MARCH, 1956

The journal of the Limb and Brace profession

Orthopedic and Prosthetic Appliance Journal

Rehabilitation Centers

Hip Disarticulation

Conditioned Response in Bracing

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

DATES TO REMEMBER — 1956

What • When • Where

APRIL

2 - 13	NEW YORK UNIVERSITY — Above-Knee Prosthetic Course, Section B	*New York City*
14	REGION VII—OALMA (Colorado, Iowa, Kansas, Minnesota, Nebraska, North Dakota, South Dakota, Western Missouri, Wyoming) —Meeting	*Omaha, Nebr. Fontenelle Hotel*
21 - 22	REGION V—OALMA (Ohio, Michigan, West Virginia)—Meeting	*Columbus, Ohio Deshler-Hilton Hotel*
27 - 28	MOALMA & REGION II—OALMA—Seminar and Technical Assembly	*New York City Biltmore Hotel*

JUNE

19	Applications to take the Certification Examinations given in October must be on file in the Washington, D. C. Certification Office by this date.	
27 - 29	AMERICAN SURGICAL TRADE ASSOCIATION—Annual Convention	*Chicago, Ill. Edgewater Beach Hotel*

OCTOBER

19 - 20	CERTIFICATION EXAMINATION FOR ORTHOTISTS AND PROSTHETISTS	*San Francisco, Cal.*
20 - 23	NATIONAL ASSEMBLY OF THE LIMB AND BRACE PROFESSION—OALMA and Certification Meetings	*San Francisco, Cal. Sheraton-Palace Hotel*

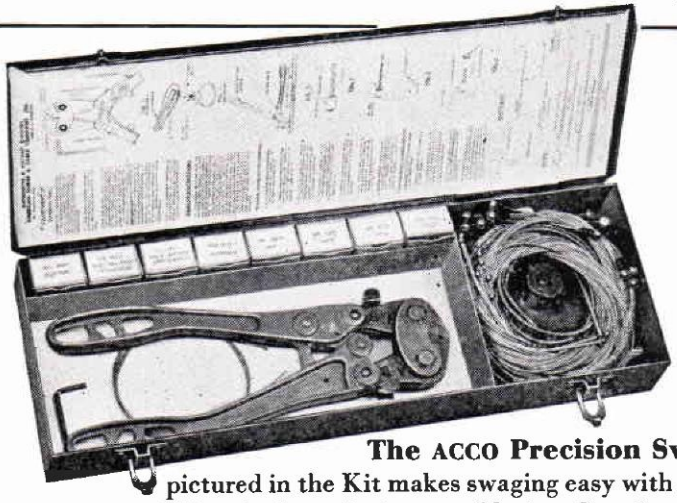
1957

JULY

22 - 27	INTERNATIONAL SOCIETY FOR THE WELFARE OF CRIPPLES—Seventh World Congress	*London, England*

ACCO TRU-LOC Prosthetics Kit

Makes Swaging Easy... Saves Time... Eliminates Soldering... Permits Re-Use of most ACCO Tru-Loc Terminals and Fittings without the Fuss and Muss of Unsoldering!



The ACCO Precision Swaging Tool pictured in the Kit makes swaging easy with ACCO Tru-Loc Fittings and Terminals... eliminates soldering. Swaging is unquestionably best... provides 100 per cent bond between cable and terminals... and there is no acid to corrode the cable... no heat to weaken it.

This Kit contains a full range of the Finest Stainless Steel ACCO Tru-Loc Terminals, Fittings, Assemblies, Cable and Housings. Everything has been carefully designed to permit maximum re-use of Fittings *...without the fuss and muss of unsoldering.*

All of the parts, and the Precision Swaging Tool supplied in this ACCO Tru-Loc Prosthetic Kit, have been tested, approved *and adopted* by the Army Prosthetic Research Laboratory at Walter Reed Hospital and by Government Hospitals and Centers throughout the U. S. For further details see the following pages.

Portable Swaging Tool

The suction cup mounting pictured here makes ACCO's Precision Swaging Tool portable. It can be used on any flat surface.

for complete information write to—

ACCO

TRADE MARK

Automotive and Aircraft Division
AMERICAN CHAIN & CABLE

601 Stephenson Bldg., Detroit 2
2216 South Garfield Ave., Los Angeles 22 • Bridgeport 2, Conn.

Shown Here are the Stainless Steel Terminals, Fittings, Assemblies, Cable and Housings furnished to Limb Shop Operators in

ACCO's TRU-LOC Prosthetics Kit

• Quantities of parts or assemblies furnished with each kit are shown with each set of drawings. And, of course, each kit also contains the ACCO Precision Swaging Tool and Suction Cup Mounting shown in the pictures on the preceding page.

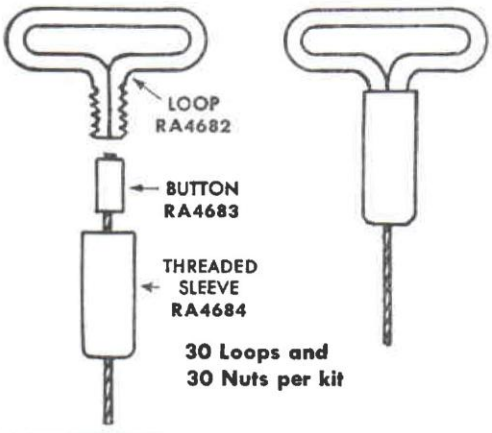
ACCO BUTTON

RA4683

100 Buttons per kit

To assemble—
Insert Cable and Swage

ACCO STRAP "T" HANGER



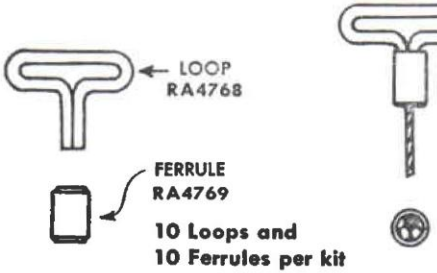
30 Loops and
30 Nuts per kit

All drawings approximately actual size

To assemble—
Thread Cable thru Nut—
Swage Button to Cable—
Screw Loop into Nut

***NOTE** • Loop and Nut can be re-used*
No unsoldering involved

ACCO ELBOW "T" HANGER



10 Loops and
10 Ferrules per kit

To assemble—
Insert Cable and Loop
into Ferrule—then Swage

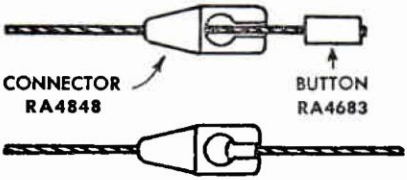
ACCO BALL-AND-CABLE ASSEMBLY

SA-6007-A64

15 assemblies 64″ long per kit

Stainless Steel Balls are on each end of these 64″ assemblies. Cut in half, each of these 64″ assemblies makes two full length 32″ cable assemblies. The Balls fit ACCO Connectors and other devices. Cut ends can be connected to ACCO Strap, Connector or similar devices.

ACCO CONNECTOR

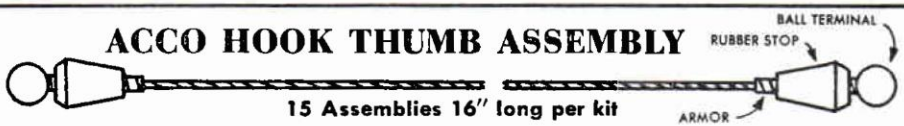


65 Connectors per kit

Ball Terminal drops easily into Connector. This Button and Ball assembly is ideal for quick disconnects on Hook and Hand exchanges.

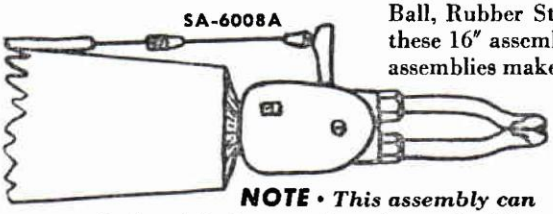
***NOTE** • Connector can be re-used There is no unsoldering*

ACCO HOOK THUMB ASSEMBLY



15 Assemblies 16″ long per kit

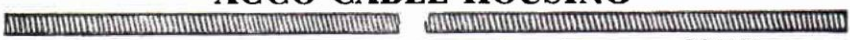
SA-6008A



Ball, Rubber Stop and Armor are on each end of these 16″ assemblies. Cut in half, each of these 16″ assemblies makes two Thumb Assembly units. Ball end is designed to fit thumb of a hook. Rubber stop holds Ball in position. Armor prevents Cable wear and reduces Cable fatigue.

***NOTE** • This assembly can be furnished to any length required for other types of installations*

ACCO CABLE HOUSING



5 lengths of 10 feet each per kit **RA4806**

Stainless Steel—Designed for use with Standard Retainers

SPECIAL **ACCO Lubricating Stick . . . will not soil clothing . . . lubricates Cable sliding through Housings . . . eliminates grunts and operating noises . . . insures smooth operation**

for complete information on ACCO TRU-LOC Prosthetic Kit and equipment, write to

Automotive and Aircraft Division
AMERICAN CHAIN & CABLE

601 Stephenson Bldg., Detroit 2
2216 South Garfield Ave., Los Angeles 22 • Bridgeport 2, Conn.

Orthopedic and Prosthetic Appliance Journal

(Title registered U. S. Patent Office)

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LESTER A. SMITH
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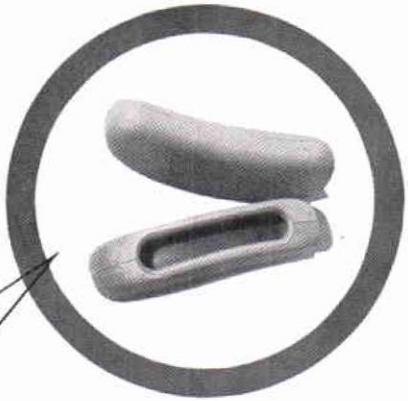
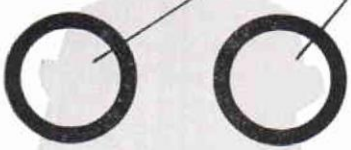
CONTENTS

DEPARTMENTS

Completely New!
Completely Different
Royal
Crutch-Eze Cushions





Start giving comfort where ordinary cushions stop

The premium quality crutch cushion for the large ready made market which demands "nothing but the best."

Royal Crutch-Eze Cushions provide maximum under arm comfort and wear under continual hard use. Ideal for hospital and institutional equipment, rental, permanent and temporary crutch users.

Extra-thick, scientifically proportioned and full-molded Neoprene sponge gives positive resistance to oxidation, perspiration, body oil and abrasion . . . halts end checks and splits. Assures pillow-soft armrest comfort . . . absorbs crutch shock . . . reduces under arm pressure and prevents crutch paralysis.

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A Report from The President of OALMA

The President of the American Board for Certification has made a most worthy explanation of certain questions that have arisen in regard to the need for certification of the brace and limb firms and individuals in those firms.

Another question frequently asked is "How does it profit me to belong to an organization (OALMA) which appears to be run by and for the benefit of large firms?"

My first reaction is to make an emphatic denial that the OALMA is run by and for the benefit of the larger firms, and proclaim that by far the greatest benefit accrues to the smaller individually owned firms, and every effort is being made by our membership committee to bring into the OALMA the smaller shops throughout the country. We are of the definite opinion that through unity there is strength and that only by the combined efforts of large and small member firms can we attain the maximum benefit that can be derived by our organization.

Minimum membership dues of $50.00 per year provides the same literature, information, and assistance with our basic problems as does the $350 per year maximum dues paid by the larger firms, and every member, regardless of how small, has a vote in the administration of OALMA that is just as powerful as the vote of the largest firm represented. No organization could possibly be more democratic.

The officers of the OALMA are elected by popular vote. They and their appointed committees serve without remuneration for the period of their tenure of office and appointment giving freely of their valuable time and effort for the avowed purpose of making the organization stronger and more valuable to the members. Regional Directors are elected by secret ballot, one vote for each firm, making it impossible to rig elections in favor of the larger firms.

The Executive Director, his assistant, and the entire national office staff are devoting their efforts collectively to serve the entire membership to the best of their abilities, and it is not difficult to look back a few years and note the progress that has been made.

Perhaps the greatest single achievement of OALMA was the fostering of the certification movement. The American Board for Certification of the Prosthetic and Orthopedic Appliance Industry has done more to elevate the

standards of Orthotists, Prosthetists, and facilities throughout the nation than any other group of events in our history.

The original artisans of our orthopedic and prosthetic shops were usually men of limited education. Methods, processes, and procedures were closely guarded secrets that were not to be divulged. Consequently an air of suspicion surrounded any attempt to promote cordial relationship among operators of hostile establishments.

Fortunately, however, with the growth of our trade association (OALMA), we find a reversal of the aforementioned trend, and today every effort is being made not only to acquire greater knowledge and skills, but to distribute that information regarding materials, design, and technique in a manner that will contribute to more effective braces and prostheses for everyone concerned.

Sincerely,

W. FRANK HARMON
President

VA Creates New Prosthetics Center

The Veterans Administration has reorganized its offices in New York City to create a new VA Prosthetics Center, according to an announcement received from Dr. William S. Middleton, Chief Medical Director.

The new Center—the only one of its kind in the country—is located at 252 Seventh Avenue in the same building with the Veterans Administration Regional Office and the Museum on Prosthetics and Sensory Appliances.

Anthony Staros has been named Acting Chief of the Center. Mr. Staros will be remembered as one of the participants in the OALMA Assembly Program in Atlantic City in 1953. He reported then on the time and cost studies in the manufacture of leg braces, describing the remarkably detailed studies made in the Prosthetic Testing and Development Laboratory under his supervision.

The new Center, to be supervised by Mr. Staros, is made up of three important units:

a. *The Orthopedic Shop,* formerly a part of the New York Regional Office. This Shop manufactures and fits artificial arms, legs and braces for problem cases and other referred patients.

b. *The Orthopedic Shoe Center,* which has been directly supervised from Washington. The Shoe Center distributes orthopedic shoes to eligible veterans throughout the United States.

c. *The Prosthetic Testing and Development Laboratory* which has been operated in New York City under jurisdiction of VA's Prosthetic and Sensory Aids Service. This laboratory, which has served as a testing laboratory for prosthetic developments prior to approval by the VA, will consolidate its personnel, testing equipment and machine shop into the new Prosthetic Center at a considerable saving to the Government.

The reorganization was put into effect in order to make for improved administrative efficiency and better service to veterans.

Herbert Hart Named Program Chairman for 1956 National Assembly

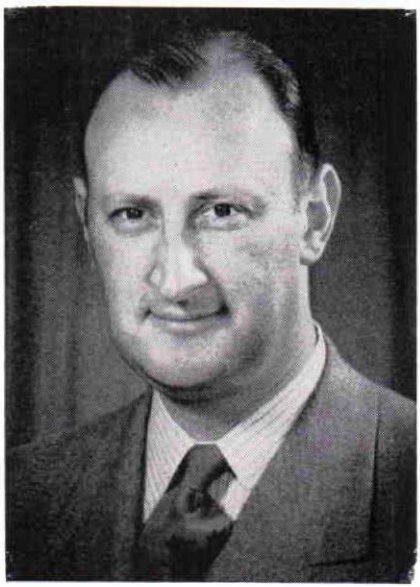
Invites Suggestions from all Certified Personnel

Plans for the biggest Assembly in OALMA's history are rapidly taking shape according to an announcement from Herbert Hart of Oakland, California, who has been named Program Chairman.

The large turnout expected for OALMA's first West Coast convention since 1951 has caused a shift of the convention from Mark Hopkins to the larger Sheraton-Palace Hotel in San Francisco. The new dates for the meeting are as follows: October 19 and 20, Certification Examination and preliminary registration; October 21, 22, 23, our Assembly meeting days. The Assembly adjourns at noon October 24.

Chairman Hart said that the number of seminars and instructional courses will be increased as a result of the popular demand for these study courses. The list of subjects to be treated at refresher sessions include functional arm bracing, a review of harnessing, design and balance in brace construction, anatomy, cervical braces, and "fitting the child from one to ten."

The scientific and technical exhibits at the Assembly will be under the supervision of Chairman Lloyd Brown of Dorrance-Hosmer Company, San Jose, California. Mr. Brown has selected the following committee to assist him: William Hitchcock, Fred Eschen, Basil Peters, Richard Locke, Vernon Murka, Stanley Hedges, Ivan Dillee, F. L. Lake, F. A. Ritterrath, William E. Brownfield. The *Concert Room* of the Sheraton-Palace Hotel has been reserved for exhibits. This large room adjoins the *Rose Room* where the OALMA meeting will take place.



Herbert Hart, C. P. & O. to plan Scientific Assembly.

In a special report to the *Journal*, Chairman Hart urged all certified orthotists and prosthetists to send in to him their suggestions for the program. He said many had already told him of plans to combine the Assembly with their annual vacation.

A special welcome awaits the wives, according to Mr. Hart. Mrs. Lloyd Brown and Mrs. Matt. Laurence are in charge of the social program.

"It's a Date at The Golden Gate"

San Francisco To Be Host At 1956 Assembly

The Golden City Welcomes OALMA

By C. O. ANDERSON

President, Prosthetic Services of San Francisco

SAN FRANCISCO, a world in miniature, awaits you. Whoever you are, wherever you are, there are exciting things for you to see and do in this great Cosmopolis by the Sea.

Fortunate in location, blessed in climate and favored with unique topography, San Francisco is truly a storybook city. To this spot by the Golden Gate, people from every nation in the world have immigrated—from France and Italy, from China and Japan, From Mexico and Spain. And in appreciation of what they found, that which was good in their native land, they have transplanted, to live in wonderful tolerance with their neighbor.

A year ago, my friend Leo Waller, writing in this *Journal* about what was in store for you in New Orleans, mentioned some of the famed eating places of that great city. In San Francisco, you may truly "eat around the world." Chinese houses where course after course of exotic and tasty foods are set before you; Japanese, where you leave your shoes outside and sit cross-legged on the floor; East Indian with their curry dishes; the Armenians with whom cooking is an art; the French whom ditto; Polynesian; Basque; Mexican; Latin American; Swedish; Swiss, German Ratskellers, the tea rooms of the British; Kosher, Hungarians; the fish grottoes and the wonderful, wonderful Italians—all of these can add to the adventure and the enjoyment of your trip to San Francisco.

Here are cracked crab, rex sole, sanddabs, *chioppino, gai chow fon, tempura, shish kebab, smorgasbord, cannoli, crepes suzzette, zambaglione*—joys cooked in all languages. Here is what inspired Caruso of the golden voice and lusty appetite to say "There is a diabolical mystery to your San Francisco. Why isn't everyone fat?"

Maybe the answer to that one is that San Francisco is also a great walking town. Compactly laid out with an exhilirating climate and breathtaking vistas, it just cries for personal and physical exploration. Bring your walking shoes. Within a four-block radius of the Sheraton-Palace (where our meeting is to be held) are San Francisco's world-famed stores, the start of Chinatown, the financial district and the ridiculously efficient little turntable which starts the city's ridiculously efficient little cable cars up one of its most famed rides.

We mention this latter because it is a "must" for seeing San Francisco. Only, don't make it during the rush hours for, while the largest of these little critters will seat thirty people, the pay-load sometimes rivals that of the Queen Mary. The trip ends at Fisherman's Wharf, which is a little bit of old Naples transplanted to our shores. The fishing fleet, boiling-hot crab caldrons and all the attendant atmosphere may be enjoyed with some of the seafood dishes mentioned above at any one of many excellent restaurants. Close by here, too, is where the Bay Tour boats begin and where deep-sea fishing is arranged.

Now, in between the turntable and the Wharf is some of the most magnificent San Francisciana of them all; past the St. Francis Hotel and Union

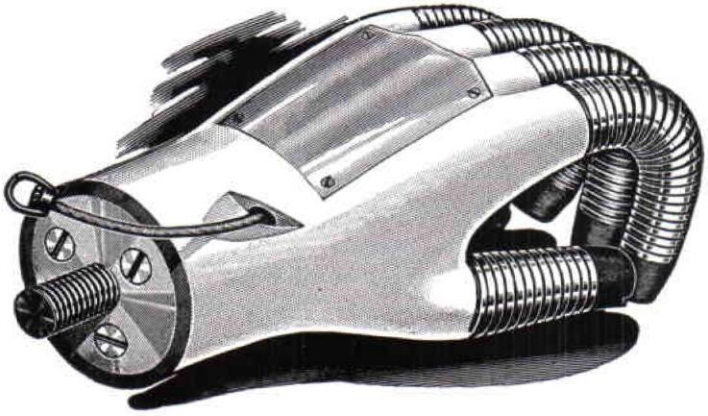
San Francisco with Beauty and Charm Presides at the Golden Gate! (picture courtesy Californians, Inc.)

Square Park (where was built the world's first underground garage) and then up Nob Hill, down Nob Hill (look out for the curve!) up Russian Hill and down Russian Hill to the Bay. These are the startling vistas mentioned earlier. On Nob Hill, go still higher to the Sky Room above the city in the storied "Top of the Mark." Pick a clear evening for this and you will go home with a magical memory that will stay with you forever.

There are dozens of other unique experiences for you, too; the ferryboat ride to Oakland and back, the same trip over the Bay Bridge, the Golden Gate Bridge trip to Muir Woods (just one-half hour from the city) to see some of the magnificent redwoods, the Earth's oldest and largest inhabitants; to prowl the waterfront in the footsteps of Jack London, Robert Louis Stevenson, Mark Twain . . . Look down on it from Telegraph Hill where you can see also the Bay, its Alcatraz and Treasure Islands, the North and East shore beyond, with hills dominating the horizon and culminating in two 4,000-foot mountain peaks.

A morning should definitely be allotted to that portion of the city bordering on the Pacific Ocean—The Cliff House with its Seal Rocks (watch the sea-lions ham it up), Sutro Gardens and Sutro Baths Museum, Playland-at-the-Beach, the Zoological Gardens with its playland for the kids, which has the most wonderful miniature railroad (the engineer's name is Casey Jones, natch) the giant saltwater swimming pool alongside, etc.

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.

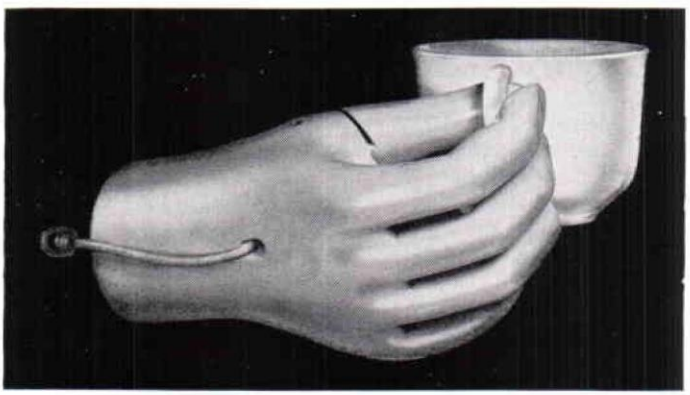
WITH Finer gauged and stronger flat finger spring wire, adding to the jointed fingers flexibility.

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**

LOCKING



SNAP THUMB

D. B. BECKER CO.

152 WEST STEVENS STREET **ST. PAUL, MINNESOTA**

And the rest of that day might very well be spent in nearby Golden Gate Park (five miles long) with its Museums, Botanical Gardens, Planetarium, Aquarium, Japanese Tea Gardens, Lakes and many other features. Flowering eucalyptus and chrysanthemums will be in bloom in October. Somehow, too, I think we should mention Aquatic Park, Yacht Harbor, the Presidio, the Ferry Building, Mission Dolores, the Opera House and Civic Center, Stern Grove and Lincoln Park. In its own way, each one of these is unique and a source of many rewarding hours.

Brother Waller, in regaling us on the cultural aspects of New Orleans, mentioned Basin Street, the home of jazz. Had he investigated further, he would have undoubtedly found that a number of the best "combos" had changed their habitat to San Francisco to further enrich the entertainment delights of this fortunate city. They exist side by jowl with splendid new gay clubs, with good food, music, floor shows; of various nationalities and various types of bands. For instance, one club features four or five fine voices who sing operatic arias and the crowd joins in. At another, you can see a line of Chinese chorus beauties, or dine and dance in an authentic Mexican cantina. San Francisco hostelries have been called almost a way of life in themselves.

"HI-LIGHTS"—THE '56 ASSEMBLY

1. **WHAT?—OALMA and ABC Hold National Assembly of the Limb and Brace Profession. WHEN?—October 19-23. WHERE?—San Francisco, California at the Sheraton-Palace Hotel.**
2. **EXHIBITS—Technical, Scientific and Supply. Write OALMA Headquarters, 411 Associations Bldg., Washington, D. C., for application blanks, booth charts and charges, etc.**
3. **CERTIFICATION—Written and oral examinations October 19 and 20 at San Francisco. Apply in writing before June 19.**
4. **REGISTRATION—Program and Advance Registration Blanks coming soon. Watch for them! Plan your 1956 vacation to include the San Francisco Assembly.**

For the theatre-goer, San Francisco is always a delight. Three legitimate theatres offer the dramas and musicals that people are talking about almost year-round. By coming early you can get in part of the Fall Season of the San Francisco Opera Company which goes on tour after October 18th.

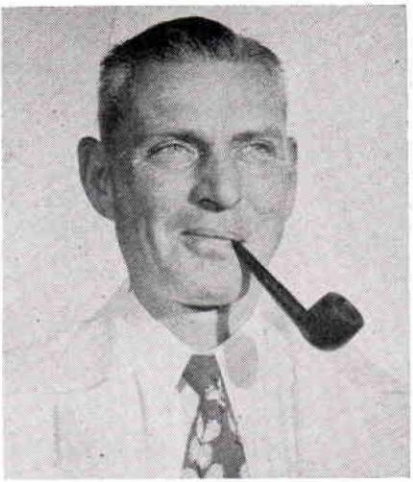
For day-time spectacles, the horses will be running at Bay Meadows; the 49'ers will be having a scheduled exhibition football game. The Bing Crosby Tournament will run at Pebble Beach (100 miles distant) October 19 to 21.

What sort of weather will you be having for all this? Of San Francisco they say "If you don't like the weather, wait five minutes or go five miles—it'll change." Our gusty, lusty climate is the weatherman's despair, the workingman's delight, the drinking man's excuse. It can cloud up like a Beethoven symphony, and then the sun will suddenly break through without ever getting to the storm scene.

For some inscrutable reason, the sun shines more in October than in June, July or August. In fact, the sun will shine during 70 out of every possible 100 hours during October. Rain is but a remote possibility for that time of year but the evenings will be cool.

For men, it is advisable to bring a topcoat. A coat is advisable for women with two or three-piece suits, blouses, sweaters, etc. Furs are worn the year around and light wool dresses, too.

Yes, you'll love San Francisco. Come early and stay as long as you may.



A Message from The President of the Certification Board

The concern of the ABC in education has previously been remarked. You will be interested to learn that the most recent sequence in the expanding educational program has proven an unqualified success. This is the establishment of Regional Prosthetic schools, in which the American Board for Certification and the OALMA have cooperated with the Prosthetic Research Board.

You will recall that a pilot school in AK suction socket prosthetics sponsored by the University of California, the Prosthetic Research Board, and the Veterans Administration was held at the U. S. Naval Hospital, Oakland, last August. The students were certified prosthetists, selected by the industry, with amputee trainers and doctors from NYU and UCLA. After completion of the pilot school these students worked with Dr. Miles Anderson and his staff of the Prosthetics Education Project (of the Prosthetic Research Board) on an improved curriculum for the regional schools which would pack as much pertinent material into a short course as possible. During the ensuing months the prospective faculties of both institutions held many practice teaching sessions under the tutelage of Dr. Anderson and Mr. Ray Sollars, criticising one another and revising both material and methods of presentation in the interest of producing a superior course for the Regional Schools.

The first of these was held at New York University from March 5-16. It was most enthusiastically received by those who attended. They felt that they left with much which would aid them in meeting their AK prosthetic problem. Many of the prosthetists who attended the UCLA upper extremity schools have indicated that they benefited from this investment of time and effort by applying for admission to the lower extremity schools. The second NYU school will be held April 2-13. We are certain that it will meet with the same fervor as was the initial effort.

UCLA will hold their first session from April 23-May 4. Firm plans for several subsequent schools in AK prosthetics at both universities are being made. In addition to the lower extremity schools, at least one course in upper extremity prosthetics will definitely be held in New York and Los Angeles. The tentative date for this NYU project is May 14.

Establishment of these regional schools is a significant advance toward better training in both prosthetic and orthopedic fields. It represents a firm foundation on which we may build. A series of similar schools in the

Chicago area is being seriously considered, if demand for them is evident.

It may also be considered evidence that your representatives on the ABC and OALMA are vitally concerned with the perpetual education of orthotists and prosthetists. Just as doctors continue to study long years after they have obtained the M.D. degree, and teachers following their certification, so will the alert members of your industry constantly pursue the knowledge which will make them better limb and brace fitters.

Sincerely,

ROBERT MAZET, JR., M.D.
President

Brace Research Ends at Mellon Institute

Mellon Institute has suspended its research activities in orthopedic appliances. This action was made necessary by the ending of the financial aid previously received from the Sarah Mellon Scaife Foundation. This is explained in the following letter received at OALMA headquarters from Dr. George H. Young, Director of Research at Mellon Institute, Pittsburgh, Pa.:

It is with considerable regret that I write you to tell you that the Institute finds it necessary to now suspend its research and development activities in the field of orthopedic appliances.

I assure you that this is not because of a decreasing interest on our part, nor failure to recognize that there are still many unsolved problems.

The report of the Executive Director to the Board of Trustees of the Sarah Mellon Scaife Foundation for the biennial period ended December 31, 1955, had this to say about the Foundation's Mellon Institute project:

"A terminal grant of $25,000 was made to Mellon Institute of Industrial Research to carry the work of the Sarah Mellon Scaife Orthopedic Appliances Fellowship from August 1, 1955 up to February 1, 1956. For the past eight years, under support from the Foundation totaling $375,900, the Fellowship has introduced many new and improved prosthetic devices tending to relieve the strain millions of the crippled are forced to undergo. An important contribution has been an educational course afforded bracemakers throughout the country, thereby raising the standards of the orthopedic industry and bringing about a much closer relationship between the brace craftsman and the medical profession.

Renewing support for any given project over a prolonged terms of years is not regarded today as good foundation policy. The chief aim of the Sarah Mellon Scaife Foundation is to get a project started which either will be completed or will become self-supporting after a reasonable period of time. In acting to terminate the Orthopedic Fellowship, therefore, the Trustees do not imply that its achievements have been unsatisfactory. To the contrary, the research has proved of great value. With this fact in mind, the Foundation will review the project next year."

I confidently trust that sometime in the future we can again undertake work in this and related fields.

Dacron Tape — An Improved Harness Material

As is common knowledge among prosthetists, there are about six basic requirements for a fabric tape for use in harnessing upper-extremity prostheses. It must have a comparatively high tensile strength for a given weight of weave; it must exhibit good dimensional stability under load; it must be readily washable without significant shrinkage and later stretch on reapplication of load; it must be nonirritating to the skin and comparatively resistant to the deteriorative effects of perspiration; it must have good workability on the sewing machine and a minimum tendency to curl; and it must be of such color as to be appropriate for a piece of apparel to be worn in intimate contact with the body. Heretofore, the materials most nearly meeting all of these demands have been vinyon and, better still, boiled-off nylon.

In an attempt to discover an even more suitable harnessing material, the Army Prosthetics Research Laboratory carried out extensive studies of the stretching, shrinking, and washing characteristics of a number of commercially available fabric tapes, including those of cotton, vinyon, nylon, dacron, and certain Fiberglas-vinyon combinations. (APRL Technical Reports 5302, 5318, 5423, and 5430.) Of these, boiled-off dacron and the Fiberglas-vinyon tapes were found to be the most dimensionally stable, both wet and dry. Although the Fiberglas-vinyon tapes showed properties equivalent to those of dacron, materials containing Fiberglas were ruled out because of the possibility of skin irritation from continued contact with glass fibers. The accompanying table summarizes the average results obtained on application of tensile loads four times up to 150 lbs. using a Baldwin-Southwark Universal Testing Machine.

It may be seen that the dacron tape stretched the least by a considerable margin. Even with loadings up to 150 lbs., far in excess of what is normally required for operation of an arm prosthesis, the dacron

Stretch in Percent of Original Length

Load (lb.)	Dacron (dry)	Dacron (wet)	Nylon (dry)	Nylon (wet)	Cotton (dry)	Cotton (wet)	Vinyon (unracked)	Vinyon (racked)
50	0.4	0.5	2.5	4.8	4.5	7.5	5.5	2.3
100	0.9	1.2	4.0	7.7	6.2	10.1	9.7	3.7
150	1.3	1.7	6.3	10.1	7.4	11.7	15.0	6.9

tape stretched only 1.7% when wet. After removal of the load, recovery to the initial length was immediate. The shrinkage of boiled-off dacron tape after washing in warm water was found to be a minimum. An additional advantage disclosed was that holes to receive buckle tines may be made in dacron tape using a heated awl, and, just as in the case of vinyon, the ends of the tape may be burned to eliminate fraying.

Because of the favorable results obtained, APRL requested that the Prosthetic Devices Study at New York University conduct further laboratory studies as well as amputee tests on the actual usefulness of dacron tape for harnessing upper-extremity amputees. A number of above- and below-elbow amputees who had been wearing vinyon or nylon harnesses were fitted with harnesses of dacron. After some five months of wear, the opinions of the amputees and of the fitters were solicited. Amputee reactions were highly favorable because of the color (which does not contrast with that of the shirt or undershirt), because of the ability of the tape to lie smoothly, because of the absence of stretching and relative absence of rolling of the tape under the axilla, and because of its excellent ability to withstand laundering. The prosthetists also favored dacron because of the low stretch characteristics, which eliminates the need for prestretching, and because of a lowered tendency toward fraying at buckle perforations.

The new material tested was furnished by the Bally Ribbon Mills, Bally, Pennsylvania. It is catalogued as "1-in. Dacron, Pattern 7928, S/O 6219, natural, boiled-off." The material is also available in the half-inch width.

Mayo Clinic Facility Now Private Enterprise

The brace facility at the famous Mayo Clinic in Rochester, Minn., has been transferred to private ownership and is now known as the Rochester Orthopedic Appliance Company. The new firm, which has been elected to membership in OALMA, is headed by Lucius Trautman as President. Joseph Gitlin is Vice President and Fritz Schroeder is Manager.

Special interest attaches to this transfer to private enterprise of an institutional brace shop. We are, therefore, quoting the following passage from the official release issued by the Clinic:

"Mayo Clinic orthopedic appliance services will be transferred to a private firm, Clinic officials have announced. The new organization which will be handling all services for orthopedic patients is known as Rochester Orthopedic Appliances, Inc., and will be owned and operated by Ray Trautman and Son of Minneapolis and La Crosse, Wisc.

The company will operate in a Clinic building on West Center St. between 2nd Ave. and 3rd Ave. The building commonly is known as the 'Old Whiting Press Building' and 'Dr. Kendall's Laboratory.' All services offered by the Clinic-operated orthopedic shops, plus some additional ones such as stocking a line of orthopedic shoes and supplying and fitting artificial limbs, will be offered by the new firm. Clinic spokesmen pointed out that while the company will have no connection with the Mayo Clinic, the Clinic orthopedic section will work closely with the firm on the problems of Clinic orthopedic patients during fitting and training in the use of artificial limbs and other appliances.

The Clinic has operated its own orthopedic shops for many years, but, officials said, they felt this work could and should ultimately be performed by a private firm.

CERTIFICATION LEADERS HONORED

Certification and OALMA Representatives at the Academy of Orthopaedic Surgeons' Session—Chicago, 1956.

Certified Facilities in the Chicago area and OALMA members attending the 1956 meeting, Academy of Orthopaedic Surgeons, entertained Feb. 1 in honor of the Certification Board members. In the upper picture are, seated (clockwise order): W. Schoene; J. Blaine Korrady, a founder-member of the Board; Peter Gelbuda; Richard Bidwell of Milwaukee; Russ Johnson of Truform; D. R. Coon; Sheldon Brown; Dr. Eugene Murphy; C. C. Scott; Michael Amrich; Alfred Denison; Herbert Henning; Peter Parenti of New York; Dr. Roy M. Hoover, Board member; and D. T. Campbell Thompson, Academy Past Pesident. Standing, l. to r.: Jack Heltsley; Dr. E. C. Holscher, Board member; Assistant Director Lester A. Smith; Emil Houk; William Scheck; George M. Robinson of Robin-Aids; John A. DeBender; Howard R. Reinherz of Kenosha; Dr. Charles O. Bechtol and Dr. Atha Thomas, former Board members; Gill C. Gilbert; George S. Gage, Jr. of Robin-Aids; and Ralph Storrs of Pope Brace Division. The lower picture shows two present and four former members who have contributed greatly to Certification, standing: Doctors Charles O. Bechtol, Clinton L. Compere, Roy Hoover, E. C. Holscher. Seated: Mr. J. Blaine Korrady; Doctors T. Campbell Thompson and Atha Thomas.

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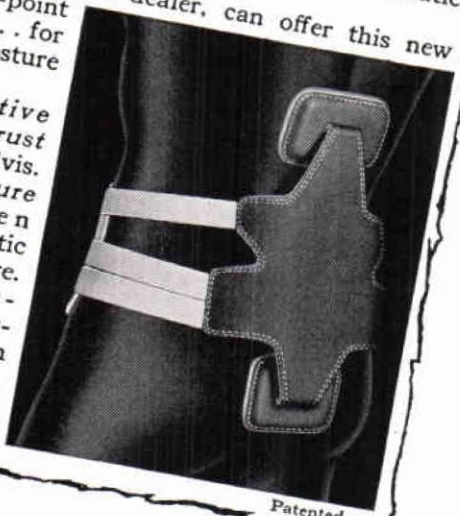

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Certification of the Individual: Some Comments on Current Questions

By ROBERT MAZET, JR., M.D.,
President, American Board for Certification

The Executive Director of the American Board for Certification continues to receive letters from many brace and limb makers throughout the country which indicate that there is considerable confusion in the minds of the writers about several matters. Some of these are:

1. Why should I be put to the expense and inconvenience of appearing before an examining board when another man who is not as well qualified as I was granted certification several years ago under the grandfather clause?

2. Having been certified, why should I be assessed ten dollars a year?

3. Since I (or someone else in my shop) am certified, why should my shop be separately certified at additional expense to me?

4. How does it profit me to belong to an organization (OALMA) which appears to be run by and for the benefit of large firms? This last question does not concern Certification at all. My colleague, President Frank Harmon, President of OALMA, discusses this point in his column on page 9.

An effort to clarify the first three questions appears indicated. They will be discussed in the order presented.

But first let us review the brief history of the ABC.

1. Until 1946 there was no central body which truly represented the many brace and artificial limb shops operating in our country. The industry had no uniform standards of ethics, no training program for individuals desiring to learn the arts of brace and limb fabrication. Its relationship with medicine and the public was haphazard. In some areas brace makers were as little respected as witch doctors and hawkers of patent medicines. The old Association of Limb Manufacturers was essentially a trade organization in which a few large firms were active. The foresighted leaders of the old Association realized the necessity for the formation of a trade group with a much broader base, which would adequately represent both small and large shops, to the benefit of all. At the same time they recognized the imperative need for bettering the relationship of industry members to medicine and the public, for formulating a code of ethics, and for instigating a comprehensive training program for apprentices on a nationwide basis.

These men were not motivated by selfish ends. They were opening a new road toward better service to the handicapped, public confidence in artisans of their craft, and pride of workmanship among their numbers. From their exertion the OALMA in 1946 and the ABC in 1948 emerged. The structure of these bodies was initially rather nebulous, and they have not been free of growing pains. They may now be considered healthy youngsters, not yet fully developed, still exhibiting change and growth.

If educational programs are to fulfill their purpose, standards must be set, and there must be a responsible body to assure these are met. This is the responsibility of the ABC. The Board believes, however, that it exists not only to set standards and conduct examinations to see that these are met. One of its functions is the gradual raising of educational and training

requirements in order to constantly improve the quality of men certified and their workmanship. This is an arduous process which must be accomplished step by step. This effort is reflected in the evolution of the examinations conducted by the Board.

At first no examination was required for certification. Every individual who had been manufacturing braces or limbs for four years was given an opportunity to become certified under the "grandfather clause" by reason of seniority. As the apprentice training program has evolved, the requirements which applicants must meet prior to appearing for the Board Examination have slowly been made more inclusive. As increased opportunities are provided by the developing educational program these will be further changed.

As a means of broadening the base on which the apprentice training program rests, and to make certain that certified men in small as well as large shops are represented, there is an advisory committee to the Board composed of two representatives from each of the 36 districts.

In an effort to make the examinations fairer the Board has for the past two years secured the active help of Dr. Miles Anderson, a professional educator on the faculty of UCLA, who has revolutionized the method of conducting these tests.

Certification of facilities is a function of the Board unconnected with the certification of individuals. Facilities must meet certain specific requirements. If they do so certification is readily obtained.

The relationship of the OALMA to the Board might be likened to that of a big brother. The two are separate groups. As stated above, the Board is essentially an examining body. The OALMA is the body which sponsors Board activities. It sets standards, initiates the educational efforts and maintains the apprentice training program. Thorugh the journal and at regional and national meetings, it offers special programs to keep certified men and members up to date on developments in the practice of the orthotists' and prosthetists' arts.

OALMA, however, is essentially a businessmen's association, representing firms rather than individuals. Its efforts are being directed toward an equitable representation of all firms. It has successfully striven to elevate the ethics of its members. It has cooperated with the investigative activities of such bodies as the Advisory Committee on Artificial Limbs and the Mellon Institute. The Executive Board is composed of eleven regional directors elected by secret mail ballot, one from each region each year. This Board nominates officers of the Association, who are then elected by the members. Each member firm has one vote.

In answer to the first question: Anyone who had conducted a brace or artificial limb shop for four years or longer had ample opportunity to become certified prior to the adoption of the present requirements for certification.

In answer to the second question: The successful operation of the certification movement necessitates expenditure of certain monies. The processing of applications, checking on references, correspondence, preparation of forms of diverse types, the expenses of running the Central Office and printing the journal require a considerable yearly financial disbursement. Without this outlay of funds, the certification program would collapse, and the chaos of former years would quickly return. It should be pointed out that the expenses of running the Central Office and printing the Journal are shared with the OALMA, that the greater part of the ABC budget is derived from income from certified facilities rather than individuals. It must also be

emphasized that no remuneration is received by any member of the Board, or by any facility which is used for the practical tests. The Examiners have until now received no expense or fee. In the future those who are not Board members will receive the modest stipend of fifteen dollars per day.

Perpetuation of the high standards of the certification program, and its implementation, are the duty and privilege of certified men. The yearly assessment is made to assure our spiritual successors that such will occur.

In answer to the third question: Certification of the individual and certification of the shop should not be confused. The first means that the certified man has met the requirements for certification, that he is honest, ethical, and dependable.

The certified shop must employ at least one certified individual, but it must meet additional requirements. Its relationship with patients and doctors must meet certain standards. Its business practices must be ethical. It must provide adequate fitting areas, toilet facilities, stand behind its products, and be a respected business in the community. In other words, certification of the shop assures the patient that he can have confidence in its products.

The certification movement has undeniably raised the standards of shop practice and business conduct. It has restored the faith of patients and doctors in the integrity of brace and limb makers for the good of all of them. The advantages of this renewed public confidence is worth far more than the yearly contribution the shop makes to the Central Office for continuation of the activities of the Board. The fee is, of course, a legitimate business expense, tax deductible. In thirty states the State Rehabilitation Commission procures devices and services only from certified facilities.

We are indebted to Mr. Henry Viscardi, President of Abilities, Inc., for the following figures: They show the percentage of physicians who had authorized the employment of persons who have lost a limb or have other disabilities (based on a study conducted by "Just One Break, Inc."). These figures were obtained by a questionnaire sent to 311 physicians who are members of an industrial medical society. They show, as Mr. Viscardi points out, the need to give industrial physicians and others a clearer picture of what the handicapped can do when properly fitted and rehabilitated:

Percentage of Physicians Who Would Authorize Employment of Individuals With Specific Disabilities

	Percent
Single leg amputee	99
Single arm amputee	77
Polio paraplegic	72
Inactive rheumatoid arthritic	70
Ostheoarthritic	66
Bilateral leg amputee—no aid in ambulation	59
Paraplegic-polio, ambulation with crutches (Restricted Back Function)	56
Wears back support	43
Bilateral leg amputee—wheelchair bound	32
Bilateral arm amputee	26
Cerebral Palsy	24

Tips On Soldering Upper Extremity Control Cables

By LLOYD BROWN, President,
Dorrance-Hosmer, San Jose, California

About two years ago, the idea of solder type fittings for upper extremity control cables was introduced to the American Prosthetic Profession. Since that time, they have been used with ever increasing popularity because of the convenience and saving in time and money they bring to both the amputee and the Prosthetist. The ease of replacing broken cable in the field has been a great help to the amputee located many miles from service centers.

In order for all to gain the utmost from the basic advantages of solder fittings, it is important that both the prosthetist and the amputee fully understand all phases of soldering control cables.

Two things to remember for long life are the importance of not overheating the cable and the necessity of washing the parts with baking soda after soldering to counteract the acid.

First, at no time should a torch be used. Although there are those who can handle a torch with sufficient skill to avoid overheating, this is a dangerous practice and should be avoided. On the other hand, it is impossible to overheat cable with an electric soldering iron and it is highly recommended that this tool always be used. Fifty-fifty solder melts at about 400° and cable is not damaged until reaching approximately 550°.

The best results are gained by the use of a small diameter solder. A 50/50 acid core 1/16" diameter solder is very satisfactory. One source of supply for this rather hard to find size is the Federated Metals Division of the American Smelting & Refining Company with offices in principal cities. A supply of stainless steel soldering acid, purchased in any hardware store, is quite helpful. A 215 watt iron, about equal in size to a 2½ lb. old style copper iron, has been found to be a practical size for this work.

Be sure iron is clean. Paint a small amount of acid around hole allowing a small amount to enter hole. Apply heated iron to fitting. In a moment the fitting will be hot and cable should be inserted. Apply solder to cable at hole entrance and allow to run well down into hole around cable. Remove iron, at the same time plunging cable in and out of hole to remove any air and thoroughly coat cable. About three or four strokes are sufficient and cable should then be held steady until solder cools. Be sure that cable is held against bottom of hole during cooling period. Wash cable well with a solution of water and baking soda to prevent any acid damage. Wipe cable clean, using a lightly oiled clean rag. If any form of liquid wax is available, this is even better: just dip and allow to dry.

Cable is now ready for use. Correctly soldered, the cable will give long service and the fittings can be used again and again. It is neat in appearance, is quick to make up. It is a flexible method. Cables are quickly made up for each patient's need. Where length has been determined incorrectly, soldering permits quick change in length. When cable becomes frayed, simply sweat the fittings from each end, replace cable with a new piece of the same length and repeat above soldering instructions. Remember, do not overheat, wash with baking soda when finished.

Canadian Hip Disarticulation Prosthesis

By C. A. BELL, B.A., Sc.

Director of Prosthetic Services, Department of Veterans Affairs, Canada

Amputation at the hip level poses a difficult problem for the prosthetist. He is not only faced with providing a limb with the three anatomical joints, ankle, knee and hip, but is faced with the problem of having no stump to activate the limb and hence difficulty of control. As compensation, however, weight bearing is provided on one of nature's chosen seats of election—the ischium.

The World War I Canadian limb for this site of amputation was of willow construction to the hip level and sockets were made of leather, steel or willow. The leg was heavy and was by no means universally accepted. In 1926 the Department adopted the J. E. Hanger Tilting Table metal limb along with other metal legs of British design. The monel metal socket or pelvic cap was joined to the thigh piece by a hip joint. The lock in the hip joint was engaged while walking and disengaged while seated. The hip joint was placed directly under the seat of the socket which effected a tiresome raise or tilt when seated. The leg was light but noisy.

Subsequent to World War II, experiments were carried out and a leg with a lateral hip joint and folding latch solved the tilt problem, but the plunger locking the thigh and spring loaded crank folding latch to hold the socket and set up together during the walking phase again necessitated heavy construction and there was little improvement in control.

Further development to provide a limb with free hip movement, was continued. A design was adopted in which about 15°-20° flexion of the mechanical hip joint occurred at the end of the swing phase. To prevent hyperextension, use was made of an elastic restraining strap. The hip joint was so placed that locking forces developed automatically with weight bearing.

About 1951, the development of the use of plastics permitted a radical redesign of the socket. By combining a plastic pelvic cap with a band enclosing the trunk at the level of the anterior superior spines, a snug, good fitting socket was obtained. No other suspension is necessary and the quick release retaining strap permits ready donning of the appliance.

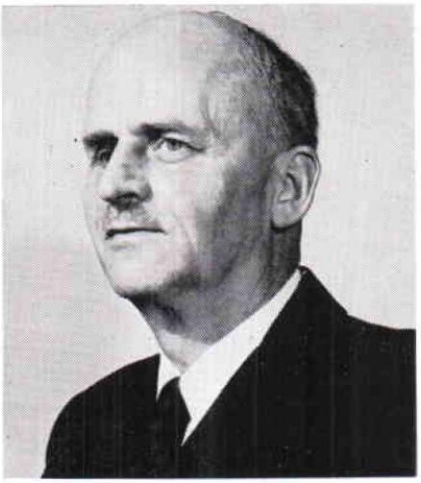
The details of the limb are described by C. A. McLaurin, formerly Research Engineer, Prosthetic Services Centre, Toronto, in his report of March 19, 1954, as follows:

Socket—The socket and waistband, or pelvic cradle, is constructed of reinforced plastic in one continuous piece, as illustrated in the attached print.

First, with the amputee standing, a cast is taken of the entire pelvic area from above iliac crests to the ischium of the amputated side. A positive plaster cast is then poured and severely modified by removing an inch or more in the fleshy areas and shaping the remainder to provide an accurate fit over the ilium and ischial tuberosity. The cast is then sealed with cellulose acetate or wax and the socket layed up with resin reinforced by glass cloth or mat with an ample

* Based on reports of E. A. Weir, B.A., Sc., and C. A. McLaurin, B.A., Sc.

Charles A. Bell was born in Toronto in 1891 and is a graduate of the University of Toronto. He enlisted in August, 1914, in the First Division of the Canadian Engineers and rose through the ranks to become an officer, leaving the Service in April, 1920, with the rank of Major. While in the Service he was wounded in action three times eventually resulting in bilateral below knee amputation and loss of the right eye. Returning to civilian life, Major Bell became connected with the Canadian Department of Veterans Affairs and since 1938 has been Director of Prosthetic Services for the Department. He received the Military Cross and Bar during the first World War and the Order of the British Empire in 1946. Major Bell was married in 1919 to Nursing Sister, Honorary Lt. H. S. Gillian. They have a son and daughter.



Charles A. Bell

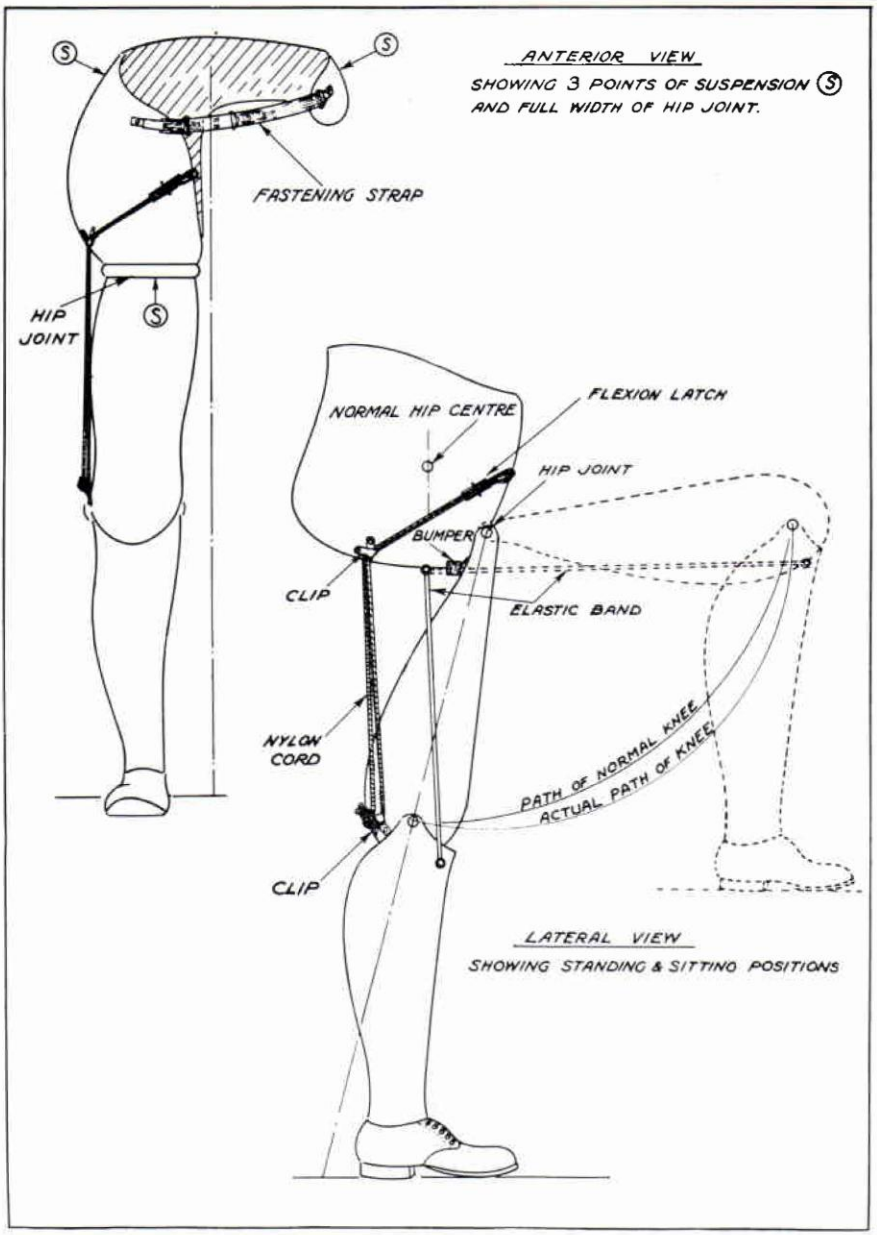
quantity of monofilament glass roving in the waistband.

No shoulder strap is fitted. A good fit over the ilium is necessary to support the prosthesis firmly and comfortably. It has been found that the best place for support is on the ridge between the crest of the ilium and the anterior superior spine. The section of the belt across the abdomen is cut off and a heavy elastic webbing with an adjustable fastener is applied to maintain a snug fit.

The socket can be tried on before the leg is fitted. It should fit comfortably, but firmly, so that very little motion can occur between the socket and the pelvis.

Alignment—The leg is attached on the surface of the socket and well forward of the ischial tuberosity, as shown in the attached print. This has two effects. The joint can be made the full width of the leg and hence have adequate strength laterally. Also, if a stop is placed behind the joint to prevent hyper-extension, no hip lock is necessary. An elastic strap should be added, however, to prevent the hip joint from flexing too far while walking, and to give the amputee some control over the leg.

The leg walks better with a free knee joint. For stability, the knee must be set up with a little hyper-extension. Thus when the hip is flexed, the knee is stable. In learning to use the leg, some difficulty is experienced in gaining confidence during this part of the stride at heel contact. It is necessary for the amputee to learn to walk into the leg and not attempt to have the hip joint reach its stop before the foot is flat on the floor. The axis of the hip joint should be more or less parallel to the knee joint and should be positioned to provide satisfactory alignment and thigh



length in sitting as well as standing.

Flexion Limiter—In the latest case to be fitted, a hip flexion limiter was provided. It consists of a latch-controlled nylon cord that allows the hip to flex only enough for walking. It must be released before sitting. The device gives the amputee confidence, prevents too long a stride and gives control during abnormal conditions, like high winds, jostling in crowds, climbing ladders, digging, etc. As the latch is not automatic, it need be used only when desired.

From the standpoint of safety in falling, it is considered that the free hip joint is preferable because the leg collapses letting the amputee fall as he will, rather than vaulting him out of control.

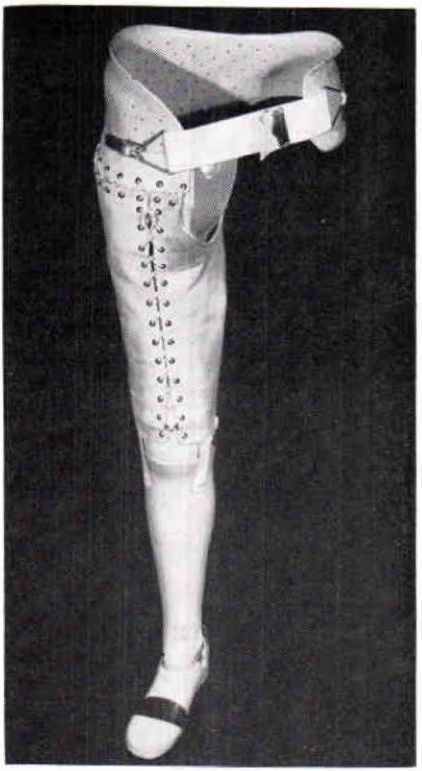
Construction Notes—In practice, the hip joint is mounted on a dural plate. The socket is built up in the attachment area with cork and a mixture of epoxy resin and sawdust, and finally covered with glass cloth and resin. The dural plate can then be temporarily attached with bolts or screws. Adjustments may be made to the position after the leg has been worn, and the final position should be secured with epoxy resin (adhesive). It has been found that epoxy resins produce a more durable socket than polyesters. Due to their excellent adhesive properties, the socket can be readily modified or patched without fear of subsequent failure.

A fairing of soft leather backed with foam rubber may be added to give the thigh a normal shape.

Advantage—The advantages of the prosthesis are freedom from hip locks, excellent lateral control, strong hip joint and freedom from shoulder harness. In practice, it has been observed that walking effort has been greatly reduced, but it has not been demonstrated how much of this is due to the free swinging hip joint or the firm pelvic suspension.

Further experimentation is in progress at present as to possible advantages that may be provided by the SACH foot, an all-plastic set-up in lieu of our standard metal set-up, and a five-link knee mechanism to provide positive lock on heel contact.

The design at present has exceeded our expectations in performance. It gives a feeling of security of control, abduction and adduction are possible, and walking ability is increased with far less fatigue. In fact, one test amputee stated that he could walk forty city blocks with less effort than he previously put forth in walking two blocks.



Hip Disarticulation Leg with Pelvic Socket.

It is most important that amputees who have previously worn a leg with a locked hip and in some cases a locked knee, approach this new appliance with an open mind and be prepared to spend some time on gait training. Some have felt a sense of insecurity with the free hip under certain conditions, and a lock to limit this is available. This is described as the "Flexion Latch" in the accompanying drawing. It will permit a locked joint or one with restricted flexion during walking and will be helpful, or a "mental crutch" to those who feel insecure on a free hip joint. It should only be used as a last resort and after fair trial, otherwise one of the most promising features of the new leg is lost entirely.

The Department have had twenty-two cases referred to date for fittings

of this type of prosthesis with results as follows:

Cases	*Success*	*Failure*
22	14	4
In process	*Deceased*	
2	2	

The four failures were due to lack of cooperation.

The adoption of this design has reduced our construction and fitting time some 45% over previous standards and the measure of success has been most encouraging and demonstrates the acceptability of this design. Further developments may increase its efficiency even to the extent of application in the case of fitting bilateral amputees of this type.

"What's New(s)"

Discussing the Blair Hyperextension Brace at the S. H. Camp & Company office in Jackson, Michigan, left to right, Camp President F. I. Yeakey, Robert Blair, of Blair Associate, C. E. Yesalis, Camp Sales Manager and E. G. Weaver, Managing Director of S. H. Camp & Company of Canada.

• S. H. Camp & Company, Jackson, Michigan, has been selected by ROBERT C. BLAIR, JR., of Blair's Associate, Orlando, Florida, as sole distributor in the United States and foreign countries of Blair's Braces and Appliances. Mr. Blair has been meeting Camp representatives to better acquaint them with the fitting procedure of his products. Besides spending time at the Camp factory in Jackson, he instructed groups in New York and Chicago.

• *J. E. Hanger, Inc. of Indiana* is moving its Indianapolis office on April 1st. This Certified Facility will occupy modern facilities at 1529-33 N. Illinois Street and will have three times the space of the former location. The new facility has been engineered for modern limb production, using all the latest developed mechanized equipment. It will be completely air-conditioned and provide adequate parking space for patients and employees. M. G. Manwaring, Vice President of the Company, is in charge of the Indianapolis office.

Anatomy Classes Underway

The Chattanooga Class in Anatomy.

Formal instruction in Anatomy is underway at Fillauer's in Chattanooga, and at the Philadelphia Rehabilitation Center. The classes are intended to prepare students for the Anatomy requirement in the OALMA Apprentice Program and the Certification examinations.

Basil Peters reports that the Philadelphia class is taught by Dr. C. G. Psaki, and that employees of several OALMA members are enrolled.

We are quoting here a description of the Chattanooga class by Carlton Fillauer, as an aid to other OALMA members who are struggling to organize similar classes:

"Our Anatomy class was started last December, at which time thirteen members of our organization signed up for a minimum of twenty classes. Our instructor is a young doctor who is a chief resident surgeon at nearby Tri-County Hospital, Dr. Raton Kiswani.

"Dr. Kiswani has based his series of lectures on the Gross Anatomy outline worked out by Dr. Miles Anderson for the UCLA extension courses for prosthetists and orthotists. As a reference we are using Gray, Anatomy of the Human Body and the section of Anatomy in the Orthopedic Atlas.

"We have a skeleton chart, a skeleton and a reflex viewer projector on which we can project pictures from various textbooks. The doctor prepares an outline in advance for each lecture, copies of which are distributed before each class. Some of the more industrious students practice making outline drawings of the various bones discussed in the previous class, which of course gives them a much better understanding and mental picture of the subject. Our young orthotist apprentice, Leroy Cook, prepares blackboard sketches in advance of each class."

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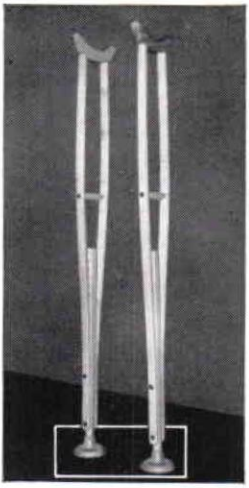

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Rehabilitation Centers and the Prosthetic-Orthopedic Facility: How to Develop Effective Cooperation for the Mutual Benefit

By IVAN A. DILLEE, C.P.

The W. E. Isle Company

Questions concerning the relationship between local prosthetic, orthopedic facilities and local rehabilitation centers have arisen in the minds of orthotists and prosthetists since the inception of the team concept and our inclusion in it. Reservations, at least mental, regarding the feasibility and desirability of close cooperation between the two persist even now. Our experience in Kansas City with these institutions has been such that for us the questions are answered and the reservations resolved. I am happy that it is my privilege to pass on to you our thinking on this subject and tell you of the mutual benefits to be derived from close cooperation. I shall also try to outline means we have employed to develop this attitude and make it effective. I intend to do this by posing a number of questions and giving such answers as we have learned and such conclusions as we have drawn from our experience.

To begin with, I would state unequivocally that effective cooperation between any two separate institutions, however closely related, does not occur spontaneously. *It must be built.* Building in these days and times, even building something as intangible as cooperation, seems full of complexities and by instinct we shy away from it. Which brings me to the first of the questions I want to ask about building cooperation:

Why Should We?

Why extend ourselves in an effort to cooperate with a Rehabilitation Center? Or why strain to get such a center to cooperate with us? From our experience with such institutions in Kansas City, and from my own personal experience, I think I can give several sound and valid reasons. First of all, because it is to the best interest of our clientele. Regardless of the manner in which these clients come to our facility, whether they drop in as customers, or are sent to us for our service as the patients of a medical practitioner, they are invariably the victims of a physical handicap. The best, most completely rounded program for the physically handicapped is available through the facilities of the Rehabilitation Center or the Rehabilitation Service of a fully organized Medical Center. I know of no other place where all the personnel who may be needed are readily available. Physician, physical therapist, occupational therapist, clinical psychologist, vocational counselor, and medical social worker, all are here and all their services and therapies are on call. If genuine cooperation exists between the center and the local limb and brace facility, then you, too, are there and *prosthetist* and *orthotist* can be added to the list of available personnel.

The rehabilitation center provides a central location to coordinate the total program for each handicapped person. When a cooperative spirit exists between the center and your facility, your service will be called for when it is needed and when the person needing it is ready for it, not sooner, not later. Speaking from my own experience, I can tell you that it is a wonderfully helpful thing to be certain that when an amputee comes

* Delivered at the National Assembly of the Limb and Brace Profession (OALMA) New Orleans, Oct. 19, 1955.

to your shop for a prosthesis he has been psychologically prepared for the experience. Physiologically, all has been done for him that can be done. Stump shrinkage has been brought to the optimum level. Contractures have been eliminated. Debilitated and atrophied muscle structures have been strengthened, and the range of stump motion has been brought to maximum, all under the watchful eye of the physician who is clinic chief. I have called this wonderfully helpful. Actually, it is much more than this. Looked at from the standpoint of the prosthetist, it is wonderfully helpful to have so many of our fitting problems solved for us before fitting is even begun. Looked at from the angle of the physically handicapped, it is even more wonderful to realize that here is one more step, a very tangible one, in the process of rehabilitation. Getting the appliance, limb, brace or whatever, is not an end in itself, but is part of a process which will continue through training and vocational guidance to the goal of rehabilitation, which Dr. Kessler defined on Television as "Relief of symptoms, restoration of function, and restoration to home, job, and family."

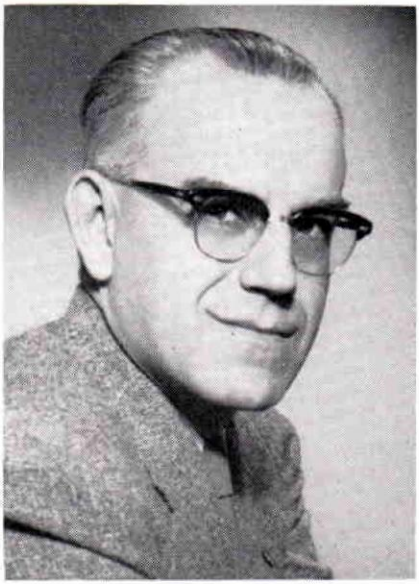
Why try to cooperate with the Rehabilitation Center? Second, because it is to our own best interest to do so. I realize that there are some, perhaps many, who will not agree with this opinion. They will say that working in a Rehabilitation Center is too time-consuming. The pace of the Rehabilitation Center is too slow, and each patient who is served requires too many hours. They will say that working in a Rehabilitation Center is too expensive, that, in addition to the time involved, the cost of traveling back and forth time after time between the center and the shop makes it prohibitive. Too, they will sometimes say, and this is unfortunate, that the personnel of the Rehabilitation Center makes cooperation impossible. Mostly these arguments sound reasonable. They seem sound. I believe, however, that they only seem so.

Consider the matter of time involved. Certainly the spending of time in the center is required. But if one goes there determined to be of help, the time is well spent. As an educational experience it is incalculably valuable. Once you have qualified yourself as a member in good standing of the Rehabilitation Center's clinic team, dedicated to achieving their goals, you will have the happy experience of working professionally with professional people, and their professional secrets will be secrets no longer but part of the technic of the team. This technic belongs to you as much as to any other team member, and it is amazing how many things one can learn that are helpful in his work if the time he spends in the Rehabilitation Center is spent with open eyes and ears and more especially an open mind.

Leaving the matter of time, let's talk a little about expense. Here we are dealing with something concrete and measurable. Of course, the amount of money involved will vary widely from place to place, but again, on the basis of our experience I can assure you that the expense is self liquidating. To show you what I mean, I'm going to be very personal now and speak in terms of my own work. For some years my work has been limited largely to upper extremity prosthetics. During the past two years I have been a member of the Upper Extremity Clinic Team in two Rehabilitation Centers in Kansas City. In these two years the average number of upper extremity amputees served per month through our facility has increased 156.6%, while the dollar volume per month has increased 193.4% over our average prior to participation in the clinic programs. These averages were calculated from the total number and price of all new upper extremity appliances furnished by our shop in two

Ivan A. Dillee's position as head of the Upper Extremity Prosthetics department of the W. E. Isle Artificial Limb Company, Kansas City, Mo., has been a vast change in experience from that of foreman of a porcelain enameling plant where he was working in 1943 when he entered Army service. Assigned to the Medical Department, he was stationed for 16 months in the orthopedic shop at Bushnell General Hospital, Brigham City, Utah. He immediately liked his new work with amputees and upon discharge in May, 1946, he completed his apprenticeship under the G. I. training bill at the Isle Company and was certified as a prosthetist.

Mr. Dillee is a graduate of Graceland College at Lamoni, Iowa. He has completed extension courses in anatomy and kinesiology at University of Kansas Medical Center. In September-October, 1953, he attended the Upper Extremity Prosthetics School at UCLA and since that time has been a member of the upper extremity clinic teams at Rehabilitation Institute and the Veterans Administration Hospital in Kansas City. A native of Independence, Mo., he is 44 years old.



Ivan A. Dillee, C.P.

twelve-month periods. The earlier one, prior to the establishment of the clinics was 1 August 1952 to 31 July 1953. The later one, subsequent to the establishment of the clinic service, included the dates 1 September 1954 to 31 August 1955, which is the latest twelve-month period for which complete figures are available.

We reason that the numerical increase comes from two sources. One of these is the inexplicable but highly efficient "grapevine" which operates among amputees. "The Word" about this new and improved service is getting around, and increasingly we find amputees desiring to avail themselves of it. Second, and probably more important, up to this time, we, the staff members of the Rehabilitation Center, the participating doctors, and other interested persons, circulated the news of this newly available service among insurance carriers and the various state, federal and charitable agencies which purchase services of the type the clinic team can offer. The result was this —instead of being the slowly accelerating thing we at the shop had anticipated, the work load jumped. In the first three months subsequent to the opening of the clinics the number of amputees increased 156% above our former monthly average and the dollar volume increased 229%. This has led us to the belief that we are serving a real need. It must be true that the cases were there all the time, but they were not being reached. They were not being served, and we believe it was only because there was no service available which adequately met their needs.

We have not been operating long enough in the Rehabilitation Centers to establish any trends by mathematical evidence. However, we feel confident that our experience in recent months of a fractional increase from time to time is an indication of an upward trend which will continue. Our confidence is based on a high percentage of successful prosthesis

wearers. There have been only two known non-wearers among all the cases processed through the clinics in Kansas City. You all are aware that this was not always the situation, especially among above elbow amputees. AE appliances in the past were too often hung in the clothes closet and hanging there they were eternal. Now these appliances are being worn, and being worn, they will eventually be worn out and will need replacement.

You will have noted that in all instances cited the dollar volume showed a greater increase than the numerical volume. The seeming disparity is not accounted for by a price increase as one might suspect. We credit the upper extremity clinic team with this phenomenon. The sole concern of the team is service, consequently, prescriptions which come from this source call for equipment the team members have deemed most suitable. Insurance carriers, federal, state, and charitable agencies, as well as individual purchasers, defer to the opinion of the team where they might not to the opinion of one prosthetist against the opinion of another. Thus we no longer need cut corners by dispensing equipment not well suited to the needs of the amputee.

One more item in this general connection I would like to mention: all this increase in volume of business has been handled by our arm department with the addition of only one part time employee. As the prosthetist involved, I know how to account for this. New techniques in fabrication and fitting account for some of it, true. More important however, by making full use of the services and therapies of my fellow team members, physician, clinical psychologist and physical therapist, to assure that the amputee is ready before he comes to me for fitting and the occupational therapist to assure that adequate training is carried out after the fitting is made, the team gains for me very nearly as much time as it takes from me.

From this you will see that we do speak advisedly when we say that the time is well spent, the expense is self liquidating, and it is advantageous to become a participant.

And now to deal briefly with this question of personalities. Of course we all realize it is a question, which should not arise but the fact remains that it does. Before you permit yourself to say, "I simply cannot work with So and So," stand aside and take a long slow look at yourself and see if perhaps you may not be looking at the source of the difficulty. See that you are exhibiting to those with whom you are working the best of your personality and hiding as best you are able those facets which might be objectionable to them. If, after doing this, you still want to say, "I simply cannot work with So and So," still do not permit it. Make yourself work with them and force yourself to be congenial. The self discipline involved will make you a better prosthetist or orthotist, one more nearly able to cope with the problems which are part and parcel of our work.

Should there be those who remain unconvinced that we, as an industry, should strive diligently to perfect cooperation between ourselves and the Rehabilitation Centers, I would like to point out that there is a third strong argument in favor of doing so. We have *no choice;* we must cooperate with them. The type of clinical service I have been talking about is not a dream of the distant future, it is a present reality. The clinical techniques I have been describing are not a thing with which we may align ourselves or not as we see fit. They are broadly recognized now and as the concept and program of Rehabilitation expand, their recognition will broaden still further. The opportunity is here and now. We have the chance to "get on the team." Failure to make the most of our opportunity

would constitute a long step backward from our avowed goal of establishing and constantly raising the professional standards within our industry.

I seriously doubt that these few paragraphs have served to convince anyone not previously convinced of the wisdom of and necessity for cooperation between the Rehabilitation Center and the Prosthetic, Orthopedic Facility. Nevertheless, let's get on with the second of these questions I want to pose for your consideration, which is:

Where Shall We?

Where shall we begin and where end in our efforts to build cooperation? A very good question—and it has no one answer. One begins wherever he can and there must never be an end. All I can do is make available to you our experience, tell you some of the things we have done, and are doing in the hope that they may serve as guide posts indicating direction.

Invite the Rehabilitation Center's staff to your facility and when they respond to your invitation, treat them as guests. Really show them your place and explain your service and the qualifications of your personnel. Encourage them to ask questions and answer all questions asked honestly, candidly, and fully.

Visit the center's facility, and encourage your staff to visit it too. You don't need to wait for a special invitation. Take advantage of annual meetings or open houses, and when you are "in" make yourself known. Exhibit a sincere and friendly interest in the place, the people, and the service.

Make yourself, your facility, your equipment and your staff available to teaching hospitals. Invite students to come to you, or if asked, go to them. In Kansas City we have had interns and student nurses as guests in our shop and we have been guest speakers in their class rooms. We have addressed hospital staff meetings. Each class in occupational therapy and physical therapy visits our facility as a class for a lecture and demonstration on bracing and lower and upper extremity prosthetics delivered by three of our people, which serves as indoctrination and familiarization. We have lent our equipment for instructional purposes, and have built special equipment for the same purpose. In short, we have tried to make ourselves useful, and I can only recommend that you try it too. Some of these activities may seem to you to be pretty far-fetched, quite far removed from serious efforts to establish cooperation between your facility and the local Rehabilitation Center. In answer, I can only say that in our case they have worked. Perhaps doing such things is like "casting bread upon the waters,"—if so, you have scriptural assurance that, "after many days it will return," and for whatever it is worth, my assurance that generally it comes back "buttered."

This brings me to the third and last of the questions I have to ask about building effective cooperation. We have asked, and to some extent answered the questions, "Why Should We?" and "Where Shall We?" Now we come to the question of:

How Can We?

There is an old and honored saying that goes, "Would you have friends, be friendly." I don't believe I will do any violence to its meaning if I paraphrase it into "Would you receive cooperation, be cooperative." Let me reiterate, see to it that all you have, your personnel, your facilities, your time, are made available to the Rehabilitation Center, *when they need them.*

There is another aspect to this being cooperative that may have escaped your attention, and I want to take a minute here to discuss it. I wonder if you who are owners or

managers of prosthetic, orthopedic facilities have given sufficient thought to the position of your employee working in a Rehabilitation Center. Here, if ever there was one, is a man squarely in the middle. He is your employee, but he is working in the Rehabilitation Center and is under the necessity of looking two ways for cooperation: Toward the center, where he must earn it; toward his employer, where he has every right to expect it. The man is in the middle, and there he has to stay, but don't make it the middle of the two horns of a dilemma. Don't let him down. In defense of my own employers, and I'm happy to fly to their defense, I must say that this has never happened to me, but I know that it has happened. Don't let it happen to you. See to it that the policies of your company are compatible with the policies and goals of the Rehabilitation Center. See that the policies are firm and are clearly understood by your employee working in the center. Let him know that when he speaks there he represents you and he involves the business and professional integrity of your firm. If you do this—the middle isn't a half-bad place to be.

Back now to our third question, we have said "Be Cooperative," next I would say: "*Be Critical*"—of yourself, your facility, and your service. Check often and carefully to see that standards are maintained. Accept the criticism of others graciously. As prosthetists or orthotists, we are peculiarly susceptible to criticism because we bring to the Rehabilitation Center an appliance. It is a tangible device whose performance is readily measurable against established standards, and any deviation from these standards is very apparent. Consqeuently, it is often necessary to remind ourselves that our critic is our friend—he is on our side. If he were not, he would not criticize—he would merely reject. Listen to your critics and learn from them. Because we have brought to the team a workable appliance, it does not necessarily follow that the solution we have evolved to the problem is the best that can be evolved, so invite criticism and welcome it.

Wisdom dictates that we, as the junior member of the Rehabilitation Center's Clinic Team, be chary of offering criticism. Certainly, it should not be done until we, as individuals, have earned a place on the team and been recognized as a member in good standing. Even then the criticism should be of the work, never of the worker. Remember, too, that criticism is far more than fault finding. In fact, criticism can be favorable, and when unfavorable, it should be positive. In its first definition "criticism" is "the act of making judgments; analysis of qualities, and evaluation of comparative worth." Do criticize when you know that you should, but bear in mind all its components, judgment, analysis, and evaluation. When you offer your criticism, think of the words of the popular song of some years ago and, "Accentuate the Positive and Eliminate the Negative."

Be Diplomatic—In the Rehabilitation Center you will be dealing with professional people who are professionally trained. Keep on the professional level. Respect the professional prerogatives of your colleagues. Within the limits of your own prerogatives, which we are in process of professionalizing, stand firmly, but not inflexibly, for what you conceive to be the best interest of the patient. In doing so, you may be sure that all you say and do will contribute toward the professional standing of our industry.

Doctor Leonard Mayo has said, "Rehabilitation is first a philosophy, second an objective, and finally a method." The existence of our organization and the nature of the work we do is *ipso facto* evidence of our acceptance of the philosophy. A careful study, even a cursory examination,

of the proceedings of OALMA will convince the most skeptical of our sincere desire to achieve the objective.

This presentation of our best thinking about the relationship between the local limb and brace facility and the local Rehabilitation Center is intended to show that we are—and of right possess—and desire to become increasingly, a part of the method.

MARCH, 1956

SUPPLIERS SECTION: PAGE INDEX

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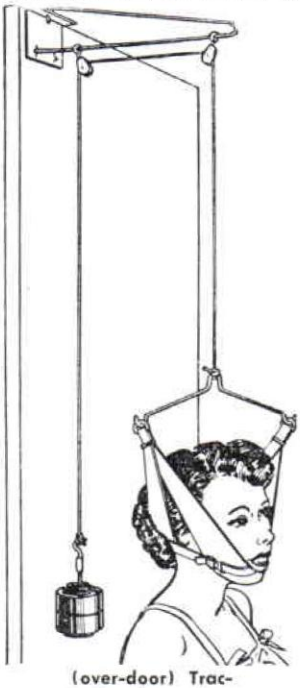

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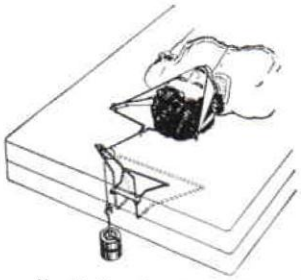

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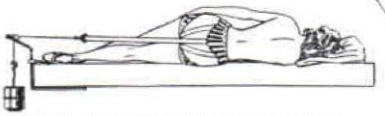

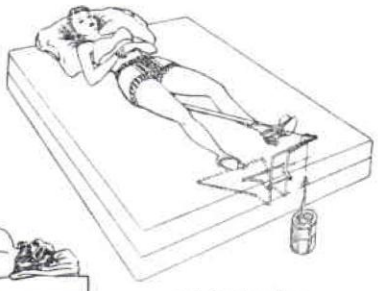

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THE USE OF THE CONDITIONED RESPONSE IN BRACING*

By HERBERT E. HIPPS, M.D.

The purposeful use of the conditioned response as a corrective force in bracing was first used in the back-knee brace described in 1954 in the Journal of Bone and Joint Surgery(3). This particular brace was so designed that as the knee went into the undesirable back-knee position, the skin of the popliteal area touched a pin, thus reflexly causing the knee to be drawn away from it. The patient thus became conditioned to holding the knee straight rather than in a back-knee position.

So successful has been this new function of a brace that we have since then designed and used other braces which employ this same conditioned response mechanism in the correction of other types of deformities and undesirable muscle habits.

The results have been good, far better than have been obtained with braces constructed along conventional patterns where pressure was the basic corrective force.

Those additional conditions for which we have designed and used conditioned response braces are:

1. Round back-sway back postural abnormality, Figure one.
2. Neck flexion-round back postural abnormality, Figure two.
3. Scoliosis, Figure three.

The following comments, case histories and illustrations should enable you to order, have built, and use, these or similar braces employing this conditioned response mechanism.

* The subject matter of this article was presented as a scientific exhibit at the 1956 meeting of the American Academy of Orthopaedic Surgeons in Chicago.

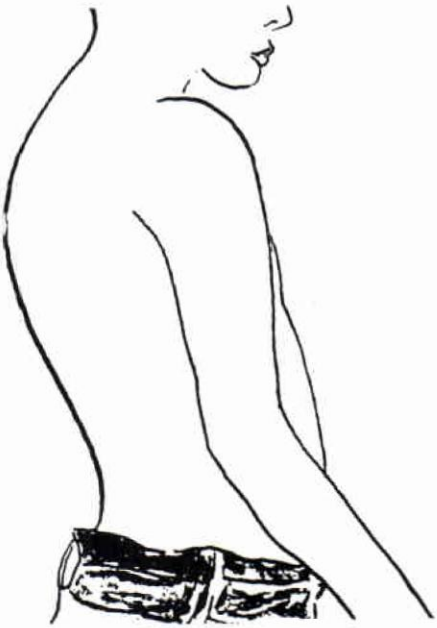

Fig. 1: Usual type of habitual round back-sway back postural abnormality.

Round Back-Sway Back Postural Abnormality

The usual treatment program of today for this condition, Figure one, consists of:

1. Specific exercises for development of the strength of the abdominal and gluteus maximus muscles.

2. Application of a brace which by three point pressure attempts to hold the low back flat.

3. Instructing the patient to "stand tall", to flatten the stomach, to stand correctly, and *to do it so much that it becomes habitual.*

Strong, tense gluteus maximus and abdominal muscles, particularly the latter, rotate the pelvis upright and correct the abnormal lumbar lordosis, Figure four. When this occurs the thoracic spine compensatorily straightens, the shoulders naturally fall backward instead of forward and the posture becomes normal. All of this is true if this abnormality is due to a habit and there is no associated fixed structural deformity such as occurs in kyphosis dorsalis juvenalis.

This regimen of treatment is successful if the patient is young and his spine is a growing one, and if he follows directions implicitly, and constantly, particularly number three.

It is not often though that a patient accurately and assiduously carries out these instructions and *seldom indeed does he ever develop the habit* of standing and walking correctly with his abdominals tight, hence improvement occurs slowly and often not at all.

It was for this type of patient that we devised the brace as in Figure five. The two pins in the abdominal pad prick the skin of the abdomen whenever the patient relaxes his abdominal muscles thus causing him reflexly to tighten them. As he does this thousands of times a day two things happen. The abdominals increase in strength and *he acquires the habit of holding them in.*

This type of brace has been used on eight patients who have obtained satisfactory correction and we have on each of them discarded the brace. Three others are now wearing this type of brace and we are pleased with their progress.

Illustrative Case Report

J. M., age twelve. This patient's sway back-round back postural abnormality had been noticed for about three years. He had been given exercises to do by his doctor which he did occasionally in a lackadaisical fashion. He was not improving.

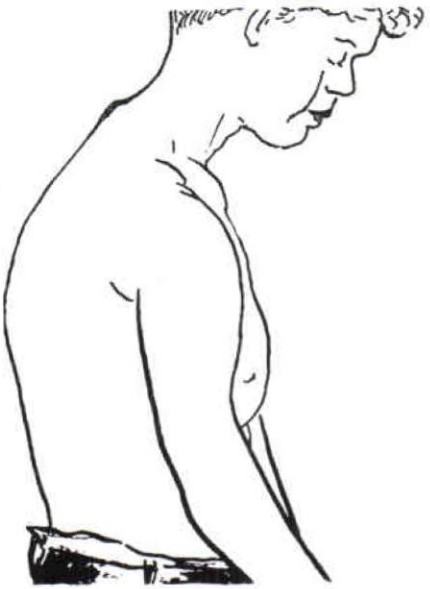

Fig. 2: Neck flexion-round back postural abnormality. The low back is normal.

The conditioned response brace was applied sixteen months ago. He wore the brace all day every day. Ten months ago, I removed the brace and told the parents to reapply it if they noticed his deformity recurring. I have been seeing him at intervals of every two months since then. He has not re-acquired his old postural habit.

Neck Flexion-Round Back Postural Abnormality

In this type of postural abnormality, Figure two, the low back posture is relatively normal. A sway back does not exist. The main deformity is a forward flexed head and neck, and a moderately rounded thoracic spine. This usually is seen in tall children who stand head and shoulder above their classmates and who, because of this, try to lean down to the level of the others. They do this so much that it becomes habitual.

The patient can correct this easily by simply holding his head up and his chin back, "West Point" style, but

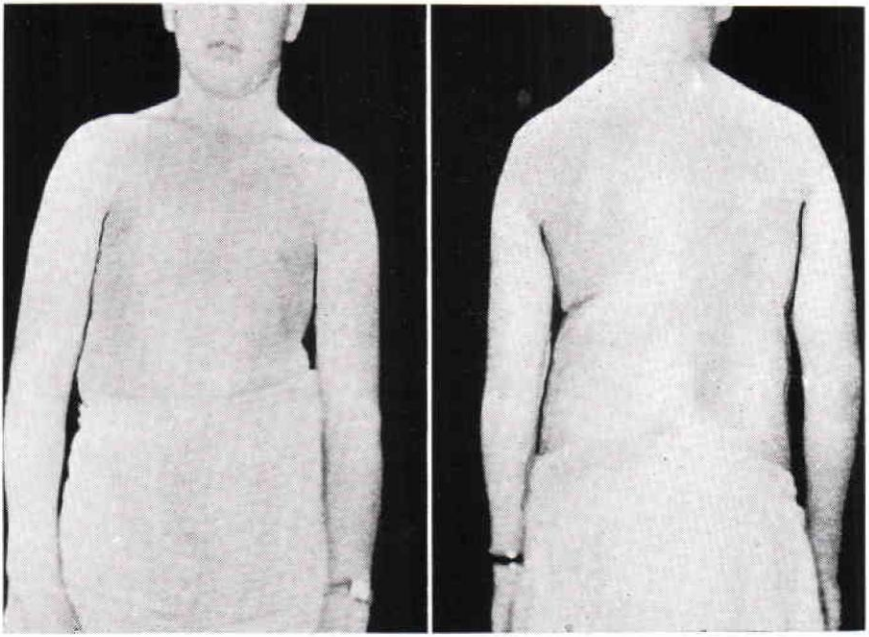

Fig. 3: Moderate degree of fixed idiopathic scoliosis in a thirteen year old boy.

because of his height he continues to lean down habitually and it is difficult to train him out of it.

For this type of patient we have constructed and applied the neck brace illustrated in Figure six.

When the head and neck lean forward too much, the skin on the front of the neck touches the sharp tip of a pin, thus causing the patient reflexly to straighten up. As he does this repeatedly thousands of times each day, he acquires the habit of holding the head erect.

This has been used on three patients with excellent results.

Illustrative Case Report

E. F., age fourteen. This tall, slender boy had been stoop-shouldered for over two years according to the parents. He has had no treatment, but the parents, and often his teacher, constantly have reminded him so stand straight, to hold his head up. Each time that he is so reminded he does straighten up, but only momentarily and he was not improving.

I saw him first fourteen months ago. The conditioned reflex neck brace was applied. He wore it all day every day. Within two months' time his habit apparently was broken and the brace was removed. However, two months later he again had re-acquired his old habit and the brace was reapplied. He wore it this time for three months, it was removed and during the last six or seven months he has not relapsed into his old postural habit.

Scoliosis

Scoliosis in its early stage, or of a mild or moderate degree, Figure three, is usually treated by specific torso muscle exercises and a back support such as a cast or a brace.

The purpose of the specific body muscle exercises, Figure seven, is to develop such a degree of strength in certain of those muscle groups that they, by their increased strength and endurance, can hold the spine either straight, or in a state of dynamic balance, the latter being accomplished

by the development of a compensatory opposite curve above or below the primary curve, thus converting an undesirable C curve into the more stable, balanced S curve.

These specific muscle exercises for such a curve are carried out ordinarily by the most conscientious patient one or two hours a day at the most, and the other twenty-two or twenty-three hours of the day the deforming forces, muscles, gravity, and sometimes abnormal bone growth have full play; thus correction occurs from this source slowly indeed and in most instances not at all.

When a cast or a brace is applied, it is one which by mechanical pressure attempts to hold the spine straight.

While this brace may hold the spine corrected or partially so, it is pernicious in its ultimate effect because the patient learns to depend on it for support; his torso muscles weaken rather than gain in strength, the curve increases as growth of the spine occurs and eventually a turnbuckle cast and a fusion become necessary.

In the early stages of most moderate or mild degrees of scoliosis in which fixation has not become pronounced, a patient can stand leaning to one side (the side of the convexity) in such a way as to partially or completely correct and in some instances to overcorrect the primary curve. Particularly is this true if the patient stands with all of his weight on the leg of the convex side, his opposite knee being bent and the pelvis tilted down on this side. Figure eight.

If we can do these following three things we shall increase the efficiency of our non-surgical corrective program in these scolioses.

1. If we can eliminate the muscle weakening effects of a confining pressure type of cast or brace and yet maintain the spine in a corrected position night and day for a sufficiently long period of time.
2. If we can make the patient exercise those particular specific torso muscles all day long and at night too, instead of for just one or two short intervals a day.
3. If we can habituate the patient to bending slightly sideways in the desired direction regardless of whether he stands, sits or lies down, and at the same time to stand habitually whenever he stands still, on the leg of the convex of the curve.

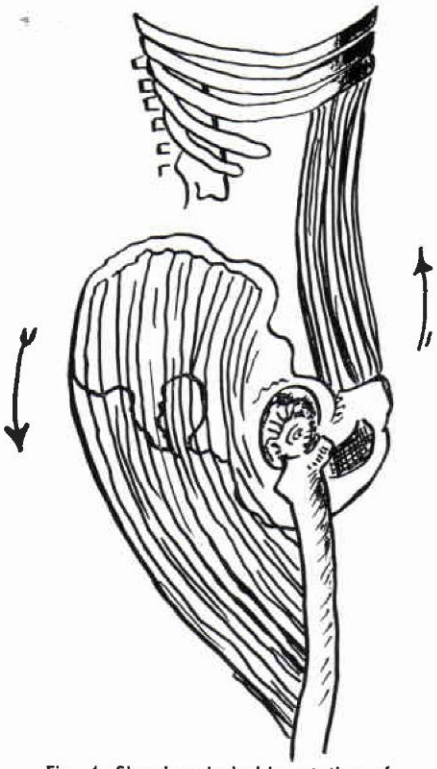

Fig. 4: Showing desirable rotation effect on pelvis, produced by strong, tense gluteus maximus and abdominals, especially the latter, thus correcting the sway back.

If these things are done efficiently and for long enough and if the spine is a growing one, then considerable correction should occur in almost all

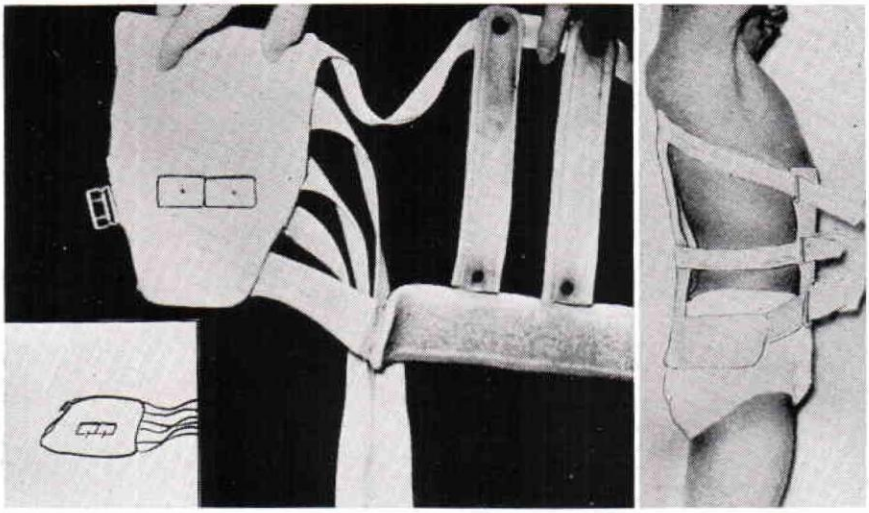

Fig. 5: Conditioned response brace for correction of sway back-round back postural abnormality. Pins in insert showed longer than necessary for clarity.

of them, since *growing things tend to grow in the way they are held.*

With this in mind we developed the scoliosis harness-brace, Figure nine, which works on the conditioned response principle and which does accomplish every one of the three desired things mentioned above.

It does hold the spine in a corrected or over-corrected position night and day, since it is worn at night as well as all day. It does not do so by mechanical pressure or confinement and wearing it does not weaken any of the body or extremity muscles.

It does make the patient reflexly exercise the specific lateral torso muscles on the desired side and he does this exercise literally thousands of times each day and night, thus they gain in strength much more completely and much more rapidly.

It does habituate the patient to standing constantly, when he stands still, with all his weight on the leg of the convex side of the primary curve, his opposite knee bent and his pelvis slumped downward on that side. It also induces him constantly to lean slightly sideways, to the side of the convexity of the primary curve, regardless of whether he stands, sits, or lies down.

This harness is not heavy, cumbersome, bulky, is not particularly uncomfortable to wear and it does not slow down in the least, the patient's routine activities of the day.

How Scoliosos-Harness Works

The side strap, Figure nine-B, should be tight enough to hold the spine bent slightly sideways, to the side of the convexity of the primary curve. This alone though is not enough. It is the natural inclination of everyone to pull against or resist any restraint and if the patient does this with the harness-brace or any other kind of side bending brace, he will exercise the wrong group of muscles. He exercises, in pulling *against* the harness-brace, the lateral torso muscles on the concave side of his primary curve which is highly undesirable and which defeats the purpose of the harness. For this reason then the felt-pin device is affixed to the inner (skin) surface of the side strap. It is so placed that if the patient straightens up or leans the wrong way, or if he stands with all of his weight on the wrong leg the side strap is pulled against his body and the pin touches the skin of the side of his

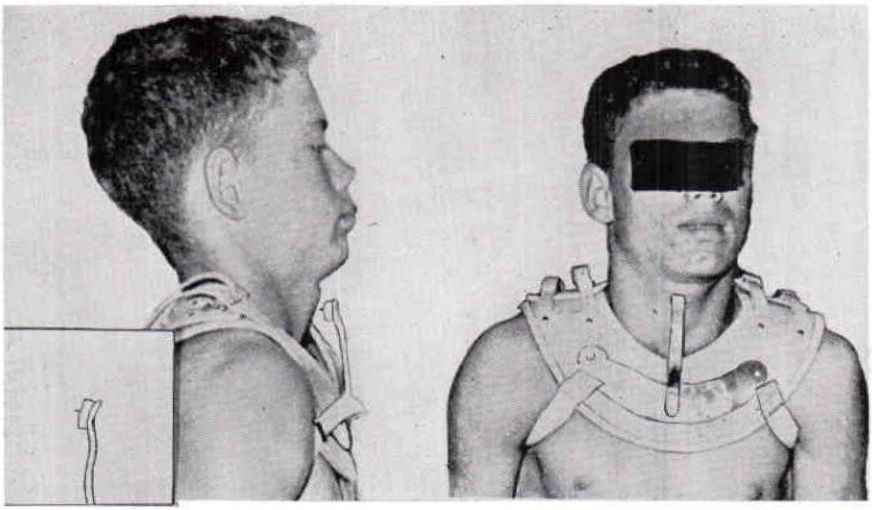

Fig. 6: Conditioned response neck brace used for correction of neck flexion-round back postural abnormality. Insert shows felt-pin device affixed to upright strip.

body causing him thereby reflexly to assume the desired position. Thus all day long, and all night too, he reflexly leans or holds his body in such an attitude as to hold the spine corrected.

Furthermore, thousands of times each day as the skin touches the pin the patient's torso muscles on the convex side of the curve reflexly contract to pull the body away from the pin, Figure ten, thus exerting a positive dynamic corrective force on the curve by exercising those specific muscles, the very ones which by their increased strength and holding power maintain the spine in a straight or a balanced position.

There is nothing new in this underlying theory of treatment as presented here. Specific exercises and a harness brace[1] have been used at times past for scoliosis, and the development of a compensatory curve in the opposite direction to the main primary curve is one of the fundamental concepts of spine balance and has been so recognized for many years.

What is new is the method of doing this by the use of this conditioned response mechanism on the scoliosis harness. Instead of specific muscle exercises carried out voluntarily at stated intervals, the patient reflexly does them all day long, and even at night should he relax into such a position as to increase the primary curve then the pin touches the skin of the side of his body on the convex side of the curve and he reflexly corrects it even while asleep. He becomes conditioned therefore, to holding the spine in the corrected or correcting position and in the process of conditioning him, a marked increase in the strength of the particular muscles necessary for maintaining spine balance occurs.

Figure eleven shows the x-ray of the same patient's spine as in Figure eight, but standing with the scoliosis harness-brace on and with all weight on the right leg. Note the increased degree of correction with the scoliosis harness on, due to the almost constant reflex contraction of the right torso muscles.

Contra-Indications

The scoliosis harness is of little or no value in the fixed, advanced degree of roto-scoliosis. It has not been very successful in stopping the prog-

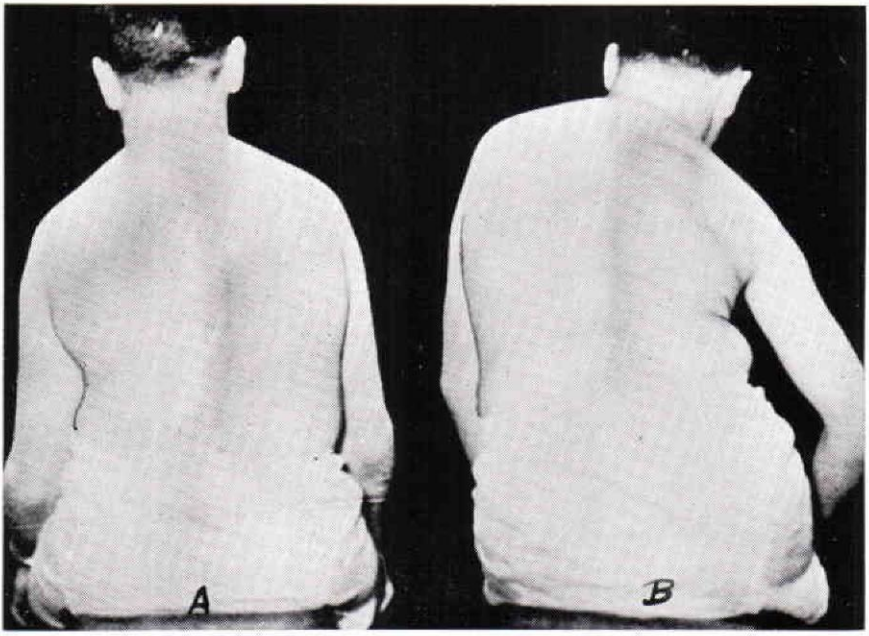

Fig. 7: a. Scoliosis patient sitting normally
b. Same patient holding right torso muscles tight in doing his specific muscle exercise.

ress of the high thoracic primary curve. Adults apparently don't tolerate it very well, mainly because the adult is interested in pain relief rather than correction of the curve. In some post-polio cases where a hip flexion or other contracture exists or where a marked amount of torso muscle weakness or leg weakness is present, it will not be of much value. I have not yet used it in children below the age of five so I don't know for sure whether it works well in that age group or not.

I have not used it on Cerebral Palsy patients, and I do not anticipate using it on them, because in most instances the Cerebral Palsy child does not have sufficient control over his muscles to enable him to obey the withdrawal reflex induced by the skin touching the pin.

Indicated In

Its greatest value lies in the treatment of early, mild, or moderate degrees of lumbo-thoracic curvature, some of which are purely static scolioses, and some of which are beginning to acquire a minimal or moderate degree of fixation and rotation. Many of those straighten out completely and those that do not, do develop satisfactory dynamic balance by the formation of a well balanced S curve.

This method of treatment, using the conditioned response principle of the scoliosis harness as a correcting force, has been used on sixty-eight patients with extremely gratifying results.

Illustrative Case Report

C. P., age thirteen, Male-Idiopathic scoliosis—Figure three.

This boy was seen first on December 28, 1954, because of his spine. The conditional response scoliosis harness-brace and a one-inch right heel elevation was applied on that day. He was seen one week later, then a month later, and again the last time on March 22, 1955, which is three months since the harness was

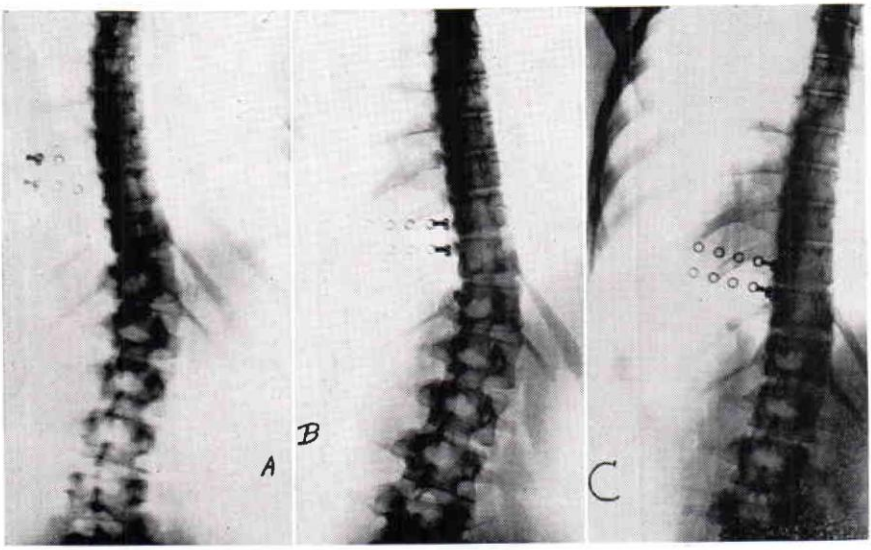

Fig. 8: X-rays of a post-polio scoliotic spine, age fifteen
a. lying down
b. standing, weight equal on both legs, no elevation on either heel
c. standing, all weight on right leg and leaning to right

applied. Figure twelve shows the spine at the initial examination. Figure thirteen shows it at the last examination. He has worn the harness night and day. It does not interfere with his sleep or his daily activities. When he plays tennis he covers the pin to prevent its sticking him, but all the rest of the time he wears it faithfully, as we requested.

Since this boy is in a stage of rapid spinal growth it is our present intention to have him continue to wear it for another year or two. It seems highly improbable that he will ever need a turnbuckle cast and a fusion.

Brace Construction

The brace used for correction of the round back-sway back abnormality may be made just exactly like almost any other low back brace. The one thing which makes it different and which converts it into a conditioned response brace is the addition of two pins on the inner surface of the abdominal pad. Figure five. This is done by cementing two small squares of felt to the inner surface of the abdominal pad and placing in the center of each of them a short pin, tack or flat headed shoe nail, the point of which protrudes about one millimeter beyond the felt surface, just barely enough to prick the skin of the abdomen if the abdominal muscles are not kept tight and retracted.

If a flat headed shoe nail is used, the point must be sharpened on an emory wheel. The sharper the point, the better it will work. If only one pin is used, the tip of the pin may lie in the umbilicus, and the patient will not feel the pricking sensation, hence two pins must be used. Furthermore, they must not be placed too high so that the pressure of the belt around the waist will cause it to be constantly in contact with the body. Also, it must not be placed too low near the symphysis pubis because then the patient cannot withdrew away from it. It should be placed on either side of the midline at the most prominent lower portion of the abdomen.

The neck brace, Figure six, used in

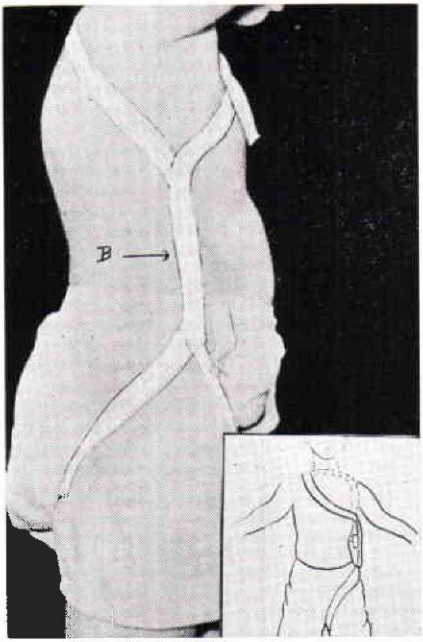

Fig. 9: showing conditioned response scoliosis harness-brace. Insert—felt-pin device exaggerated in size for clarity.

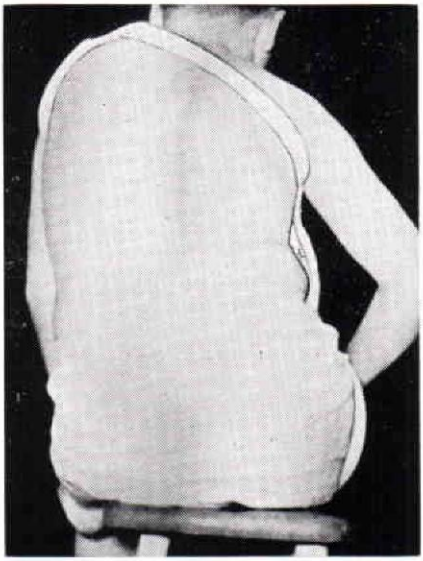

Fig. 10: Same patient as in Fig. 7, but wearing scoliosis harness. Note how he habitually sits with right torso muscles contracted to prevent pin from sticking skin of right side of chest. He stands and lies down the same way.

the neck flexion-round back postural abnormality is simply a flat leather collar resting on the shoulders about the base of the neck with an aluminum plate in front, to which is attached a small vertical aluminum strip and on the side of this upright strip which faces the neck, the felt-pin device is affixed. This upright aluminum strip is so adjusted that if the patient's neck goes forward into the undesirable position, the skin of his neck touches the pin, and he reflexly straightens up the head and neck.

The scoliosis harness is made of one-inch webbelt. The side strap is sometimes most effective when made of a strip of woven elastic, but in most instances it is made of the same inelastic web belting as the rest of the harness. It is, of course, always placed on the convex side of the primary curve. The square of felt and pin are placed on the side strap in such a way, and in such a position, as to touch the most prominent fold of skin on the side of the chest or loin if the patient straightens up, leans to the opposite side or stands on the wrong leg, but it must not touch if he sits, stands, or lies down correctly.

When a patient sits for a long period of time the side strap may migrate forward some, and cause the pin to touch the antero-lateral aspect of the body instead of the true lateral aspect. If it doesn't migrate around to the true frontal plane of the body, it is all right. I have simply found from experience that it works just as good on the antero-lateral as well as the lateral aspect. The patient can be instructed to pull it back to the true lateral aspect and this is usually sufficient.

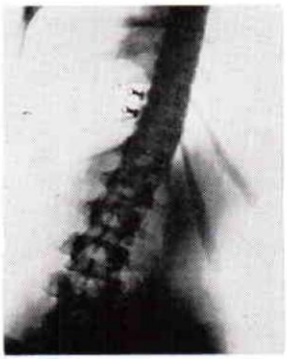

Fig. 11: Same patient's spine x-rays as in Fig 8, but now wearing scoliosis harness. Note additional correction due to habitual reflex contraction of right lateral torso muscles.

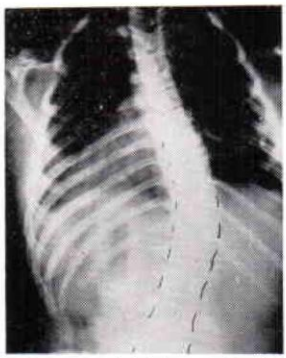

Fig. 12: Spine at initial examination. Film made with patient standing, weight equal on both feet, knees straght. This is the x-ray of patient in Fig. 3, idiopathic scoliosis.

Fig. 13: Same patient as Fig. 12, standing, weight equal, knees straight, but now wearing scoliosis harness-brace and a one-inch lift on right heel. This film made three months after application of harness. Note straightening of primary curve and development of a curve in opposite direction.

Dr. Herbert E. Hipps is a fifty-three year old orthopedic surgeon living in Waco, Texas. He got most of his orthopedic training under Dr. W. B. Carroll at the Scottish Rite Hospital for Crippled Children in Dallas back in 1931, 1932 and 1933, following which he studied in Europe for eight or nine months, before starting in al private practice in Texas. He is the author of some thirty-five or forty various articles on various orthopedic subjects. Dr. Hipps is, at the present time, a Diplomate of the American Board of Orthopaedic Surgeons, a member of the American Academy of Orthopaedic Sugeons, a member of the Texas Orthopedic Association, and other medical and surgical societies.

Final Comment

The use of the conditioned response mechanism on suitable braces adds materially to the corrective forces necessary for correction of the existing deformity or abnormal muscle habit.

Correction occurs through physiological means rather than by mechanical pressure. It induces the patient to participate actively and constantly in the correction and he thus becomes conditioned to maintaining himself in the corrected or correcting position. He develops the habit of doing so.

It is a thoroughly harmless procedure. At no time have we ever seen any but the mildest skin irritation where the pin intermittently touches the skin.

It is hoped that others will use this most efficient corrective mechanism on these types of braces and also develop new uses for it on other braces and other conditions.

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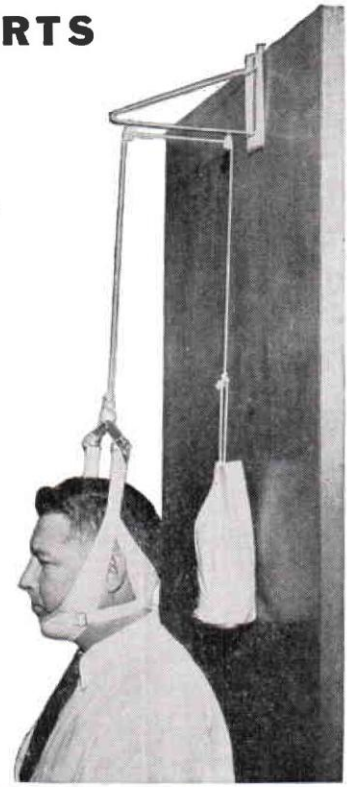

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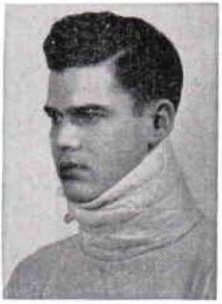

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CROSS-COUNTRY REPORT

What the OALMA Regions are Doing

Region XI meets at Portland, Ore. OALMA members in the Northwestern States met Feb. 11. Starting from top left to right: J. James Sparks, L. W. Paterson, John Geis, Glen Bliss, Vernon Allen, Bob Chatterton, Earl Odell, James Corbett, Charles R. Rice, A. W. Pruhsmeier, H. Boyce, Carl Gustavson, Charles Newton, Wayne Brooks, Ray Moore, Joe Frosic, O. N. Fuoco, Clarence Cole, Russell Brain, L. Cedar, Glenn Jackson, Willard Parlette, Marvin Goodrich, Harry Weaver.

Region VII to Meet at Omaha

OALMA's largest Region, the Middle West, Region VII, is to hold a one-day meeting at Omaha, Nebraska April 14th. All sessions will be in the Hotel Fontenelle. Local arrangements are in charge of Donald Bohnenkamp of Omaha, and Jack O. Casey, Secretary-Treasurer.

Les Smith of the Washington Headquarters will conduct round-tables on "Public Relations" and "Keeping Up-To-Date in the Limb and Brace Field." Mr. Fred Novak, Director of Vocational Rehabilitation, will be speaker at the luncheon. New developments in orthopedic appliances and artificial limbs will be discussed.

Region VII is proud not only of its large geographical extent, but of its record in contributing four National Presidents of OALMA in recent years; Lee Fawver, Chester C. Haddan, A. P. Gruman, and Lucius Trautman—a record no other Region can match.

Region VIII (Southwest)

Region VIII, the Great Southwest, met at Shreveport, Louisiana, March 10 and 11 under the Chairmanship of James D. Snell, Regional Director. All sessions were held in the Physicians and Surgeons Hotel, a very modern building, which is part of a growing medical center, including hospital, office building and clinical facilities. Dr. Gene D. Caldwell discussed "Children's Amputations" and reviewed a new Os-Calcis Brace. Dr. Caldwell also reported a growing medical opinion that congenital deformities are best treated by amputation and replacement with a prosthesis as soon as possible.

A panel discussion on public rela-

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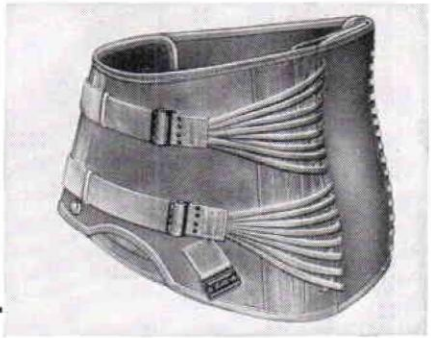

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tions was presented by Les Smith of the Washington office, who acted as moderator. National President Frank Harmon, Ted W. Smith of the Knit-Rite Company and Sam H. Dobyanski of Houston made up the panel.

The meeting adjourned to the Snell Facility in the hotel for a shop demonstration by Dr. John Young of Mellon Institute. Members were so impressed with this fine presentation that at a later business meeting they unanimously voted a resolution of appreciation and an expression of their regret that Mellon Institute has been denied funds to continue this research project headed by Dr. Young.

Jerry Leavy, Vice President of Dorrance-Hosmer Company was featured speaker at the dinner, presenting a report on "Upper Extremity Measurement and Fabrication" illustrated by colored slides. President Frank Harmon of the National Association extended greetings and presented for discussion and future study two new terms which have been coined: as replacement for orthopedic —"orthotic" pertaining to straightening or correcting, and "orthesis," the appliance intended for straightening or correcting a body part.

At the closing business session members heard a report on the new Lower Extremity Schools presented by Al Muilenburg, who attended the first pilot school. A gadget demonstration evoked keen interest as new products and new braces were passed around and described. The services of the National Office which are available to member limb and brace firms were reviewed by Assistant Director Les Smith.

The large delegation from Houston Texas was successful in winning approval of Houston as the meeting city for 1957. In 1958 the Association will meet at Gonzales Warm Springs Foundation as guests of the Foundation.

New officers of the Association for the year ahead include Al Muilenburg of Houston, Texas, as President; Sam H. Dobyanski as Vice President; and Richard Terry re-elected as Secretary-Treasurer. All three are residents of Houston.

Los Angeles Meeting

Certified prosthetists and orthotists, together with managers and facility owners, gathered in a special meeting to honor Glenn Jackson, executive director of OALMA and Dr. Robert Mazet, president of the American Board for Certification. Dr. Miles Anderson, head of the Prosthetic School at UCLA was also in attendance at the meeting presided over by Charles A. Hennessy, first vice president of OALMA on February 13.

Director Jackson gave a progress report on certification and told of the advances in the professional standards that have been secured to date as a result of certification improvement. He spoke highly of the efforts of Dr. Anderson in preparing the new certification examination and presented the new certification application forms, commenting on the wide scope of requirements that must be met by applicants in order to reach the high professional standing now being recognized.

Director Jackson also gave a progress report on OALMA, telling of the status and goals of the economic project and explaining the benefits which will result from the efforts of this project, available only to OALMA members.

What's News?

• *John McCann* has presented OALMA Headquarters Library with a valuable gift—the proceedings of the 1928 annual meeting of the Association of Limb Manufacturers. Our thanks to John for his valuable and scarce donation. Reading over the proceedings for that year we find that H. T. Odgers of the Columbus Artificial Limb Co. was President and McCarthy Hanger, Sr., was Secretary.

New England Council Officers look back on a Good Year—left to right: Secretary Joseph Arnold; Treasurer Eric Klahr; Regional Director Karl Buschenfeldt and President Joseph Martino. The Council has elected these officers for 1956: President John F. Buckley; Vice President Edward Hitchcock; Secretary John Glancy; and Treasurer Eric Klahr.

Region III—Eastern Pennsylvania Maryland, Delaware, Virginia and Washington, D. C.

The annual meeting of Region III of OALMA (the Middle Atlantic States) was held in Baltimore, Maryland, at the Lord Baltimore Hotel on January 28-29. Charles Wright, Regional Director, presided over the two-day session. The forty members and their wives who attended enjoyed meeting in this fine old Maryland town. The collegiate spirit and goodwill shown to each other gave the session special significance. It proved that a business meeting can also be a social success.

Glenn Jackson and Treasurer M. P. Cestaro opened the program with "The Financial Side of Your Business." There's no doubt in our mind that this presentation enlightened many members present who had been plagued with the problems of financial analysis. And if we may quote Glenn: "This type of cost analysis will be continued at other meetings" —this should prove beneficial to every member of our profession. The need of bracing for the cerebral palsied child was excellently illustrated by Mr. C. D. Denison and his son, with slides from their personal file (these are the same slides, incidentally, which were shown by Dr. Phelps at the Academy Meeting).

Our After Dinner Speaker was Dr. Sidney Fishman of New York University talking on "Leaves From the Prosthetic Research Book." Everyone was interested also in what he had to say about the new school in prosthetic appliances just getting underway at New York University.

A "What Would You Do?" round table was a highlight of the Sunday morning session. It was delightful to see what a "bull-session" in which no gavel is swung, can achieve with a discussion.

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John Cocco of Philadelphia presided over the closing session on "New Ideas." New jigs and appliances were presented and a short lecture on Better Bracing concluded a memorable and delightful meeting of District III. Special thanks are due to our Baltimore natives, who were hosts, Mr. and Mrs. C. D. Denison, and to Mrs. Basil Peters, Treasurer of the OALMA Ladies' Auxiliary.

By ALFONS GLAUBITZ

The South Meets at Birmingham

Region IV representing the Southeastern States held its ninth Annual Meeting at the Bankhead Hotel in Birmingham, Alabama, March 16 to 18. Approximately 80 persons were present in the meeting at the Bankhead Hotel—a far cry from the first meeting in 1948 and 1949, when the entire registration could have been accommodated in a taxicab! Arrangements for the meeting were in charge of Moody Smitherman, Secretary-Treasurer of the Region and Richard Locke, Regional Chairman. The latter as Program Chairman kept the sessions moving on schedule. National President Frank Harmon was Guest of Honor. Region IV is proud to claim him as a native son.

Dr. Harriet Gillette of Atlanta described the activities of a rehabilitation center.

The Canadian Hip Disarticulation Prosthesis was described in a series of slides presented by Carlton Fillauer. This was followed by another

(Continued on page 81)

for Precision in Arch Supports

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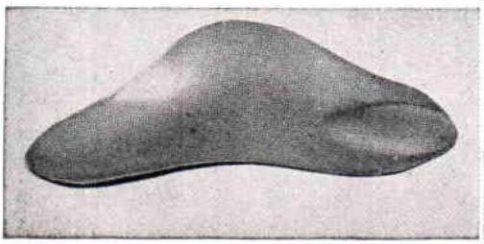

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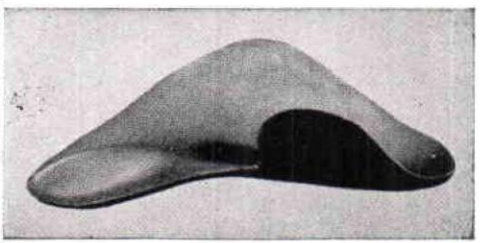

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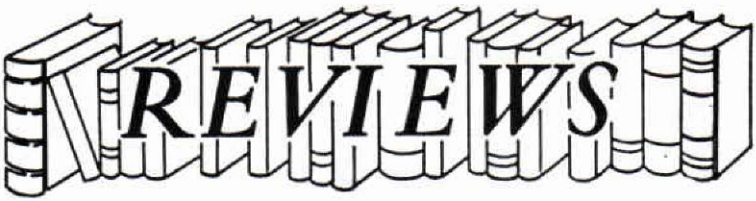

ESSENTIALS OF ORTHOPAEDICS

By Philip Wiles, M.S. (Lond.), F.R.C.S. (Eng.) Published in the United States by Little, Brown and Company, Boston, 1955. 358 pages, illus. $10.00.

Reviewed by Henry J. Saur, C.O., Henry Saur Co., Philadelphia.

In this book the author has "tried to confine himself to the elements of the subject, both physiological and pathological, and the application to diagnosis and treatment." He apparently had in mind the general practioner, the medical student, and the graduate student training for the specialty, because he gives a brief but comprehensive explanation of most orthopaedic conditions, including the more common forms of treatment. The various chapters deal with postural defects, back pain, the spine, the hip, the knee, the foot and ankle, the shoulder, the elbow, and the wrist and hand. The later chapters deal with pyogenic infections, tuberculosis. arthritis, bone tumors, congenital defects and diseases, and finally diseases of the nervous system.

For the orthotist it would be an excellent reference book, where he could get an understandable explanation of all the common and most of the uncommon orthopaedic conditions. However, the author devotes very little space to the use of orthopaedic appliances. In many instances he gives the reader the impression that he takes a dim view of their use as a means of treatment. The few places where he advocates their use, he refers only to the most conventional types.

In general, the book is written in an understandable manner and is an excellent source of information on orthopaedic conditions. It contains very little for the orthotist seeking specific information on braces.

CLINICAL ORTHOPAEDICS

Edited by Anthony F. De Palma, M.D., and various associate editors. Published at Philadelphia and Montreal by J. B. Lippincott Company. Number Five, c. 1955, 242 pages; Number Six, c. 1955, 219 pages. $7.50 each.

Reviewed by Durward R. Coon, C. P. & O., Detroit.

In writing a review of these volumes it would be inadequate for a layman to do justice to them, and so I will attempt to give my impressions.

Upon opening *volume five*, I became engrossed immediately with the short resume of the life and work of Dr. Joel Ernest Goldthwait by Dr. John G. Kuhns. From this, I continued with the article about Postural Evolution by Dr. Charles W. Goff, which was very informative.

The most interesting part of this volume in its appeal to the Prosthetist or Orthotist begins on page 169 with the article on back braces by Dr. Odon F. von Werssowetz. There is more information here about types of braces for the back and fitting procedure than I have ever seen so concisely assembled before. The illustrations of braces showing the fitting on patients is very informative and clear. The summary covers not only Dr. von Werssowetz's brace, but also the Williams, Goldthwait, Lipscomb, Baker, Callahan, Knight, Cowhorn,

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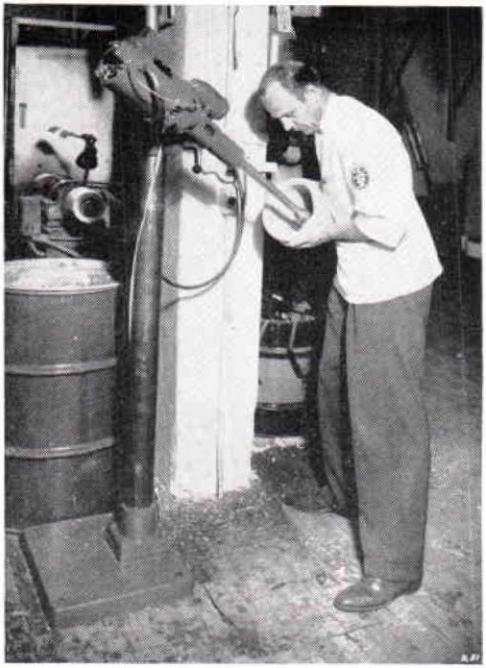

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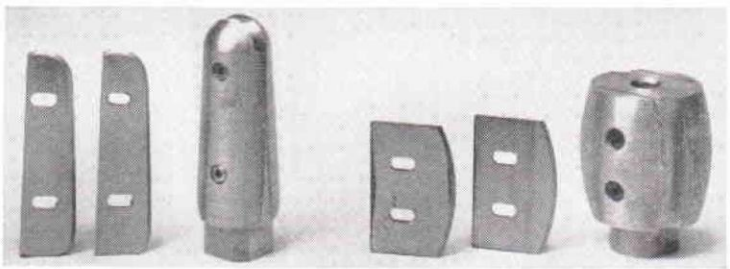

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Brackett and the familiar Taylor braces. The doctor's point of view regarding these braces is clearly informative and something every fitter should read.

The other articles about the cervical spine by Ruth Jackson, M.D., Juvenile Dorsal Kyphosis by Tom Outland, M.D., and Hal E. Snedden, M.D., and Postural Backache by Lowell F. Bushnell, M.D., are well worth the time of every fitter to read several times.

My impression of *volume six* is somewhat different in the sense that it is not nearly so applicable to the problems of the Orthotist or fitter, but deals with subjects more suitably related to the doctor. However, I do feel that a better working knowledge can be gained by reading these books and the chapters dealing with surgical procedure and problems.

Like many other new problems, as we read and think more about them and take opportunities such as offered in these books to read about them, we will gradually acquire a better understanding of surgical cases as they come to us for fittings and be better able to fill the doctor's requirements.

In summary, it seems that these books would make ideal reading matter for all of us, and they will give us something to think about and definitely not be a summary of familiar facts, but rather an interesting way to view familiar problems from the doctor's viewpoint.

A NOTED BOOK ON ARTIFICIAL LIMBS

Historical Review by Lester A. Smith.

OALMA Headquarters Library has just added to its collection, a famous book on prosthetics written by one of America's noted limbmakers. This is the 1931 edition of "Manual of Artificial Limbs," written by George E. Marks and published by the firm of A. A. Marks, Inc. This copiously illustrated book of 356 pages, was originally published under the title, "A Treatise On Marks' Patent Artificial Limbs With Rubber Hands and Feet." This was written in 1888 and the first edition appeared the following year.

OALMA is indebted to a New York City member firm, the Marks Artificial Limb Company, C. B. Lenmark, Manager, for this valuable gift.

It is a startling experience to read this book, and particularly the first edition published in 1889, and realize that much we today think of as the result of modern research was known and practiced by these pioneer prosthetists.

George Marks from 1878 on devoted himself to a study of artificial limbs. He toured the principal cities of Europe and studied thoroughly the methods in use by the manufacturers in those cities. New York City in the eighties was already the metropolis of the country and an ideal place in which to see a great number of amputees. The bloody battles of the Civil War had left many amputees throughout the country.

The partners in the Marks Company developed great skill in treating these people. In addition they received many orders from foreign countries. Their catalogues and earlier writings appeared in German and Spanish, as well as in English.

Some idea of the scope of their business may be gathered from the section on Statistics in the 1889 edition. At the time that volume was published the firm had already filled 8,066 orders for artificial limbs. The author thoroughly reviewed 3,500 of those in which the records were complete. His study of the cause for the amputations reveal some interesting figures. At that time railway accidents were responsible for 25% of the amputations. Wars, including foreign wars, were responsible for 30%, while accidents with horses and vehicles were responsible for 2½%.

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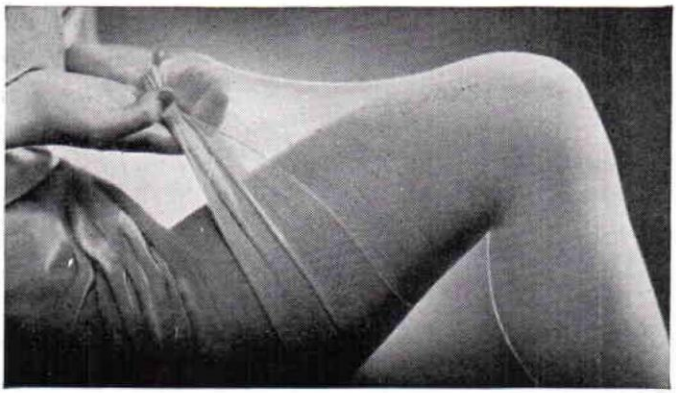

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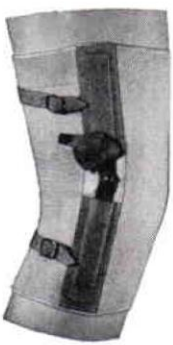

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Reading this book, the 1889 edition which is on file in the Library of Congress and the 1921 edition which now ornaments the shelves of our Headquarters Library, it is impossible not to have a feeling of pride in the achievement of this early generation of prosthetists. We should not forget what they accomplished. Indeed, the history of prosthetists needs to be studied and recorded. We should begin now before the old records are lost. Just recently our Past President, Clyde Aunger, has accepted the important assignment of "Old-time" editor and columnist for our *Journal.* We hope that anyone who has letters, pictures and records on prosthetics, especially in the days before World War II, will think of the OALMA Headquarters Library as the logical place for the safe custody of these valuable relics.

COURSE IN ABOVE-KNEE PROSTHESIS FITTING AND ALIGNMENT FOR PROSTHETISTS

Prepared by Dr. Miles H. Anderson, Raymond E. Sollars and Marian Prince Winston for the Prosthetics Education Project, sponsored by the U. S. Veterans Administration in cooperation with the Prosthetics Research Board of the National Research Council, March 1, 1956. 251 pages.

This loose-leaf Manual is the most practical and useful book now available for the prosthetist, and it's easy to see why this is so. It represents the basic principles and good working practices developed by the Prosthetic Devices Research Project of the University of California of Berkeley, and by these members of the prosthetic profession who served at the first pilot school:

John J. Bray, Los Angeles
Donald F. Colwell, Los Angeles
Henry F. Gardner, New York City
Charles A. Hennessy, Los Angeles
William E. Hitchcock, Boston
Alvin L. Muilenberg, Houston
George A. Scoville, Hartford
Howard R. Thranhardt, Atlanta
William A. Tosberg, New York City

Materials in this course were written and edited by Dr. Miles H. Anderson, Raymond E. Sollars and Marian Winston. Its publication was sponsored by the U. S. Veterans Administration in cooperation with the Prosthetics Research Board of the National Research Council. This was prepared exclusively for the use of students in the Above-knee Prosthetics Fitting and Alignment Schools in 1956 at New York and at Los Angeles. For the present this manual will be given to all prosthetists who enroll for the courses in A.K. Prosthetics at N.Y.U. and U.C.L.A., but will not be available for general distribution. The Table of Contents will give some idea of the practical nature of this book:

CONTENTS

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The Answer to Your Leg Finishing Problems

Mounted on below knee Wood Leg with *SACH* Foot.

What a Girl needs to fill a Nylon Stocking with -- this *Realastic* COVER has it!

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slide series on "Passive Abduction Above Elbow Arm." The brace man was not forgotten, as Wilmore Bremer reviewed ways to reduce the failure of brace parts. The latest in prosthetic appliances was presented by Howard Thranhardt, and new developments in orthopedic appliances by Bert Titus. The expanding rehabilitation program was reviewed by Mr. Les Waller, Director of Physical Restoration of Alabama. Mr. Waller prefixed his remarks with some of the most delightful hunting dog stories every heard by an appreciative audience.

Jerry Leavy, Vice President of Dorrance-Hosmer, was one of the featured speakers at the meeting and presented two programs: (1) "Tips on Harnessing and Making the Upper Extremity Prostheses" (illustrated with color slides) and (2) a film presentation, "Are Your Hands Tied?" This motion picture is available free of charge to local meetings arranged by members of OALMA.

Les Smith, Assistant Executive Director of OALMA spoke on "Keeping Up-To-Date in the Artificial Limb and Brace Field." He also took part in a panel discussion of "Public Relations for the Limb and Brace Shop." Other members of the panel included George Lambert of Baton Rouge, Moody Smitherman of Birmingham, and Reid White Goldsby of Mobile. J. L. Brakefield, Director of Public Relations for the Liberty National Fire Insurance Company, was guest speaker of Region IV at the Annual Banquet.

At the closing session members heard Glenn Jackson, Executive Director of OALMA speaking on "What's Ahead."

Officers elected for the year ahead include the following Board of Governors: (1) The OALMA Regional Director ex officio; (2) Mrs. Louise Gillespie Able; (3) H. H. Maddox of Warm Springs, Georgia; (4) A. D. Pope, Jr., of Charlotte, North Carolina, and (5) Jack L. Caldwell of Tampa, Fla.

Tampa, Florida, won out in the competition to be host for the 1957 Regional Meeting. Tentative choice for 1958 is Charleston, South Carolina, and for 1959, Chattanooga, Tennessee.

In Memoriam

GEORGE W. DURRETT, founder of the Birmingham Artificial Limb Company of Birmingham, Alabama, died January 14 at the age of 74. He was born in Cleburne County, Alabama on September 6, 1881 and spent most of his adult years in the artificial limb field, his first experience being with the Winkley Company. He went into business in Birmingham for himself in 1906 and successfully operated the Birmingham Artificial Limb Co. until his retirement in 1951. Along with others here in the South, he also trained Pete W. Allen, President, Birmingham Artificial Limb Co., and Moody L. Smitherman, Secretary, who are joint owners at the present time. Mr. Durrett is survived by his wife, Mrs. Nina May Durrett, one son, George Durrett, Jr., two daughters, Mrs. Zillah Allen and Mrs. Shirley Rochell, who is still employed by the company.

MAX W. ROSS, formerly President of the Joint Mfg. Co., Peoria, Illinois, passed away in St. Petersburg, Florida, on March 21st, 1956, at the age of 83. Mr. Ross was active in the forming of the Association some years ago and attended every Assembly until his retirement in 1949. He is survived by his wife, Mrs. Martha M. Ross of St. Petersburg.

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Often copied, but never duplicated, the Sierra Model "C" Elbow offers several unique advantages to both the prosthetist and the amputee. No other elbow offers all these features:

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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 in their entirety by the American Board for Certification as a guide for the Certified Prosthetist and Orthotist. The full text of the Codes may be obtained by application to the American Board for Certification Headquarters.

The following digest of the rules 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 industry product will be made to fit unless such promise is made in good faith and the industry member is possessed of the requisite competence to assure his ability to fulfill such guarantee. A prosthetic device is not to be considered as fitting or an orthopedic appliance unless properly shaped for the body member to which it is applied, and in proper alignment and conformity with the physique of the person to wear such a product, and affords the optimum of comfort and use on the part of the wearer.

(5) To deceive anyone as to his authority to represent and make commitments in behalf of an industry member unless such be fully true.

(6) To use any testimonial or use any picture which is misleading or deceptive in any respect.

(7) To demonstrate any appliance in a manner having the tendency or effect of creating a false impression as to the actual benefits that may be reasonably expected from it.

(8) To use any guarantee which is false or misleading.

(9) To represent that any appliance conforms to a standard when such is not the fact.

(10) To publish any false statements as to financial conditions relative to contracts for purchase of appliances.

(11) To engage in any defamation of competitors or in any way to disparage competitors' products, prices, or services.

(12) To use the term "free" to describe or refer to any industry product which is not actually given to the purchaser without cost.

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

(14) To take part in any concerted action with other members of the industry to wilfully fix prices.

(15) To promote the sale of any appliance to any person who can not be expected to obtain reasonable benefit from such appliance.

(16) To refrain from giving every assistance to doctors before and after amputation or crippling condition, or to fail to do everything possible to promote mutual trust and confidence between the industry and the members of the medical profession.

(17) To undertake to supply an artificial limb by mail-order specifications without personal fitting thereof unless conditions are such which make an exception desirable, and in any case, no misrepresentation shall be made as to fit.

(18) To unduly exploit features of appliances less important than proper fit and alignment.

(19) To fail to recognize that the interest of the amputee and the handicapped is the first concern of this craft and therefore any failure to make available to all of its members and the general public any improved technique that may be used as to making, fitting, aligning or servicing of industry products shall be an unfair trade practice.

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

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