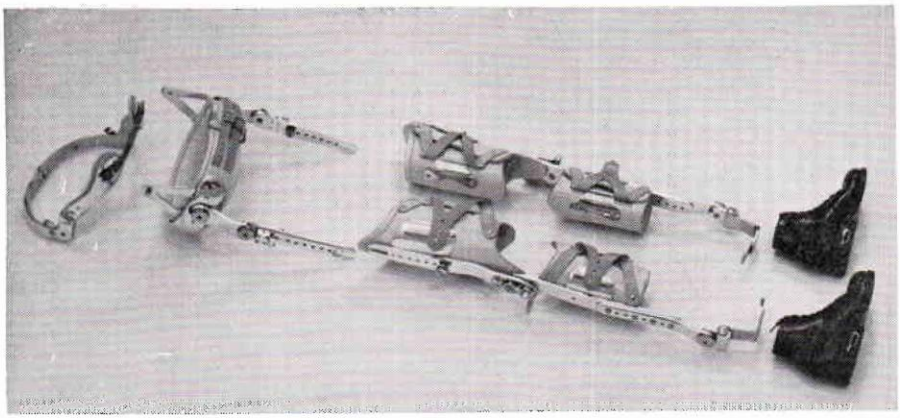

Fig. 7. The brace is separated easily into 4 sections: trunk, pelvic and leg units, and shoe assembly. Sectional construction is essential to a brace designed basically for training purposes, since this allows withdrawal of the brace piece by piece as the child is trained in self-control of the part. One hopes, in the usual course of events, to discard successively the trunk, the pelvic and the leg units, thus attaining the objective for which the brace was applied—to enable the child to get along without it.

program in balance and gait work. The brace, by assisting trunk and leg control, correcting torsion and reducing involuntary movement, frees the attention of the patient and the therapist for the more immediate requirements of reciprocation and crutch handling. For parents it is sometimes a revelation to observe how the brace steadies a precarious gait or makes progression feasible for a child whose adductor spasm had previously caused hopeless tangling of the legs. Perhaps in the long run it is only in a minority of cases that bracing makes the difference between success and failure in gait attainment, but experience gives us reason to believe that a well-designed brace will assist many children to walk sooner and more easily than would otherwise be the case.

Besides these principal indications, the Newington brace has a range of secondary applications which may be very helpful in certain circumstances. By reducing involuntary movement in the lower half of the body, leg and trunk bracing often gives considerable aid to the occupational therapist working on upper-extremity control in athetoid children. We have observed repeatedly that these children are enabled to concentrate more effectively on arm and hand movements. The brace should be prescribed for young children who cannot otherwise be prevented from assuming harmful positions, such as a common one of squatting on knees and haunches, with the legs to either side. If long maintained, this posture leads to fixed internal rotation deformity of the femur, not to mention leg and foot deformities. Some children with balance deficit will creep for long periods rather than essay the hazards of walking; here the brace can be applied, initially with the knee joints locked, to prevent creeping and encourage the upright position. We prescribe bracing routinely in early hip subluxation, with the object of preventing increased adductor shortening, femoral torsion and coxa valga. However, to date we have not been able to come to any firm opinion of its value in this connection. The leg sections of the brace, detached and used as

night splints (preferably with interchanged shoes, toe caps cut out) are helpful in offsetting contractures of the tendo achillis and the hamstrings.* Postoperatively, when lengthening of these tendons has been performed, the leg sections double as day braces and night splints.

Conclusions

In our experience, bracing has played an indispensable role in the treatment of cerebral palsied children. Well-designed braces of various models should be extremely helpful to case management in any cerebral palsy treatment center. Braces are as specific in purpose as medication, and should be prescribed with definite objectives in view. The physician assumes responsibility for determining the objectives in each case and prescribing a brace that can reasonably be expected to achieve them. Physician and bracemaker are jointly responsible for the proper design and fitting of the brace, and should ensure that any question arising in the parents' minds regarding the purpose and the application of the brace is answered. In prescribing a major brace in cerebral palsy, such as the Newington brace, it must be remembered that bracing is only one aspect of a multifaceted training program. Institutional supervision often is needed until the brace becomes familiar and its place in the program clearly defined.

Summary

Among braces of various models used in the treatment of cerebral palsy in children, a lower-extremity brace with pelvic band has been found indispensable in handling the more severe forms of paraplegia and quadriplegia. The Newington brace has been especially designed to provide light yet effective support for the lower extremities and trunk. Sectionally constructed, the brace is also highly useful as a training aid, since it can be left off, part by part, as the child improves in voluntary control. The design and the application of the brace are illustrated in a series of photographs.

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* Contractures and fixed deformities in cerebral palsy cannot be corrected by bracing. As a corollary, the position imposed by a brace should be attainable passively without discomfort. Disregard of this rule is not infrequent, perhaps accounting for the disrepute of braces in some quarters. A properly designed brace is always comfortable for the wearer; and children, excepting an occasional child with a severe emotional disturbance, do not object to wearing day or night braces that are comfortable.

CORRECTIVE BRACES FOR GENU VALGUM AND GENU VARUM

By M. J. TROSCLAIR

Supervisor, Orthopedic Appliances, University of Texas, Medical Branch, Galveston, Texas

Corrective braces for genu valgum and genu varus have been problems of the medical profession and the orthotist for many years.

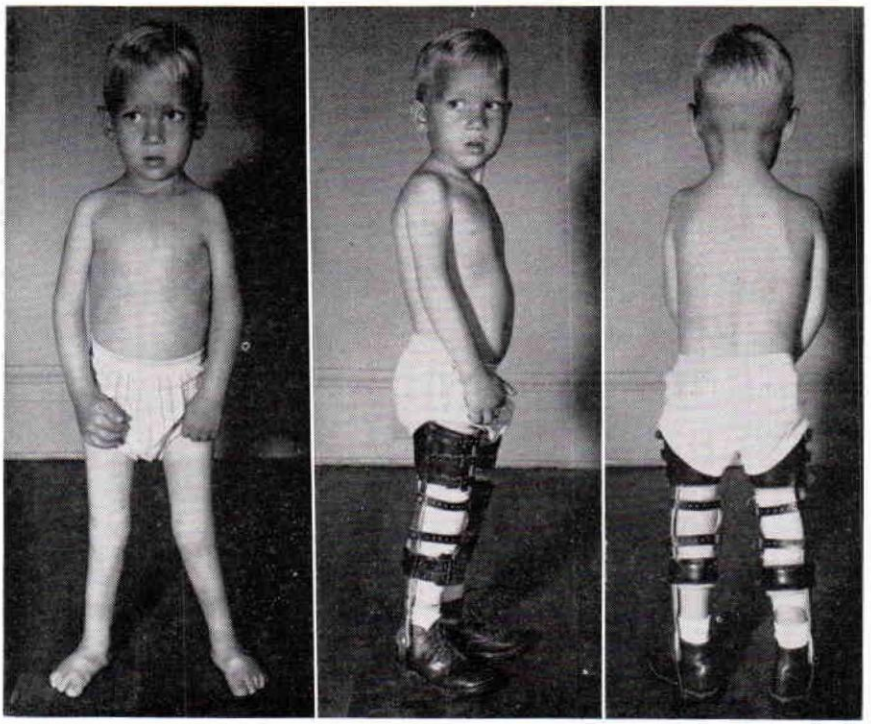
It is generally felt that braces serve better as holding devices than as corrective appliances. Corrective pressure over a long period of time is required to have any effect upon deformities. This pressure to be effective must be moderately severe and constant, therefore, making the appliance uncomfortable and difficult to tolerate.

There are in use today various types of corrective leg braces, but practically all types utilize the same basic three-point principle. Many orthotists feel that both lateral and medial uprights are necessary, while others like the single upright only. We at the University of Texas Medical Branch do not claim to have anything basically new, or by any means a cure-all for these types of deformities but have submitted these pictures of one of our patients wearing bilateral single upright bowleg braces which have to date accomplished a considerable degree of correction.

A description of the appliance follows:

1. The patient is measured much the same as for any leg brace, a draft of extremity noting circumference and width at all pertinent points is desirable.

2. A 24 s. t. aluminum bar $\frac{5}{8}$" x 3/16" is shaped to follow the contour of the leg allowing $\frac{1}{4}$ inch extra space at knee. This material size varies with each case.



3. An ankle joint of the orthotist's preference is then attached (the pope free motion ankle joint was used in above illustration) and then the half stirrup is fabricated and attached to the shoe.

4. A solid one piece thigh cuff is then fashioned from 24 s. t. .090.

5. Next, two straps at least 8 inches long are riveted to the upright above and below the position of the knee to be buckled to the contoured medial knee cup which is the adjustable pressure component of the entire brace.

6. The brace is then fitted with the leather cuffs and covered on the outside for protection of clothes and to improve appearance.

This brace utilizes the basic three point pressure principle but in such a way that pressure is present at some of the most permissible places. These are: at the thigh from below greater trochanter to just above the knee; at the lateral portion of calf (pressure on above patient was not enough to place excessive pressure on the peroneal nerve); at the ankle (where some patients will require a pressure button); and last on the medial condyles of the knee where we do not have nerve or blood supply of superficial position.

The above material was in reference to a genu valgum deformity but can be used almost as well on genu varum by changing to a medial upright.

As we have stated we do not claim to have anything basically new or the ideal brace and will appreciate hearing from anyone who has a better method for bracing these patients in this age group.

"PROGRESSIVE EXERCISE THERAPY IN REHABILITATION AND PHYSICAL EDUCATION" by John H. C. Colson, published by The Williams & Wilkins Co., Baltimore, Md., 1958, 184 pp., $4.50.

Reviewed by William A. Tosberg, C. P. & O.

This book discusses progressive exercises and is an excellent textbook for corrective therapists and others who are primarily engaged in physical education. It not only has a well written and well organized text but it is illustrated with stick diagrams which makes it easy to understand and easy to follow.

As the title indicates, these exercises are progressive and describe dynamic exercises, static exercises, and also mobilizing and strengthening exercises. Exercises for the head, the neck, trunk, shoulder-girdle, as well as upper and lower extremities are explained and illustrated.

Part II describes specific exercise therapy following a number of surgical procedures and Part III is written for general exercise therapy.

Although this book is not of direct application to the work of prosthetists and orthotists, it is of general interest since we all know that a well conditioned body is one of the prerequisites for the effective use of braces and prostheses. We are aware of the fact that the need for knowledge is rapidly increasing in the field of our choosing. It is not enough that we are familiar with techniques applying directly to our craft. We have learned that we have to be familiar also with fundamentals of anatomy, physiology, kinesiology, engineering, psychology, and many other fields. Being aware of the need and benefits, as well as the techniques of progressive exercises might very well be helpful in extending the scope of our knowledge.

NORTHWESTERN ANNOUNCES PROSTHETIC CURRICULUM, NEW PERSONNEL

Blair Hanger Named Chief Prosthetist

Northwestern University Medical School this month announced the first curriculum in its new Prosthetic Education program. According to Dr. J. Warren Perry, Director, the school will open with a course in Prosthetics and Orthotics for Rehabilitation Counselors August 10-14, 1959. This course will be repeated September 14-18, September 28-October 2, April 4-8, and April 18-22.

Unique in this initial Northwestern curriculum is a course in The Fitting and Fabrication of Special Prostheses (No. 650). This specialized course for prosthetists is being introduced by Northwestern in direct response to wide request. Scheduled for October 5-9, the course will cover the fitting and fabrication of hip-disarticulation, hemi-pelvectomy, Symes, partial foot, and lower-extremity congenital prostheses. Mr. C. A. McLaurin, Director of N.U.'s Prosthetic Research Center and inventor of the Canadian hip-disarticulation prosthesis, and Mr. Fred Hampton, laboratory supervisor of the Research Center, will share the major responsibility for the lectures.

Northwestern will also cooperate with UCLA and NYU in the teaching of below-knee prosthetics, programmed this year for the first time. The N.U. classes are set up for February, March, and May:

February 8-26	611	B/K Prosthetics for Prosthetists
February 22-26	612	B/K Prosthetics for Therapists
February 22-26	613	B/K Prosthetics for Physicians and Surgeons
March 7-25	611	B/K Prosthetics for Prosthetists
March 21-25	612	B/K Prosthetics for Therapists
March 21-25	613	B/K Prosthetics for Physicians and Surgeons
May 9-27	611	B/K Prosthetics for Prosthetists
May 23-27	612	B/K Prosthetics for Therapists
May 23-27	613	B/K Prosthetics for Physicians and Surgeons

Courses in above-knee prosthetics, planned for December and June, complete the schedule announced by Dr. Perry:

Nov. 30-Dec. 18	601	A/K Prosthetics for Prosthetists
December 14-18	602	A/K Prosthetics for Therapists
December 14-18	603	A/K Prosthetics for Physicians and Surgeons
June 6-24	601	A/K Prosthetics for Prosthetists
June 20-24	602	A/K Prosthetics for Therapists
June 20-24	603	A/K Prosthetics for Physicians and Surgeons

Blair Hanger Joins Staff

With the publication of the curriculum came the announcement of the appointment of Herbert Blair Hanger as Chief Prosthetist and Assistant Director of the new program. Mr. Hanger has been engaged in various phases of prosthetics since 1934, when he began a four-year apprenticeship in Washington, D.C. that was later supplemented by courses at UCLA and NYU.

Mr. Hanger's past experience in prosthetics represents a consistent combination of shop work and training activities. During World War II he served in Walter Reed General Hospital in Washington, where he was in charge of all prosthetic and orthopedic work, and in the same position

in McGuire General Hospital in Richmond, Virginia, where he helped organize a shop and its personnel. At both installations he lectured and supervised the training of servicemen assigned to learn principles of fabrication and fitting.

After five years in the Army Mr. Hanger managed the New York office of J. E. Hanger, Inc., assuming the responsibility for training fitters and visiting clinics. Meanwhile he gave lectures in prosthetics to student nurse classes, to medical staffs of various New York hospitals, at the Kessler Institute for Rehabilitation, and at Temple University in Philadelphia. In addition, he has conducted OALMA seminars at a New York regional meeting and at the national convention.

Mr. Hanger's teaching activities in the new school will be implemented by assistance from well-known prosthetists and orthotists not only from the Chicago area but from throughout the nation, selected as lecturers on the basis of their recognized competence and experience in these professions.

Already signed for the medical and therapy divisions of the Prosthetic Education faculty are staff members from the Northwestern University Medical School, the Rehabilitation Institute of Chicago, the University of Illinois Medical School, and Loyola University's Stritch School of Medicine.

The naming of the new curriculum and faculty represent the culmination of nearly a year's efforts that began with the organization of space in the Rehabilitation Institute of Chicago and the selection and purchase of suitable contemporary equipment. At the first public conference, reported in the December issue of the *Orthopedic and Prosthetic Appliance Journal*, Dr. Perry and Dr. Clinton L. Compere, Academic Advisor for the new school, expressed the hope that Northwestern's curriculum, schedule and philosophy would reflect the needs and desires of the professions they are pledged to serve. Since then the school has conducted a survey throughout the mid-western states, the results of which are mirrored in the published curriculum. It has also been counseled by an Industry Advisory Committee of OALMA, appointed by Executive Director Glenn A. Jackson. The members of this committee—Mr. Ralph Storrs (Pope Brace Division, Kankakee, Illinois), Vice-President of OALMA, Mr. Richard G. Bidwell (the House of Bidwell, Milwaukee, Wisconsin), Region VI Director, and Mr. William Scheck (Scheck and Siress, Oak Park, Illinois)—have taken an active part in the planning of the curriculum and in policy decisions.

The new prosthetics school is supervised by the Department of Orthopedic Surgery of Northwestern University Medical School, represented by Dr. Clinton L. Compere, and operates on a grant from the Office of Vocational Rehabilitation, Department of Health, Education, and Welfare. It is located on the near north side of Chicago at 401 East Ohio Street, in a specially constructed air-conditioned area of the Rehabilitation Institute of Chicago, in the vicinity of three major hospitals and the national offices of several professional medical organizations. The Rehabilitation Institute, which shares many of its services with the Northwestern school, is itself located in a newly decorated, refurbished building equipped for the examination, treatment (both in-patient and out-), and training of handicapped persons and for the prosthetic and orthotic rehabilitation of amputees of all ages.

Requests for information about the new Prosthetic Education program may be addressed to its Director, Dr. J. Warren Perry.

B/K COURSE AT UCLA

Dr. Miles Anderson has released the schedule of courses in orthotics and prosthetics of the University of California — this covers the fall and spring semesters 1959-1960.

The new "Below-Knee Prosthetics" course for prosthetists will attract wide attention. For this first session starting November 30, and running through December 18, the size of the class is limited to 14 students.

As in past years a limited number of financial aid will be available to help students take these courses.

Only one above-knee prosthetics course will be given, but this has been expanded to a three-weeks session, running from November 2 to November 20. The third week was made necessary by additional material included such as the Hydra-Cadence Hydraulic Unit, Plastic Laminate Reinforcement, the SACH Foot and the more complex layout and alignment procedures.

Below Knee Prosthetics Course

Newest of the UCLA Courses is this B/K Session which runs from Nov. 30 to December 18. Early registration is advised.

COURSE DESCRIPTIONS

X 480 *Below-Knee Prosthetics, for Prosthetists*; Tuition Fee, $150

Newest in the series of courses in prosthetics that started with the original presentation on artificial arms, this course in Below-Knee Prosthetics is based on the results of several years of research by the Lower Extremity Amputee Research Program at the University of California, Berkeley. Subjects covered are lower extremity functional anatomy, locomotion, the biomechanics of below-knee prosthetics, components of the below-knee prosthesis, cast-taking techniques, reliefs and build-ups, fabrication of liner and plastic socket, the below-knee adjustable leg, the SACH foot, static and dynamic alignment, use of the alignment duplication jig, the muley suspension, placement of the knee joints and thigh lacer, and seminar discussion of carved wood socket and other below-knee prosthetic techniques. During the laboratory practice sessions, all students are required to fit three below-knee amputees, each offering a different combination of problems.

The last week of the course is devoted to refresher seminars and demonstrations relating to new developments in upper and lower extremities prosthetics. Some of the subjects covered are review of latest methods for solving fitting problems in above-knee amputees with flexion and abduction contractures, the problem of edema, the installation and adjustment of the new Hydra-Cadence hydraulically-controlled above-knee prosthesis, a new cosmetic finish for women's prostheses, a new plastic Symes prosthesis, plastic laminate reinforcement techniques for lower-extremity prostheses, and new fitting techniques and components for upper-extremity prostheses. Students and instructors are given the opportunity to present and discuss problem cases they have encountered in applying the techniques taught at previous schools. Clinical practice in clinic team operation with the physicians and therapists is also provided, as in previous courses. This course will be given four times during the 1959-1960 school year, and class size will be limited to fourteen students. Faculty members in charge are Mr. Charles A. Hennessy, C. P. & O., Associate Director, Prosthetics Education, and Mr. John J. Bray, C. P. & O., Assistant Research Prosthetist, University of California, Los Angeles, School of Medicine.

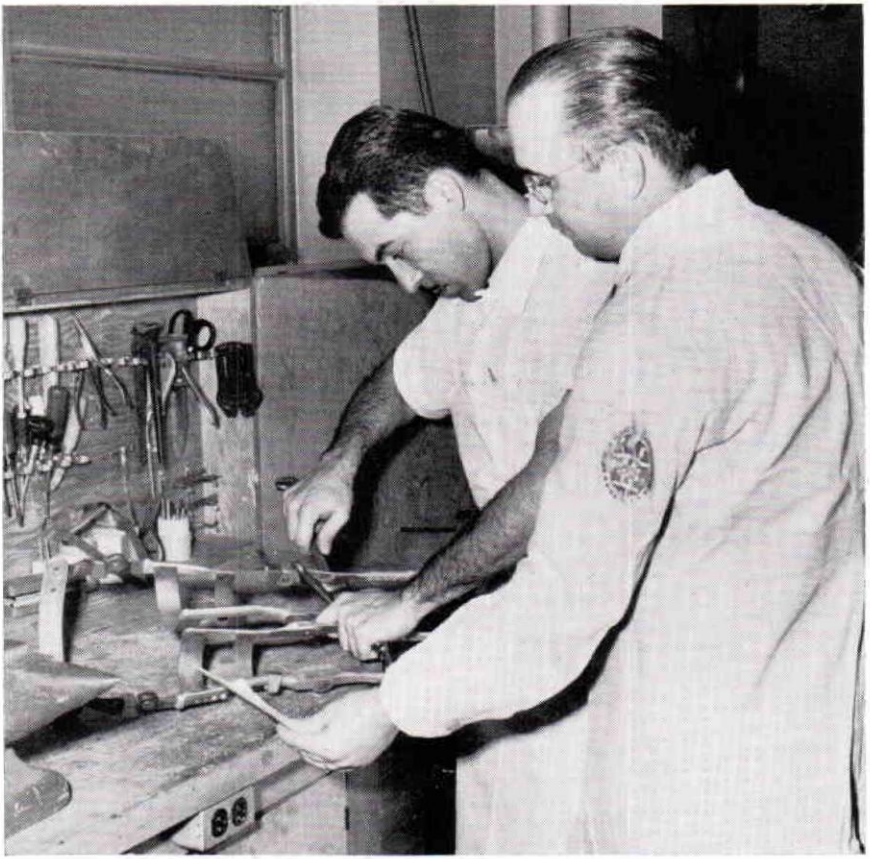
NINE-MONTH TRAINING COURSES FOR ORTHETIC AND PROSTHETIC TECHNICIANS—INSTITUTE FOR THE CRIPPLED AND DISABLED

The Institute is a comprehensive rehabilitation center which conducts broad programs of teaching and research as well as services to the physically handicapped. The professional activities include Medical, Social Adjustment, Vocational Rehabilitation and Prosthetic Orthetic Laboratories. The Institute is professionally affiliated with New York University.

The Institute is again offering its basic training programs in Orthetics and Prosthetics. This rehabilitation center has since 1918 been actively engaged in the manufacturing, research and teaching field of prosthetics and orthetics. The teaching activities are born of a shortage of qualified personnel which serves the handicapped. Previous experience in the field of work is not required, but students must meet established prerequisites. Graduates of former years are now performing services not only in the United States, but throughout the world.

All students will receive a basic curriculum which covers a number of subjects. COMPREHENSIVE ANATOMY will be taught by a physician who will emphasize those areas which are the most meaningful to the student. PSYCHOLOGY OF THE DISABLED is a subject which equips the student to professionally handle the problems of patient relationships and to understand patient management. REHABILITATION TECHNIQUES give the student a comprehensive view of the patient's total program. PHYSICAL EVALUATION for the selection of appliances is carried on through the team approach. ETHICAL AND PROFESSIONAL RELATIONSHIPS are lecture courses which are based on the Code of Ethics for the Artificial Limb and Brace Profession, and the standards of the American Board of Certification. THE HISTORY OF ORTHETIC AND PROSTHETIC APPLIANCES prepares the student with background information of a broadening nature. MECHANICAL AIDS for the disabled encompasses such devices as canes, crutches, wheel chairs, etc. LABORATORY LAY-OUT AND PURCHASING develops thinking towards the most modern facilities and allows the student the advantage of making the best possible use of materials and components which are available. SAFETY AND MAINTENANCE instruction pertains to laboratory practices. BENCH TOOL instruction is limited to those tools which are anticipated for the student's use. POWER MACHINE instruction covers the operation of machines anticipated to help the student in his particular field. All of this instruction is covered in approximately 20 percent of the total course time.

Those students who are taking the orthetic program will receive instruction in the following subjects: MATERIALS used in the fabrication of orthesis. This will cover the properties of the materials and their correct selection for a given case. MEASURING AND FITTING of orthesis is an important aspect of the training and is given an appropriate proportion of course time. PLASTER TECHNIQUES are of importance to the orthetist insofar as the increasing use of plastics is concerned. Therefore, this subject is stressed. CONSTRUCTION AND FINISHING OF APPLIANCES is actually done by the student and covers a wide range of appliances. PREFABRICATED PARTS and the construction of braces from bar stock are



Stephen Hall, C.O., Checks Work of Student

a part of the student's training. Instruction is given in LEATHER WORK as it relates to the devices which the students fabricate. AMBULATION TECHNIQUES are presented by an Institute staff therapist so as to provide the student with a knowledge of how his products are used.

Those students taking instruction in the prosthetic area will receive instruction in the following subjects: MATERIALS including metal, wood, plastics and leather. This instruction is designed to enable the student to select the most desirable material for a given case. MEASURING AND FITTING of prosthesis is an important aspect of the training and is given an appropriate proportion of course time. PLASTER TECHNIQUES are of importance to the prosthetist insofar as the increasing use of plastics is concerned. Therefore, this subject is stressed. The curriculum for PROSTHETIC PRODUCTION covers conventional below knee, conventional above knee with pelvic band and suction socket prosthesis. Students who make exceptional progress, are then given the opportunity of exposure to the less common sights of amputation for the purpose of prosthetic production. All students are given instruction in the use of the ADJUSTABLE KNEE AND TRANSFER JIG as fitting procedure. LEATHER WORK is taught as it relates to the devices which the students fabricate. GAIT TRAINING is taught by an Institute staff therapist which, while not necessarily applied by the student, is important to him in the course of his work.

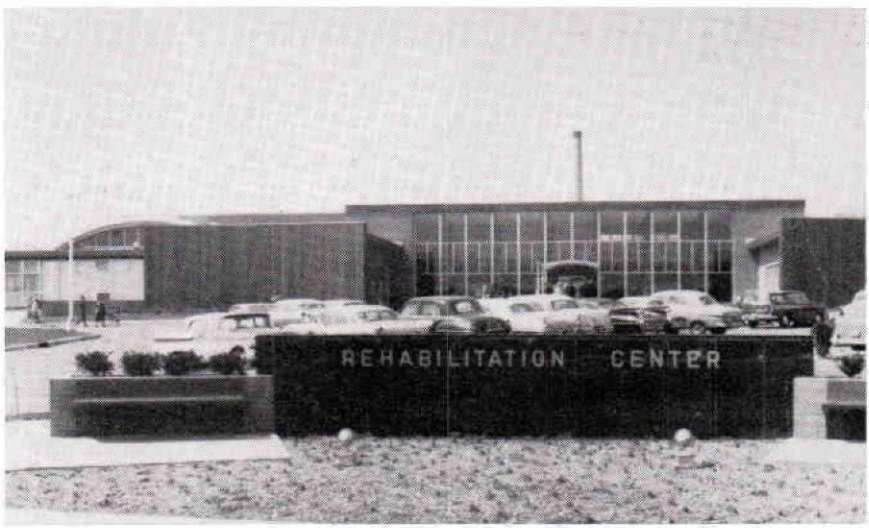
All students take part in a number of clinical team experiences, and field trips. These activities take place at the outstanding facilities in the Greater New York Area. All training is given with the basic idea of helping to prepare the student for examinations offered by the American Board for the Certification of the Prosthetic and Orthopedic Industry.

These courses are scheduled to begin September 14, 1959, and will continue through June 24, 1960. They represent a full-time training program with sessions Monday through Friday, plus additional special academic instruction. The enrollment is limited so as to maintain a high level of personal instruction.

Prerequisites for enrollment are a High School Diploma for United States applicants. Applicants from other countries should have obtained educational levels comparable to high school completion. Prior training in manual arts, mechanical drawing, anatomy and related subjects is desirable, but is not a necessary qualification.

The tuition for the nine-month course is $550.00; a $50.00 registration fee is required to accompany the formal application, but is refunded if the student is not accepted. The tuition is payable $250.00 the first day of the course and $250.00 the first day of the second semester. The Institute for the Crippled and Disabled will furnish all tools and major supplies. The student should anticipate a maximum of $75.00 in charges for textbooks, printed material, and incidentals.

Requests for application blanks should be addressed to: Mr. Charles R. Goldstine, Director Prosthetic and Orthetic Laboratories, Institute for the Crippled and Disabled, 400 First Avenue, New York 10, New York, U.S.A. Students submitting completed application forms prior to August 1st, 1959, will be given preference for enrollment.



The Pennsylvania Rehabilitation Center at Johnstown, Pennsylvania (picture courtesy S. W. Conrad of Binghamton Limb and Brace Company), new center opened April 16, with a number of OALMA members from New York and Pennsylvania in attendance. It is believed to be one of the finest rehabilitation centers in the world.

A PROGRAM OF EDUCATION FOR PROSTHETISTS AND ORTHOTISTS

By LeRoy Wm. Nattress, Jr., M. A.

Special Assistant, Orthopedic Appliance and Limb Manufacturers Association, Washington, D. C.

Over the past ten years great strides have been taken in the development of prosthetic and orthopedic appliances and in the application of new materials and techniques in prosthetics and orthotics. Accompanying these developments has been a more intense interest in educational programs that would train prosthetists and orthotists in the use and application of these developments.

Some educational programs were developed. Quite correctly, they began by presenting concentrated courses to men who had already established themselves in the practice of these art-sciences. The two- to six-week courses which these men attended when added upon their previous experience in prosthetics and orthotics have made a striking difference not only in the practice of these fields, but also in the recognition of these fields as paramedical, professional specialties.

Meanwhile, however, there developed an ever enlarging gulf over which the new person entering these fields had to hurdle before he could gain the necessary experience to benefit from the existing educational program. The fact that there is no basic educational curriculum available to those who desire to become prosthetists and orthotists is deterring likely men from entering these fields and, as a result, impedes further progress in these fields.

The recent professed interest in degree granting programs to be presented by certain of our large universities to train men in these fields adds a further complication. These will create an even greater disparity between the experienced man and the university trained man, not perhaps from a technical standpoint, but certainly from a theoretical and professional standpoint.

For some time now the Orthopedic Appliance and Limb Manufacturers Association (OALMA) has been observing this relationship as it has unfolded and has attempted to discern its responsibility to these art-sciences today. The responsibility was clear. The Association must do all in its power, first to offer to the men entering these fields a means for obtaining the basic education necessary to take advantage of the formal education now offered and, second, to offer further training to the men who are experienced in prosthetics and orthotics so that the university graduate will be accepted in these fields without the development of schisms which would be harmful to both and especially to the art-sciences we represent. In other words the Association has accepted the responsibility of presenting the means for successfully integrating and thereby upgrading the fields of prosthetics and orthotics.

As a result, the Association has as a first step taken upon itself the ambitious task of making available the means for obtaining basic learning in the art-sciences of prosthetics and orthotics. Three programs toward this end will eventually be offered. The remainder of this article will serve to introduce one of these programs: Correspondence Education.

The art-sciences of prosthetics and orthotics are presently learned by what is loosely termed an apprenticeship program requiring a minimum of four years actual experience in these fields. What this means is that a person wishing to become a prosthetist or orthotist becomes employed by a facility in order to learn the techniques of fabrication and of fitting artificial limbs or braces. He may enter into this relationship within a facility directly upon graduation from high school. Since no standards of training exist, his learning will be governed by two things: his own initiative and the interest of those with whom he works. The former is the governing factor in all learning — formal or informal; the latter leads to all sorts of difficulties including prejudice, over-specialization and exploitation.

In devising a correspondence curriculum we must assume the initiative of the trainee. Therefore our object is to offer a well-rounded program which the trainee may augment by his daily work in a facility. By its very intent, this program will include the basic requirements or prerequisites for further learning.

In order to enroll in any correspondence curriculum the student must contact the institution offering the courses he desires to take. To enroll in courses in prosthetics or orthotics a person in addition must be employed in a prosthetic or orthotic facility. Upon being contacted the institution will send one of their representatives to talk to the prospective sudent. The representative will explain the educational services of his institution in relation to the Association's approved course of study and give the student a chance to ask questions about the courses in which he is interested.

The student will be asked to supply the representative with his formal educational background. With this the representative will be able to determine what prerequisites the student must take to be able to enter the approved course of study. Fees also will be determined on this basis. On agreeing to take the necessary prerequisites and to pay the required fees the student may then enroll in the curriculum. The payment of fees may be made in full at that time or a plan of extended payments may be initiated.

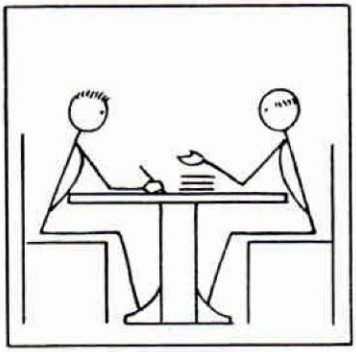


Figure 1. The Representative of the Correspondence School meets with the prospective student.

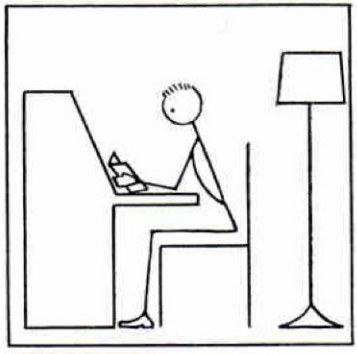


Figure 2. After Enrollment the Student begins Studying.

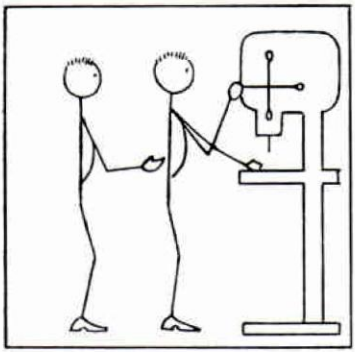


Figure 3. A District Representative of the Association will be available to Counsel and Guide the Student as he progresses through the Curriculum.

Figure 4. The Instructor gives his individual attention to each item of Work submitted by the Student.

As the student progresses through the curriculum the school's representative is available to answer some of his questions and to guide him. In addition, a district representative of the Association will be alerted to the fact that a person is enrolled in the approved curriculum of the Association. He will be available for consultation with the student about questions that may arise in prosthetics or orthotics or about problems that may occur as the student progresses in the curriculum. In addition, regional meetings are planned which will be designed to augment the curriculum being studied.

When the enrollment has been completed and processed the school mails the student his first units of instruction. These are accompanied by instructions in techniques for studying. The student then begins studying at home as time allows. There are no classes for him to attend and no deadlines to meet. He, himself, determines how fast or how slow he learns.

When each lesson is completed the student submits a written examination or a sample of his work to the school. At the school the instructor for the particular course being taken by the student reads the examaination and carefully goes over every item of work submitted. He evaluates the student's work and assigns a grade to it in the same way a classroom instructor would. The instructor will note any errors and either write clarifications on the examination paper, refer the student to a portion of the text for further study, or both. Then a clerk records the student's work and returns the examination or work sample to the student.

Correspondence school instruction is not an impersonal marking of papers as might be thought. The instructors are as interested in the student and his progress as any good instructor would be. In addition, correspondence school instructors have more time for their students than do most classroom instructors. The reason for this is that they do not have to take the time to prepare lessons. This has been done in advance by experts. The student's lessons and letters get individual attention and each student is, in effect, individually tutored.

In the meantime, after the student has sent his first examination to the school, he begins to study the next lesson and to prepare the next examination. When his previous examination is returned to him the student is able to review the comments made by his instructor and restudy the portions of the lesson in which he was weak. By this time he should be ready to submit the next examination, and the process is started over again.

Upon successfully completing the entire course of study approved by the Association the student will be awarded a Certificate. Some students may not wish to enter into or complete the entire course that is recommended. These students may enroll in a "Selected Units" curriculum which may emphasize the particular subject areas in which they feel that training would be of most value to them.

Education in many forms is available all about us, but to obtain it we must pay the price. This price is very real. It involves time, effort and money. From the money standpoint to enter this curriculum described above a matriculation or admissions fee of $50.00 will be charged. Then for each unit taken the student will pay a fee of $5.25. Each student must decide for himself if the curriculum offered is worth the cost to him.

The Association has reviewed a number of the courses presently available through accredited correspondence schools. In the Fall it will publish the recommended curriculum drawn from the offerings of one of these schools. This curriculum will include courses in plastics, materials, mechanical principles, business practices, health and psychology. If the interest in those courses is great enough, the Association will eventually augment this curriculum with courses more specifically related to prosthetics and orthotics.

One impression must not be drawn from this article. That is that only men who are just entering the fields of prosthetics and orthotics are eligible for these courses. On the contrary, almost everyone who is engaged in the practice of prosthetics or orthotics at any level will find some, if not all, of these courses valuable. This is why the curriculum of "Selected Units" has been made available. Through this the manager of a facility may find the course in accounting he needs to augment his previous experience, or the prosthetist who has specialized in upper extremity work may find the course in plastics he needs to widen his experience or the orthotist may find the course in physics he needs to better serve the special needs of his problem patients.

Figure 5. The Student reviews the comments of the Instructor and prepares the Examination for the next Lesson.

Figure 6. A Certificate of Completion will be awarded to Students who successfully finish the entire Curriculum approved by the Association.

The need for a basic curriculum in prosthetics and orthotics is becoming more and more obvious in order to help the men entering these fields to keep abreast of the developments being made both technically and educationally. The correspondence curriculum introduced in this article is one of three programs to be offered through your Association. The major advantage of a correspondence curriculum is that the student sets his own rate of educational progress and completes this progress in his own home while he is gainfully employed in the fields for which he is obtaining more knowledge and understanding.

For the present, any inquires concerning Correspondence Education in Prosthetics and Orthotics should be directed to:

Orthopedic Appliance and Limb Manufacturers Ass'n.
Suite 130
919—18th Street, N. W.
Washington 6, D. C.

SUPPLIER'S INDEX—June 1959

Code of Ethics for the Artificial Limb and Brace Profession

The Federal Trade Commission has approved fair trade practices for the field of artificial limbs and for orthopedic appliances. Both codes have been adopted by the American Board for Certification as a guide for the Certified Prosthetist and Orthotist. The full text of the Codes may be obtained from the Board's Headquarters. The following digest is printed for ready reference.

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 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 product will be made to fit unless such promise is made in good faith and industry member is possessed of the ability to fulfill such guarantee. A prosthetic device or an orthopedic appliance 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 a 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 product which is not actually given to the purchaser without cost.

(13) To *wilfully* entice away employees of competitors, with the purpose of injuring, destroying or preventing competition.

(14) To take part in any concerted action with other members 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 members and 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 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 products shall be an unfair trade practice.

(20) To pay anything of value to any doctor for the purpose of obtaining a referral of a patient by the doctor.

Further, the limb and brace profession 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 use its services.

COSMESIS COMES OF AGE

Realastic restorations for not just a few

— BUT FOR ALL WHO HAVE A NEED

PRODUCTION ITEMS NOW AVAILABLE IN:

4 sizes for Children and infants

4 sizes for older children and teen-agers

6 sizes for women

6 sizes for men

Supplied in all the shades of the REALASTIC abridged E-Issue Color Guide.

WHAT DOES THIS MEAN?

Now, a prosthetist can order what he needs instead of what the laboratory thinks he should have, for any given case.

A saving of approximately 50% is possible through prefabricating the products and supplying items from stock. Still more savings are possible from multiple buying.

FASTEST POSSIBLE SERVICE

Greatest perfection because products can be inspected and the culls eliminated before stocking.

Rationalization of the service and the most complete coverage of sizes and types.

New products can be established from the same processes until it will be possible to meet the cosmesis needs of all who have suffered amputation or atrophy.

HOW WILL IT WORK?

Prosthetic Services has prepared an interim catalog dealing with all mold sizes and prosthetic components developed so far. The exact measurements of all the gloves are listed in the various categories. Instructions for ordering, order blanks and a complete price list are included.

You will find many innovations—many more have been worked out for the future.

Prosthetic Services of San Francisco wishes to acknowledge its great debt to Army Prosthetic Research Laboratory for its support and technical assistance in this program. The phases involving mold production, glove coloring, and automatic fabrication are a direct outcome of APRL development.

A NEW DEVELOPMENT OF PREFABRICATED

Realastic® GLOVES

AND PROSTHETIC COMPONENTS

for CHILDREN • TEEN-AGERS
WOMEN • MEN

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for all types
FOREARM PROSTHESES

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MECHANICAL HANDS

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PASSIVE HANDS

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UPPER ARM CASES

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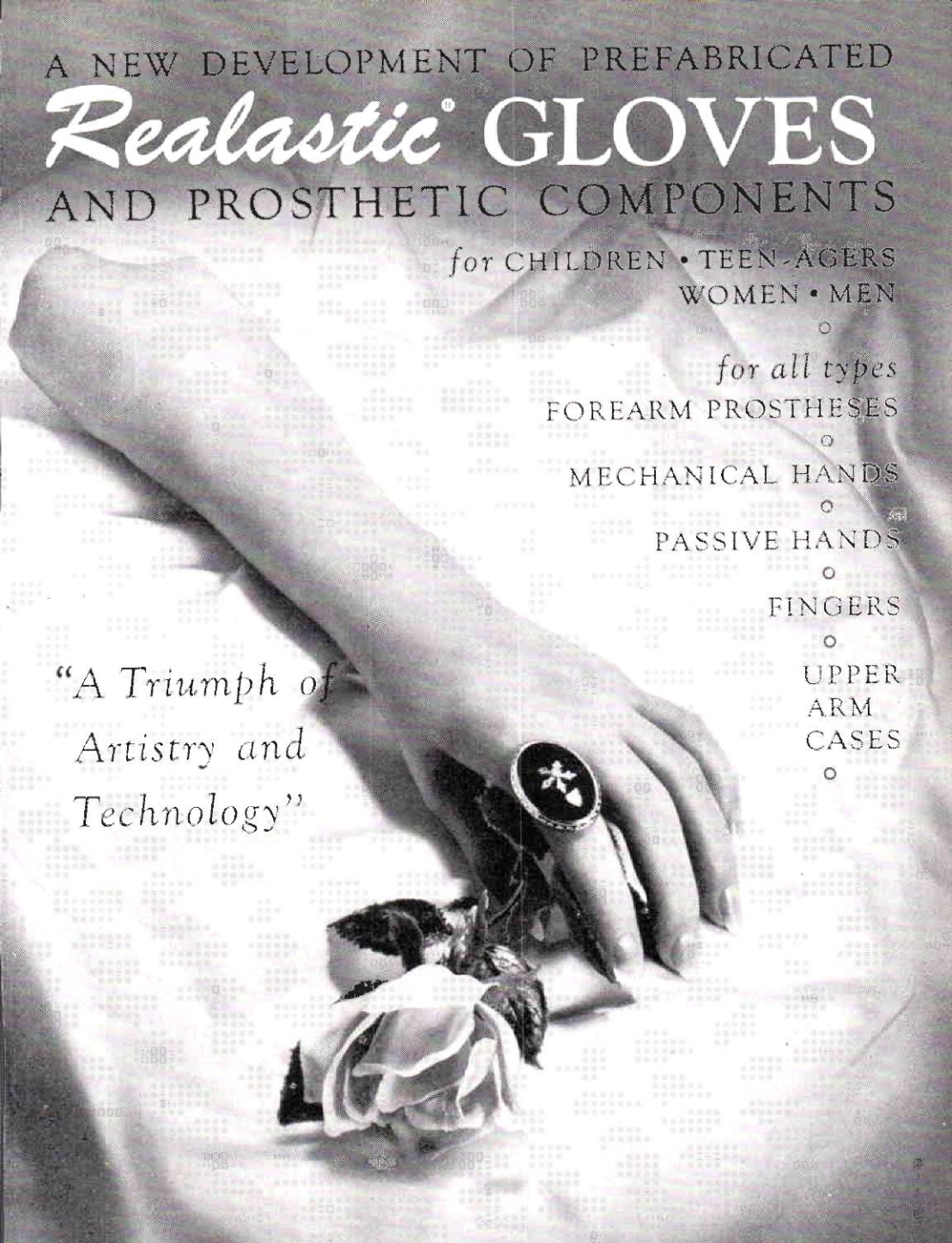
"A Triumph of Artistry and Technology"



PROSTHETIC SERVICES OF SAN FRANCISCO

175 JESSIE STREET, SAN FRANCISCO 5, CALIFORNIA

"LOOKS REAL—IT LASTS"

MAKERS OF *Realastic*® RESTORATIONS

FUNCTIONAL TRAINING OF THE BILATERAL ABOVE-KNEE AMPUTEE[1]

Erbert F. Cicenia, Ed.D.,[2] Charlotte F. Springer, M.D.,[3] Paul C. Hausser, M.A.,[4] Albert G. Midwood[5]

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Rehabilitation of the amputee falls into four categories of concentration: postoperative care, fitting of the prosthesis, functional training and vocational re-training. Postoperative care is intended to assuage any psychic trauma, to prevent surgical complications, and to prepare the stump for prosthetic fit. It assists the amputee in attaining some independency before the fitting of the artificial limb as well as in reducing his total dependency on the prosthesis in an emergency when the prosthesis could not be used. Fitting of the prosthesis includes procedures whereby the proper prosthesis is selected and fitted for the individual. Functional training includes instruction and practice in the use of the prosthesis. Vocational re-training covers the preparation of the amputee for the occupation most suitable to his new limitations. It may include psychometric testing and prevocational exploration, vocational training and vocational guidance, schooling, and placement. This paper is concerned primarily with only one of these categories of concentration, namely, functional training of the amputee.

Because functional training of the amputee has much to do with the acquisition of special abilities or the attainment of some forms of manipulative skills in the use of equipment, it is both a medical and an educational process. As such, functional training programs for the amputee should conform to recognized therapeutic procedures as well as to accepted educational principles. In practice a daily activity evaluation is used to determine present positive powers and abilities as well as future needs. Periodic re-evaluations are given to determine the effectiveness of teaching and responses by the patient. General conditioning has as one goal physical fitness for effective living with a prosthetic device. The use of the compensatory musculature of the body offsets the various physiological effects of prolonged bed rest. In addition a program of body reconditioning contributes to the physical and mental well-being of the amputee (1, 2, 3). Training in "fundamentals" includes the development of those specifics of strength, balance, coordination, and endurance basic to the efficient use of the prosthesis. Instruction in functional activities is that part of the functional training program which teaches the amputee how best to use his conditioning and achieved fundamentals in practical day-to-day living.

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The exercises and activities selected for this article are only representative of a great number that might be developed for the bilateral above-knee amputee. They should suggest ideas from which many more exercises may be developed.

Evaluation

At the New York State Rehabilitation Hospital, the Physical Rehabilitation Section determines the actual functional ability of all patients, regardless of type of disability, by administration of a 76-item daily activity test (4) which covers the entire range of essential activities likely to be encountered in day-to-day living. In practice, the test results are used to orient the therapist to the teaching problem before him for each individual patient and to develop a program of instruction for each patient in functional exercises and activities designed to meet his needs. The test results help to establish in the patient a connection between prospective learning and present attainments, all of which can be effectively used by the therapist as a means of motivation. Generally, the patient is interested in learning of his present level of ability and what he can do to improve himself.

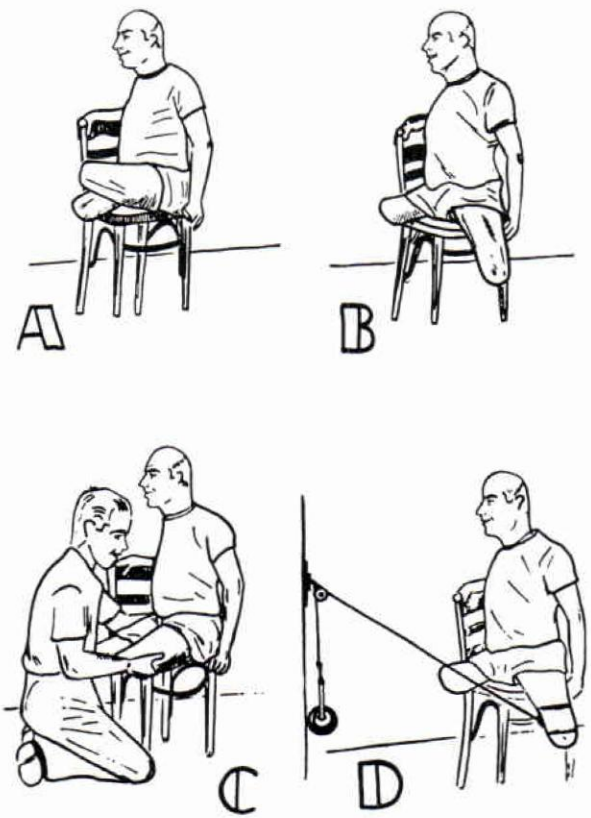

Fig. 1

In the actual instructional phase of functional training, the evaluation procedure is of distinctive value as a teaching device. The test results can be used in determining whether or not the teaching has been effective and when the therapist can go on to the next learning experience. The results disclose what modifications of teaching procedure are needed if the teaching has not fully registered with the patient (5). The entire program for the patient should be continuously reevaluated by physician and therapist on the basis of all examinations and tests recorded for a given patient. Difficulties may not necessarily be due to ineffectual teaching methods or materials or lack of technical ingenuity to cope with motor problems, but rather, to lack of capacity which may or may not be amenable to improvement.

General Conditioning

General conditioning exercises are intended to improve the over-all condition of the patient as well as of the stump. Stump exercises, as part of general conditioning procedures, are administered for the same purposes as are therapeutic exercises instituted during the postoperative care program except that the intensity is greatly increased and stump movements are carried out against manual and mechanical resistance. Several typical basic stump exercises are explained in the following paragraphs and illustrated in figures 1 and 2. The aims of such exercises are to prepare the stump for weight bearing, to maintain joint range, and to develop muscle strength.

I. Hip Extension

Hip extension exercises can be performed in the prone and side lying positions, in the sitting position, and in the erect position. One method of performing hip extension in the sitting position is described as follows: *Starting Position:* Erect sitting position on chair or plinth with one leg held in flexion over the edge of the chair and with the hands grasping the sides of the chair for support. *Action:* (fig. 1A) With the trunk held fixed move the stump down and back through the entire range of hip extension holding the contraction at maximal extension for several seconds (fig. 1B) before relaxing and returning the stump to the starting position. *Progression:* An advance of this movement would be to perform hip extension against manual resistance at first (fig. 1C) progressing to mechanical resistance (fig. 1D), whereby a greater exercise load can be used once the patient is able to easily overcome the maximum manual resistance the therapist can offer.

II. Hip Adduction

Hip adduction exercises are best performed in the supine, side lying, and erect positions. One method of performing hip adduction exercises in the supine position is described as follows: *Starting Position:* Supine lying on mat or plinth, with or without a pillow under the head, according to the preference of the patient, with the stumps spread in abduction (fig. 2A). The arms should be relaxed over the abdominal area (if the patient

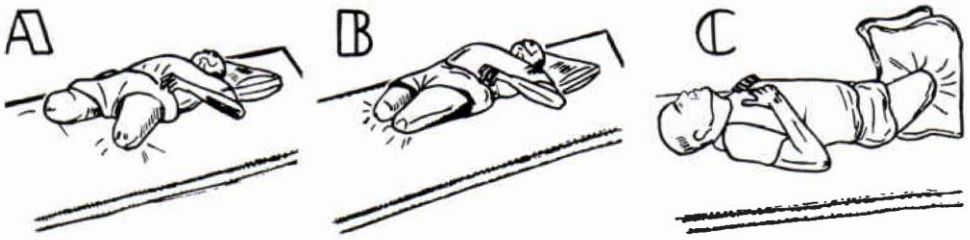

Fig. 2

is permitted to place the arms at the sides, he may substitute by pushing or pulling on the mat or plinth). *Action:* Adduct the stumps, squeezing the limbs together and holding the contraction at maximum adduction for several seconds (fig. 2B) before relaxing and returning the stumps to the starting position. *Progression:* An advance of this exercise would be to have the patient squeeze a folded pillow between the stumps (fig. 2C) progressing to manual and mechanical resistance exercises.

Fundamentals

The "fundamentals" of functional training are: *balance, strength, coordination,* and *endurance.* Fundamentals train the patient in capacities necessary for learning activities of daily living. The introduction of methods of performing higher levels of daily activity skills before the acquisition of the basic fundamentals may require re-teaching later. An easy way to start a lively discussion is to ask the question, "Which of these is most important?" Every worker in functional training probably has a strong opinion on the subject. The position taken here is that all fundamentals are important, but that, if any one were to be singled out for special emphasis, it would be coordination. It is this quality which makes the difference between "muscling through" an activity with brute strength and performing an act skillfully, smoothly and efficiently.

There is an unlimited amount of material in the form of exercises, drills and activities that can be used to develop fundamentals. Any well-trained therapist with a knowledge of kinesiology and therapeutic exercises has at his command a good many of these activities, and he can formulate a large number of movements and exercises closely related to the development of fundamentals which should contain elements of, and duplicate where possible, motions which the amputee will be called upon to do later in performing daily activity skills (6). In addition it should be pointed out that fundamentals are usually stressed at the mat, parallel bar, and crutch management levels of functional training (7-14). Many activities adaptable for use as lead-up exercises at these levels of training can be found in any good reference work. To illustrate the lead-up principle, several lead-up functional parallel bar exercises are explained and illustrated in the following paragraphs.

I. Step Climbing Drill

Aims: To develop the fundamentals of balance (weight shifting, etc.) and coordination (foot placement, knee locking and unlocking, etc.). *Lead-up Values:* A preparatory drill to develop balance and coordination necessary to perform the daily activities of ascending and descending curbs and stairs.

A. Ascending Drill

Starting Position: Parallel bar stance directly facing the apparatus to be ascended at a distance permitting the prosthesis to be lifted from the starting position onto the step (fig. 3A). *Action:* Shift the weight of the body to one side and flex the hip on the opposite side placing the foot on the stool (fig. 3B). Flexion of the stump at the hip causes the prosthesis to rise and the knee of the prosthesis flexes due to gravity. Move the hands forward slightly and shift the body weight forward and over onto the hands. Pushing down on the bars, straighten the elbows and lift the body off the floor. Transfer the weight of the body over onto the leg which has been placed on the step and simultaneously extend the stump forcefully inside the prosthesis (fig. 3C). This is done to lock the knee of the prosthesis by pressure of the posterior portion of the stump against the inner surface

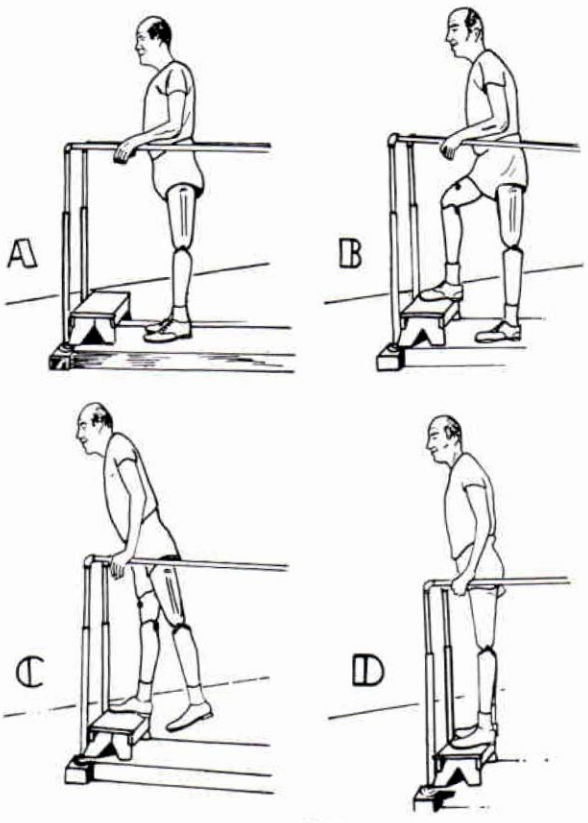

Fig. 3

of the thigh portion of the bucket. Place the other leg on the step and reestablish the balance (fig. 3D). This is accomplished by flexing the stump at the hip high enough to permit the foot to be placed on the step. The knee is locked in the same manner as was described for the other leg, namely, forcefully extending the stump against the prosthesis.

B. Descending Drill

Starting Position: Parallel bar stance on top of the apparatus to be descended with the feet on the step in such a manner that the heels rest on the step with the fore part of each foot over the edge (fig. 4A). *Action:* Shift the weight of the body to either side, hike the hip on the opposite side or flex the stump at the hip and raise the leg forward off the step (fig. 4B). Shift the body weight forward over onto both hands until the leg on the step begins to flex at the knee. Gradually lower the other leg to the floor (fig. 4C). Flexion of the knee is facilitated by gradually relaxing the hip extensors as the weight is transferred to the hands. As the other leg is lowered to the floor, the stump is forcefully extended against the bucket to lock the knee for weight bearing. Flex the stump at the hip, bring the other leg off the step and reestablish the balance (fig. 4D).

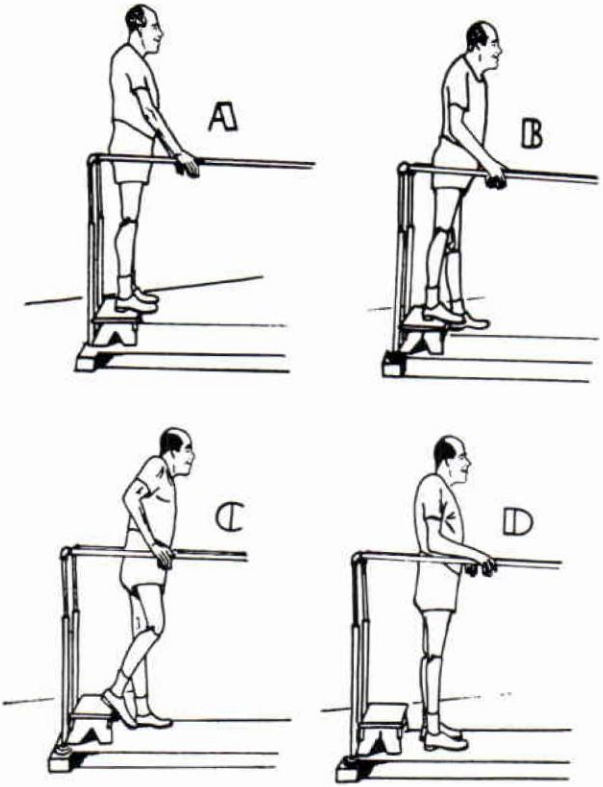

Fig. 4

Functional Activities

This section analyzes some of the basic methods of performing daily activities with the aid of artificial limbs. Much of the training in this area consists of the basic technics used in functional training with braces and crutches, modified to meet the specific kinesiologic demands required of the amputee patient equipped with bilateral above-knee prosthetic devices.

I. Wheelchair Activities

Although it is generally anticipated that a bilateral above-knee amputee will eventually become completely ambulant with prosthetic devices with or without crutches or canes (15), a wheelchair can be considered an aid to locomotion under certain specific conditions. It can answer the problem of getting about during the postoperative treatment phase and during the period of waiting for prosthetic devices. The amputee will also find it convenient to use a wheelchair during the training phase because of lack of endurance. Even after full walking tolerance has been established, use of a wheelchair may be needed in emergency situations, e.g., when one or both stumps have broken down or when the patient cannot bear weight for other reasons. For these reasons, wheelchair activities must be included in the functional training program for the bilateral above-knee leg amputee.

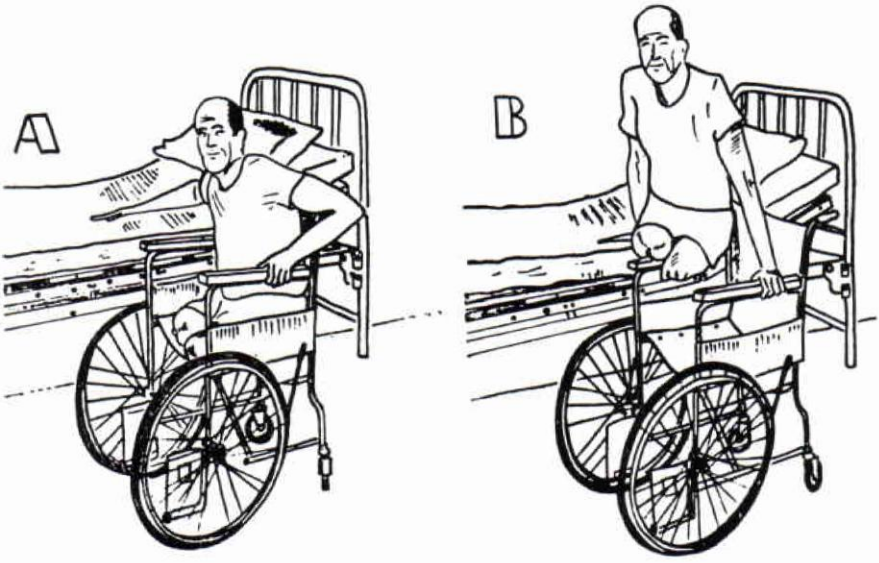

Fig. 5

A. Wheelchair to Bed and Return

Starting Position: Position wheelchair so that it is parallel to the side of the bed. Lock the brakes. Place the hand nearest the bed on the bed and grasp armrest with the other hand (fig. 5A). *Action:* Push down with both hands, straighten both elbows and raise the body to above the level of the armrests. With lateral pressure from the hand on the armrest shift the body weight over onto the hand and arm on the bed and transfer the hips to the bed (fig. 5B). Remove the hand from the armrest and adjust to a comfortable position on the bed sitting or lying.

The procedure for returning to the wheel chair is the reverse of the above-mentioned method. Move to the edge of the bed and with the hand nearest the chair, grasp the armrest farthest from the bed (fig. 5B). Push down on both hands, extend the elbows and lift the buttocks off the bed, transferring the body between the armrests. From this position gradually lower the hips to the wheelchair assuming the sitting position (fig. 5A).

B. Wheelchair to Straight Chair and Return

Starting Position: Position wheelchair so that it faces toward the side of the straight chair. Lock the brakes. Draw straight chair in as close as possible toward the wheelchair. *Action:* Position body forward in the wheelchair so as to allow room for hand to be placed behind hips, and place the other hand on the outer edge of the straight chair (fig. 6A). With the elbows locked shift the weight over onto the hand on the straight chair. Push down on both hands and lift the hips from the wheelchair

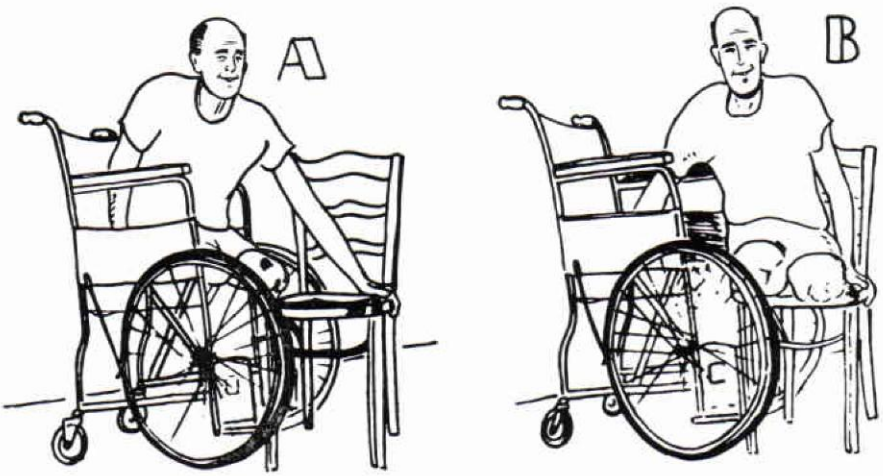

Fig. 6

and transfer the body to the straight chair (fig. 6B). Adjustment of position on straight chair can be accomplished by pushups, buttock walking or both.

The procedure for returning to wheelchair from straight chair is the reverse of the above method. Place hand nearest wheelchair on seat (fig. 6B). Shift the body weight over onto the hand on the wheelchair seat. Push down on both hands extending the elbows and lifting the buttocks from straight chair to wheelchair (fig. 6A). Reposition body in wheelchair.

C. Wheelchair to Tub and Return

The method of transferring from wheelchair to straight chair and return can be utilized in the following way to transfer from wheelchair to tub and return. *Starting Position:* Position the wheelchair parallel with the tub and place straight chair or bathroom bench next to tub in front of wheelchair. *Action:* Transfer to straight chair or bench (fig. 7A) in manner previously described in moving from wheelchair to straight chair and return (see Wheelchair to Straight Chair, figs. 6A and 6B). Facing the tub

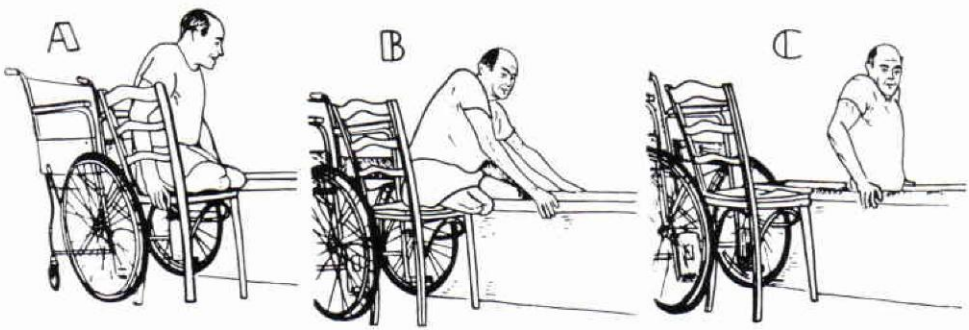

Fig. 7

at an obtuse angle place hand, on same side as the tub, on the edge of the tub (fig. 7B). Transfer the hips so as to straddle the tub edge. Reach forward and place the hands on each tub rail (fig. 7B). Shift the body weight over onto the arms, lifting the hips from the edge of the tub and gradually lower the body into the tub (fig. 7C). The above method of getting from wheelchair to tub can be used in reverse sequence in order to get from tub to wheelchair (fig. 7C-7A).

D. Wheelchair to Floor and Return

Starting Position: Sitting in wheelchair with the wheels of the chair in the locked position. *Action:* Position the body to the front edge of the chair. With one hand firmly grasping the armrest on the same side[6], bend forward and reach down for the floor placing the other hand on the floor (fig. 8A). With the elbow locked, shift most of the body weight over onto the hand and arm on the floor. Push down on both hands lifting the hips off the chair; lower the body to the floor (fig. 8B). The procedure for returning to the wheelchair is the reverse of the above method with the exception that the hand is placed on the seat instead of the armrest.

II. Activities with Prostheses and Crutches

Whether or not a bilateral above-knee amputee will become completely ambulant with or without crutches or canes depends upon many factors. Among the most important are the age of the patient and his general health and fitness, the condition of the stumps, and the patient's capacity for training. The ultimate goal of independent living without the aid of crutches or canes may never be fully realized. In such a case, a lesser goal with crutches or canes may have to be accepted. Forearm crutches are preferred as they offer more support than canes and, in most instances, the amputee may not require the complete support afforded by full length underarm crutches. If an amputee can get along with canes or if underarm crutches

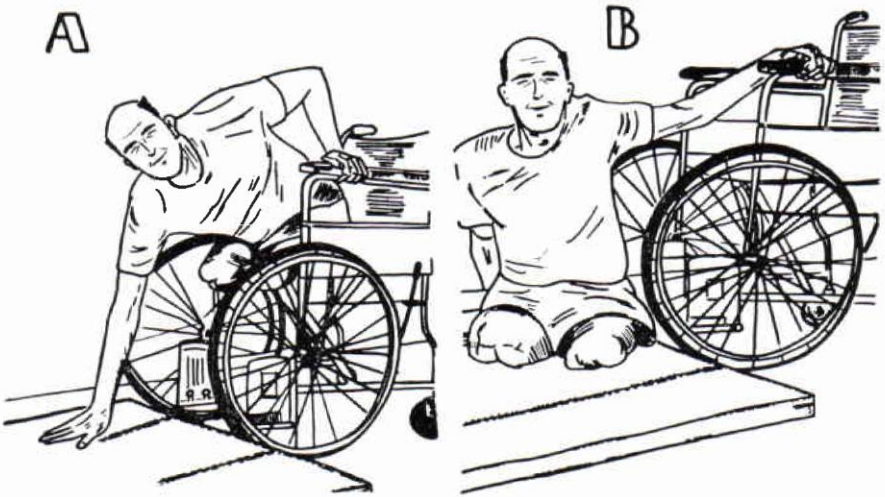

Fig. 8

[6] The hand may be placed on the seat of the wheelchair in preference to the armrest. By so doing the angle of the lean and the distance the body must be suspended and lowered are decreased.

are required, it is simple to modify the methods described below to meet the differences among the three types of support.

Wheelchair to Standing and Return

Starting Position: Sitting in the wheelchair with the brakes locked. Grasp crutches in the usual manner and place them on the floor in the vertical position (fig. 9A). *Action:* Forcibly extend the elbows and push-up to an erect position (fig. 9B). Simultaneously with the push-up extend the stumps at the hips bringing pressure on the inner posterior surface of the prostheses. This will not only help in assuming the erect position but help to insure the locking of the knee joints. After the knee joints have been held in full extension, advance the crutches and assume the crutch balance stance preparatory to ambulating away from the chair. The above method of getting from wheelchair to standing can be used in reverse sequence in order to get from standing to wheelchair (figs. 9B-9A).

Note: Other authors have described a method of getting from wheelchair and return which is very similar to that used by some bilateral long leg brace-wearers. In this variation the patient lifts the body out of the chair with a half turn of the body in the direction of the chair and pivoting on the extended legs (16). Although this is probably the safest method of getting up from a chair, the present authors feel that it is a slow and laborious technic which should be used only when a patient has difficulty with learning the straight forward method.

III. Curb Climbing

A. Ascending Curbs

Starting Position: Crutch balance stance facing the curb. *Action:* Balance on the prosthesis and place both crutches onto the curb simultaneously or alternately depending on the patient's ability. Shift the weight of the body to one side and flex the hip on the opposite side placing the foot on the

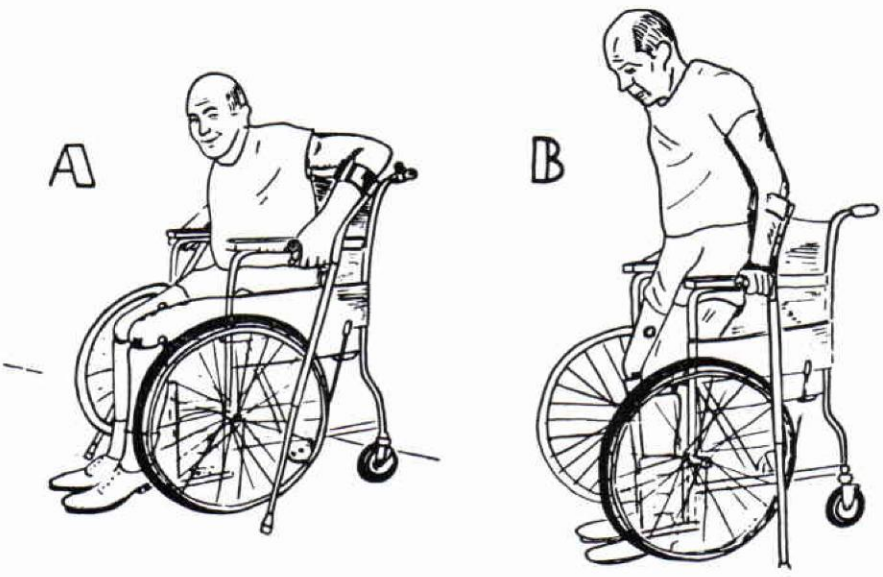

Fig. 9

curb (fig. 10A). Flexion of the stump at the hip causes the prosthesis to rise and the knee of the prosthesis flexes due to gravity. Shift the body weight forward and over onto the hands and simultaneously straighten the elbows lifting the body off the street level onto the curb (fig. 10B). As the body is raised from the street level, the stump of the leg which has just been placed on the curb is forcefully extended inside the prosthesis. This is done to lock the knee of the prosthesis by pressure of the posterior portion of the stump against the inner surface of the thigh portion of the bucket.

B. Descending Curbs

Starting Position: Crutch balance stance facing the street. *Action:* Move the feet alternately to the edge of the curb so that both feet are overlapping. After this has been done, lower the crutches to the street. Shift the weight to one side, hike the hip on the opposite side or flex the stump at the hip, raising the leg forward and off the step (fig. 10C). Shift the weight of the body forward onto the hands until the leg on the curb begins to flex at the knee. Gradually lower the other leg to the street (fig. 10D). Flexion of the knee is facilitated by gradually relaxing the hip extensors as the weight is transferred to the hands. As the other leg is lowered to the street the stump of the first leg is forcefully extended against the bucket to keep the knee locked for weight bearing.

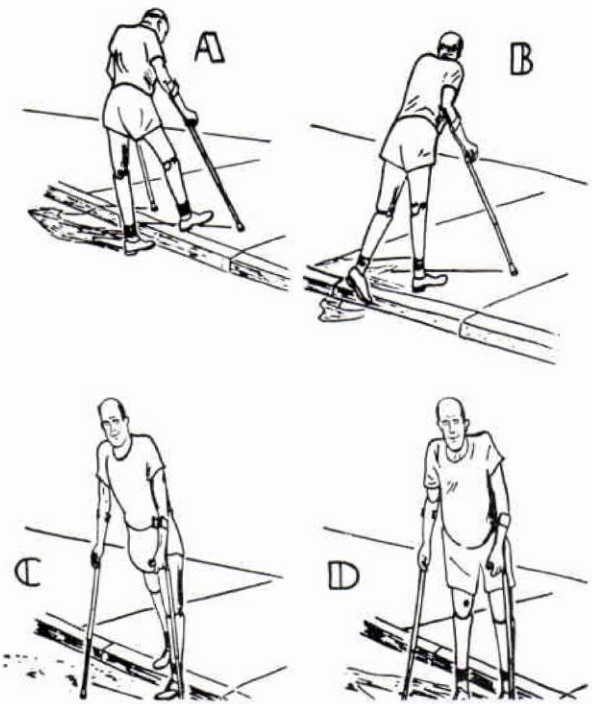

Fig. 10

IV. Stair Elevations

A. Ascending Stairs with Handrail

Starting Position: Crutch balance stance facing the stairs and near the handrail. *Action:* Maintain balance on the crutch farthest from the handrail, remove the opposite arm from the forearm cuff, and hold both crutches in the manner deemed most convenient. Grasp the handrail with the free hand preparatory to ascending the steps (fig. 11A). Shift the weight of the body to the arm on the handrail and the leg of that side. Flex the hip on the opposite side and raise the foot onto the step (fig. 11B). Flexion of the stump at the hip raises the prosthesis, permitting the knee to flex due to gravity. Advance the crutches two steps above the starting position (fig. 11C). Shift the body weight forward and over onto the hands and simultaneously straighten the elbows lifting the other leg onto the step (fig. 11D). Readjust stance and complete the movements for the remaining steps. As the body is raised to the step, the stump of the leg just placed on the step is forcefully extended inside the prosthesis (fig. 11D). This is done to lock the knee of the prosthesis by pressure of the posterior portion of the stump against the inner surface of the thigh portion of the bucket.

B. Descending Stairs with Handrail

Starting Position: Crutch balance stance near the handrail at the top of the staircase directly facing the steps. *Action:* Maintain balance on the crutch farthest from the handrail, remove the opposite arm from the forearm cuff, and hold both crutches in the manner deemed most convenient.

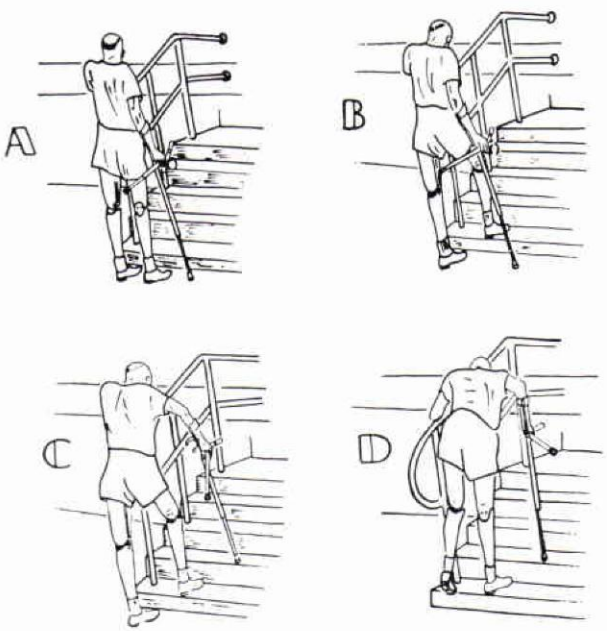

Fig. 11

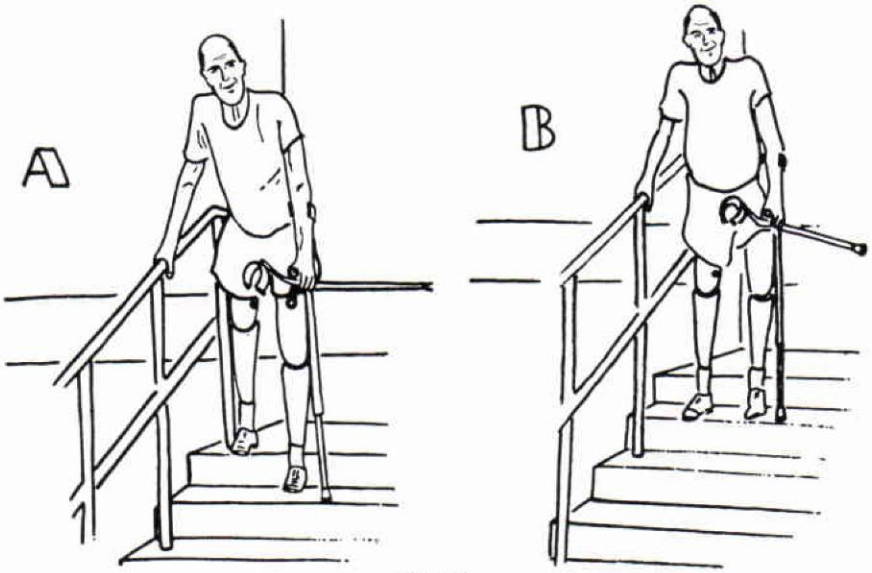

Fig. 12

Grasp the handrail with the free hand preparatory to descending the steps. Move the feet alternately to the edge of the step so that both feet are overlapping. After this has been done, lower the crutches to the step below. Shift the weight of the body to the arm on the handrail and the

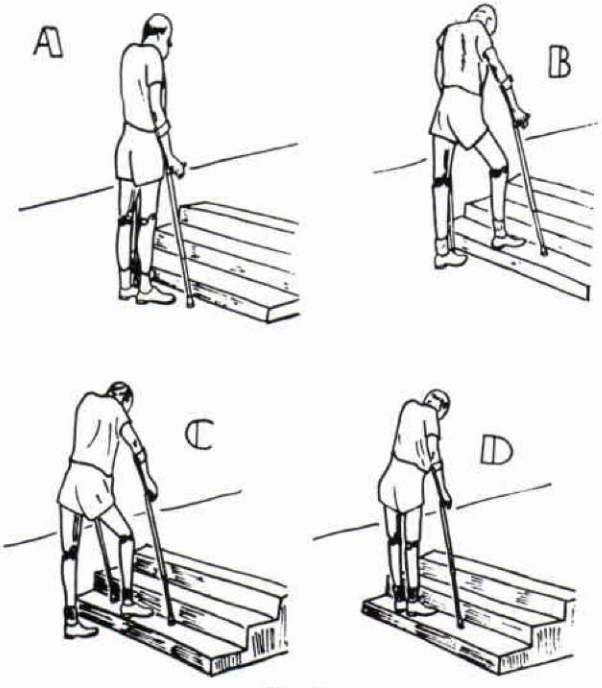

Fig. 13

leg of that side. Hike the hip on the opposite side or flex the stump at the hip raising the leg forward and off the step (fig. 12A). Shift the body weight forward over onto the hands until the leg on the step begins to flex at the knee. Gradually lower the other leg to the step (fig. 12B). Readjust stance and complete the movements for the remaining steps. Flexion of the knee is facilitated by gradually relaxing the hip extensors as the weight is transferred to the hands. As the other leg is lowered to the step below, the stump of the other leg is forcefully extended against the bucket to keep the knee locked for weight bearing.

C. Ascending Stairs without Handrail

Starting Position: Crutch balance stance facing the stairs (fig. 13A). *Action:* Advance one crutch to the step above. Shift the weight of the body to one side and advance the leg on the same side as the advanced crutch (fig. 13B). Reestablish balance and advance the other crutch so that both crutches are now on the same step (fig. 13C). Shift the body weight forward and onto the hands and simultaneously straighten the elbows lifting the body up onto the step. Place the other leg on the step and reestablish balance (fig. 13D). This is accomplished by flexing the stump at the hip high enough to permit the foot to be placed on the step. The knee is locked in the same manner as was described for the other leg, namely, forcefully extending the stump against the prosthesis. This procedure is repeated until the flight of stairs is completed.

D. Descending Stairs without Handrail

Starting Position: Crutch balance stance at the top of the staircase directly facing the stairs (fig. 14A). *Action:* Move the feet alternately to

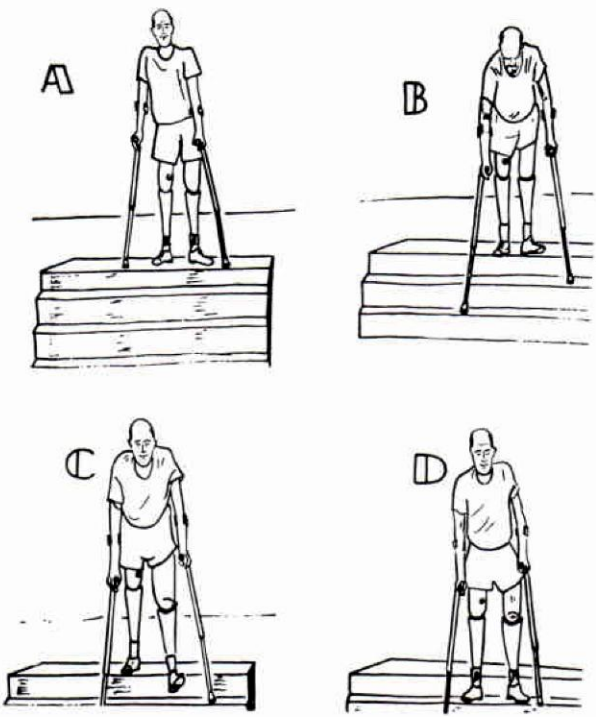

Fig. 14

the edge of the step so that both feet are overlapping the step. Advance one crutch to the step below: the other crutch is placed two steps below (fig. 14B). Shift the weight of the body to one side, hike the hip on the opposite side or flex the stump at the hip and raise the leg forward and off the step (fig. 14C). Shift the body weight forward over onto the hands until the other leg begins to flex at the knee. Gradually lower the other leg to the step (fig. 14D). This procedure is repeated until the flight of stairs has been descended.

Summary

One phase of rehabilitation of the bilateral above-knee amputee, namely, functional training, has been discussed. An attempt has been made to show that the fundamental approach to functional training with prosthetic devices is the same as with braces and crutches. Proper evaluation is followed by general conditioning, including pre-prosthetic stump exercises, and training in fundamentals, prior to actual instruction in functional activities. Four qualities have been emphasized as the bases of training. These are strength, balance, coordination and endurance. Of these, coordination has been considered as the most essential.

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AN AMERICAN PROSTHETIST RETURNS TO NEW ZEALAND AND AUSTRALIA

Editor's Note: *Noel J. Brown, President of D. W. Dorrance Company, with his brother, Lloyd, were born in New Zealand. This spring Noel Brown, accompanied by his wife and his mother, returned to New Zealand and visited Australia. We have asked them to report on his trip as follows:*

"Accompanied by my wife, Mrs. Noel J. Brown, and my mother, Mrs. Esther C. Brown, I had a very interesting trip to New Zealand and Australia. My reasons for the trip were twofold. First, I was very much interested in visiting the artificial limb establishments in both New Zealand and Australia because of contacts the Dorrance and Hosmer firms have had with them. The other reason was personal in that I was born in Dunedin, New Zealand, and had not returned for a visit there since I left there in 1919. My mother, now 73 years old, was also anxious to see her native land. She had never flown before, but enjoyed every bit of the trip and had the exciting experience of landing in New Zealand on her 73rd birthday.

"Forty years ago, the trip from New Zealand to San Francisco took 24 days by boat. The return trip took only 28 hours of actual flying time. Stops were made at Honolulu, Canton Island (very close to the equator), Fiji and Auckland, New Zealand.

"In Honolulu I had the pleasure of a very interesting visit with Mr. Newton of the C. R. Newton Company. We talked of many phases of the limb industry. We were treated to a Honolulu down pour which caused the plane to leave quite late.

"Arriving in Auckland, New Zealand, we had a most interesting visit at the Disabled Servicemen's Reestablishment League Limb Shop. All limb shops in New Zealand are government owned and large shops are located in Auckland, Wllington, Christchurch, and Dunedin. Mr. Binet is the manager of the Auckland facility and I found him most cordial and friendly. There are several employees in this work shop. They have good fitting rooms and facilities for rehabilitation. We saw the interesting "Kiwi" knee which was developed in New Zealand, and is being used on many of their legs. I also met three bilateral arm amputees who had lost their arms in electrical accidents. One of these was from the island of Samoa and was a native Samoan. They will all be taken care of by the New Zealand government, and were being fitted with their first arms.

"In the evening, they invited me for a showing of Jerry Leavy's film, "A Day In The Life Of An Amputee." These new amputees were greatly surprised at Jerry's dexterity. I was called upon to explain many of his methods.

"Traveling to Wellington by car, a distance of about 500 miles, we passed the most interesting Wiatoma Caves. These underground caves are lit only by the glow of thousands and thousands of glowworms, a sight unique in the whole world. Next we saw the geysers and hot springs of the Rotorua section. A feature I will always remember was a concert by the Maori people. Their singing is most beautiful and the rhythm and beauty of the poi dances is hard to describe. At Lake Taupo we saw 16 to 20 inch trout being caught in numbers. All under 14 inches were thrown back.

"The next stop was Wellington, the capital city of New Zealand. My stay coincided with the annual conference of the government artificial limb factories. All artificial limb work in New Zealand is part of the government. Col. C. E. Butcher introduced me to the group, and I gave an informal talk

on upper extremity prosthetics. I had a wonderful opportunity to meet the leaders in New Zealand at the meeting. Mr. Arthur Thompson heads the Wellington facility, and has recently gone through the limb school at UCLA. He found it very helpful. He is a most dedicated and friendly person. I had enjoyed his visit to the United States greatly, and was most happy to meet him again. Mr. Jim Henderson of the New Zealand Broadcasting Co. interviewed us both that afternoon, and the tape was later broadcast throughout New Zealand.

"Traveling by plane we reached Dunedin which was the birth place of my mother as well as myself. My mother was thrilled to see the many places she remembered. I saw our old home, looking very much like it did when we left 40 years ago. Here I had a most interesting visit with Mr. Walden Fitzgerald, F.R.C.S., a very well known orthopedist. The most exciting part of the trip was a journey to Queenstown which came next. From there we flew on a small sightseeing plane over the Southern Alps. This little plane dipped in and out of steep valleys with mountain peaks and glaciers and huge water falls, and fjords all around. I have taken many slides and some movies of the trip, and the pictures of this flight are most spectacular.

"After New Zealand, we flew to Sydney, Australia. In Sydney I visited the shop of the International Society for the Welfare of Cripples. Also, I visited the Government Rehabilitation shop which is a very large factory. Then a very smooth flight by Viscount plane took me to Melbourne. It is hard to believe the size of these Australian cities. Sydney is over two million in population and Melbourne between one and two million. Mr. Richard Masson of Melbourne was my host during my stay here. He has a very progressive and modern upper extremity factory. With him I visited the Children's Hospital and the very large Government Rehabilitation Shop. In Australia, the government makes and furnishes prostheses, but there is also a certain amount done by private firms.

"Everywhere I found a most cordial reception, and much interest in what is being done in the United States in this field.

"Before leaving Australia, we had the pleasure of visiting the beautiful blue mountains in the Katoomba area. This area is somewhat reminiscent of our own Grand Canyon in the United States.

"I will always remember the beautiful New Zealand scenery and the cordiality of the people. In Australia I was impressed by the progressive and pioneering spirit of the people."

UNUSUAL HIP-DISARTICULATION PROSTHESIS

The April 1959 issue of *The Journal of Bone and Joint Surgery* has an interesting article on "*The Use of a Bilateral Canadian-Type Hip-Disarticulation Prosthesis for Congenital Absence of Both Lower Extremities.*" This is a case report by Dr. Cline D. Hensley, Jr., Wichita, Kansas. The author gives credit to *Mr. F. L. Lake, C.P.&O.*, of the Hanger Co. of Oklahoma City, for the technical design and fabrication of the Prosthesis. Suggestions were also received from John Bray, prosthetics instructor at UCLA in the final design.

Fabrication of the limb was completed by Herman Ellis.

PROSTHETIC SERVICES IN KOREA

By

Hung Tong Chun, C.P.

Chief Prosthetic Technician

Korean National Rehabilitation Centre

Editor's Note:

Mr. Chun was assisted in the preparation of this manuscript by Mr. Eugene J. Taylor, New York University-Bellevue Medical Center. Mr. Taylor is a member of the Board of Directors of the American-Korean Foundation and has served since its inception as volunteer Director of Program, and is now Program Consultant.

In forwarding his manuscript to the Journal, Mr. Chun wrote, "My tour of training abroad has served me in good stead and has endowed me with a confidence which proves an invaluable asset to me in my work here in Korea. To the many friends who were instrumental in giving me their kind assistance, advice and support during my period of training, I wish to convey my most grateful thanks."

There are no reliable statistics in Korea on the number of physically handicapped persons in various categories, including amputees. The Korean Ministry of Defense has estimated the number of veteran amputees at 20,000. This figure seems to be fairly accurate. Over and above this number, however, are probably an even greater number of civilian amputees who became disabled while assisting in the war effort as members of the Korean Service Corps, a "labor force" which was attached to various units of the United Nations Command during the war, and of civilian amputees who were not directly or indirectly a part of the Korean and United Nations military war effort.

A conservative estimate is that a minimum of 50,000 Koreans suffered amputations as a result of the war. Added to them are a sizeable but unknown number of persons who have suffered congenital absence of extremities and amputations as a result of non-wartime accidents and disease.

The Korean National Rehabilitation Centre, Tongnae, has a children's ward for 34 inpatients equipped through funds contributed by the volunteers of the United Nations Women's Guild.

In the early stages of the Korean conflict, the United Nations Command through the United States Army Medical Service established a prosthetic program and amputee rehabilitation program for disabled Republic of Korea military personnel. The unit was operated by U. S. Army prosthetic personnel.

Parallel with this program, the United Nations Korean Reconstruction Agency in 1953 began the development of a modern comprehensive rehabilitation center utilizing a former veterans' institution at Tongnae, Kyongsang, Namdo, near Pusan in southern Korea. In addition to providing funds for construction of facilities, the UNKRA project included equipment and the long-term services of international experts in physical medicine, remedial gymnastics, prosthetics and vocational training.

In early 1953 when the Korean National Rehabilitation Centre, as this project came to be known, was just starting, an American-Korean

Foundation mission headed by Dr. Howard A. Rusk visited Korea. The purpose of the visit of this mission, which included such familiar names in rehabilitation as Mrs. Howard A. Rusk, Mrs. Bernard F. Gimbel, Mr. Leonard Mayo and Mr. Eugene J. Taylor, was to ascertain the immediate technical assistance needs in the Republic of Korea to which American voluntary funds could be put to immediate use by the then newly founded American-Korean Foundation. It was not surprising in view of the membership of this mission that the American-Korean Foundation gave high priority to cooperating with UNKRA in the development of the Korean National Rehabilitation Centre. Included in the assistance provided by the American-Korean Foundation were the services of expert international consultants in physical therapy, occupational therapy and nursing.

The Korean National Rehabilitation Centre, to which UNKRA contributed $647,000, has been in full operation since 1957. It now provides services for 300 adult trainees (in-patient and out-patient) through three main units: medical, which includes physical therapy and occupational therapy; prosthetics, which includes the manufacturing, fitting and training in the use of artificial limbs and braces; and vocational rehabilitation which includes training in printing and stamp-making, commercial art, radio repair, electro-mechanics, tailoring and dressmaking, welding, masonry, machine shop, sheetmetal work and a number of other trades. The administrative director of the center, Mr. Cha-Hun Koo; the medical director, Dr. Chung Hi-Oh; a medical consultant, Dr. Pil Soo Shin, and the writer all had advanced training in their respective fields at the Institute of Physical Medicine and Rehabilitation, New York University-Bellevue Medical Center, on fellowships provided by the American-Korean Foundation. Four other physicians have or are now undertaking advanced training in physical medicine and rehabilitation at the New York University-Bellevue Medical Center, and a Korean is currently completing a full course of training in occupational therapy under the sponsorship of the American-Korean Foundation at San Jose State College in California. The author's fellowship was given as a result of the recommendations of Mr. William Tosberg, Chief Prosthetist, Institute of Physical Medicine and Rehabilitation, who visited the Korean National Rehabilitation Centre in Tongnae in 1956.

Prosthetic Program

At the present time the prosthetics program is conducted through five independent workshops, but plans have been made to start construction in 1959 on new physical facilities which permit combining all of the prosthetic workshops. In order to avoid delay in production, the new building is being built around the present workshops which are located in independent barracks-type corrugated iron huts.

Upon completion of the outer walls and glass roof of the new building, the huts will be dismantled, leaving the machines and equipment in their present position but in a modern one-floor workshop. Very little rearranging will be required, and there will be no interruption in production.

Workshop No. 1

Workshop No. 1 is equipped with a modern automatic copying lathe for producing wooden feet, shin pieces, knee blocks and high sockets, all of which are roughly assembled to close approximate measurements with the knee joint and ankle joint ready for the final assembly and fitting stages. Other equipment includes a bandsaw, electric routing machine and drilling machine.

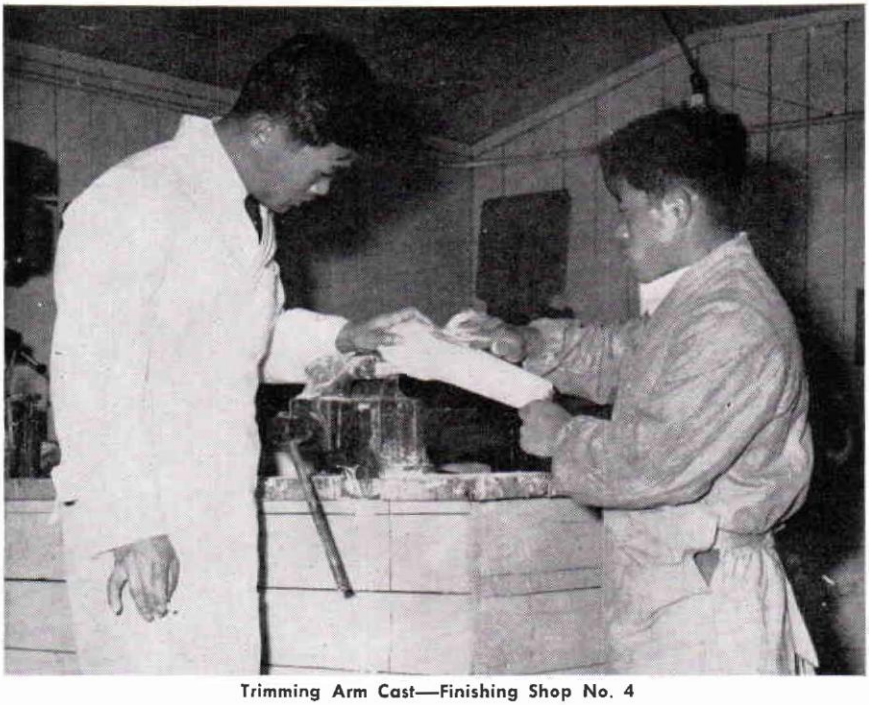
Imported willow wood has been used for these wooden parts, but a transition is being made gradually to the use of a locally grown wood known as "Pinamoo." This wood, pinamoo, is slightly heavier than willow but otherwise possesses similar characteristics. It is tough and durable and is proving quite serviceable, providing ample seasoning time is allowed. For this a small kiln drier is needed. Pinamoo is purchased in log form and stored. After initial seasoning the bark is removed and the log is stocked out to lengths which are trimmed roughly to size, bored through the center; the ends are waxed to prevent cracking, and the lengths are stored in an airy drying shed for continued seasoning.

Workshop No. 2

Worskshop No. 2 produces all of the leatherwork for artificial limbs and braces and a sub-section is responsible for the making of plaster casts and leather blocking. Efforts are being made to use laminated plastics for arm sockets and other needs, but due to the inavailability of recognized suitable plastics, a celluloid acetate is being used with success. This is secured by rendering down celluloid scrap such as motion picture or X-ray film and applying it layer by layer over a stockinette. Another sub-section produces boots and shoes for uses with braces and other leather sub-assemblies for surgical supports.

Workshop No. 3

Workshop No. 3 is a self-contained unit for the fabrication of braces and other surgical supports. Equipment includes a turning lathe, blower forge, welding apparatus, grinders, a small milling machine and two small power presses for stamping out sheet metal components.



Trimming Arm Cast—Finishing Shop No. 4

Workshop No. 4

Workshop No. 4 is used for the final assembly and fitting phases of the program. It is equipped with fixed and portable internal sanders, drilling machines, drying ovens, rawhide facilities and compressor-type paint spray equipment.

Workshop No. 5

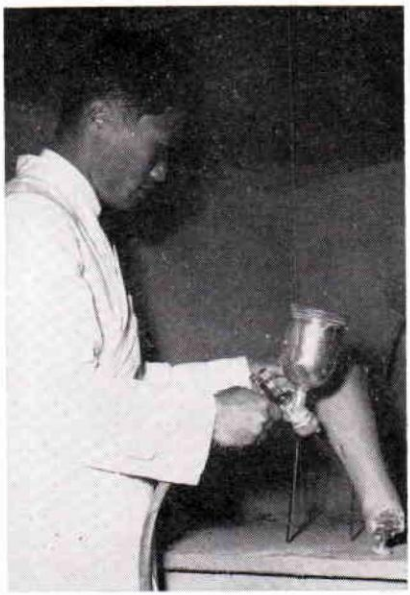
Workshop No. 5 is a completely equipped machine shop which serves the dual purpose of production work plus providing vocational training in metal work for the disabled trainees in the center's vocational training division. In this workshop two prosthetic technicians are permanently assigned for the making of components.

Production Progress

Production was slow during the initial stages of development of the program because of the necessity for training technicians in skills almost totally foreign to Korea. The volume of production, however, has increased steadily as additional trained technicians have become available. During 1958 production averaged 65 completed limbs and braces per month, but early in 1959 an average of 115 finished products had been achieved.

Staff Training

A staff training program has been initiated to which independent limb makers and other rehabilitation personnel are invited. Prosthetic manuals from other countries are being translated for distribution not only to the center's staff and trainees, but to independent limb makers in an attempt to aid them in increasing their skills and to promote the use of standardized prosthetic terminology and technical knowledge throughout the nation. One objective of this effort is, hopefully, to develop standardization of prosthetic components through encouraging private prosthetic organizations to order components from the Korean National Rehabilitation Centre. Currently the center is supplying components to the Church World Service Amputee Rehabilitation Projects at Severance Hospital, Yonsei University, Seoul, and at Taejon. These projects have been aided by American consultants. The Chief Prosthetists at Severance Hospital Project and



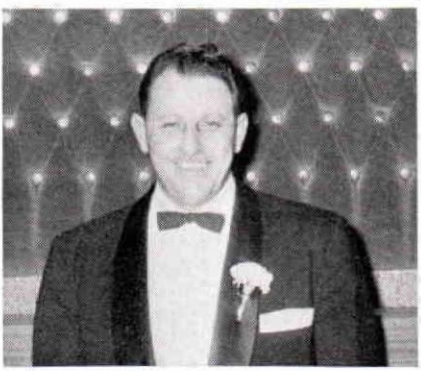
Spray Painting—
Finishing Shop No. 4

Taejon Project, Mr. Ray Song and Mr. Kan Mo Chung, both had advanced training in the United States under fellowships from the American-Korean Foundation. Mr. Song's training was at the Institute of Physical Medicine and Rehabilitation and Mr. Chung's training at the Woodrow Wilson Rehabilitation Center, Fisherville, Virginia. Mr. Chung has just returned to Korea after spending a year as a consultant in organizing an amputee rehabilitation project at the Cameroons in Africa.

Local Problem

While every effort is being made to make maximum use of Korean raw materials, it is almost certain for some considerable time that the Korean National Rehabilitation Centre must depend on imports of certain items, such as certain metals of good quality and plastics which are not obtainable in Korea. Ankle and knee joints using local metals have been successfully produced, but experimentation over a two-year period shows the local metals will not stand up to the exhaustive wear and tear demanded of them. Progress has not as yet reached the stage where the very intricate mechanisms for upper extremity elbow units or advanced types of terminal devices requiring specialized machinery can be produced satisfactorily. Efforts in this direction have been confined to simple devices, which although crude, have proved serviceable.

The Korean National Rehabilitation Centre at Tongnae is building a reputation of which all members of its staff and the author are very proud. The words of commendation and praise which we receive from visitors from other countries who have had wide experience in rehabilitation and prosthetics are encouraging to us. Even more satisfying, however, is the increasing number of applications for admission which the center is receiving from all parts of the Republic of Korea upon the recommendation of former patients who are now using our limbs and braces.



WAR MEDALS FOR JOHN GALLO

John Gallo, C.P., Manager of J. E. Hanger, Inc. of New York City, was awarded the Bronze Star, February 20, 1959, by the U. S. Government. This medal was awarded for exemplary conduct in ground combat against armed enemy forces during World War II. Mr. Gallo is the recipient of the Purple Heart with oak leaf cluster (twice wounded), the Presidential Citation with cluster, European-African Middle East medal with silver star and 4 bronze stars and Invasion arrowhead, combat infantry badge, the French Fourragere and Victory medal.

Orthopedic-Prosthetic Idea Exchange

Contributing Committee: Everett J. Gordon, M.D., *Chairman;* Joseph Ardizzone, P.T.; Raymond Beales, C.P.; Edwin M. Brown, Prosthetic Representative; Victor L. Caron, C.P.; Charles Ross, C.O.&P.

Warm weather is here again and with it comes the many problems of stump perspiration and resultant skin irritations. Previous efforts to control skin perspiration have included various methods of collection of the perspiration to avoid its accumulation within the socket with resultant irritation and discomfort: formalin soaks for the stump, successful in some cases when it could be tolerated; iontophoresis with aluminum salts; local application of aluminum ointment similar to the commercial deodorant preparations; and daily use of Phisohex. The local application of deodorant type creams was not practical because of the large amount of area to be covered and the occasional skin sensitivity with continual use. To date we have found no one preparation which would give the desired effect with daily application, but we have not yet given up hope. *Phisohex* remains the agent of choice at this time, as it maintains the skin relatively free of the usual staphylococci which cause the majority of skin infections, and also tends to diminish the activity of the sweat glands. However, it is not the complete answer.

We have found silica gel, the old stand-by, is still the best method of maintaining limited control of perspiration. We have devised a very simple but practical method of inserting silica gel in the socket, by placing it within a "disemboweled" powder puff with a gripper button attached; the opposite gripper receptacle is fastened to the bottom of the socket. In this manner the powder puff, filled with silica gel, can be snapped into place, but is easily removed and replaced with a fresh one whenever necessary; it avoids the discomfort of the bag rolling around within the socket with ambulation. The powder puff can easily be revitalized each evening by heating in a moderate oven. The patient can carry several of them in a plastic bag during the day, changing them whenever necessary and dehydrating them at night.

The SACH foot is still one of the "hot items" in the prosthetics field. It is rapidly becoming the standard foot component in the United States, and is being universally accepted by all lower extremity amputees with few exceptions.

In a few instances the belting has loosened, causing a friction type of clicking with walking, sounding as if it were coming from the shoe instead of the foot. However, the sound persists when walking without shoes; "dissection" of the foot has shown the belting to be loose at the anterior portion of the keel, which can be repaired easily, removing the objectionable noise. We have also observed that it is common to find a slight delamination of the heel at its postero-superior attachment to the keel, but this has caused no problem (easily repaired with rubber cement by amputee) and does not interfere with the satisfactory function of the foot. We believe that this results largely from the application and removal of tight shoes, but can also follow excessive roll-over onto the toes with certain types of gait. It is suggested that a shoe horn be used for inserting the foot in the shoe and also in the removal of the shoe, lessening the tearing strain upon the posterior attachment of the heel. The use of a nylon sock to cover the foot, over which a

regular sock can be put on and removed, is also stressed in order to minimize such a strain. Incidentally, we have tried to interest several manufacturers in putting out a standard item of this type instead of having the patient confiscate his wife's old nylon stockings.

One of our hip disarticulation amputees has noted that his gait is not affected by changing to various types of shoes when he uses the SACH foot, but when he uses the old wood foot his gait varies considerably with the type of shoe worn. Another has noted difficulty in dancing with the SACH foot, such as in turning and getting upon his toes, as he tends to rock back on the relatively soft heel. However, he has also noted that he is able to bowl easier with the SACH foot and feels that his score has actually been improved! We have also noted that the SACH foot can definitely be used with a pump type of shoe by female amputees, and even with loafers in either sex, contrary to the original thought that such shoes could not be maintained in position with this type of prosthetic foot.

Some of our SACH feet that have been in use for two years are now beginning to show signs of wear and will be replaced. It is too early to give an average life expectancy for the SACH foot but our observations at this time indicate that two years may be estimated as an average.

In the field of braces interest is being stimulated in the use of a quadrilateral socket as the upper portion of an ischial weight bearing brace. This gives a more positive control of ischial weight bearing than does the usual type of ring attachment, where the weight bearing is not always placed at the desired point on the pelvis. This is particularly important with instability of the hip, such as after non-union of a fracture of the neck or subtrochanteric area of the femur. Of course the upper portion of the brace actually represents the superior five or six inches of a prosthetic socket and must be manufactured and fitted in the same manner as a prosthesis, materially adding to the expense of such a brace. In selective cases, however, where the patient is disabled and must depend on crutches without it, this crtainly would seem worth the added expense.

The functional hand bracing course given at U.C.L.A. has proven valuable not only for fabrication of special hand braces, but also for partial hand prostheses. One of our amputees who has only the thumb digit remaining has been very successfully fitted with a partial hand prosthesis by utilizing the bracing principles taught in this course. Opposition of the second and third fingers to the remaining thumb, is gained by wrist flexion with appropriate cable attachments. We feel sure that these principles will be extended to a wide variety of uses with partial hand prostheses.

There has been increased interest in the use of laminated plastic as a cover for all prostheses in lieu of the usual rawhide. Not all shops have installed the necessary equipment, but the advantages of ease of cleaning, better maintenance, and better cosmetic appearance appears to have stimulated considerable interest in this final step of completion of a prosthesis.

We are anxiously awaiting the results of Dr. Edward Holscher's survey of hip disarticulation prostheses in the St. Louis area. In our own clinic we have had an unusual experience with two such amputees. One amputee, who was an excellent walker with the tilt-table prosthesis, has given the Canadian type a thorough trial but still prefers his older prosthesis. As he puts it, "with the tilt-table prosthesis I control the limb, and with the Canadian type the limb controls me." He has noted difficulty in side stepping, in getting up and down from a sitting position, and walking up and down inclines

with the Canadian type of prosthesis. One of our prosthetists, Mr. Raymond Beales, has successfully replaced the elastic strap on the Canadian prosthesis, moving it posteriorly to the buttocks region above and fastening it to the lateral mid-thigh region below, instead of using the prescribed position from the hip joint to below the knee. He uses a two-inch wide web-strap of moderate elasticity and finds that it does not limit the stride, side stepping, or other hip motions as much as the standard type of strap control.

We hope our readers will continue to make observations and send them to us during the Summer. We are especially interested in how you handle your perspiration problems and will be glad to pass along any hints. Perhaps, our friends in the deep South have some ideas—we would appreciate hearing from them.

A pleasant Summer to all of you! !

Joseph G. Placa, C. P. & O. of Nassau Surgical Appliance Co., sends us this note:

"Oven Curing a plastic laminated prosthesis presented a problem as we did not have the space to set up this heating element besides being expensive.

"We therefore made our own oven by purchasing a garbage can with a cover for $2.22 and a Bake-Well oven thermometer for 49¢ and improvised a ¼ inch rod through the top of the can to hold a shank, socket and foot. This placed on top of an inexpensive two burner gas stove proved very successful.

"Possibly our readers can improve on this idea so I pass it on to them."

Plastic Soft Socket Follow-Up

by
Waldemar Schoene, C.P. & O.
(Bardach-Schoene Co., Chicago, Ill.)

In the interval since the publication of a previous report[1] on 850 below-knee amputees fitted with a new plastic soft socket (*Flexolimb*, Bardach-Schoene Co., Inc., Chicago, Ill.) we have had opportunity both to improve the product and enlarge our experience with 100 additional cases, all of which were successful.

Some of these were old cases in which stump irritation had been a common annoyance while they were wearing prostheses with conventional sockets. One instance is that of a farmer, who, despite his physical handicap, finds it necessary to perform all the usual tasks of this occupation. His was a particularly difficult case of stump irritation; once initiated, it was difficult to control because of the man's physical activity. After being fitted with the new plastic soft socket and undergoing one or two routine adjustments he reports that he has had no trouble whatsoever.

Our own experience is confirmed by reports from other prosthetists who have visited our shop to observe the techniques of applying the material. The head of one facility[2] writes, "Every single case we have fitted has been successful, comfortable, and the client is extremely happy with his limb. The ages of the patients range from eleven to eighty-seven years. This has been the best improvement in B/K prosthesis in years."

Of one case in particular he adds, "The doctors at the clinic were amazed that one man fitted with this new soft socket was able to work three hours after getting his limb. He worked until two hours before clinic time eight hours a day for a week, using a piece of stockinette for a stump sock. When he was examined at the clinic his stump revealed not the slightest sign of pinkness. I was somewhat amazed myself, since this patient was carrying 100 pound sacks of salt and sugar, unloading ships at the waterfront."

The head of a Canadian facility reports, "Things are going along very nicely, and we are using the Bardach-Schoene technique to good advantage." In a later communication, he says that every case so far fitted with this soft socket has proved successful.

A number of prosthetists have reported that improvements made in the plastic sheets have not only increased the comfort of the patient but have increased the ease of handling as well. One writes, "It looks as though the new plastic sheet is softer and easier to work with."

The improvement to which they refer consists of a better fabric which, laminated to the plastic (polyvinyl chloride acetate), affords greater flexibility and heat resistance. The resin and plasticizer from which the plastic sheets are made in our plant are standard products available from commercial sources. The equipment and the process used to manufacture the plastic materials into sheets of appropriate thickness and lamination to the fabric facing have been previously described.[1]

We have had some inquiries as to whether or not this plastic soft socket can be used with all types of shanks. To all practical purposes, the answer is no. The shank we use was specifically designed for this purpose. While it is conceivable that the plastic might be adapted to other types, there can be no guarantee without taking the necessary time and trouble to investigate, that such use would be successful.

From our own continuing experience with *Flexolimb* it still appears to be the best available insurance against stump complications, which for many years have troubled the patient and fitter alike. Stump irritation has not been seen in any of the below-knee cases we have fitted with this type of soft socket.

Perhaps it would be well to remind readers that this material is available to the profession generally, the only condition being the assurance that prosthetists using it are fully informed on the techniques of application. Since the original report[1], 19 prosthetists have visited our facility for instruction. They came from Seattle, Charleston, W. Va., Detroit, Milwaukee, Edmonton (Alberta, Canada), Louisville, Fond du Lac, Wis., San Antonio, Chicago, Oak Park, Ill., Pittsburgh, Cincinnati, Dallas, Indianapolis, Oklahoma City, Peoria, Ill., and St. Louis.

The course of instruction requires sixteen hours for completion and consists of the most practical approach we know: the actual fabrication, according to specifications, of a below-knee prosthesis with the plastic soft socket. The process is carried out from start to finish under our instruction and supervision.

The sequence of operations has been detailed in a set of instructions which, along with the actual job experience, serve adequately as a guide during instruction and as a memorandum of procedures once the prosthetist undertakes the operation on his own. For this service we charge what we believe to be a reasonable fee.

Members of the profession are cordially invited to communicate whatever inquiries they may have regarding this development which, in the opinion of many, is a significant advance not only in simplifying the fitting of below-knee prostheses, but also in keeping the wearer happy and satisfied.

Notes

1. Schoene, Waldemar, "A New Plastic Soft Socket for Below-Knee Prosthesis," *Orthopedic and Prosthetic Appliance Journal*, Dec., 1957, Page 33.
2. Name furnished on request.

NEW PUBLICATION

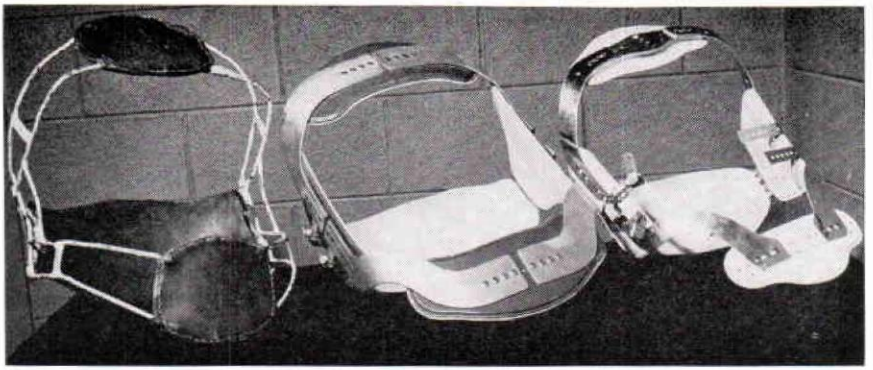
"NAPH News" is a new monthly bulletin in the field of rehabilitation. It is published by The Nation's Capital Chapter of the National Association of the Physically Handicapped, Inc. J. Roland Hays of the President's Committee to Employ the Physically Handicapped, serves as editor. George Zetts, C. O., is contributing his services as Advertising Consultant. The May 1959 issue reprints by permission an article from this Journal, "Functional Fashions for the Physically Handicapped" by Dr. Howard A. Rusk.

PERSONALS

Regional Director *Herbert Hart and Mrs. Hart* of Oakland, California, announce the engagement of their daughter, Joyce, to Mr. John Hertz. The wedding will be held November 29. Joyce, with her brother Barry, attended the 1957 Assembly in Washington.

FRACTURE OF THE SPINE
New Treatment Without Plaster Casts

By LOUIS MONFARDINI
Winter Park, Florida



THE JEWETT BRACE—At the left is the original brace made in 1937. The middle model was made ten years later. At the right is the Jewett Brace made in 1959.

As may be generally known among members of OALMA, the treatment of uncomplicated fractures of the lower thoracic and lumbar spine, without the use of plaster casts, has been developing in recent years. Hyper-extension for the reduction of the compression fracture is obtained on a reversed gatch bed. Measurements of the patient are taken by a qualified brace technician to select a Jewett Brace. The brace is applied as soon as the normal alignment of the spine and reduction of the compression fracture have been obtained. The brace is then easily adjusted, if ordered by the doctor, by the brace technician as the patient progresses to complete recovery.

The plaster cast treatment for fractured spines goes way back many decades at least. Practically everything in orthopedic surgery has been developed because of a preceding instrument, appliance, or method of treatment which needed improvement. The first hyperextension back brace to be used for fractures of the spine, as far as we know, was described by Dr. Arnold Griswold in *The Journal of Bone and Joint Surgery* (Vol. 18, page 784), in July 1936. This was an adjustable brace put on the patient after two or three months of wearing a hyperextension plaster jacket. It was never used as a primary form of immobilization of fractured spines.

Dr. E. L. Jewett, acting on the principle of Dr. Griswold's brace, made the first rigid hyperextension spinal brace to be used as a primary definitive treatment for the uncomplicated compression fracture of the lower thoracic or lumbar spine. His first patient was an eighty-eight year-old lady, who had sustained an uncomplicated compression fracture of the second lumbar vertebral body from a jack-knife injury when her car went over a deep hole in the road. This patient was very thin and was adamant about not wearing a plaster of paris cast. Dr. Jewett assured her that if she would wear a plaster cast for two weeks or so, in the meantime he would make a hyperextension brace which would be just as effective as a cast and much more comfortable, as well as lighter. He made two plaster casts of this patient

LOUIS MONFARDINI
Sales Manager of the Florida Brace Corporation

when she was in adequate hyperextension on the fracture frame. One cast was removed immediately and was used as a model for the brace, whereas the second one was worn during the two-week period when the brace was being made by a local mechanic and covered by a local saddle and leather worker. The first brace was described and written up in *The Journal of Bone and Joint Surgery* (Vol. 19, No. 4) October 1937. At this time, practically all well fitting braces for the back were made from a plaster of paris cast as a mold. This method of making hyperextension braces was used by Dr. Jewett until 1942, when he left for the second world war.

When Dr. Jewett came back in 1946, one of his patients was a doctor's mother who had a severe cardiac involvement and was very obese. She had an uncomplicated compression of one of the lumbar vertebral bodies and the same method of treatment as described above was used. However, this patient had to be anesthetized while on the Goldthwaite bars for the application of the plaster casts. This procedure took about an hour and was very severe on the patient. On returning to her room, she never left her bed and died about five days later. At this time, the idea was evolved of making this hyperextension back brace from the patient's body measurements only. Mr. Robert Blair was the originator of this method of measuring and was of great assistance to Dr. Jewett in coordinating and developing the mechanical aspects of this method.

Since 1946, many doctors over the entire world have treated thousands of uncomplicated fractures of the lower thoracic and entire spine without any of these patients being anesthetized or taken to the operating or cast room. They have generally been treated on admission to the hospital with gradual hyperextension on the reversed gatch bed and have had measurements made for the brace as soon as possible. Where there has been a minimum or no compression, many of these patients have been made ambulatory the same day.

The above account, we hope, explains why we are most anxious to have the brace used only in a standard manner because we are not putting out the brace simply as such, but as an integral part of a treatment for fractured spines and other allied conditions. The brace must be expertly measured, made, and applied. Prescribers, manufacturers, and users of the brace must know about its many pitfalls.

SHOULD BRACE AND LIMB HOUSES SELL SHOES?

by

Maurice J. Markell*

Many brace and limb houses are now selling orthopedic shoes, particularly those types prescribed for children; and beyond business considerations, suppliers feel that they are rendering a service to their doctors and their communities.

Often, special shoes are at the core of the treatment of foot problems in children. Tiny boots with open toes are used in correcting club foot and similar anomalies in babies; they may be used after casting for retention purposes or possibly with Denis Browne splints. From the second year onward, inflare and outflare walking shoes, curved and wedged, are used in controlling pronation and metatarsus varus. Surgical boots are used at all ages for wearing with braces and appliances.

Children's orthopedic shoes are not a new idea: Tarso Supinator and Tarso Pronator shoes were introduced over twenty-five years ago. There has been, however, a marked upswing in sales during recent years; and, medically, the idea still has enormous potential. Unquestionably there are many doctors who would be more disposed to prescribing special shoes if they knew such prescriptions could be filled readily.

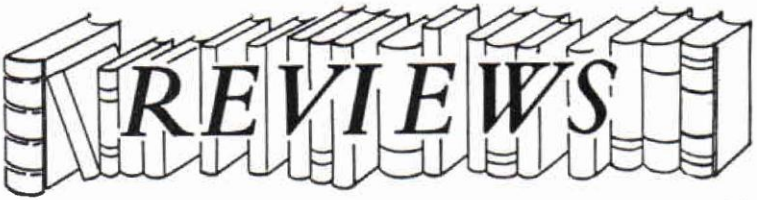
For consistently good results with orthopedic shoes, a fitter must be within easy reach, and the right sizes must be available and supplied promptly. Accurate fitting requires that different size and width combinations be tried on. Doctors, moreover, insist that shoes be fitted immediately after removal of casts and won't tolerate the delays attendant upon mail ordering.

Since sales are usually limited to a few basic types of shoes, stock requirements, dollarwise, are not great. The majority of sales are usually concentrated within a given age group. A fairly active orthopedic or pediatric office can generate enough prescriptions to justify a modest stock. Sales potential increases when an orthopedic hospital happens to be nearby.

Orthopedic shoes certainly belong in brace and limb houses as much or more than in ordinary shoe stores. Brace and limb people work closely with doctors and enjoy their confidence and respect. They understand anatomy, and practical experience in exact fitting of these shoes can be acquired. Shoe fitting can be mastered easily when you have adequate supplies of shoes to work with.

Where the need exists in any community, brace and limb establishments should consider an investment in stocking special orthopedic shoes and the acquisition of fitting techniques a genuine part of their responsibility.

* The M. J. Markell Shoe Co., Inc., an associate member of OALMA, serves many members of the brace and limb profession as a supplier of all types of children's orthopedic shoes. Additional information concerning these shoes can be secured by writing to this company at 332 South Broadway, Yonkers, N. Y.



THE CERVICAL SYNDROME by Ruth Jackson, B.A., M.D., F.A.C.S., Clinical Assistant Professor of Orthopaedic Surgery, The University of Texas, Southwestern Medical School, Dallas, Attending Orthopaedic Surgeon, Baylor University Hospital, Formerly Chief of Orthopaedic Surgery, Parkland Hospital and Instructor in Orthopaedic Surgery, Baylor University College of Medicine, Dallas, Texas.

Second Edition, Published by Charles C. Thomas, Springfield, Illinois, 1958. 197 pages, Illustrations. $6.50.

Reviewed by Terry Moore, Daytona Beach, Florida.

This much needed discussion of a very complex group of symptoms is the product of many years observation and research on some 2,500 cases, and the synthesis of a number of publications and instructional courses. As pointed out in a foreword by Dr. Steindler of the University of Iowa, she has not restricted her approach to a description of purely personal observation, but has included the reasonable deductions that any scientist would make as to what may be expected from excessive exterior forces applied to the anatomy. The book has much to offer to the Orthotist towards an understanding of the type, purpose and function of the appliances which are indicated in many of these conditions.

The Cervical Syndrome, as defined for the purposes of the book, is strictly limited to those symptoms and pains originating from irritation of nerve roots in the cervical region, and specifically excludes those that originate elsewhere in the body. Thus, a full understanding of cervical anatomy is essential. To this end, the discussions and photographs are so complete that the book may be used as a reference. Moreover, the mechanics of this most intricate part of the body, including points of maximum stress and strain and resulting nerve root irritation from mechanical disarrangement, are fully analysed.

While a large number of the causes of cervical nerve root irritation are covered, Dr. Jackson particularly directs her attention to whiplash injuries, since that type of injury is now so prevalent. She takes issue with the current superficial assumption that these result from hyperflexion followed by spontaneous extensor recoil. She points out that a high proportion of such injuries occur to passengers in a standing vehicle which is violently struck from the rear. This causes an immediate and violent hyperextension, followed by spontaneous hyperflexion recoil. The resulting trauma will vary accordingly, as must the diagnosis and treatment.

In diagnosis, the importance of history as well as examination is stressed, and to this end excellent specimen history and examination sheets are given. Full descriptions and percentages of occurrences are set forth of the diverse symptoms such as limitation of motion, tenderness, pain, muscular spasm, produced from pressure, palpitation or extension of compression. She describes several tests which she has developed such as pressure on the top of the head and lateral extension by opposing forces pain is explained, and case histories are given showing the necessity of such on the shoulder and head.

Treatment, of course, is extensively covered in all its phases, including traction, heat, diathermy, massage, local anesthetic, immobilization, and other procedures. This is of most interest to the Orthotist, and he should find it most helpful. As to immobilization, the author takes issue with the practice of maintaining extension or hyperextension of the neck, and states categorically that it is incorrect, emphasizing that a position which maintains the straight neck, with chin "tucked in" is a must.

The author avoids a dry recital of case histories, exhibits a studious and dedicated interest in her subject, an experienced and thoughtful exposition fully documented with extensive photographs, and a lively and attractive presentation which recommends itself to the reader.

MODERN PROSTHETICS: A REPORT ON THE FIRST INTERNATIONAL PROSTHETICS COURSE. Edited by A. Bennett Wilson, Jr. *Published by the International Society for the Welfare of Crippled (Order from the Society at 701 First Avenue, New York 17, N. Y., U.S.A., $1.50 per copy).*

Reviewed by LeRoy William Nattress, Jr., OALMA Headquarters.

The First International Prosthetics Course was held under the auspices of the World Health Organization and the Committee on Prostheses, Braces and Technical Aids of the International Society for the Welfare of Cripples in Copenhagen, Denmark, August 1-10, 1957. Over a hundred physicians, therapists, prosthetists and engineers representing 21 countries attended this course.

The United States was well represented on the instructional staff by the following individuals: Dr. Verne Inman, Dr. Henry Kessler, Dr. S. William Levy, Capt. Thomas Canty, Dr. Eugene Murphy, Col. M. J. Fletcher, Mr. A. Bennett Wilson, Mr. William Tosberg and Mr. Donald Wilson. The Second International Prosthetics Course will be held in July of this year.

The booklet itself begins with an outline of the course of instruction with pertinent reference material for each topic. The remainder of the booklet is devoted to general outlines of the lectures which could not be referenced or do not appear elsewhere in the literature. The booklet was prepared primarily for those persons attending the course to serve as a reference to their experience in Copenhagen. However, a great deal of good, general information of use to persons interested in prosthetics and orthotics is presented.

Some of the general topics presented are: Functional Bracing of Paralytics, Education of Prosthetists in Denmark, Prosthetics Services in Japan, Cerebral Palsy in Children, Management of the Knee Disarticulation, and Prosthetics in Geriatrics.

Of special note is the presentation by Dr. Murphy on the Principles in Prosthetic Management for Cases with Multiple Handicaps in which the numerous physical and mental problems appearing with amputation are discussed. Among these are: Paralysis of the muscles controlling the stump, fractures of the stump, paraplegia or hemiplegia, sensory disabilities, heart disease, dermatological conditions, intelligence and neuromuscular coordination.

TO THE LADIES

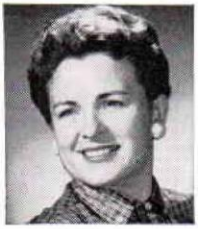
Tell Your Husband:

"Let's Go To The Assembly"

Mrs. Bobbye McGraw
President

Mrs. Margaret Peters
Vice President

Mrs. Gertrude Buschenfeldt
Second Vice President



Mrs. Pearl Leavy
Secretary

Mrs. Marie Storrs
Treasurer

Dear Reader:

The chances are that your husband is so busy, like all other OALMA members, that he hasn't had a chance to talk over our National Assembly at Dallas with you. Indeed his time may have been so much taken up with doctors and patients that he isn't fully aware of the wonderful program being planned at Dallas and Mexico City.

Because this is so often the case and because he'll have a better time at Dallas if you're with him I'm taking this column this month to tell you something about the professional features and programs at Assembly time—keeping our plans for the social activities for the ladies for a report in the September Journal.

And I hope that, after reading this column, you will take a minute or two to go over the program with your husband—remind him that he needs a change in activities, and that the National Assembly will give him relaxation, and inspiration.

If your husband is an orthotist, these are some of the highlights—Dr. Paul Williams of Dallas will head a session on "Back Bracing." This is the famous doctor after which the Williams Back Brace is named. And one of America's leading woman physicians, Dr. Ruth Jackson, will hold a session on "Neck Bracing." Dr. Jackson is head of the Jackson Clinic in Dallas and is a national authority. Her book, "The Cervical Syndrome," is now in its second edition. And those who are preparing for the Certification Examination will benefit from Johnny Bray's Seminar on "Anatomy for the Orthotist and Prosthetist."

And prosthetics has not been neglected. The Canadian Symes Prosthesis will be described by Colin McLaurin and Mr. Hampton, who first developed this in Canada. Key specialists from the Michigan Crippled Children's Commission team up with Col. M. J. Fletcher for a session on "Appliances For Very Young Children." Anthony Staros of the VA Prosthetics Center reports on new developments coming out of research, including hydraulics.

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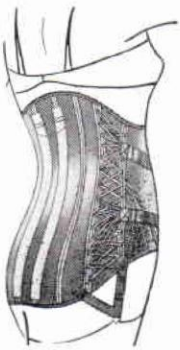

MODEL 423
Sacro-Lumbar Back Support for Women

SOUND BASIC DESIGN—In developing the corset type of support, Freeman has worked closely with the medical profession. The result of this work and cooperation is a sound basic design that can give the exact degree of support or immobilization desired and still retain comfort for the wearer whether he's sitting, standing or reclining.

COMPLETE LINE—When you handle Freeman surgical supports you have available the *right* model for every surgical garment application the doctor may prescribe. You can be sure that each is correctly designed for its job and *will be worn* because it will be comfortable. That's why you can fit and sell Freeman garments with confidence.

FREEMAN QUALITY FEATURES • *Self-smoothing, Non-Wrinkle Fly. Exclusive. Speeds putting on garment, assures extra comfort* • *Petal-Soft Interior Finish. Cushions stay, avoids irritation* • *Nylon Laces at points of greatest strain* • *Soft Plush Padding under hooks and eyes* • *Superb Needle Work* • *Correct Materials.*

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FUN AT ACAPULCO—Trying for distance off the jump at an Acapulco, Mexico ski club is Carlos Elias, one of the foremost exponents of this popular sport.

And both orthotists and prosthetists will be spending lots of time with the displays in the forty-two booths.

The Mexico City trip this year is an extra added dividend. We'll leave Dallas Thursday afternoon and be in Mexico City at one of its stunningly beautiful new hotels that evening. In the next two or three days there'll be morning sessions and visits to the rehabilitation centers there. The Ministry of Health will greet us. And there'll be many opportunities to see the beautiful sights of Mexico, with the side trip to Acapulco, whose beauty will take your breath away. Your husband deserves the pleasure and satisfaction which the Assembly will give him. Plan now to attend it with him.—Mrs. Bobbye McGraw, President, Ladies' Auxiliary.

Orthotist's Son to Graduate in Medicine

Joseph W. McKeever, Jr., son of Joseph E. McKeever of Muncie, Indiana, will graduate from Indiana University School of Medicine this June (he completed his academic work as of March 6). Mr. McKeever's son is a graduate of Ball State Teachers College, where he did his pre-medical work. He will interne at the Wayne County General Hospital in Michigan. Congratulations to father and son.

New Helps for your

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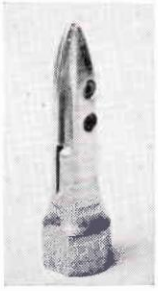

MIDGET CUTTER—No. 2100H

A new single blade cutter to help you pull small children's sockets—and to route out corners for all quadrilateral fittings. $25.00 including an extra blade.

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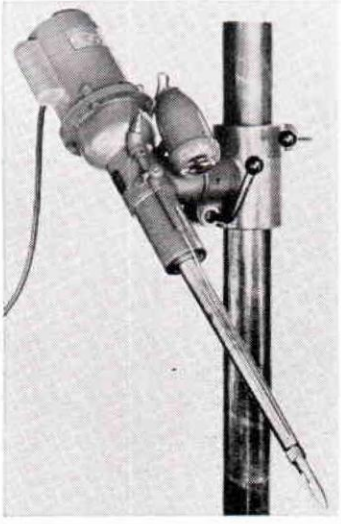
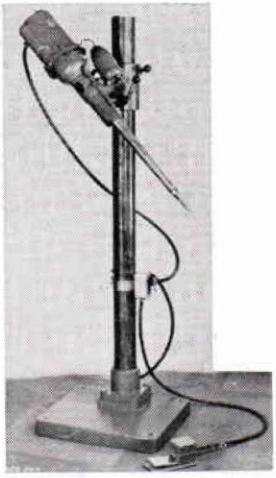


Another tool to help you get ultimate efficiency from your Trautman Carver. This is a blower attachment which gently blows sawdust and chips away from the cutting tool. This enables you to see at all times exactly where and how you're cutting. Comes complete with airhose fitting—can be plugged into any standard airline. Flow of air can be regulated. Attach in minutes with screwdriver only tool needed. Cost $10.50.



FOOT SWITCH

(For the Trautman

Carver 2100K)

We've had requests for a foot-operated switch, and this is the answer. It can be attached in a matter of minutes to any Trautman Carver. Designed so that if the operator wishes to use the hand switch instead of the foot pedal, all he has to do is remove the motor plug from the receptacle on the column of the Carver and then plug it directly into the power supply. Does not affect the Carver's normal operation. Cost $22.65.

TRAUTMAN SPECIALTIES, INC.

410 Portland Avenue, Minneapolis, Minnesota

MEET OUR NEW MEMBERS:

Mal J. Trosclair is Supervisor of the Orthopedic Brace Department of the University of Texas, Medical Branch, at Galveston. This is the newest Associate Member of OALMA.

Mal reports that he first became interested in orthopedics in 1941, when it was necessary for him to have his first set of bilateral long leg braces with pelvic band. As a brace wearer in the next five years he became even more interested in braces and the possibility of improvements in them. As a result, in 1956, he sold his own business and started from the bottom as an apprentice in the University of Texas Medical Brace Department. In 1958 he became Department Supervisor. His staff includes three men at present.

On the personal side, his favorite pastime is proving to individuals, such as prospective employers, that the use of crutches and braces need not be a handicap when the individual really applies himself. He has proved this personally by such acts as buying and driving a Class B outboard racing boat—this requires kneeling on both knees with long-leg braces in a cockpit, size 30" x 36" while hitting rough water at high speed—by riding a motorcycle—and his last and favorite undertaking, civil aviation. Last year Mal bought a light single engine airplane and has now met Civil Aeronautics requirements for a private pilot's license. He'll be using this plane to take in some of the future OALMA meetings. Besides his lovely wife, Mal has two children, Mal Jr., who is four years old and John Mark, who is three.

William L. Wright is head of Wright's Prosthetic Laboratory located at 811 West Platt Street, Tampa, Florida. The head of the firm has been active in the limb and brace for thirteen years, first becoming interested in work with the handicapped through the Veterans Administration (he was separated from the Service, wearing a leg brace). He began his apprentice training with E.H.R. of Detroit, later becoming manager of their Lansing Branch. After receiving Certification, he opened his own business, the Lansing Orthopedic Appliance Company, which later became a part of Wright and Filippis. This firm employed him as manager for three years. He then

came to Florida as manager of McCall-Rising, Inc. of Tampa. Mr. Wright and his wife, Gertrude, have two children, Billy, 8, and Geri, 10.

He is a member of the Curtis Hixon Laboratory, and is prosthetist on the clinic team; professional member of N.R.A., serves on clinic teams at Veterans Regional Office, Pass-A-Grille Beach, Fla., also the clinic team of Happiness House in Sarasota, Fla., the National Advisory Council for Certification in the Tampa and St. Petersburg area.

Also associated with him in Wright's Prosthetic Laboratory are William C. McCall, a graduate of the Upper Extremity School of New York University, who took his training in orthotics at Duke University, and James E. Thomas, Manager of a branch at St. Petersburg. This branch will have a complete new building in early August. At present it is located at 1311 Central Avenue.

The new firm is also enrolled under the OALMA Group Insurance Program. In a letter to OALMA headquarters Mr. Wright declared he was looking forward to becoming "a member in a great organization."

Walter H. Stauffer (right) checks a measurement in his facility, the Edmonton Artificial Limb Company, of Edmonton, Canada, with his foreman, Steve Hobal. (Edmonton News Photo)

CROSS COUNTRY REPORT

What's New in the Brace and Artificial Limb Field
Meetings - OALMA - Suppliers - Certifees

MRS. ALICE CROWELL TO HEAD TRUFORM SALES STAFF

Mrs. Alice Crowell is the new head of the field representative and sales staff of Truform Anatomical Supports. She succeeds Mr. Russell Johnson, who continues with Truform in an advisory capacity.

Truform Anatomical Supports is a division of Surgical Appliance Industries, Inc., with headquarters at 3960 Rosslyn Drive, Cincinnati, Ohio. The firm is an Associate Member of the Orthopedic Appliance & Limb Manufacturers Assn.

Mrs. Crowell is the daughter of Mr. and Mrs. Frank L. McGiffin of Decatur, Illinois. Her interest in surgical appliances and medicine began in her teens, when she was a staff employee of St. Marys and the Decatur-Macon County Hospitals.

Mrs. Crowell was employed as a surgical appliance technician by the late Tom Copeland when she first met Mr. Russell Johnson. After Mr. Copeland's death, Mr. Johnson induced her to join the Truform staff. Under his guidance she became a field representative, first travelling in the midwest and southern states and then in the northwestern states.

She was married on April 2, 1955, to Mr. C. "Ray" Crowell of Dallas, Texas, also a field representative. At that time they merged territories and travelled together as "Truform's Team" from the midwest to the Pacific Coast.

In assuming her new duties, Mrs. Crowell said that Truform would continue its policy, in effect for many years, of catering only to the requirements of the ethical surgical appliance dealer. She commented that she fully realized what a tremendous job Russ Johnson had done and added that with his good advice, the wonderful cooperation of Mr. I. M. Pease and the Truform staff, she hoped to live up to the standards he had set.

HONORED AT NASSAU LUNCHEON: Left to right, Arthur Finnieston, C.O., Sir George Roberts, Dr. Charles R. Burbacher, and Mr. Etienne Dupuch.

Dr. Charles R. Burbacher and Arthur Finnieston, C. O., both of Miami, were honored recently for their work with the crippled children of the Bahamas. Dr. Burbacher was named a member of the British Empire Order by Her Majesty Queen Elizabeth. Mr. Finnieston, who has been associated with Dr. Burbacher in the making of the braces, and fitting the artificial limbs, received a handsome gift from the Crippled Children's Committee. Dr. Burbacher and Mr. Finnieston were guests of honor at a luncheon given by the Acting Governor of the Bahamas.

We quote the following from an editorial in the *Nassau Daily Tribune*:

"Mr. Finnieston has been associated with Dr. Burbacher in this work from the outset. He has made all the braces and fitted all the shoes prescribed by the doctor for the children. And since he has been coming here he has made artificial limbs for many people in need of this service.

"This work has become so near to his heart that he performs many services in Miami for the Committee.

"When Cyril Tynes, a highly esteemed young man, was taken seriously ill and had to be flown to Miami by charter plane a few weeks ago, the secretary of the committee phoned Mr. Finnieston in Miami. Mr. Finnieston alerted the doctor, made hospital and ambulance arrangements, met the plane when it arrived in Miami, and stayed at the hospital until late that night when he got the doctor's report on the case and phoned the information back to Nassau, at his own expense, for the benefit of Mr. Tynes' family.

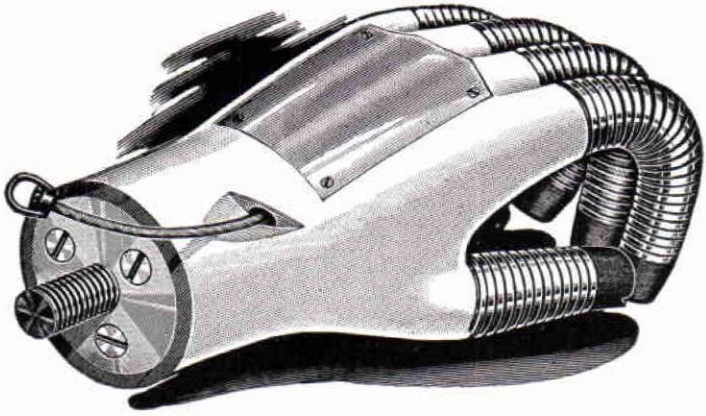
"Any delay in handling the Tynes case would have been fatal but now he will live and the use of his limbs may be restored. Earlier this week the secretary of the committee received a note from Mr. Tynes, written clearly in his own handwriting, expressing appreciation for the wonderful care he was receiving at the hospital.

" 'If he were the Duke of Windsor,' Mr. Finnieston reported soon after Mr. Tynes was admitted to the hospital, 'he could not receive better care and treatment.'

"These are acts of service to humanity that set men apart and create an Order of true Nobility that finds origin in the human heart.

"It is pleasing for The Tribune to extend congratulations and to share in the respect and affection that goes out to the doctor . . . and the bracemaker whose lives of service have been a benediction to the poor and afflicted."

SEE THE NEW LOCKGRIP HANDS



WITH improved finger lineup, enabling the thumb to grasp between 1st and 2nd fingers.

WITH naturally shaped and molded rubber finger tips.

WITH Finer gauged and stronger flat finger spring wire, adding to the jointed fingers flexibility.

NEW Realistic cosmetic gloves exceedingly lifelike in sizes 7½—8—8½.

A lighter, stronger and the most useful of all mechanical hands, in sizes from 6 to 10, all wrist styles.

ALSO THE LAMINATED WOOD HAND WITH FIBRE CORED FINGERS **PLYLITE**

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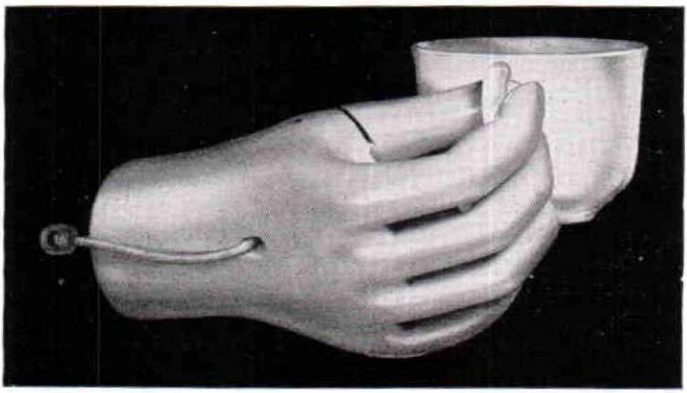

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WITH THESE HANDS

Evaluation and Review of a Film

Your editor has asked Karl J. Barghausen, C.O. and Miss Catherine Keane of the Nelson Orthopedic Co. to evaluate and review the 16mm film, "With These Hands," which is of special interest to Prosthetists, Orthotists, and others working in the field of amputee rehabilitation. Copies of this film may be obtained by writing to Mr. T. P. Hipkins, Executive Director, Home for Crippled Children, 1426 Denniston Ave., Pittsburgh 17, Pa.

WITH THESE HANDS—AN EVALUATION

By KARL J. BARGHAUSEN, C. O.

The film, *With These Hands*, was written, produced, directed, and is being distributed by competent authorities in our field and therefore will prove of special value to OALMA members and their staffs. Since the star of the film is a child—little Sylvia—I believe that anyone working directly with youthful amputees will want to see it.

Sylvia was born February 15, 1954 with the absence of both hands. In June of 1956, surgery removed two digits from her wrists. Three months later, she was fitted with plastic prostheses, her terminal devices being plastic mittens. In November 1956, the plastic mittens were exchanged for small Dorrance hooks. Continuing this step-by-step rehabilitation process, Sylvia's normal growth necessitated a new set of prostheses in May 1957. The following August, new cables had to be installed.

None of these steps in the rehabilitation process could have taken place without the close cooperation between the Home for Crippled Children in Pittsburgh and the Department of Health of the State of Pennsylvania with headquarters in Harrisburg. Within the Department of Health of this forward-looking State is a special section for crippled children, whose medical director is Dr. Paul Dodds.

The film does a fine job of setting forth the type of cooperation that is required between the various interested parties if the rehabilitation processes are to be successful. As a graduate of the Upper Extremity School at the University of California, I was particularly grateful to the producers of this film for having detailed the clinic approach so well, demonstrating the need for prosthesis-use training in the rehabilitation of little Sylvia.

Undoubtedly, this film is of value to our profession.

WITH THESE HANDS—A REVIEW

By CATHERINE KEANE, *Nelson Orthopedic Co.*

Mr. Ted Hipkins, executive administrator of the Home for Crippled Children in Pittsburgh, Pennsylvania, graciously arranged a special viewing of the film, *With These Hands*, for a committee representing the Orthopedic Appliances and Limb Manufacturers Association.

Produced by the Pennsylvania State Health Department at the Crippled Childrens Home in Pittsburgh, the film runs approximately 30 minutes. The story deals with the rehabilitation through prostheses of a little girl who was born with one hand off below the elbow. It is pitiful to see a baby of less than five frustrated and incorrigible because of the neglect of her little playmates and the curiosity and sympathy of adults.

The rehabilitation procedures are well done in the film. After being entered in the Home, Sylvia's case is evaluated. The physical and mental rehabilitation starts almost immediately and is carried on throughout her

stay at the home. She goes through the various phases of being fitted with a prosthesis until she has learned how to use it. The child returns home happy, well adjusted.

Special instructions are given to the parents, teachers, and others associated with her development. I was interested in the fact that the film points out that Sylvia is to be trained and corrected from that point on as any normal child would be.

But Sylvia isn't the only star of the film. Other cases at the Home with upper extremity involvement are covered, each one pointing out how versatile crippled children can become when they are rehabilitated through the use of effective prosthesis.

Narration and theme are excellent. The film is well edited. Although I found it interesting, I sincerely believe that its educational value has greater potential for the general public than for members of the Orthopedic and Prosthetic field. Films, such as *With These Hands*, should be shown before Parent-Teacher Associations, Church, and Civic clubs, in order to create a better understanding of the amputee and his rehabilitation processes, helping the handicapped to be more readily accepted in our everyday life.

TELLING THE DOCTOR—Demonstrations at medical meetings is an important responsibility of the certified facility. Here we see William B. Ferris, Jr., Manager of the Hanger facility at Raleigh, North Carolina, demonstrating an artificial limb to Dr. J. Sam Holbrook of Statesville, and Dr. R. B. Davis, Greensboro, North Carolina. Dr. Davis is Secretary-Treasurer of the Tri-State Medical Association and the scene was the convention of the Association at Winston-Salem, March 16-17. (Picture courtesy Winston-Salem Journal, Winton-Salem, N. C.)

Do you have this new Dorso-Lumbar Support in stock?

Here's the story on the new Truform contribution to correct therapy and patient comfort . . . as it's now being told to your physicians in medical and osteopathic Journals. Their prescriptions will come to you . . . be ready to serve their patients.

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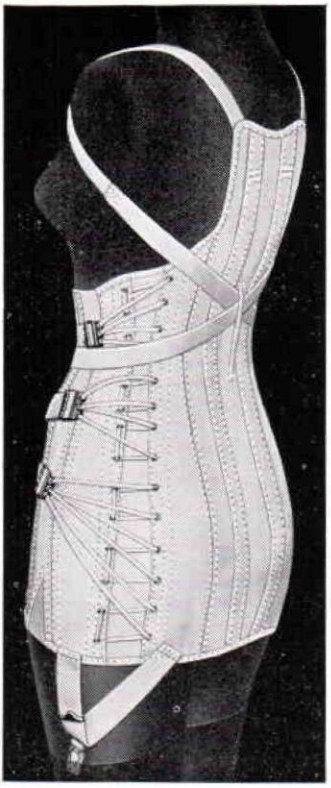
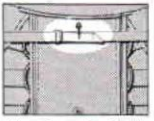


NEW DORSO-LUMBAR SUPPORT

Women's models 1173-HS full skirt (pictured above) and 1174-HS regular length. Men's model 417-HS regular length. Drawing shows single adjustment of shoulder straps in front, retained in "keeper"



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Springtime Is Meeting Time For The Regions

Comes the first touch of spring and OALMA's eleven Regions busy themselves with a series of meetings. They gather in cities throughout the United States to hear technical papers, to see scientific demonstrations and get news and roundtable discussion of knotty problems. And the field representatives of the manufacturers make most of these meetings. Here we show some moments of relaxation in the evening at various meetings.

Dr. Stewart at San Antonio — Here we see Dr. Stewart, Head of the VA's Prosthetic and Sensory Aids Service, with David Amato, Rehabilitation Counselor of the U. S. Embassy at Mexico City, Dr. Rodolfo Herrejon y Martinez and Louis Monfardini in a quiet moment.

Jerry Leavy, "Popular Man About Regions" for Dorrance-Hosmer.

"That's the Way it is, Ray" —James D. Snell of Shreveport and Ray Crowell of Truform Anatomical Supports, at the Meeting of Region IV.

REHABILITATION AIDES MEET WITH MOALMA LEADERS: Shown above are some key figures from the New York Division of Vocational Rehabilitation, who took part in OALMA's Seminar May 8 and 9—Front row: MOALMA President Milton Tenenbaum, Louis Salzman, Assistant Supervisor, New York City District DVR Office, Mrs. Adele Tenenbaum, William Spinelli, Supervisor of the Hempstead District Office and William Spiro, Program Chairman for MOALMA. Back row: Standing left to right: Elliot J. Netzer, Counselor, Milton Finkelman, Supervisor in the Compensation Unit, Israel E. Weissfeld and Dr. Harry Sanford, Counselors, and Harry Katz, Unit Supervisor, Amputee and Home Bound Unit (Mr. Katz will be remembered as one of the "resource persons" for the 1957 National Assembly).

MARY DORSCH HONORED: At the 1959 New York Conference Mrs. Mary Dorsch was presented an award of Merit by MOALMA for her services in the rehabilitation field. Shown above left to right are: OALMA Director Glenn Jackson, Mrs. Dorsch holding the award, MOALMA President Milton Tenenbaum and OALMA Past President John A. McCann.

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CERTIFICATION LEADERS: Three former officials in the American Board for Certification get together at the 1959 MOALMA Conference. Here we see left to right: Karl Buschenfeldt, now President of OALMA, Dr. T. Campbell Thompson and Daniel A. McKeever of Atlanta, Georgia. Mr. McKeever is the former President of the American Board for Certification. Dr. Thompson and Mr. Buschenfeldt served as Vice Presidents of the Certification Board.

12TH ANNUAL MEETING OALMA, REGION IV

The 12th Annual Meeting of Region IV, O.A.L.M.A. convened in Chattanooga, Tennessee, April 10th-12th, 1959, with 43 company registrations and 48 individuals, making a total of 91 registrants. The meeting opened with a cocktail party sponsored by S. H. Camp Co., Southern Prosthetic Supply, Fillauer Surgical Supply, Pope Brace Division and Truform Anatomical Supports.

At the Saturday morning breakfast attended by 75 members and their guests, Frank Harmon introduced the speakers from the Warm Springs Foundation. Dr. Ed Haak spoke about traditional bracing, giving the history of braces and showing the conventional type long-leg brace. Mr. Horace Maddox of the Warm Springs Foundation made some comments on the relationship between the doctor and the orthotist. Dr. Herring spoke on experimental braces, showing the McKibben Artificial Muscle, and urging the development of new braces.

Tony Staros of the VA in New York showed a film on "Procedures for Lamination of Wood Prostheses." He also showed several new items, such as Plastic Foam and different plastic laminates with special scents, for example pine. One of these has a bacteriostatic agent which checks fungus and bacterial growth. Robert Kay, Area Chief of the VA in the Southeastern Region, talked on the Checkout Form being used to evaluate every phase of Prosthetics—workmanship, delivery time, etc.

Glenn Jackson described his cross-country trek with Karl Buschenfeldt, gathering information and seeing what is going on behind the scenes in prosthetics and orthotics. He talked about the future and brought in a resource speaker to expand on each different concept. Seid Hendrix talked on the effect of rehabilitation and the program for new NRA legislation.

Colonel Fletcher showed the connection between research and development, mentioning APRL in different sizes, the new Elastic Plaster Bandage, and other items being tested now for future use. Dr. Sydney Fishman of NYU commented on the fact that educational programs are being pushed, and in all probability there will be a Prosthetic Degree Course this fall. In the future, there will be a form of college education especially for prosthetists. Leroy Nattress talked about the coming certification program and the examinations one must pass to become certified. There were lively discussions between the consultants and members of the audience.

On Saturday evening the program ended with a first-rate David Crockett cocktail party, buffet supper, and dance with music by Ed Shallett's orchestra.

For the Sunday session, new ideas and techniques were presented and discussed by Mr. Rickard, Ralph Snell, Carlton Fillauer, Mr. Berkeley, George Lambert, Horace Maddox and Howard Thranhardt.

Frank Harmon spoke on "Progression or Stagnation—Increase Tangibles and Intangibles." He included contacts with patients and doctors as well as shop inventory. Various manufacturers presented their latest developments of various items that can be utilized by shops for better and easier appliances relating to function and comfort for the patient.

Colonel Fletcher told us what is new at APRL, mentioning in particular more sizes now available in the APRL hand. Glenn Jackson and Carlton Fillauer reported on the committee on Advances of Prosthetics, its purpose in advancing and developing new ideas. Carlton Fillauer, Moody Smitherman, R. W. Goldsby and Tom Maples were elected as board members for the coming year. Louise Gillespie was re-elected as secretary and treasurer.

The 1960 Spring Meeting will be held in Pensacola, Florida.

NATIONAL HEALTH FORUM

Challenges of Occupational Health

"The Health of People Who Work" was the topic of the National Health Council when it met at Chicago, March 17-19. Representatives of more than sixty foundations, associations and government agencies which make up the National Health Council, met to study ways to improve the health of workers, the health of their dependents and the communities in which they live. Attendance was by invitation only and Les Smith, Assistant Director, represented OALMA and the Certification Board. Among the organizations represented at the National Health Council Meeting were the American Medical Association, the Arthritis and Rheumatism Foundation, the National Foundation, the National Rehabilitation Association, Society for Crippled Children, and Association for the Aid of Crippled Children.

Many of the largest corporations of America were represented by the physicians who head their company occupational health departments.

Next year's meeting of the Forum will discuss the problem "The Health of Older People." It will focus attention on the major aspects of aging, biological, psychological, cultural and economic. This is of importance to the limb and brace profession because of the growing tendency and acceptance of fitting appliances on older people.

The Jewett

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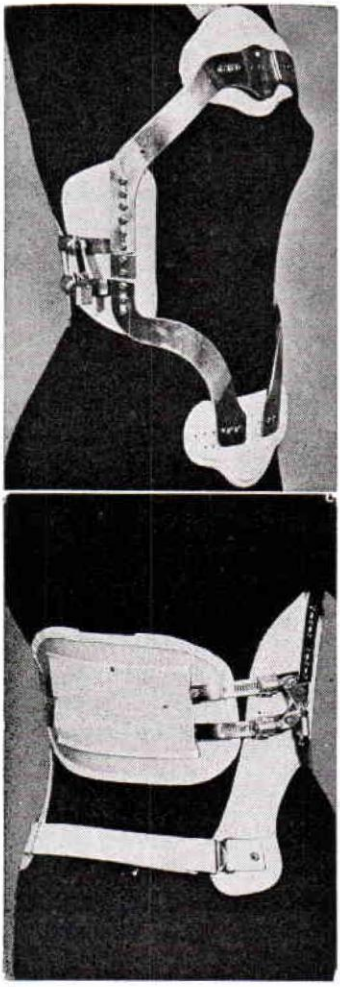

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REGION VII HOLDS TECHNICAL SESSION AT KANSAS CITY

George Robinson, noted authority on functional bracing, is shown with one of the patients used as demonstrators at the Kansas City Meeting. (Photos by Bob McCarty).

Some eighty-five members and friends of OALMA set a record for the attendance at the annual spring sessions of OALMA Region VII. This was the turnout for the meeting at the Hotel Continental in Kansas City, May 22-24.

From Friday noon until Sunday afternoon a series of meetings and informal conferences and facility visits kept the interest of those present at a high level. When adjournment time came Sunday afternoon the Committee, including Regional Director Ted Smith, Regional President Kenneth F. McConnell, Secretary Betty Hanicke and Ted Reynolds could look back with pride on these highlights:

A session on "Functional Arm Bracing" with George Robinson of Robin-Aids Company, demonstrating appliances on the Patient (Several of his patients were shown with George Robinson undergoing the fitting process over WDAF-TV television).

A skillful and effective demonstration of the plastic lamination procedure by Ivan Dillee of Prosthetics Education and Research, New York University (Mr. Dillee was on familiar ground in Kansas City, since he received his original training with the W. E. Isle organization).

"Servicing Hydra-Cadence," a demonstration with visual aids by Donald F. Colwell of Glendale, California.

Therapists, physicians and other related professions were in attendance at the meeting and heard a special program in which Jerry Leavy once more proved himself to be a master demonstrator and explainer of upper extremity prostheses. Erich and Betty Hanicke presented cases of bilateral, congenital AK prostheses. Visiting prosthetists and orthotists brought good luck to the Kansas City Athletics—seventy-seven of them turned out for an evening which saw the Athletics defeat Chicago 16 to nothing.

In the concluding business session, Lester Smith, Assistant Director of OALMA, spoke on "What's Ahead As Washington Sees It" (he went back to Civil War days to see what was ahead!) Colorado was selected as the host state for next year's meeting, with George Thornton of Denver serving as Regional President, Paul Mers, Vice President and Mrs. Sally Mers of Cheyenne, Wyoming, as Treasurer. Mrs. Betty Hanicke of Kansas City was reelected Secretary of the Region.

SUCCESS OF REGION VI SETS NATIONAL TREND

The unusual success of Region VI's Meeting may well have set a national trend. This, it seems likely will influence other Regions and so it seems desirable to report in some detail *just what did happen* at Cerami's Island View Motel on Brown Lake in Wisconsin June 5-7!

The physical surroundings were an important factor. The lovely Wisconsin countryside—the attractive motel for the exclusive use of members and the absence of outside distractions all combined to make this an ideal setting for a fine professional program. The total attendance of ninety-one comes close to setting a national record.

Program highlights included these features:

For the first time an OALMA Meeting saw an actual demonstration on the patient of the McKibben Artificial Muscle. Dr. Edwin C. Welsh, physician in charge of the patient, was assisted in his presentation by Kenneth W. Lauterwasser, R.P.T., the physical therapist. The comments of the patient on his experiences with this Muscle were of unique value.

Dr. Robert E. Stewart, Director of the VA's Prosthetic and Sensory Aids Service joined with Adrian E. Towne, in a panel discussion on "Prosthetic and Orthotic Procurement" (Mr. Towne is Supervisor of the Wisconsin State Rehabilitation Medical Services, and will be remembered as a program participant in the 1958 National Assembly). Robert F. Voss and Edward Tomashewski, VA Prosthetic Representatives, joined the panel with Les Smith, Assistant Director, serving as moderator.

Due to the sudden illness of Lorrin Madsen, Vice President Paul Leimkuehler took over the discussion of "The Otto Bock System of Fitting and Alignment of the Lower Extremity Prosthesis."

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There is a little of the "Camera bug" in every orthotist and prosthetist. This was evident in the close attention given to Erich Hanicke as he reviewed thirty years' experience in the use of the camera and its value to our profession.

Another *first* for this meeting was the announcement of the schedule of courses to be given by Northwestern University Prosthetic Division this year. Blair Hanger, C.P., who is the new instructor in prosthetics, was present with Dr. J. Warren Perry, Prosthetics Educational Director. Blair, who was formerly manager of the J. E. Hanger facility in New York City, has been on leave of absence for the past year. His return to our field was warmly welcomed by the members.

Anthony Staros and Henry F. Gardner from the VA Prosthetics Center, demonstrated the "Polyester Laminates in Prosthetics and Orthotics." Mr. Gardner was on his way to the Below-Knee pilot course at the University of California. A discussion of the "Hydraulic Leg" including a live demonstration of the Hydra-Cadence Unit, was expertly handled by Donald F. Colwell of Glendale, California. Jerry Leavy of Dorrance-Hosmer and Colonel Maurice J. Fletcher, Director of the APRL teamed up to report on "Prosthetic and Orthotic Arming of the Upper Extremity."

National officers of OALMA and visitors from other Regions were on hand. For National President Karl Buschenfeldt, it was his eighth Regional Meeting. Vice Presidents Paul Leimkuehler of Cleveland and Ralph Storrs of Kankakee, Illinois, were introduced, as was Certification Board Member Howard Thranhardt of Atlanta, Georgia and Ted Smith, visiting Regional Director from Kansas City, and OALMA Past President McCarthy Hanger, Jr. Les Smith spoke on "Growing Pains and OALMA's progress."

The Wisconsin weather was perfect. An American *luau* on the terrace overlooking the lake proved that OALMA members are flexible enough to enjoy Hawaiian food while lying down! Sunday afternoon came all too soon and it was with real regret that members said goodbye to the host committee.

REVIEW

PEDIATRIC NEUROLOGY

By Stanley S. Lamm, M.D., Clinical Professor of Pediatircs, State University of New York. Published by Lansberger Medical Books, Inc., 51 East 42nd St., New York, New York, $12.90. 494 pages — 495 pages illustrated.

This well-prepared and excellently printed book will be good reading for the orthotist who wishes to know more about the background of the cases he is bracing. Of special interest are the chapters on Cerebral Palsy and Diseases of Muscles.

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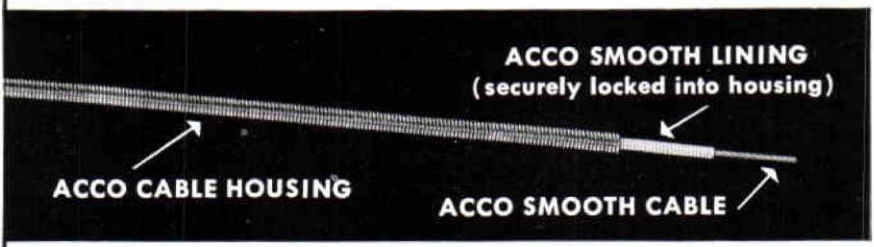

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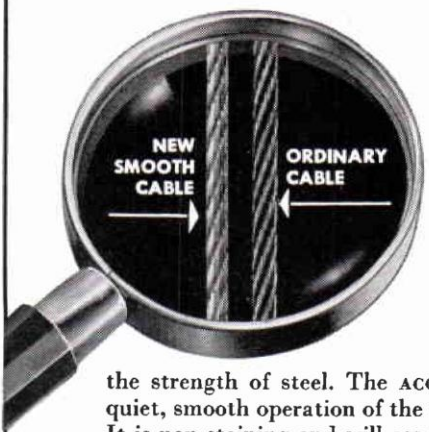

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In Memoriam

As the Journal goes to press we learn with regret of the death of *Charles Wright*, C. P. & O., June 7. Mr. Wright was senior partner in the firm of Wright and Filippis, Certified Facility and OALMA member at Detroit. He made his home at Waterford, Michigan. Mr. Wright was formerly Regional Director of OALMA Region V.

Mrs. H. Stuart Barker, Jr. of Norwell, Massachusetts, wife of Stu Barker, C.P., died recently after a long illness. Mr. Barker is the assistant to Joseph Aveni at the Liberty Mutual Rehabilitation Center in Boston, and is an active member of the OALMA New England Regional Council.

Andrew J. Pope, President of the National Artificial Limb and Brace Company of Pittsburgh, died March 16, 1959. Mr. Pope, one of the best known prosthetists in Pennsylvania, was active in the Pennsylvania Orthopedic and Prosthetic Society and served as a member of its Executive Board. He is survived by his wife, Mrs. Elizabeth Pope, two daughters, Mrs. Joel Kalas and Mrs. Louise Stoker, and a son, Dr. Leo J. Pope of Pittsburgh.

Mrs. John A. McCann died at Burlington, New Jersey, June 1, 1959. Mrs. McCann, the wife of the OALMA Past President, was a member of the OALMA Ladies' Auxiliary. She had attended many Assemblies and had a wide circle of friends in prosthetic circles throughout the United States. Funeral services were held June 4, at Burlington, New Jersey. President Karl Buschenfeldt and Executive Director Glenn Jackson represented OALMA.

Mrs. Nellie Warnick, beloved wife of E. A. Warnick of Wilkes-Barre, Pennsylvania, died May 15. Mrs. Warnick was a member and former President of the Ladies' Auxiliary of OALMA.

Louis H. Barghausen, pioneer prosthetist of Pittsburgh, died May 12. He is the father of Herman, John and Karl Barghausen, of Pittsburgh, and of L. B. Barghausen of Columbus, Ohio.

BRIEF NOTICE:

The following publications are brought to the attention of readers of the *Journal.* They may be ordered from the publisher indicated:

DIRECTORY OF CATHOLIC FACILITIES FOR EXCEPTIONAL CHILDREN IN THE UNITED STATES, third edition.

Published by the National Catholic Educational Assn., 1785 Massachusetts Ave., N.W., Washington 6, D. C. $2.75.

This 248-page Directory will be useful to anyone who is attempting to locate an institution or school for handicapped children. The section on Orthopedic Facilities, pages 22-31, is most useful, but there are also special listings under such headings as "Spina Bifida," "Rheumatic Fever," "Muscular Dystrophy," etc.

"A Concise Textbook of Anatomy and Physiology" By Joyce W. Rowe and Victor H. Wheble. This well-illustrated book of 684 pages was prepared by the authors, who are English, for orthopedic nurses. It is published in this country by the Williams & Wilkins Co. of Baltimore, which is noted for the high quality of the medical books it publishes. The price is $8.00.

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