DECEMBER, 1960

ORTHOPEDIC & PROSTHETIC APPLIANCE JOURNAL

The Journal of the Limb and Brace Profession

RALPH STORRS, C.O.
President 1960-61, American Orthotics and Prosthetics Association

publisher: American Orthotics and Prosthetics Association

SCHEDULE OF MEETINGS AND EXHIBITS, 1961

SPONSORED BY THE AMERICAN ORTHOTICS AND PROSTHETICS ASSOCIATION

I. NATIONAL ORTHOTICS AND PROSTHETICS ASSEMBLY—Oct. 19-26, at the Eden Roc Hotel, Miami Beach, Florida.

Richard G. Bidwell, C.P., C.O., Program Chairman

Bert Titus, C.P., C.O., Vice Chairman

George H. Lambert, C.P., C.O., Exhibits Chairman

Erich Hanicke, C.P., C.O., Chairman, Special Technical Devices Committee

Program suggestions should be addressed to the Program Chairman, AOPA Headquarters, 919-18th St., N.W., Washington, D. C.

II. REGIONAL MEETINGS

In 1961, the Association will sponsor a series of eleven regional meetings, as shown in the schedule below. Attendance is open to all who are interested in the rehabilitation of the orthopedically handicapped.

Requests for reservations and program suggestions should be addressed to the Regional Director listed below. Consult the Orthopedic and Prosthetic Appliance Journal for additional information about programs, reservations, etc.

1961 Regional Meetings

March 3-5—Region I, at Boston. Regional Director: Joseph H. Martino, United Limb & Brace Co., 15 Berkeley St., Boston, Mass.

March 10-12—Region XI, at Portland, Oregon. Regional Director August W. Pruhsmeier, K. E. Karlson Co., 718 S.W. 11th Ave., Portland, Oregon.

April 14-16—Region III and Pennsylvania State Society at Harrisburg, Pa. Regional Director: Basil Peters, B. Peters Co., 1127 South Broad St., Philadelphia, Pa.

April 21-23—Region X, at San Francisco. Regional Director: Herbert J. Hart, C. H. Hittenberger Inc., 421 19th St., Oakland, Calif.

April 28-30—Region IX, at Los Angeles. Regional Director: Harvey Lanham, Long Beach Artificial Limb and Orthopedic Co., 1043 Pine Ave., Long Beach, Calif.

May 5-6—Region II, at New York City. Regional Director: Mrs. Mary Dorsch, Dorsch-United Limb & Brace Co., 109 E. 29th St., New York, N.Y.

May 12-14—Region V, at Dearborn Inn, near Detroit, Mich. Regional Director: D. R. Coon, D. R. Coon Company, 4200 Woodward Ave., Detroit, Mich.

May 26-28—Region VIII, at Hotel Baker, Dallas, Texas. Regional Director: David C. McGraw, Snell's Limbs & Braces, Inc., 1833 Line Ave., Shreveport, Louisiana.

June 2-4—Region VI, Midwest. Regional Director: Richard G. Bidwell, House of Bidwell, Inc., 535 North 27th St., Milwaukee, Wisconsin.

June 9-11—Region VII, at Minneapolis, Minnesota. Regional Director: Robert C. Gruman, Winkley Artificial Limb Co., 1330 Washington Ave., N. Minneapolis, Minn.

June 16-17—Region IV, at Asheville, N.C. Regional Director: Bert Titus, Director, Department of Prosthetic and Orthopedic Appliances, Duke University Medical Center, Durham, N.C.

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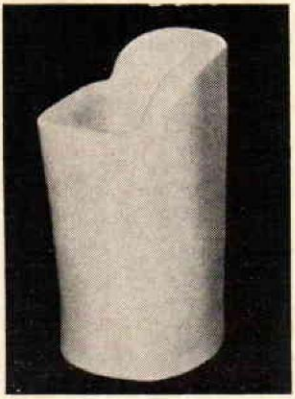

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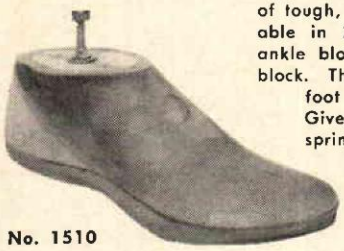

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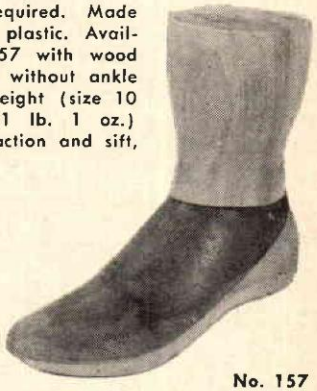

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Orthopedic and Prosthetic

Appliance Journal

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Publication does not constitute official endorsement of opinions presented in articles. The *Journal* is the official organ of its publisher, The American Orthotics and Prosthetics Association (formerly Orthopedic Appliance and Limb Mfrs. Assn.) and of the American Board for Certification. All correspondence should be addressed to the Editor of the *Orthopedic and Prosthetic Appliance Journal*, 919 18th St., N.W., Washington 6, D. C.

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Advertising rates are full page $65.00 per issue—half page $40.00 per issue.

Other details on advertising requirements and policies may be obtained from the editor, 919 18th St. N.W., Washington 6, D. C. or from any of the members of the AOPA Committee on Advertising and Supplies:

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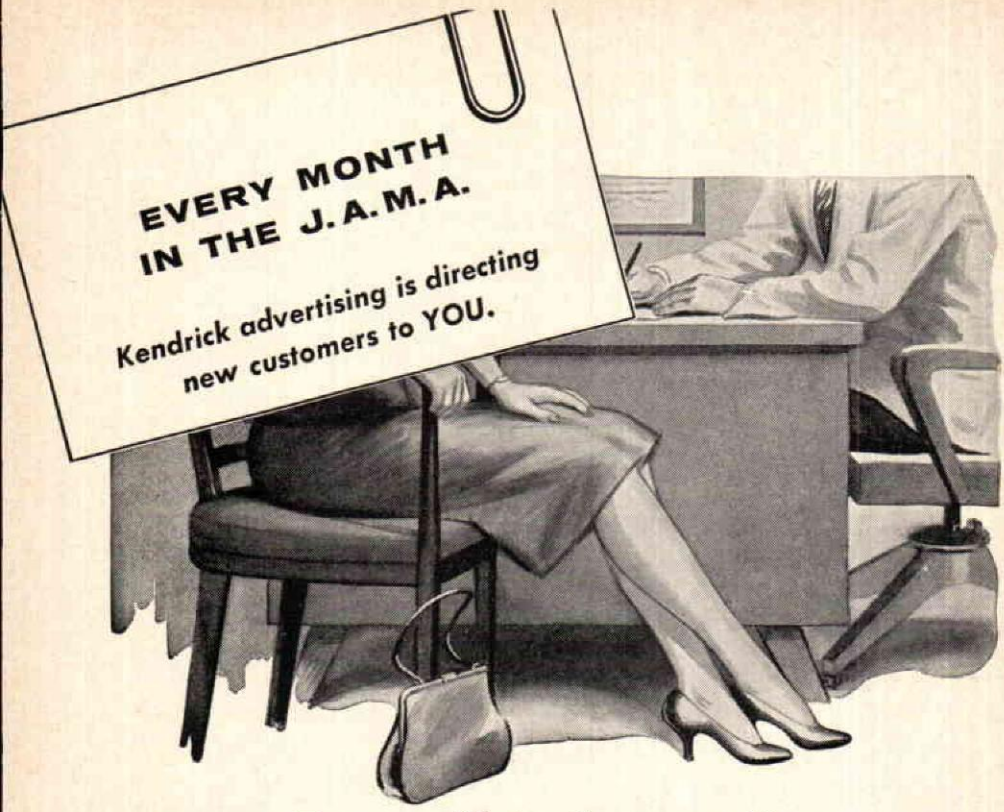

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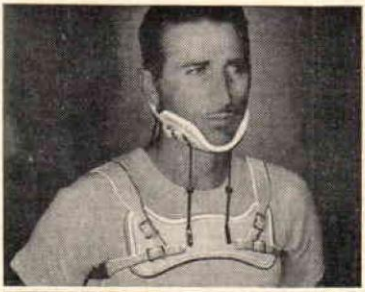

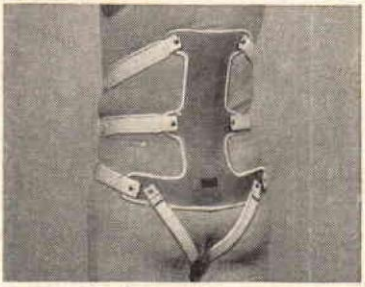

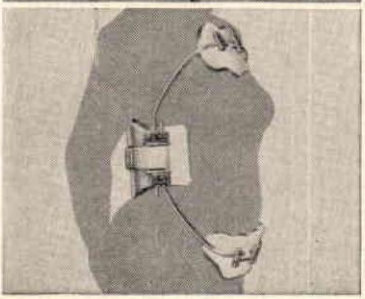

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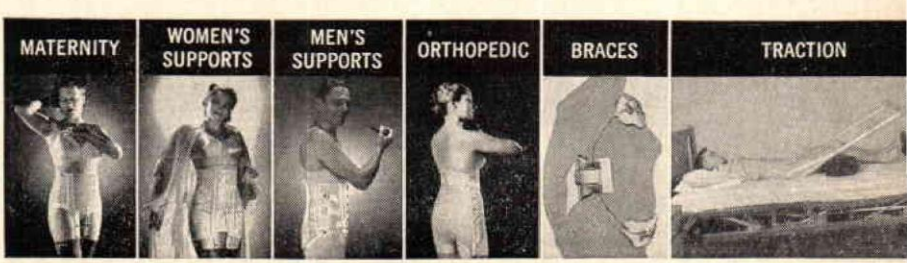

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The plastic easily-shaped Camp Chair Back brace is indicated for support of the lower lumbar spine to limit lateral and rotary motion. By increasing the pressure of the back bars, this brace can produce mild hyperextension or, by eliminating this bar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

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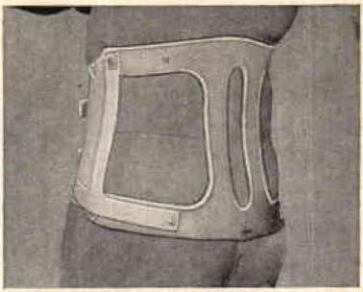

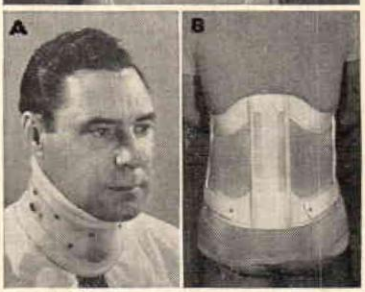

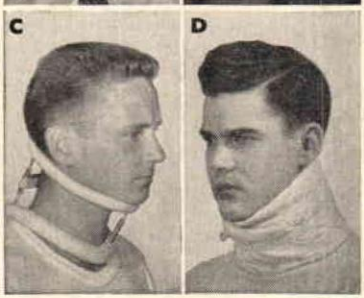

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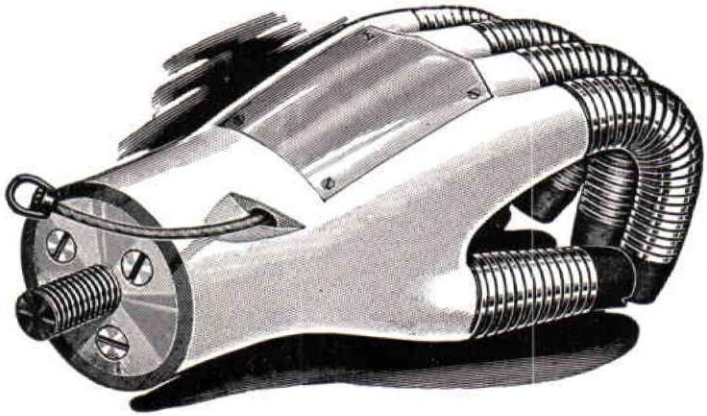

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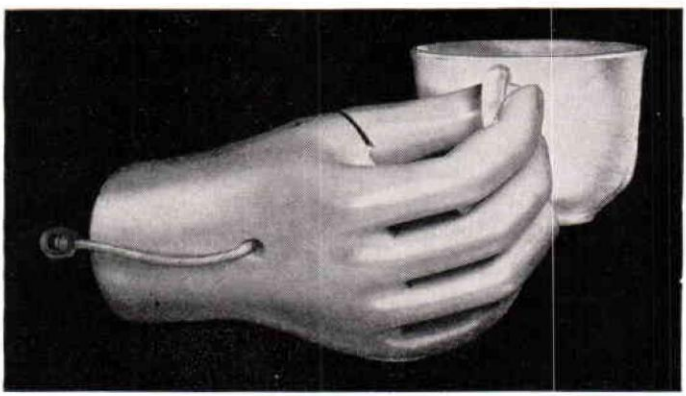

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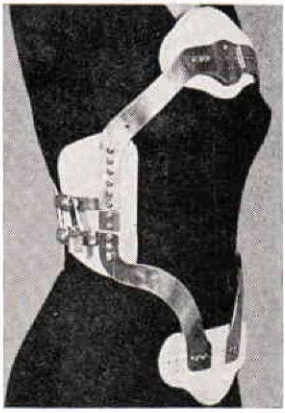

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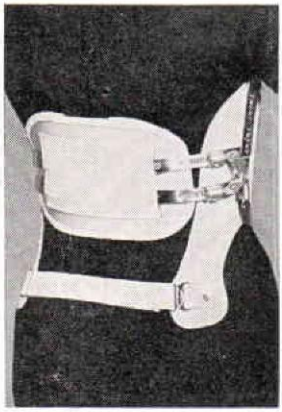

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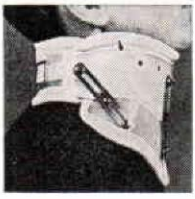

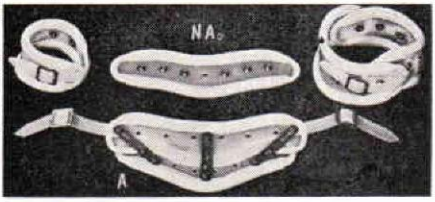

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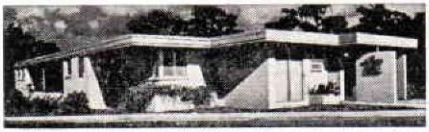

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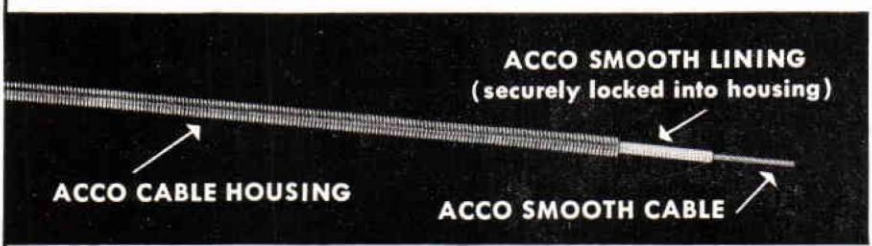

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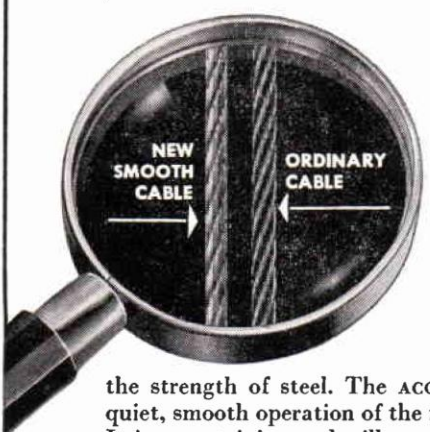

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ACHIEVING COSMETIC VALUES IN ORTHOTIC APPLIANCES*

By THORKILD J. ENGEN, C.O.

Clinical Instructor—Orthotics, Department of Rehabilitation
Baylor University College of Medicine, Houston, Texas

In 1958 a medical team from our rehabilitation unit in Houston, Texas, visited more than 100 of our former respirator patients who were on home care programs *in their homes* for the purpose of evaluating their medical condition, the outcome of home placement, and the use and practicality of their physical assistive equipment and respiration. It was found that a number of these patients did not use their upper extremity orthotic devices to the *extent intended* at the time of discharge from the hospital. Also, it was concluded by this team that if the assistive equipment had been designed to provide useful functions rather than correcting deformities, it was used and highly valued by the patients.

A complaint often repeated was that the devices were too heavy and bulky and this tended to make some patients feel conspicuous. These findings prompted us to make a critical evaluation of the design and appearance of our orthotic equipment as it affected usage. If you analyze any orthotic equipment you will find it can have one or a combination of the following functions:

1) Support weak body members
2) Correct or prevent deformities
3) Assist weak muscle groups
4) Resist strong muscle groups

In addition, they should also have these desirable features:

1) They should be comfortable for the patient to use regardless of purpose: which means that the materials from which the device is made must be carefully selected to meet the functional requirements and design characteristics.
2) They should be cosmetically acceptable.

Exactly what does cosmetically acceptable mean? It is obvious that patients do not want to advertise their handicap, but if their neuromuscular condition does require some form of orthotic equipment it is very important that the basic requirements prescribed by the physician should be met and insofar as practical, they should be appealing to the eye in form, color, and material selected.

Comparatively speaking, the frames for eye glasses are often selected to suit the individual's taste and personality, because here the cosmetics are considered very important. Orthotic equipment, as well as eye glasses, often becomes a part of the individual and is therefore a good reason why beautifying and finishing touches should be added.

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*Paper presented at the "Symposium on Orthotics and Prosthetics Worldwide," sponsored by the American Orthotics and Prosthetics Association, New York, September 4, 1960.

When our practice is being taught to an apprentice it is too often said and demonstrated that when a piece of material (aluminum, leather, etc.) is to be rounded "the corners should be knocked off." Unfortunately, this is exactly what is done and the final result is a mediocre job. It does *not*, and I emphasize *not*, take any more time to eliminate undesirable hammer marks, uneven corners, and unfinished edges on any job once it becomes a part of normal working habits.

When an orthosis has been completed with the previously indicated desirable features, the orthotist develops a pride for his work that will benefit not only himself, but also the patient and the physician. Therefore, I think it is very important that the equipment prescribed by the physician for his patients must have a finished appearance with suitability of form, shape and function, and not just add up to the sum of the materials used.

On an experimental basis we have anodized the surface of the aluminum used for upper extremity devices. The patients like this new appearance of their equipment and in addition, anodizing eliminates the black stain on clothing. Furthermore, it is much more resistant to deterioration caused by perspiration, etc. The aluminum gets this resistance from the electronically applied oxide surface coating or film which is readily dyed in any desired color. Once the equipment for this process has been installed it is relatively easy and inexpensive to use.

Since the time does not permit me to describe these devices in detail, I would like to pass around some samples of the upper extremity orthotics we are currently using for our patients. You will notice on some of these devices that the anchoring straps have been eliminated so the patient can easily apply the orthosis himself. Also we are using a durable felt for cushioning and lining that is held in place by a good grade of rubber cement which eliminates riveting entirely.

The need for a standardized hand orthosis for functional as well as supportive purposes has often been a subject for discussion. In view of recent developments of externally applied power sources designed to obtain useful function of the flail extremity it is useful to develop a hand orthosis with the basic characteristics described that will be adaptable for mass production.

In our current research program we are attempting to solve this problem by casting a basic hand orthosis of moldable plastic material. These will be made available in a variety of sizes that can be adjusted easily by a simple heating process to meet the fitting requirements of the individual patient.

Some of the advantages of using this method are that the plastic orthosis firmly supports the volar arch of the hand without restricting the mobility of the fingers, and positions the thumb in opposition to the fingers so that a useful grasp or pinch can be obtained. If the orthosis is intended to keep the hand in a neutral position an aluminum wrist support can be added and deformity caused by muscle imbalance and gravity forces may be prevented.

If external power is to be applied to obtain flexion of the fingers channels for tendons can be imbedded in the plastic during the production stage. These are placed in a pattern similar to the tendons of the flexor sublimus muscle.

In this development we have attempted to bypass the mechanical "erector set" approach for various reasons:

1) Simplicity of fitting the orthosis by the orthotist
2) Ease of repeated application and use by the patient

3) Maintenance problems will be greatly minimized

At our Institute we are now in the process of studying patients who have been fitted with this plastic orthosis in order to determine the following:

1) Fitting problems
2) Skin reaction
3) Tolerance for prolonged usage, etc.

It is obvious there are several problems remaining to be solved in this development but we hope in the future that this line of research will prove to be fruitful.

Conclusion

We, in our Association, are trying to raise our standards. One way of doing this is to take a personal interest in the patient's disability and constantly strive to improve the design and appearance of the orthotic equipment prescribed. This in turn will raise our standards for professional performance and benefit the patient through increased natural acceptance and use of the devices we provide.

I should like to quote from Thomas Carlyle, who said: "A goal of yesterday will be the starting point of tomorrow."

A BRACE APPARATUS OF CAST-RESIN FOR A PARALYZED POINT-FOOT (TALIPES EQUINUS) CAUSED BY POLIOMYELITIS

By HELMUT KOGLIN

In Fa. Pfeuffer & Co., Nurnberg, Germany

Published in Orthopaedie-Technik, October 1959, Page 256
with two illustrations
(Translation by Otto Rothman, Chief, Testing & Development Laboratory, VAPC)

"The foreshortening appliance worn till now by a patient was in the form of a leather shoe with a V-2A sole and a built-in spacer for height equalization. The prosthesis was worn out and had to be replaced.

The desire for the patient for a lighter and better looking construction led to the consideration of using cast resin.

After fabrication of an exact plaster model with elastic bandages and a Bofors test socket, a thin inner shell was cast. Care was taken to provide enough room for the toes. Then the 5⅛" high spacer (height equalizer) and the forefoot were made out of balsa wood. The imbedding was made so that a large part of the body load would be distributed to the forefoot. Also, for the location of the forefoot, the correct positioning for the roll-over had to be borne in mind. The inner socket was roughened and the wood parts glued on with cast resin. Over the whole was now drawn an elastic glass sock and several layers of cotton-and helanca-tricot. The sole was reinforced with a layer of fiberglass. This whole part was then cast by using the vacuum technique. The lacers can be made of leather, or if water tightness is desired, of Vulkolan. With the latter, the brace can be used for bathing.

As paralytic cases often tend to strong perspiration, several holes should be provided for aeration.

The construction proved to be light and durable and permitted the wearing of regular store shoes.

Weight comparison:

Old appliance—2.75 lb.

New appliance—1.32 lb."

PROSTHETICS IN SOME ASIAN COUNTRIES*

By ABELARDO M. INOCENTES, M.D.

Consultant Surgeon and Chief of Rehabilitation, National Orthopaedic Hospital, and Consultant to U. S. Veterans Administration Prosthetics and Sensory Aids Unit, Manila

There has developed in recent years a stronger awareness of rehabilitation problems in Asian nations. While it is true that the blind and the deaf had had programs already developed for them, the increased interest sparked by World War II nevertheless found prosthetics an excellent project around which to develop and evolve other rehabilitation activities. This has been because prosthetics offers a fast and dramatic demonstration of rehabilitation which is easily understandable by a great majority of the population. A BK for instance comes in hopping or leaning on his crutches, but comes walking out after rehabilitation. I dare say that in Asian nations, prosthetics has played a major role in initiating a rehabilitation project and in affording opportunities for rehabilitation ideas to be absorbed and expanded upon. Indonesia gives us an example. Starting out as a crude limb shop, the Solo Project has burgeoned out into a large sprawling comprehensive center counting on solid support from both the government and the civic organizations.

But prosthetics in Asia cannot be as simple as transplanting Western prosthetics to Asia. The problems are certainly different, enough anyhow to make one think twice before he can say he is sure he has the right solutions by the simple expedient of knowing Western solutions.

Many of the amputees in Asia belong to the working class in rural areas. They will have to contend not only with the mud and the rain of the villages but also with those of the flooded paddy fields. A simple peg-leg does not seem to be entirely satisfactory. Again, very few of these workers wear shoes for everyday use. Unless they are willing or can afford to wear shoes every day, they will find it more convenient to leave the prosthesis in a corner of the house. The heat and the perspiration in tropical weather wear out leather and wood and metal much faster than in temperate countries. Repairs and replacements would come in bigger volumes. These materials, especially metal and wood, will have to be imported in some countries, and even leather in others. This entails great difficulties, particularly involving exchange.

Again we realize that progress in prosthetic rehabilitation depends on a developed professional corps of engineers, chemists, prosthetists, physical therapists, occupational therapists, etc., and on a level of industrialization high enough to supply us with the necessary know-how, machines and tools, and materials. All this presupposes an economy that can bear the costs. International helping agencies may aid in initiating a project, but we like to think that the ultimate objective is for the project to develop enough so as to be able to stand by itself, in the sense that projects in western counries are able to stand by themselves.

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*Paper presented at the "Symposium on Orthotics and Prosthetics Worldwide," sponsored by the American Orthotics and Prosthetics Association, New York, September 3, 1960.

I hope I am wrong when I say that Asians carry a strong tendency to depend too much on their government. And since there is no great network of helping organizations as you have here, nor systematic coverage by insurance, unless the government agrees and/or can afford to pay for all limbs, the problem of who is going to pay is a recurring and vexing one.

The questions that would come up therefore in examining prosthetics programs in Asia are:

1. how large is the need?
2. how is this need being met?
3. what part of the prosthetics set-up should receive emphasis?
4. what can be done to make the project as self-sustaining financially as possible?

In the light of these impressions, I would like to give you an idea about the directions prosthetics development has taken in some Asian countries.

PROSTHETICS IN THE PHILIPPINES:

Prosthetics in the Philippines is very new. The Prosthetics and Sensory Aids Service at the United States Veterans Administration in Manila keeps a few homemade beat-up crude pieces of junk that served their wearers as prostheses. It was only in 1945, right after the war, that we saw modern artificial limbs at the United States Army Hospital, and the set-up of machines and tools and materials that went with their manufacture. The need also for the para-medical sections of Physical Therapy and Occupational Therapy hit us with a great impact. All this appeared of the greatest importance to us at that time because of the large number of war-time amputees hobbling around without limbs. We were helped to a great extent in our prosthetics project at the National Orthopedic Hospital by the United States Army training some of our key personnel in Prosthetics, in Physical Therapy, and in Occupational Therapy. At about the same time we received a donation of machines and tools from a philanthropic citizen who was helping amputees get limbs. That started off our prosthetics project with some solid foundation. Since then we have sent one technician and one physician abroad for training specifically in prosthetics. Other physicians have undergone training in Physical Medicine and Rehabilitation and one technician in Orthotics. Now we are at the threshold of a five-year graduated program of prosthetics development with Colombo Plan aid—in machines, tools, materials, and in apprenticeship training. We ultimately hope to establish a certification board. The number of our amputees approximate that of any other nation in the world. We get them from tumours, vehicular accidents, industrial accidents, disease.

Our limbs are paid for by the government usually in the case of our indigents—by industry through the Department of Labor—by insurance—and by private patients. Veterans get their limbs free from the United States Veterans Administration or the Philippine Veterans Board. Our paraplegic braces at the Spinal Center of the National Orthopedic Hospital are financed by the Women's Auxiliary of the National Orthopedic Hospital —a fine example of a small but very effective group of civic volunteers.

PROSTHETICS IN VIET NAM:

The Prosthetics Shop at the Saigon Rehabilitation Center was started about two years ago under a United Nations expert. This is a well-equipped set-up under the Army. It uses local wood and leather. I have seen some ankle joints (metal) imported from the Solo Center. To my mind, this may be a mechanism to help stimulate greater production and greater sufficiency within the area, a situation that seems desirable at the moment for

historical reasons and for financial reasons. Plastics Prosthetics has been started. A United Nations Physical Therapy expert has started work. The government pays for the limbs.

PROSTHETICS IN INDONESIA:

Indonesia is a country that started off with absolutely no facilities at all but now boasts of an adequate and modern prosthetics program. Local leather and local wood are used. The Solo Center can manufacture joints and metal parts from crude metal. Several ministries support the Center. Most of the limbs are paid for by the government—the Ministries of Health, Labor, Social Affairs, Education, etc. Civic organizations support indigents and children.

Indonesia supplies Viet Nam with metal joints.

PROSTHETICS IN LAOS:

Laos has no prosthetics program. At the present writing, the Army imports finished limbs from a private manufacturer in Saigon. Needless to say, there are fitting problems.

Laos is aware of this and is eager to start a project. With international helping agencies, she is at the planning stage of a prosthetics rehabilitation program. Because, however, of her small population, there has been some thinking as to how big a shop she should develop in terms of complete manufacture and/or simple repairs.

Summary

Most Asian countries are aware of their needs in prosthetics. They know that they may have to develop modifications to meet the particular needs of their climate and their people. They are also cognizant of the fact that their prostheses would have to be of the simplest and of the cheapest manufacture. In that sense they would like to use their own local materials. But plastics holds a particular fascination for them. It seems capable of cutting corners both in manufacture and in financing!

Before I close this brief essay, I should like to thank Mr. Tosberg and the AOPA for inviting me to share with you some of the prosthetic problems facing Asia today. I know that I am not alone when I say that Asia is deeply indebted to the more highly developed nations in this world who, in teaching and guiding her, have been more like a group of big brothers to Asia.

Thank you.

PUERTO RICO FACILITY OPENS

Manuel De La Torre, C.O., has opened his own establishment at Santurce, Puerto Rico. This is operating as the Orthopedic Appliances and Corrective Shoes of Santurce at 1505 Loiza Street, Santurce, P. R. Mr. De La Torre was formerly head of the brace establishment at the Rehabilitation Center in Harmarville, Pittsburgh. He received his training under Charles Goldstine at the Institute of Crippled and Disabled in New York City.

THE HELICAL ROTATOR

By ROY SNELSON, C.O., ALBERT SNELSON, C.O., and ANDREW KARCHAK, JR., B.S.

Snelson Orthopaedic Service, Downey, Calif.

The orthotist sees a certain group of patients whose only problem is that of internal or external rotation of the feet. In such cases a device is needed that will control the rotation with a minimum amount of restriction.

In the past, many devices have been used, such as bilaterial long leg braces with pelvic band, which are not only restricting, but expensive; or twister straps which are inexpensive but not very effective. The cable rotator has fulfilled this need better than most devices, but it too presents problems.

You must use a cable with a left hand twist on one leg and a right hand twist on the other. The cable, unless stainless steel, will rust, and of course, as the cable frays, it will present sharp points that can injure the patient.

However, the most objectionable feature is that you must over-correct the foot and let the slack be taken up as force is applied. This gives a somewhat spongy effect.

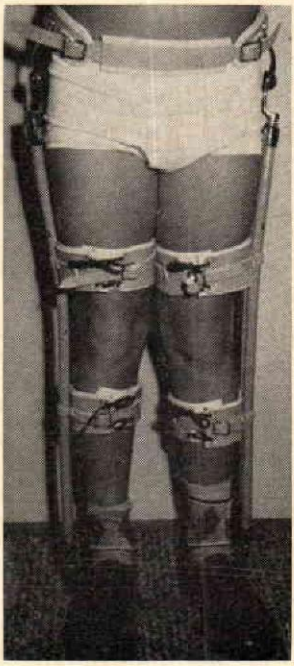

Figure 1

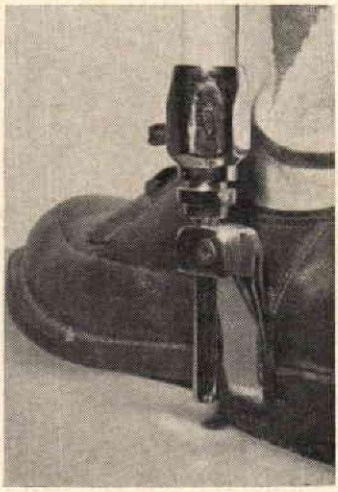

Figure 2

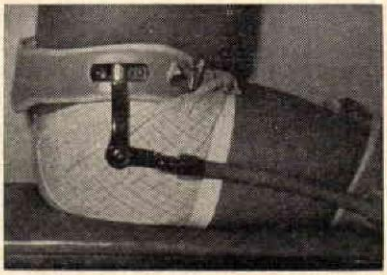

Figure 3

With these problems in mind an attempt was made to develop a device that would solve some of these problems. This work led to the development of the helical rotator.

The helical rotator (Fig. I) consists of two helically woven steel sheathes, one placed over the other and dipped in rubber. The two helical weaves provide a unit that is flexible but has virtually no torque. Unlike the cable, there are no sharp edges and no over-correction is needed. You merely place the feet in the desired plane and tighten the friction blocks (Fig. II) Because the helical rotator will not yield to a rotational force, the feet stay where they are set.

The helical rotator consists of the following parts:

2 @ shoe plated with friction blocks
2 @ helical rotators with ends
2 @ ball bearing hip joints
1 @ pelvic band

In the first fitting a regular hip joint was used. However, due to the torque applied at the hip joints, the pelvic band had a tendency not to conform to the patient when sitting. Ball bearing hip joints were added, which alleviated this problem. (Fig. III)

The use of friction blocks at the ankle provide an infinite adjustment, as well as a three inch adjustment for growth. If the patient outgrows this adjustment, it is a simple matter to loosen the end fittings on the helical rotator and insert a new one.

It was found that soft leather bands at the calf and thigh were helpful in holding the rotator closer to the leg for better cosmesis.

To date, approximately fifty patients have been fitted with the helical rotator with good results. It has been especially useful in the cerebral palsy, where control of rotation without undue restriction is most important.

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Arrangements have been made by Howard Reinherz of our *Journal* Committee for an Official Binding for the AOPA *Journal*. The design selected is a dark green hard cover with the AOPA seal and the *Journal* title, volume number, and year in gold on the back, plus the subscriber's name in gold on the front cover. The price per four-issue volume is $4.15, including return postage.

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NYU OFFERS NEW COURSE IN UPPER EXTREMITY PROSTHETICS

By BERT R. TITUS, C.P. & O.

Director, Department of Prosthetic and Orthotic Appliances
Duke University Medical Center, Durham, N. C.

In fabricating an upper extremity prosthesis there are two aspects of the prosthetist's work which require considerable expertness if the results are to be satisfactory. The first of these is the matter of socket fitting. The molding of a wax check socket to take full advantage of stump contours, to provide socket stability and yet allow unrestricted range of motion, and most important, to achieve comfort are matters that require a high order of experience and skill.

The second area in which the prosthetist's work is of extreme significance is that of fabrication of the harness and control system. Proper suspension and control of the prosthesis, not to mention the factor of comfort, are totally dependent on the skill and experience which the prosthetist brings to this matter.

In a new course which New York University offered for the first time from October 17 to 28, 1960, these two aspects of the fabrication of upper extremity prostheses were the exclusive concern of the students and their two instructors, Ivan Dillee, C.P., and the author. This course was originally designed to meet the needs of the many prosthetists who utilize central fabrication facilities for arm work but also are directly responsible for fitting and harnessing the prosthesis no matter where it was made. To accomplish this purpose each student in the two-week course, measured, casted, and fitted check sockets to six different amputees including a long B/E, a short B/E, a very short B/E, two A/E's and a S/D. In addition each student made a B/E figure 8 harness, two A/E figure 8 harnesses, one A/E chest strap harness and one S/D harness.

The students reaction to their experience in this course was universally favorable. They felt that they were now well qualified to take proper measurements and casts and to achieve proper fittings through the fabrication of wax check sockets. The students also felt that when they received prostheses from central fabrication facilities they would be able to install harness and control systems with assurance.

EXCELLENT REVIEW OF NEW IDEAS

It was also pointed out that, in addition to being of benefit to those limb facilities which do not do their own fabrication, the course would serve as an excellent review for the many prosthetists who had taken the upper extremity course as long as 5 to 8 years ago. It must be remembered that it was at least that many years ago that upper extremity courses were first introduced and popularized. Perhaps other prosthetists may feel a need to review those newer ideas in upper extremity harnessing and fitting which require true art rather than simple mechanical skills. If so, this new course serves as a valuable avenue for such practice.

New York University is planning to offer one additional such course this academic year from February 6 to 17, 1961. There are still several vacancies in this class and interested persons should write to Dr. Sidney Fishman, New York University, Prosthetics Education, 342 East 26th Street, New York 10, N. Y. for further information about the course and for application blanks. The course number is 7416B and the title is "Upper Extremity Fitting and Harnessing."

THE HUMERAL NECK SHOULDER JOINT

By FERDINAND J. KARG, CP&O
Hollywood, Calif.

We are indeed proud of our scientific advances in this age of conquering space. Some inventions have failed because of their tremendous complexity. In Prosthetics, inventions have to meet certain requirements, the most important being that of Simplicity. Such a simple device was recently developed in the Prosthetics Research Department of the University of California at Los Angeles: the humeral neck shoulder joint.

The humeral neck shoulder joint is a manual friction joint. It is used for very short above-elbow disarticulation or thoracic amputations. The shoulder joint itself consists merely of an axilla ring made of 2024 aluminum with its exterior threaded having a 10 degree undercut, a center groove for anchoring, 8 holes, an outcut plus a stainless steel band which fits around the plastic portion of the humeral section with an adjustment screw for the friction. The principle is that half of the axilla ring is laminated permanently in the thoraxic section, while it allows the humeral section to turn on the other half, the plastic being part of the thread. I personally have never seen a better shoulder joint of this type. The advantages are listed as follows:

1. It is simple and dependable.
2. It is strong and durable
3. It is light in weight.
4. It is economical.
5. There is very little maintenance.
6. It permits ventilation.
7. It is neat in appearance and not bulky.
8. The flexion and extension of the humeral section has a wide range.
9. There is a possibility of flexion-abduction (by proper alignment).
10. It is usable for double or single wall sockets.
11. If replacement of the socket is necessary the humeral section need not necessarily be replaced.
12. It is commercially available in 6 sizes.
13. It allows the double amputee to reach to the perineum.

The disadvantages are listed as follows:

1. More skill is required in laminating.
2. If not aligned correctly it must be done all over again.

Some suggestions for laminating follow:

Prepare in two parts, humeral section first. Make check socket to assure proper fit and alignment. Make sure turntable is rotated internally enough to allow for rotation of elbow turntable to bring forearm in horizontal position, in combination with flexion abduction. (See drawing). Be sure to tie off well in tie groove, possibly anchor through holes. Tighten friction band snugly over the axilla ring when laminating humeral section but line previously with a strip of soft leather or felt to prevent from cutting PVA bag. Plastic will form its own thread under pressure. Trim and remove ring while warm. The angle for the axilla ring may vary between 5 and 25 degrees horizontally and only a few degrees vertically.

KINEMATICS OF PROSTHESIS SHOULDER JOINTS

By GERALD GWYNNE
Associate Engineer in Research, UCLA

Upon reviewing Mr. Karg's article I was impressed by the clarity of his description of the ring shoulder joints. He told a long story in little more than one typewritten page, while I shall be content if these technical remarks take less than four pages. This development was the result of a long series of theoretical studies and amputee trials of various types of shoulder prostheses, conducted principally under sponsorship of the Veterans Administration. Cooperative efforts of the Department of Engineering and the School of Medicine at UCLA led to definition and adoption of minimum functional requirements for prosthesis shoulder joints.

Minimum Functional Requirements of Prosthesis Shoulders

Prosthetists have long recognized various functional requirements for prosthesis shoulder joints. They seem to attach the most importance to those factors which, according to their personal experience, may best help the bilateral shoulder amputee carry out the activities of daily living. Thus some men believe that stability is the most important requirement, so they eliminate the joint. Others use the Hitchcock passive abduction shoulder joint[1], the UCLA passive friction shoulder joint[2], or similar constructions. Experience with various techniques, as well as studies by Keller et al[3], Blaschke[4], and others at UCLA, have resulted in specification of the following design criteria:

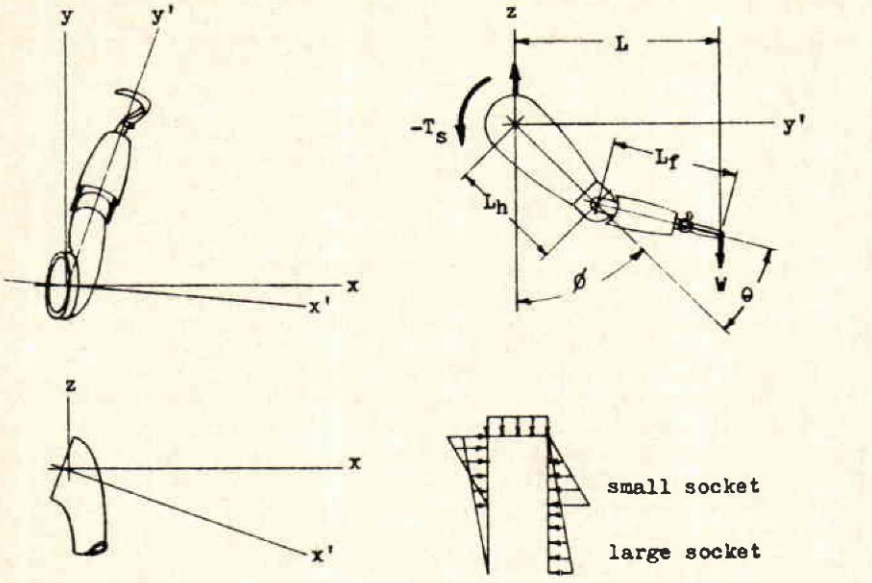
1. the prosthesis-torso coupling must be stable,
2. action must be reliable,
3. anterio-lateral elbow positions must be provided,
4. for humeral-neck prostheses, stump clearance must be provided.

Other considerations include cost, weight, and comfort, but these functional criteria were given primary consideration.

Our first design studies disclosed that eating and toileting could be accomplished if simultaneous shoulder flexion and abduction were used to position the humeral section. Since this position was found to be useful for a number of other activities, commercially available shoulder bulkheads were modified to give a swivel action in a plane, with the pre-positioned setting held by a spring-loaded disc clutch. This assembly was mounted with its plane of action vertical but skewed with respect to a parasagittal plane. Although the desired action was achieved, the joint was expensive and heavy, and it failed to provide clearance for a humeral neck stump. In addition, it gave amputees a very broad-shouldered appearance because its posterior rim necessarily was mounted to clear the scapula, and the skew angle brought the anterior rim still farther out. These factors, as well as problems of tissue loading under the socket, were taken into consideration in a kinematic analysis of the amputee-socket-joint complex.

Shoulder Joint Torques and Socket Reaction Forces

It is apparent from the principles of levers that the torque in a prosthesis shoulder joint is equal to the product of the applied load times its lever arm. Further, equilibrium of the prosthesis requires an equal reaction force and an equal reaction torque. These reactions are transmitted through the shoulder to the socket where they are equilibrated by distributed pressure in the body tissue. Although this pressure distribution varies with socket fit, a rough approximation can be obtained by assuming linear



LEGEND:

x - frontal axis
x' - ring-joint axis
y - parasagittal axis
y' - arm axis
z - vertical axis

Approximate pressure distribution

ø - humeral flexion angle
θ - elbow flexion angle
L - effective lever arm
L_f - forearm length to load
L_h - humeral length
T_s - shoulder torque
W - load

FIGURE 1

FORCE, TORQUE, AND PRESSURE RELATIONS

elastic properties for the tissue. Accordingly, for a load consisting of a weight at the terminal device, socket-tissue pressure will vary from zero at the top of the socket to a maximum at the bottom rim of the front wall of the socket, and oppositely on the back wall. These force, torque, and pressure relations are summarized in Fig. 1.

Some appreciation of the importance of these factors can be gained by assigning values to the weight, the elbow and shoulder flexion angles, and the socket and arm dimensions. With the elbow flexed 30° with respect to the humeral section, and the humeral section flexed 60° from the vertical, the forearm will be horizontal. Setting the distance from the elbow axis to the weight equal to twelve inches, and the distance between the shoulder axis and the elbow axis also twelve inches, the effective lever arm is

$$\text{Lever Arm} = L(h)\sin\phi + L(f)\sin(\phi+\theta) = 12\sin 60 + 12\sin 90 = 18 \text{ in.}$$

A ten-pound weight would then produce a torque at the shoulder equal to the product of the weight times its lever arm, or

$$\text{Torque(s)} = T(s) = (\text{weight})\ (\text{lever arm}) = (10)\ (18) = 180 \text{ lb-in.}$$

Lever arms for various combinations of flexion angles can be found graphically by drawing the axes of the humeral and forearm sections to scale and measuring the horizontal distance between two vertical lines through the shoulder axis and the weight.

It can be shown if two elbow laminating rings are bolted together to form a disc-clutch shoulder joint, as is sometimes done, the unavoidable eccentric loading produces a large radial force on the bolt and the holes in the rings. For the conditions given, when using three-inch diameter rings, this force can be as great as 150 pounds, or 6,400 pounds per square inch of projected area. Repeated adjustments of the shoulder then cause galling and wear of the holes in the aluminum rings. This trouble can be eliminated by providing a bearing of larger diameter in the joint.

Going next to the socket-tissue pressure distribution, some trouble may be encountered as exact analysis of this pressure distribution is complicated by the compound curvature of the socket. However, an important principle can be developed qualitatively if the socket shape is approximated by a rectangular box section. This principle relates the socket-tissue pressure to the socket size and explains the discomfort experienced by amputees wearing small sockets. These small sockets are sometimes used to permit a snug fit and maximum possible ventilation. As the maximum pressure within the socket varies inversely with the socket height, we developed a structured socket which comes down eight or nine inches on the chest wall and extends within an inch or two of the sagittal plane, as shown in Fig. 2. This socket, generally referred to as the spar-strut socket, is reinforced with glass bead-

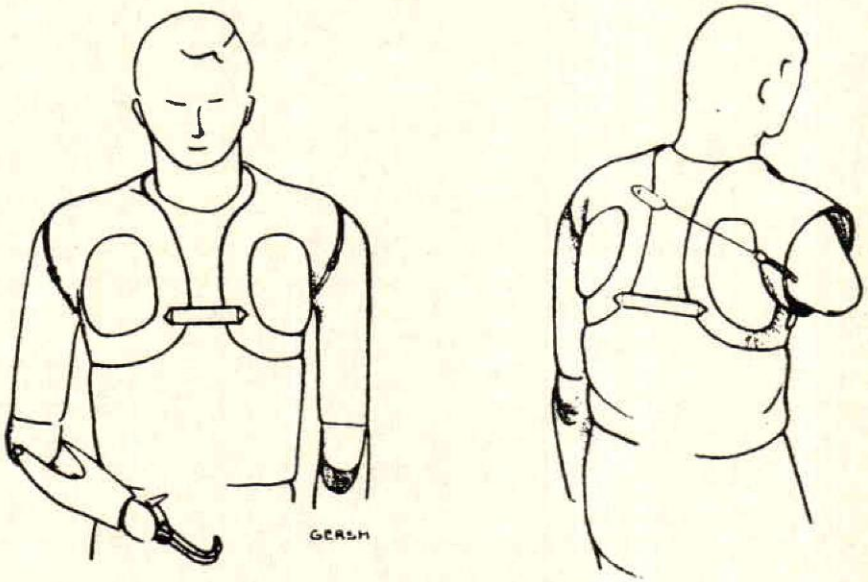


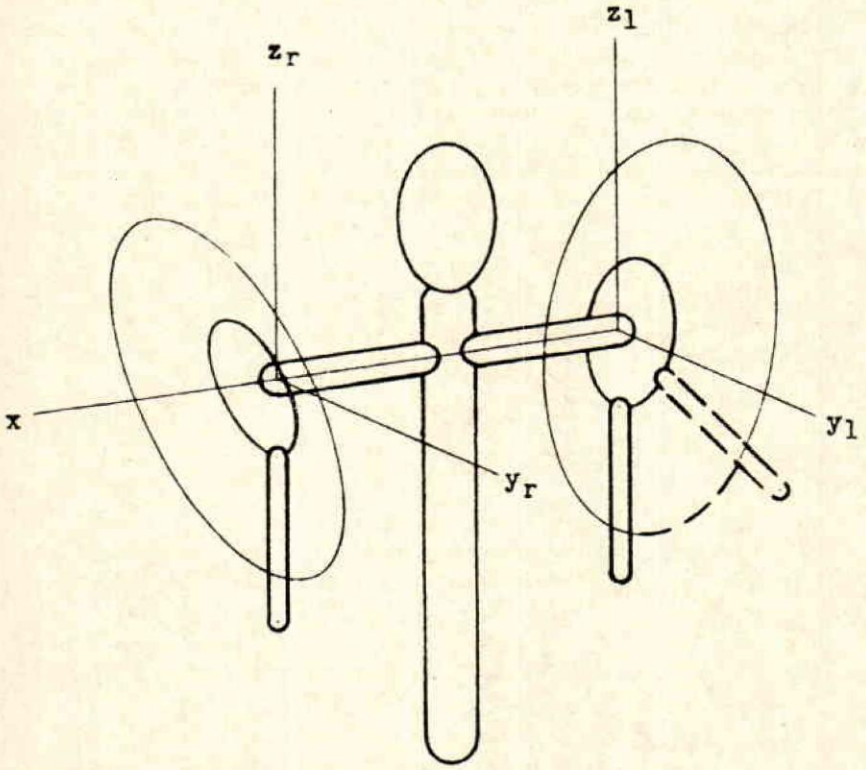
FIGURE 2

BILATERAL HUMERAL-NECK PROSTHESIS

ing around its periphery and up the center strut to permit cutting large ventilating holes, as described by Henderson[5]. Additional ventilation is provided by the clearance through the shoulder joint. By actual test, the load which amputees can carry without discomfort has been tripled and quadrupled by use of this socket, and shoulder movement is impaired only slightly as the socket tends to swivel about the chest wall. This socket structure is an integral feature of prostheses using the ring-humeral neck shoulder joint as described in the next section.

Geometry and Mechanics of the Ring-Type Humeral-Neck Shoulder Joint

Design studies based on the anatomy of the shoulder and the functional



LEGEND:

x - frontal axis
y_r - right parasagittal axis
y_l - left parasagittal axis
z_r - right vertical axis
z_l - left vertical axis

FIGURE 3

KINEMATIC DIAGRAM

requirements given above resulted in several feasible motions and mechanisms. Some of these were found to be quite complex, with two-axis swivels, ball bearings, multiple-disc clutches, circular dovetail slides, and other elaborate features. The configuration selected as being most practical as well as feasible was a threaded metal ring mating with a threaded humeral section in such a way that the threads could serve as a swivel bearing. Its mounting and adjustment are described by Mr. Karg, but the geometry of its compound motion may be clarified by the diagram of Fig. 3.

The ring is mounted with its axis centered on the shoulder pivot and inclined ten to thirty degrees below the horizontal so that its plane conforms closely to the body contour. Then if the humeral section is vertical for zero flexion, its axis will generate a conical surface as it is flexed or hyper-extended. This motion combines flexion and abduction into one motion; the amount of abduction present can be varied by rotating the humeral section about a vertical axis during build-up of the ring on the mold. It should be noted that some abduction with hyperextension may occasionally be used in back of the body.

In order to obtain maximum strength from the plastic threads, the ring threads are a modified Acme type, called knuckle threads. Static and dynamic loading tests on a child-size prosthesis and specimens with 3½-inch diameter joints showed that the threads had ample strength. They withstood a side load of 200 pounds at the end of a seven-inch humeral section without any damage and required an axial load of 2,320 pounds to produce failure. The complete socket, humeral section, and ring weighed fourteen ounces, and adult-size assemblies have been made that weighed less.

As Mr. Karg noted, the joint permits complete circumduction of the arm about the shoulder with a fairly natural motion. This feature may give it utility for orthotic work, and there is a possibility of using it with external power for braces and prostheses.

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THINGS DON'T JUST HAPPEN

By NOEL J. BROWN
D. W. Dorrance Company

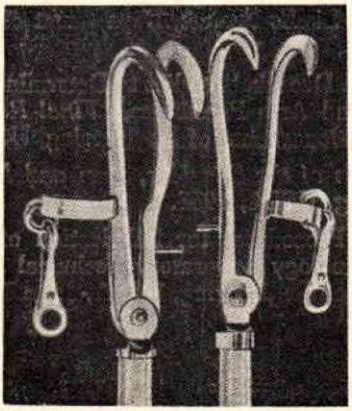
Often we look at a manufactured device and think that it "sprang full grown" to its present perfection. We are prone to forget the many steps in the evolution of any complex product. Some ideas prove efficient and practical, and are perfected. Others die "aborning."

Think of how little our present automobile resembles the cars of yesteryear. Many types and makes have disappeared. Remember the Marmon, the Stephens Salient Six, the Kissel Kar, the Briscoe, Dort (not Dart), Saxon, Columbia, Moon, Diana, Durant, Apperson, Velie, and Franklin. There was even a car with 12 cylinders for power on the hills, and 6 cylinders for economy on the flat. All of these played their part in the evolution of today's automobile, and disappeared from the scene.

Prosthetic devices have also had a trial and error factor in their development. I should like to give you a few details on the development of the Dorrance terminal device from the early invention by Mr. Dorrance of the first split hook to the present wide selection of fifteen models.

In 1909 Mr. D. W. Dorrance was a 54 year old sawmill operator in Oregon. He could tell vivid stories of the tremendous stands of virgin Douglas Fir. Great ox teams were used to haul the logs to the mills. Steam engines puffed and big saws sang as the logs moved through. Safety regulations were not developed as yet, and many accidents occurred. In one of these Mr. Dorrance lost his right hand. I have heard that he was back at work the next day. He was a strong, virile man and it seems that nothing could stop him.

In those days, a leather socket with an improvised single hook or a hand with little function was all that could be obtained. He was not satisfied and his inventive mind was soon at work. About 1912 he invented the first split hook, and it looked like a hay hook sawed down the middle. The two halves were hinged together, a thumb added and rubber bands applied for closure. Crude though it was, it worked. His great contribution to present day prosthetics was the fact that he was a born salesman. Most people would have used it themselves, but never developed it into a business for the benefit of others.



PICTURES FROM EARLY CIRCULAR showing D. W. Dorrance and the first Dorrance hooks, about 1912.

He had a very hard time popularizing his invention. Limb shops did not want to bother with it. Legs were their main business. He traveled from city to city actually peddling his devices. He often "rode the rods" he was so poor. A lesser man would have failed, but he was a man with a mission.

My first acquaintance with Mr. Dorrance was in 1931. I was a freshman in college and was working my way through as an engineering student. It was my privilege to work for him. At that time the No. 5 carbon steel hook was about the only model. A lock finger hook (quite different from the present lock hook), and a hand had been developed and discarded.

Soon after I started to work, the carbon steel was replaced with stainless steel and the problems of plating were eliminated. The hinge joint had been a plain box bearing. Mr. Dorrance suggested a ball bearing joint. After some experimentation, a double ball bearing joint was developed and has proven very satisfactory.

Next the special needs of farmers were considered. The Model 3 with a large opening for shovels and tabs for holding nails was a partial answer to this need. However, a suggestion from the field for a chisel holder led to the development of the Model 7 hook. It has become one of our most popular devices and serves men in many manual occupations.

The question of how to make a hook lock was under consideration for several years, and about 1936 the present type of lock hook was designed. The Model 1 came first, but the Model 6 with the shape of the Model 7, has proved to be so much more popular that the Model 1 is now obsolete.

Mr. Dorrance loved to meet people, and demonstrate his hook. He attended many of the A.L.M.A. conventions before the time of O.A.L.M.A. or A.O.P.A. His last trip to a convention was in 1937 in the East. He was the oldest man there (80), and the only man who had flown to the meeting. It was his first and only flight and he enjoyed it immensely. In the early part of 1943 he passed away.

The Second World War years kept us busy with production problems. When the smoke cleared away, new developments started again. The light weight high strength aluminum alloys were considered for terminal devices. New techniques and tooling were required before the first aluminum hook could be produced. The hook, the now obsolete Model 55, had rubber sleeves on the jaws. This led to the bonding of neoprene on the jaws in the Model 555. Many amputees asked for an aluminum hook shaped like the Model 5, and so the Model 5XA was developed. Its light weight (3 oz.) and useful shape made it immediately popular. Others needed the extra strength and longer wearing qualities of stainless steel, and soon we were producing the Model 5X stainless steel hook with rubber lining.

The need for smaller hooks had been filled in the past with the Models 8, 9 and 10 stainless steel Dorrance hooks. We therefore were urged to make smaller devices in aluminum alloy for children. Thus, the 88X, 99X and 10X were designed in quick succession. We thought this was the ultimate in size reduction, but the end was not yet. Requests came for a tiny device for children 1 year and up. The result was the new Model 12P covered with plastisol. Plastisol has also been applied to the other small hooks, namely, the 10P and 10AW.

Like the old cars mentioned in the beginning of this article, several models have disappeared. We no longer make Model 1, 2, 4, 9, 10 and many others. We occasionally have calls for some of these, and will make them on request. However, they did pave the way for our present line of 15 models to fit all ages and many occupations, and I feel the end is not yet. New developments must continue and improvements should go on.

MEDIAL OPENING ABOVE ELBOW SOCKET

By COLIN A. McLAURIN
Project Director, Northwestern University
Prosthetic Research Center

and F. L. HAMPTON
Research Prosthetist

Introduction

A medial opening above elbow socket was recently fabricated at Northwestern University Prosthetic Research Center to solve specific problems in a special case. The principles involved are of particular interest because they may be advantageous in standard cases.

Case History

On November 6, 1959, a 22 year old female incurred an amputation above the right elbow following injuries received in an automobile accident. A brachial plexus injury sustained at the time of the accident caused the stump to be considerably limited in range of motion and strength. In addition there was considerable redundant soft tissue at the end of the stump and loss of sensation over the lateral and distal portions. Following pre-prosthetic therapy a standard above elbow arm with figure 8 harness was fitted. The patient experienced discomfort in the axilla of the opposite arm with considerable impairment to circulation. She was unable to don and remove the prosthesis unaided, was limited in her ability to open the hook because of her restricted range of motion, and experienced difficulty in operating the elbow lock.

Fig. 1—Lateral view of amputee showing limitation of humeral flexion and redundant tissue at the distal end.

Fig. 2—Anterior view of the amputee showing limitation of abduction.

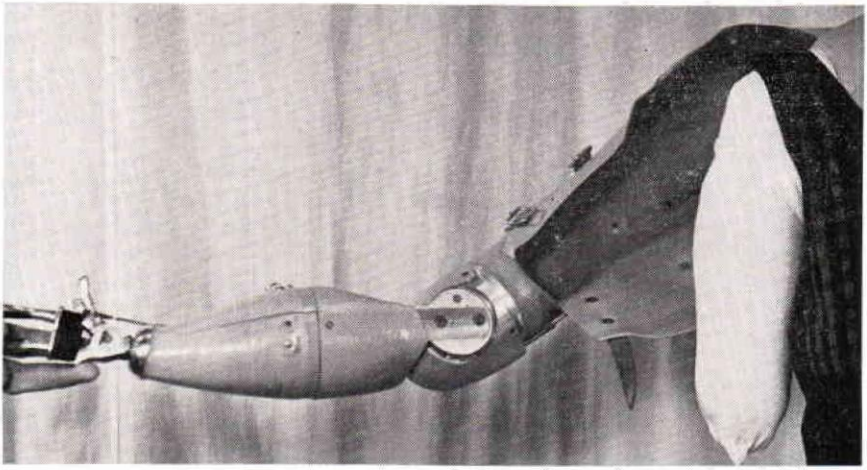


Fig. 3—View showing the medial flap open for donning and removing the socket.

Special Prosthesis

The problem of axillary discomfort was overcome by fabricating a socket which was fitted well up over the shoulder. The arm was thus suspended from the shoulder rather than the harness. To provide facility in donning and removing the socket the entire medial section of the socket was removed (with the exception of the distal end) and replaced by overlapping Naugahyde flaps with straps and buckles for adjustment.

The socket provided good suspension, adequate stability and ease of adjustment. The thin, flexible medial wall renders this part of the socket more comfortable.

The cast of the stump was made in two pieces—humeral section and shoulder cap—both using alginate. In the case of the shoulder cap a stockinette bag of alginate was placed over the shoulder and external pressure was applied. A check socket was then made in two corresponding pieces from which the cast for the final socket was obtained.

Difficulties in operation of the conventional elbow lock were overcome by tightening the elbow control strap so that it was in tension in the relaxed position. The lock was alternated by raising and lowering the shoulder which momentarily released tension on the cable. This simple and effective hook-up can only be used when the socket is suspended by an integral shoulder cap instead of by the harness. However, because of the limitation in range of motion, the conventional elbow was abandoned in favor of the experimental single control elbow unit (as illustrated).

Remarks

This medial socket and elbow lock control system appears to be simple and advantageous for special cases. It remains to be proved whether or not it has any advantages for standard above elbow amputees. It does suggest that the advantages of the German system of fitting well over the shoulder for suspension can be realized without difficulties in getting in and out of the socket. The adjustment should also be valuable in primary cases where considerable shrinkage is expected.

Fig. 4—Posterior view of arm and harnessing. *

Fig. 5—Lateral view of arm and harnessing. *

Fig. 6—Anterior view of arm and harnessing. *

*The elbow and forearm in these photographs are non-standard requiring no elbow lock control. With a standard arm the elbow lock control set-up would be attached at or near the center point of the figure 8 and draped medially to the socket, so that when the shoulder is elevated the socket rises releasing tension on the elbow lock.

WHY NOT INCLUDE A SURGICAL SUPPORT DEPARTMENT?

By MRS. JACK PAVA
J. R. Pava Orthopedic Laboratory, Santa Barbara, Calif.

SPEAKING FROM EXPERIENCE—We are very happy that we finally started such a department. For one reason, it rounds out the service that you can contribute to your community and to your doctors. Who is better qualified to fit surgical supports? Certainly the Orthotic and/or Prosthetic facility is better equipped than the average surgical supply dealer, corset shop, drug store or department store. These items go "hand-in-hand" with our business. The prescribing physician much prefers to send his patients to a facility where the personnel are trained to fit properly and are familiar with anatomical terminology, whether it be for a dorso-lumbar support or just an elastic knee cap or anklet.

The surgical support department also helps materially to augment incomes which may have declined because of the decrease in brace requirements with more modern surgical procedures, the decline in polio incidences, and other factors. We gradually added to our lines until today we carry just about every type of surgical corset and belt for men, women and children, including abdominal, obesity, post-operative, hernia, colostomy, visceroptosis, rib fracture, corset-type shoulder brace, maternity and, of course, orthopedic corsets for sacro-iliac, lumbo-sacral and dorso-lumbar conditions.

Mastectomy bras and long line bras for women corset patients are good items to carry also. Some women are accustomed to wearing one-piece foundation garments. Suddenly, it becomes necessary for them to wear a surgical corset. If they have a "roll" above the corset, the only way they will be happy "figure-wise," is to fit them with a long-line bra that extends down over the top of the corset.

Elastic hosiery is a "must" in the field of surgical supports. We carry every conceivable type—from just an anklet; to below-knee length in both surgical one-way stretch for your fracture cases to sheer two-way stretch. We also carry above knee hose in sheer, medium and heavy surgical weights in all lengths from normal stocking height or clear to the groin or any length between. Expanded top sizes are important, so you can properly fit the patient who has a large thigh in comparison to the lower leg.

Trusses are not to be forgotten. Crutches, canes, walkers, wheel chairs, patient lifts, and home traction equipment should all be included in your stock. In other words, any appliance that the physically handicapped would need should be part of your service. Then, eventually, you can hope the doctor will only have to think of one place to send all his patients for any item in that line. You may wish to either rent or sell such items as wood, adjustable crutches or Canadian crutches, walkers and wheel chairs.

Now—you say—how do I go about establishing this new department? One very important factor in its success is trained fitters for surgical corsets, elastic stockings and trusses. An Orthotist should have no trouble fitting his male patients with a surgical corset. If he knows how to fit a back brace, he can fit a corset even for an obesity condition without further training. However, he should have some training in fitting elastic stockings to

familiarize himself with the conditions that require elastic hose and the types used in various conditions if the prescribing doctor does not specify. If in doubt, always call the doctor and discuss it with him rather than fit something other than he had in mind. You will find the doctor will appreciate your interest in taking correct care of his patient, rather than fitting the wrong thing, just to make a sale. That training also is important so you will be familiar with your size ranges.

To properly fit trusses, training is also necessary to know the different types of hernias and the type of truss to use for each condition. This the doctor usually leaves up to the technician. You also will fit many people who have had hernias for years and just come to you for a new truss, without having seen a doctor or being referred by one. If you are a good truss fitter, many times you can correct a bad fitting that has perhaps been done by an untrained fitter and by using a different type of truss, that does the job properly, make a permanent customer of that person.

To get back to the subject of surgical corsets. I had said, "An Orthotist should have no trouble fitting his male patients with surgical corsets." What about the female patients? That is quite another story. Of course, you should have a woman fitter for your women patients. Here is where training is very important. Women's figures vary so much that selecting the proper model corset for her figure and for the condition requiring one, is the key to her being happy wearing that garment. Also, do not make the mistake of trying to carry only two or three models and plan to do extensive alterations to make them fit everybody. Labor is too costly to be spent at the sewing machine. If you carry a well rounded stock of different models for different figure types in a good range of sizes, you will find you can fit a big percentage of your women patients without any alterations except maybe just shortening a garter.

Where do you get this training? Both Truform Anatomical Supports and S. H. Camp Co. hold excellent schools in these subjects at least once a year in different sections of the country. Their curriculum includes the anatomy of all the physical conditions requiring supports and the fitting of their proper appliances. In fact, Truform is contemplating holding a school in our fair town in April, 1961. Speaking from experience, I took both Truform and Camp and a short, concise Akron Truss Co. course and I found them very beneficial. If you gain nothing more than confidence from these courses, that is very worth-while. For confidence in yourself as a fitter is very important in your relationship to the patient. Many times have I heard these words from a patient, "I certainly will never go anyplace else for my garment from now on. I can tell you people know what you are doing." Believe me, that only happened after I had gained confidence in my own fitting. The person requiring these services, whether it be a corset, elastic stocking or hernia support, needs to feel that the person fitting them knows what he is doing and is filling the doctor's prescription exactly. I can not reiterate too strongly how important trained fitters are to the success of a surgical support department . The ultimate success, financially speaking, is not necessarily in the initial fitting. Your repeat sales make you an even better profit. But if the patient and the doctor are not happy with the initial fitting, that patient will probably never come back.

For the efficient working of your repeat sales, always fill out a card to be kept in a file for every patient. We keep one file on all elastic hosiery patients, another file on all men's supports, whether it be a corset or truss, and another file for our women's corset patients. The information on these cards should be—Name, address, telephone number, date fitted, model and

size used, price charged, the referring doctor's name (if any) and detailed, necessary alteration information. Always tell the patient you are keeping their record card on file, so even if they move out of town, you can supply them with the same thing, as long as their weight does not change too much. In that case, of course, you would either need new measurements or they would have to be refitted. But in the case of a repeat sale, if you have a card on your previous fitting and the person wants the same thing, you merely have to pull their card and perhaps just hand them the item, eliminating the time of fitting them again. That especially applies to elastic stockings, bras, an elastic support, etc. Of course, if it is a lumbo-sacral corset with posterior, bilateral steels, you would put the garment on the patient, so you could check if the same size still fits, and then shape the steels.

Another small service we extend, which seems to be appreciated, is to send a printed "Thank You" form to the referring doctor, filling in the patient's name, date fitted, and service performed with any pertinent remarks, and enclosing a few printed prescription blanks.

In closing, there are only a couple more points to bring out. Adequate sized, soundproof, clean fitting rooms are very important. There is nothing like a professional atmosphere to please everyone. The doctor, the customer, and your fitters are all much happier where these conditions prevail. Keep the ash trays emptied, floor and mirrors clean, and clear the fitting room of any stock from the previous fitting and change the linen, if necessary, before you escort the next patient in. Also, never carry your stock into the fitting room in their boxes—it invariably brings on unnecessary conversation about what size the patient thinks they should wear. We try to sew our name and address labels into garments so the patient can not forget where they purchased it. It is a good idea to take out or cover up the model and size information, if possible. Just remember, though, not to go overboard in loading up on stock. Judge your potential volume of business by your location and competition. If you are located in a small community or town, such as we are, your potential is limited by the number of referring physicians you can hope to depend on and by the population of that town. Also, expect to pay a good fitter a satisfactory salary, to which they will be entitled.

ENGEN EXHIBIT WINS PRIZE

An exhibit on "Orthotic Devices for the Paralyzed Hand" won third prize in international competition. The exhibit, prepared by *Thorkild Engen*, Certified Orthotist who heads the Orthotic Department of Baylor University, Houston, Texas, was one of those shown at the International Congress of Physical Medicine and Rehabilitation at Washington, D. C. the week of August 22nd.

The exhibit was also shown at the National Assembly of Orthotics and Prosthetics sponsored by A.O.P.A. at the Waldorf-Astoria, New York City, the week of September 2-6.

The exhibit described and displayed late developments in hand appliances. Some of these were described in the article by Mr. Engen, which appeared in the Orthopedic and Prosthetic Appliance *Journal* for March 1960.

PORTEN REPORTS ON FITTING DEFORMITIES WITH PLASTIC SOCKET

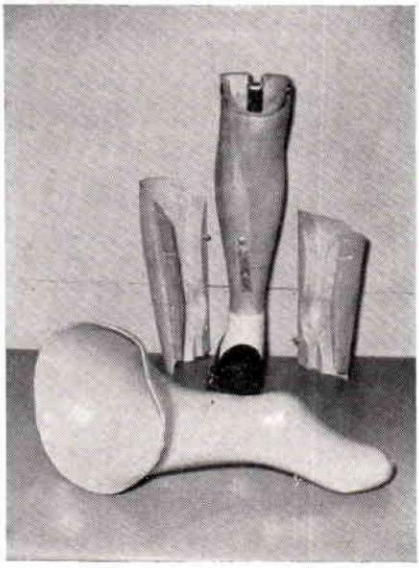
An interesting report on the use of a plastic socket in the fitting of a short-leg prosthesis for a young girl of 18 has come to us from Laurence Porten, president of the Union Limb and Brace Company, Inc.

The girl is severely handicapped with congenital deformities. She has no right femur and knee joint and the foot, which has only three toes, is located at the knee level. The hip joint is out of proportion, but functions normally. In addition she is without a right arm—a condition that is similar to a shoulder disarticulation—and has a retarded left arm, about 4 inches shorter than normal, twisted backward, and with no elbow joint and only three fingers.

The girl was first fitted in 1949, when she was seven years old. She was then given a combination Above Knee limb with hip joint and pelvic band, a moulded leather thigh corset which enclosed the whole leg and foot, and a wooden shin with artificial foot. In order to get a perfect fit it was necessary to make a plaster mold of the entire right side, including hip and leg down to the toes.

She was also fitted at the same time with a right shoulder disarticulation arm which improved the cosmetic appearance as well as giving better body balance. A simple wooden hand with movable thumb and lock proved quite useful after the child learned to operate the elbow lock.

Both prostheses were worn for about four years, during which time the wooden shin was lengthened three times. In 1953, shortly before the girl's family moved to another state, a new leg had to be made to compen-



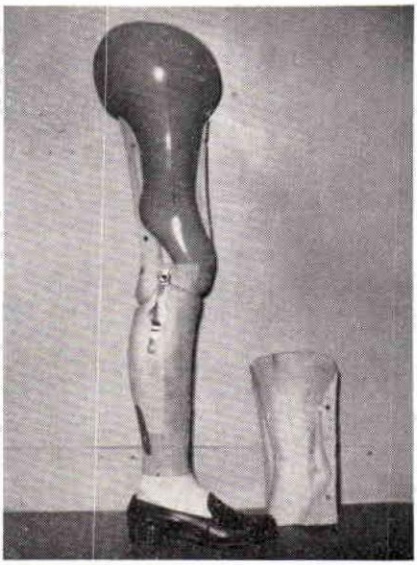
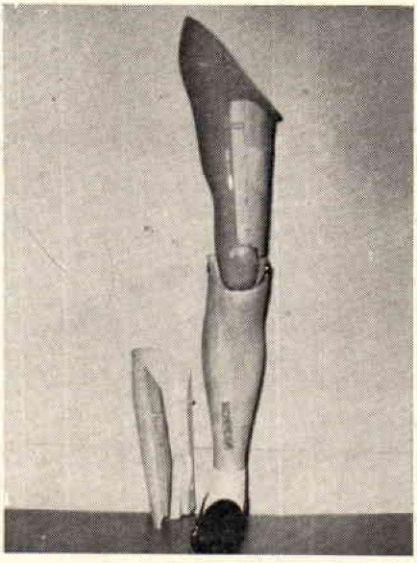


Fig. 1—The plastic socket and wooden shin, knee and thigh pieces dis-assembled.
Fig. 2—Outside view of installed plastic socket.

sate for her growth. After this time there was no contact with the patient until July 1960 when she came to the office to be measured for a new prosthesis.

Mr. Porten describes the construction and fitting of the new leg as follows:

"After the regular procedure of casting, etc., we followed up with a wax socket fitting and the regular plastic laminating process. The new prothesis consists of a laminated plastic socket—instead of a moulded leather thigh corset—which is fitted into a wooden thigh socket, and also has a wooden



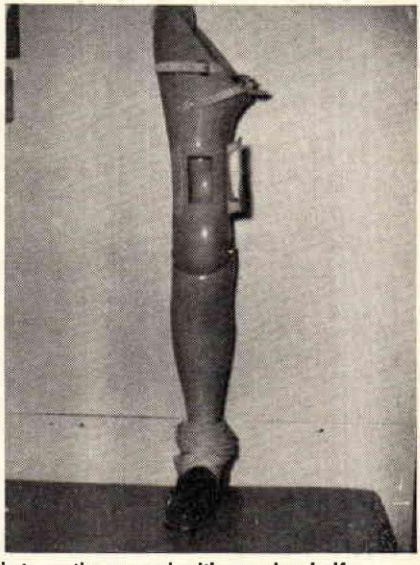


Fig. 3—Front view of installed plastic socket, partly covered with wooden halfs.
Fig. 4—The finished leg with laminated plastic cover.

Fig. 5—The patient wearing the leg.

knee, shin, and SACH foot. (See Figs. 1 through 4.) The conventional hip joint and pelvic band were replaced by a Silesian bandage, which is used successfully on Suction Socket legs.

"The deformity is well hidden in the wooden thigh, the plastic socket is sanitary and odorless and fits the leg perfectly. A cut-out front window allows the deformed leg to slide easily into the socket and a window pad holds the leg securely in place. The Silesian bandage maintains a very good hip control and holds the prosthesis in perfect alignment.

"This new combination has proved to be very satisfactory and the 18 year old girl is most happy with it. We have handled several similar cases in the past with equal success.

"The idea of reporting this case is to show that plastic material has great possibilities in the fitting of deformities. I have used it for shoe extension braces, shin protectors, arm and leg braces, arch supports, hand and arm splints, and artificial leg covers ever since I attended the UCLA Upper Extremity School in Los Angeles in 1953."

A SURGEON COMMENTS

By EVERETT J. GORDON, M.D.

Those of you who attended the September convention at the Waldorf-Astoria in New York City will certainly agree that this was one of the finest sessions our organization has ever held. The group was indeed fortunate to hear professional talks of the highest caliber from speakers from all over the world. After hearing a doctor from the Philippines describe conditions in Southeast Asia, most of us felt quite proud of the progress we have made in the U.S.A. However, our ego was soon deflated by the brilliant exhibition of prosthetic advancements made in Germany, especially of upper extremity appliances with suction-type sockets, and bracing in the treatment of scoliosis. Especial thanks is due to those who planned the program to immediately precede the meeting of the International Society of Orthopaedic Surgeons, who also met in New York City, thereby making it possible to secure such a brilliant array of world renowned speakers.

Everyone agrees that the prescription of new prosthetic devices must always be done on a conservative basis. We are all familiar with the immediate onrush of amputees seeking to use a newly announced device, believing that this will be the long-awaited answer to their problem. The experienced prosthetist and orthopaedist is especially careful in prescribing newly innovated devices for the problem amputee. The resultant difficulties when this policy is not followed was recently demonstrated in the Washington area by a below knee amputee who had gotten along very well with a conventional type of hard socket until very recently when he developed stump ulceration and swelling. After several months of self-care he reported to our clinic and requested a new UCB or Patellar Tendon Bearing type of prosthesis, believing that this would correct his stump problem. He was advised on local care to heal the stump ulcer and told to defer using his prosthesis until the stump was healed; physical therapy including whirlpool baths and ultra-violet applications was also prescribed. An appointment was given to return in 3-4 months when the stump was healed, so that further consideration could then be given to prescription of a new type of prosthesis. However, the patient was "impatient," bypassed the clinic, and through other channels secured a new UCB prosthesis. After 5 days use his stump, which

had begun to respond to the prescribed therapy, became very edematous, the ulcer deepened, and he became bedridden. Sheepishly, he returned and asked for aid, recognizing his error. This demonstrates that the doctor may not be right every time, but he is more often right than wrong—*his* advice should be heeded in lieu of the patient's do-it-yourself opinion!

We have found in using a UCB prosthesis that the amount of hyperextension must be controlled, although it is recognized that a slight amount does add to stability. However, if alignment in excess hyperextension occurs, incoordinated heel-toe gait follows, with resultant abnormal pressures upon the stump and probable stump pain and skin ulcerations.

In our brief experience with the UCB (patella tendon bearing) prosthesis we have found that a second or spare limb is usually unnecessary. In some cases a spare replica insert may be supplied, which will correctly fit into the plastic shell and can easily be switched with the original insert. This may be of aid to those who perspire freely, with odor problems, or who change frequently for sanitary reasons. Actually, there is little need for a complete new prosthesis, as it is the insert which is more apt to need replacement than the shell or foot of the prosthesis. The SACH foot can easily be repaired with little delay whenever required.

In one bilateral below-knee amputee who is using UCB prostheses, we have had a problem of clicking of the knees with ambulation, due to striking of screws on the inner side of the knees. This is somewhat difficult to control, except by retaining his gait with a wider stance. Has anyone else had similar experiences? If so, how have you corrected it? We certainly would like to know as this appears to be a rather interesting phenomenon in bilateral BK's that occurs with the freedom of gait resulting from UCB prostheses.

Our experiences with the SACH foot have continued to be quite favorable. We have had only one amputee in the last year who has expressed dissatisfaction and wanted to return to his old wood foot; he was a farmer who felt that the SACH foot was not durable enough for him. However, some of our amputees have expressed difficulty in going up and down stairs, because of excessive compression of the heel of the SACH foot. They noted definite instability with heel compression, which was not noted with their previous solid type wood foot. We have found that in some instances it may be necessary to use firmer heel inserts, if stair climbing is an important phase of the amputee's daily activities.

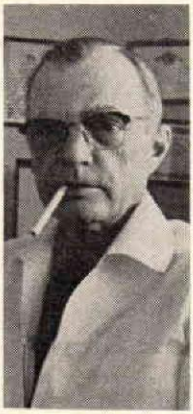
Several of our amputees have preferred a large flap of leather to line the front of the fork strap of their knee extension aid, to prevent the knee joint from pinching and tearing their trousers. This seems to afford good protection and does cut down the reweaving bills. Such innovations are often devised by the amputee himself—if you have any interesting ones, we would be glad to publish them for the benefit of others.

We have not had any communications from our readers for some time. Let's not make this just a local column, but continue the original purpose of interchange of ideas. There are a lot of smart men in our organization —let's confirm this by sending along your ideas so that someone else can be benefited—we want to hear from *you!*

HONORARY MEMBERS OF AOPA

By CHESTER C. HADDAN

The first Honorary Member of our Association, then known as the Association of Limb Manufacturers of America, Inc., was Dr. S. Perry Rogers, now of El Paso, Texas. At the time he was elected as an Honorary Member of our Association he was living in Chicago. Dr. Rogers has been a loyal and dedicated friend of our Association and its members down through the years and is held in high respect by all who know him. He was elected to Honorary Membership at the Twenty-first Annual Convention of the A.L.M.A. at the Hotel La Salle in Chicago on October 9, 1940.



DR. ROGERS

MR. HANGER, SR.

DR. KRATZ

The second man to be elected to Honorary Membership in our Association was Dr. John A. Kratz, then Director of the Office Vocational Rehabilitation. Dr. Kratz, who was Director of the Office of Vocational Rehabilitation for many years, was a tried and true friend of our Association. The feeling of the members of our Association toward Dr. Kratz was best expressed in the words of Mr. David E. Stolpe on October 7, 1941 when he said, "I feel that this Association owes Dr. John A. Kratz a great debt of gratitude for his kindness and cooperation in contributing his educational talks on our convention programs. In fact, Mr. President, our conventions would not be complete if Dr. Kratz were not with us."

Dr. Kratz probably had a greater and keener understanding of the problems and tribulations of this small and struggling industry than any other national figure at that time. And his inspirational talks at convention after convention did a great deal toward raising the standards of our Association to their present status.

The third person to be elected to Honorary Membership in our Association was the late McCarthy Hanger, Sr. McCarthy Hanger was truly one of the great men of all time in this industry. He worked long and hard and never refused to do any job big or small, menial or great, if it helped to move the industry forward even the smallest bit. My personal opinion is that no man in the history of this Association has contributed so much to its advancement as the late McCarthy Hanger, Sr. who was

elected to Honorary Membership on October 5, 1942 at the Twenty-third Annual Convention.

The fourth person to be elected to Honorary Membership in our Association was another truly great American—one of the outstanding surgeons in the history of medicine. Dr. Harry E. Mock was a warm friend of our Association and helped to bring about, perhaps more than any other person at that time, a closer bond between surgeons and limb makers. He was elected to Honorary Membership on October 5, 1942, in Chicago.

DR. MOCK

DR. THOMAS

MR. SPIEVAK

MR. AUNGER

The next person to be selected for Honorary Membership in our Association was Dr. Atha Thomas of Denver, Colorado. Dr. Thomas was elected to Honorary Membership on October 6, 1942 at the Twenty-third Annual Banquet of the Association. He was then a warm, loyal, and understanding friend of our organization and its members and has remained, down through the years, one of our Association's most loyal allies in the medical field. It was largely through the efforts of Dr. Thomas that the American Board for Certification was brought into being, for without his cooperation and understanding it is doubtful if the American Academy of Orthopedic Surgeons would have participated with the Association in establishing the American Board for Certification.

The last two men to be elected to Honorary Membership in our Association were both elected at the same time. They were both elected to Honorary Membership at the Annual Meeting of our Association in October 1952 in Washington, D. C. Both of these men have served the Association with honor and with dignity; the first, Mr. Joe Spievak of Youngstown, Ohio served as President for the years 1934-36 and the second, Mr. Clyde A. Aunger of Phoenix, Arizona served as President for the years 1936-1938.

KING OF GREECE SHOWS ENTHUSIASM FOR AMERICAN PROSTHETICS

By LLOYD BROWN
A. J. Hosmer Corp.

King Paul I of Greece was only one of the many important persons who visited the U.S. Prosthetic Exhibit during the recent World Fair conducted in Thessaloniki, Greece.

The United States Pavilion made up one section of the 25th International Fair held this fall in Greece. Many of this country's largest manufacturers exhibited their latest products including American machinery, automobiles, hand power tools, color TV, household appliances, etc., etc. A similar fair was conducted at about the same time in Vienna, and these are customary events in other important cities in past years.

For the first time in history, the U.S. Department of Commerce included Prosthetic Devices, and these were shown under the heading "Rehabilitation Of The Handicapped."

Mr. Jerry Leavy, well known bi-lateral arm amputee of the A. J. Hosmer Corporation, was appointed Technician-In-Charge of this exhibit. The latest products of various U.S. Manufacturers were on display. McCann, Tenenbaum, Sierra, Dorrance and Hosmer were among those presenting displays of their newest products.

The Fair was opened from August 29th to September 29th. Final and exact attendance figures are now being compiled, but they will exceed one

King Paul I of Greece accepts "Hire the Handicapped" stamp from Jerry Leavy—This picture, made in the United States Pavilion at the 25th International Fair at Thessalonica, appeared on the front page of a leading Greek newspaper. Jerry has just given the King a demonstration which included removing his coat, tie, and shirt.

half million people. More than 100,000 people attended during the first six days, 85,000 people attended during one Sunday alone. American day was celebrated on September 10th with about 400 honored guests present, who were greeted by U.S. Consul General, Robert S. Folsom. All were highly impressed with the demonstration given by Jerry Leavy during closed sessions for these important persons. Despite heavy rain, King Paul I of Greece visited the U.S. Pavilion on September 9th and was greeted by American Ambassador, Elis O. Briggs, Consul General, Robert S. Folsom and other U.S. Officials. The King was particularly impressed with demonstrations of Prosthetic Devices by Jerry Leavy. "This is perfectly astounding," King Paul said of Leavy's performance. He told Jerry that he would send the Queen around to see this demonstration as she was highly interested in helping the war casualties of Greece.

The newspapers were amazed with the U.S. Prosthetic Pavilion and published pictures on the front pages of their leading papers showing Jerry at work and also greeting the King. The U.S. Department of Commerce in Washington was very enthused with the Prosthetics Department and wrote Jerry on September 15th, "We were certainly pleased here in Washington when we received the opening day cable from Mr. DeKalb which stated: "The Prosthetics and Medical Exhibit headed by Jerry Leavy is without question one of the all time crowd stoppers in any fair ever held under OITF Direction. Literally continuous mobs of open eyed Greeks watched in amazement the almost unbelievable demonstration of Jerry Leavy. Many other firms manufacturing Prosthetics and Sensory Aids contributed to the great success of this exhibit."

In addition to the full month that the Fair was opened, it was necessary for Jerry Leavy to spend two additional weeks in Greece organizing the opening and to help with the official closing of the meeting. Jerry was on duty seven days per week for the entire time of the Fair, and his hours started at 8:30 A.M. each morning and continued to 9:30 P.M. each evening. During these hours he explained, through Greek interpreters, all products on display and at regular intervals he conducted a demonstration of his American prosthesis in action. The ease with which he handled a glass of water, the telephone, light switches, and other everyday items truly amazed the crowd. He then removed his necktie, coat and shirt to demonstrate his ease in handling clothes.

Jerry Leavy has worked hard at this assignment and deserves much credit from our entire profession for the excellent manner in which he has represented the entire United States. The enthusiasm shown by our government officials is quite remarkable, and we add our own thanks for a job well done.

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PROSTHETIC FITTING OF UNUSUAL ANOMALIES OF THE LOWER EXTREMITY

By JAMES A. MacDONELL, M.D.

Consultant, Area Child Amputee Center
Michigan Crippled Children Commission
Grand Rapids, Michigan

During the past ten years we have had the opportunity to evaluate over five hundred child amputees. Since 1955 we have observed and evaluated eighty-two unusual anomalies of the lower extremity.

The normal gradient of ambulation in a child occurs at fifteen to eighteen months of age. Standing balance is obtained at twelve to fourteen months. By the time a child is twenty-four months of age he normally has a very adequate gait pattern. Children with congenital malformations of the lower extremities, because of their inequality of leg lengths, present a delay of six to twelve months in this normal period of ambulation unless they are fitted with appliances. It is the author's observation that as soon as the child has reached his normal level of locomotor development he should be fitted with a brace or modified prosthesis so that he can progress to activities of walking, running and playing comparable to the normal child of his age.

The philosophy of converting anomalous extremities to standard amputation types has evolved in the treatment of unusual anomalies. This philosophy is *not* conceived for the purpose of fitting *all* unusual anomalies; rather,

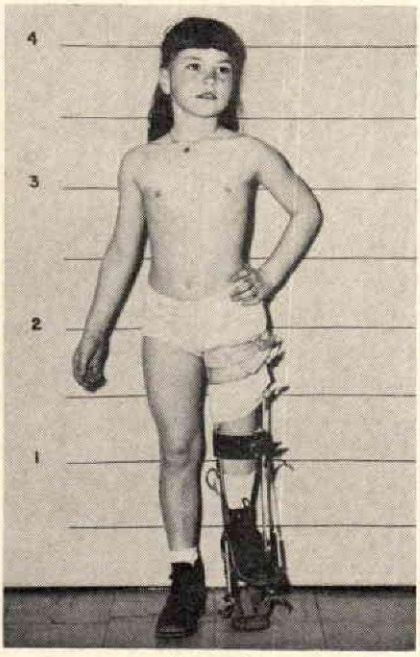


Figure 1

Figure 2

approximately 15 per cent of upper extremity anomalies and 65 per cent of lower extremity anomalies lend themselves to this type of procedure. Wearing of braces is, in our minds, a means of initiating ambulation. However, conversion by surgical means obtains a satisfactory end result in the future progress of the patient. Also, cosmesis subsequently becomes a prime consideration as the child reaches the age of reason.

The following illustrative cases serve to demonstrate our management of some unusual anomalies:

Case I, born February 11, 1952, was first seen at two months of age with congenital coxa vara and shortening of the left lower extremity. At nine months of age she was fitted with an ischial-bearing caliper brace on the affected side. The patient utilized this type of appliance until seven years of age (See Figure 1). At that time the parents agreed to surgical conversion, and a Syme type of amputation was performed. She is now fitted with a modified Syme prosthesis with SACH foot (See Figure 2). Patient and family are well pleased with the increased functional and cosmetic gains.

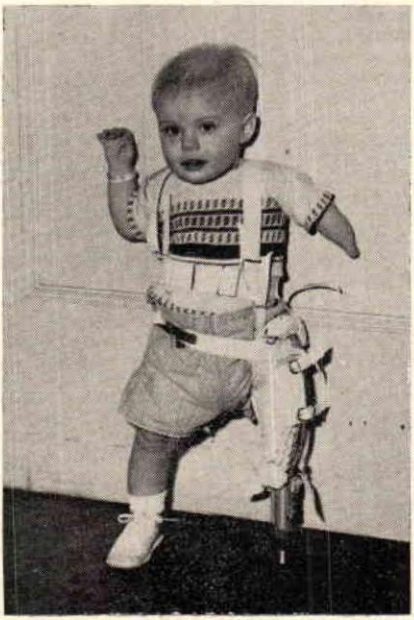


Figure 3

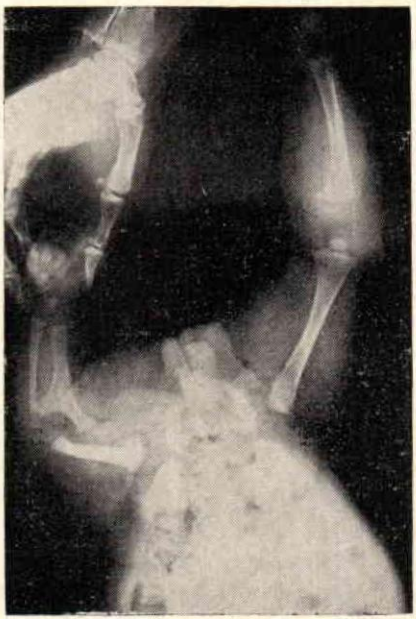


Figure 4

Case II, born August 5, 1956, was first seen at three months of age. He presented congenital left radial paraxial hemimelia, and intercalary phocomelia, left lower extremity. (See Figure 3). At eleven months of age he was fitted with a modified plastic bucket for pelvic support, with metal uprights terminating at a crutch tip. This type of fitting was continued until the patient was fifteen months of age, at which time he was fitted with an ischial-bearing brace with molded leather lacer thigh-cuff, double uprights and crutch tip (See Figure 4). He continued in this type of appliance until three years of age; at that time the foot was disarticulated. Present prescription consists of a "pipestem" type of socket, single pivot knee, plastic shinpiece, SACH foot and toddler's harness.

Children who present complete absence of the lower extremities necessarily are not candidates for surgical procedures. They do, however, present unusual problems when fitted with prostheses.

Case III, born August 14, 1957, was initially examined at this clinic at ten months of age. He was born with absence of both lower extremities (congenital amelia, bilateral). Initial fitting consisted of a plastic pelvic bucket which was attached to a platform with small casters. The patient learned to move about the room in this apparatus by moving his torso from side to side. At two years of age the prescription was changed, and the patient was fitted with a pelvic bucket with immobile "legs" and rocker-type feet. His height was commensurate with a normal child of his age. (See Figures 5 and 6.) His next prescription will be a pelvic bucket, "legs," Canadian type hip-locks, and SACH feet. He will be taught to use a swing-to and swing-through gait with the aid of crutches. (See Figure 7.)

In summary, evaluation of these children following conversion of anomalous lower extremities so as to provide fitting with conventional prostheses has demonstrated definite basic advantages. A study of the behavior patterns in these children prior to surgical conversion reveals that they become regressive in their socialization with children in their age group. Parents of these children, recognizing the disability presented by their child, have been most receptive to conversion amputation. The child is able to ambulate with equal lower extremities that are functional and cosmetically acceptable. The physical, mental and social problems manifested by these children prior to conversion are markedly lessened after this final definitive surgery has been performed.

The fitting of children with anomalies of the lower extremities presents a special individual problem in prosthetic fitting, and prescription therefore cannot be standardized.

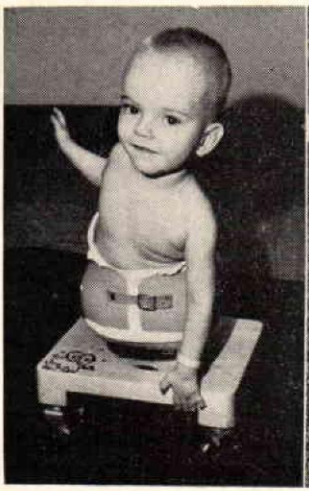


Figure 5

Figure 6

Figure 7

PROSTHESIS AFTER AMPUTATION FOR SCLERODERMA

By DR. B. G. SPIVAK

Published in Orthopedics, Traumatology and Prosthetics,
Volume 20, Page 73, September 1959, Moscow, USSR

Editor's Note: *Orthopedics, Traumatology and Prosthetics* is a journal published in Moscow and received by The American Orthotics and Prosthetics Association in exchange for the *Orthopedic and Prosthetic Appliance Journal.*

We are anxious to publish abstracts of the articles in it directly related to prosthetics and orthotic appliances. We are indebted to Elliott Markell of Markell Shoe Company for a review of the following article and to Dr. Drillis of the Prosthetic Devices Study of New York University for a translation. It is our hope to publish other abstracts in succeeding issues of the *Journal.*

Galina K., 29 years old, entered the Prosthetics Institute in August 1957.

At the age of 3, after scarlatina and diphtheria, she developed a swelling scleroderma which chiefly affected the distal portions of the left leg and left arm.

At the age of 12, she walked with crutches, with only the right lower leg for support. She was unable to walk on the left leg because of the contraction of the hip and knee joints.

Although she was given systematic medication, physical and spa treatments, the scleroderma grew worse, and only in the last five years was it noted that the swollen parts had healed. On the left forearm and left hip, the damaged tissue was being replaced with normal skin, and trophedema on the feet had healed up.

At the time of admission to the hospital, it was observed that there was a marked shortening and atrophy of the left shin and foot and also a contraction of the left hip (150°) and left knee joint (90°).
The amount of blood flow in the left thigh was determined with the aid of radio-active isotopes and was found to be two to three times less than on the right side.

It was decided to do an amputation on a level with the lower third of the thigh. As a relative contraindication was the scarred skin on the medial surface of the thigh. The amputation was performed directly above the epicondyles of the femur. Healing came at the end of the first month with a moderate sized mobile scar forming on the end of the stump.

At this point, preparation for the prosthesis was begun including physical therapy procedures, massage of the stump and gymnastic exercises to eliminate the contraction of the hip joint. During one month the patient learned to walk with the leg in a plaster of Paris prosthesis. Thereafter a wooden prosthesis without a lock in the knee joint was used.

The fabrication of the prosthesis was complicated because the stump of the left thigh was severely atrophied. It was almost without subcutaneous fatty tissue, and the skin in some places had changed to scar tissue. Besides, it was noted to have a contraction of abduction of the left thigh in a range of 20 degrees.

The prosthesis was constructed with careful attention to the peculiarities of the stump. The thigh socket was oriented outward in relationship to the knee joint. The alignment of the socket was based on the results of the contraction examination—a little bit forward and outward. The internal anterior surface of the socket, surrounding the end of the stump, was covered with foam rubber to prevent painful contact with the hard wall of the socket.

Investigation six months after discharge from the hospital showed that Galina is walking well on the prosthesis with a cane in her right hand. She does not complain of pain.

This case merits study because it is of a kind seldom seen—also because of the unusual character of the prosthetic procedure.

WESTERN ORTHOPEDIC ASSOCIATION MEETING

The Western Orthopedic Association, one of the largest groups of its kind in the World, met at Coronado, California, near San Diego, October 23 to 27. We are indebted to John A. Metzger, the AOPA member from Long Beach, California, for an interesting report on this session and a copy of an attractive program. Mr. Metzger recommends that at future meetings of the Western Society, there should be an exhibit on the value of dealing with certified facilities. Such a display, he believes, would do a great deal to promote Certification, both of individuals and of the facilities.

The program of the meeting included a discussion of a new technique and a new prosthesis for knee disarticulation by Robert Mazet, Jr., and Charles A. Hennessey, an AOPA member from Los Angeles. The Biomechanics Laboratory Group from Berkeley, California, presented a seminar on Problems in Amputee Research, similar to the session at the AOPA Assembly in New York City.

The Space Age was presented by a seminar on Orthopedic Aspects of Space Flight by a group of specialists from the Aerospace and Radiation Medicine Group of Convair-San Diego, which is a division of General Dynamics.

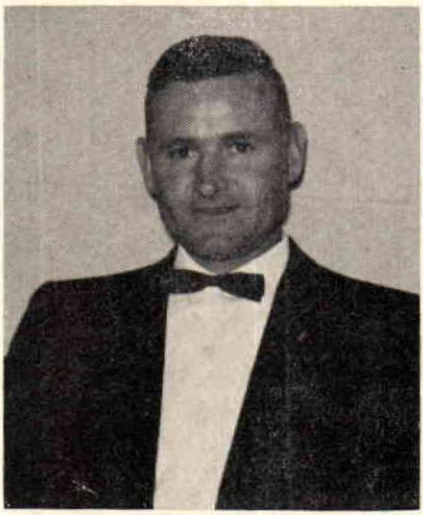
Among the technical exhibitors were Hittenberger's of San Francisco, with Herman C. Hittenberger in attendance and S. H. Camp and Company of Jackson, Michigan, represented by Vice President C. B. Clemons and Miss Hazel Irving.

Dr. Marvin P. Knight of Dallas, Texas, is President of the Association for the year 1961.

BIOGRAPHICAL SKETCHES OF NEW AOPA MEMBERS

Editor's Notes:

This is a series of sketches of managers of new member firms of the Association. The manager of the Orthotic-Prosthetic facility is one of the most important and least appreciated factors in the care of the handicapped. In this column, devoted to biographical sketches of these men, we aim to give some idea of the long experience, skill, and special qualifications which make up the successful, conscientious, and ethical manager.



FRANKLIN M. FLOYD

F. M. Floyd, C. O., is the manager of the F. M. Floyd Brace Company of 3802 Wrightsville Avenue, Wilmington, N. C. The facility is certified in the field of orthotics.

Mr. Floyd began his career in Charleston, S. C. with his brother Wilbur L. Floyd. He is one of the Orthotists who took their training under the G.I. Bill of Rights Law with much of his actual experience in the Orthopedic Clinic of the Medical College of South Carolina. He was certified at the examination given in Atlanta, Georgia in 1951. Mr. Floyd opened his establishment in Wilmington, N. C. in 1954 and has since become well-known in the rehabilitation picture of the "tarheel" State.

WILLIAM MACK JONES

William Mack Jones, C.P., is typical of the skilled technicians who are making their mark in prosthetics in Southern California. Still a comparatively young man, Mr. Jones had had many years of experience before he opened his own establishment at Long Beach, California. He began his training with Harvey G. Lanham, and took the technical courses of the apprenticeship school for training in Orthopedics and Prosthetics, which was sponsored by members of the Association in the Los Angeles area. In the Prosthetics Technician examination, he received an average grade of 90 and holds the State of California certificate as a Prosthetic Technician. He passed the Certification examination in 1951.

The facility which he now operates is housed in a modern quarters. Attractive waiting rooms in the front of the building are matched by an efficient layout of the shop area in the rear.

Mrs. Jones is also active in the operations of the establishment.

WALTER WOLFING

Walter Wolfing now operates the orthopedic facility in which he began his training thirty years ago. This modern, up-to-date facility is located in the exact spot in Baltimore of the first shop—907 N. Calvert St.

Now known as Walter-Brunos Orthopedic Appliances, Inc., it was begun many years ago by the late Bruno Wensien. Mr. Wensien saw evidences of rare ability and skill in the young Walter Wolfing thirty years ago and added him to the staff of the establishment. When he retired, Mr. Wolfing purchased the facility and has expanded its operations.

Mr. Wolfing was certified as an orthotist in 1951. Mrs. Wolfing is treasurer of the organization and takes keen interest in its operations.

The unusual and difficult type of appliance has always been a special concern of Mr. Wolfing. Some of his devices are shown in the well-known book, "Posture and Pain," published in Baltimore by the Williams and Wilkins Co. This was written by Henry O. Kendall and Florence P. Kendall, Physical Therapy Department of Children's Hospital in Baltimore.

On a recent visit to this facility, the editor of the *Journal* was interested to find a patient who had come all the way from Detroit for a special type of arch support.

An interview with the parents of a daughter who had been treated for scoliosis, gave other indications of the satisfaction which the facility provides for its patients.

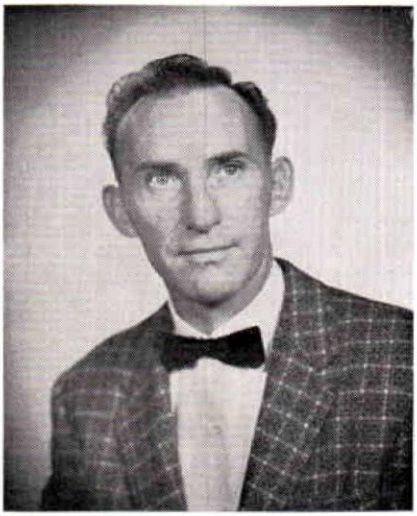
Both Mr. and Mrs. Wolfing are concerned about future developments in orthotics and prosthetics. The problems of obtaining skillful help and of education are ones which they place high on the agenda for action by the Association.

JOSEPH MIKO

Joseph Miko, head of the Pittsburgh Orthopedic Company, has spent twenty-eight years in the field of orthotic appliances. His facility is located at 409 Federal Street, Pittsburgh 12, Pennsylvania. (Tel. FAirfax 1-2043) Physicians and colleagues with whom he has worked describe him as "a man of integrity, ability, a fine personality and one who gets

along well with all of his colleagues."

Mr. Miko started his career with the late Charles Apitzsch, who was head of the brace shop at Children's Hospital of Pittsburgh, and worked with him from 1932 on. In 1942 he went into service, where he served for 41 months. Most of this time was spent overseas at a Hospital Base. After his service, Mr. Miko was affiliated with the National Artificial Limb Company of Pittsburgh until 1947, when he became Supervisor of the Veterans Administration Brace Shop. In 1951 he went into business for himself as owner of the Pittsburgh Orthopedic Company, culminating his active career of twenty-eight years in brace work.

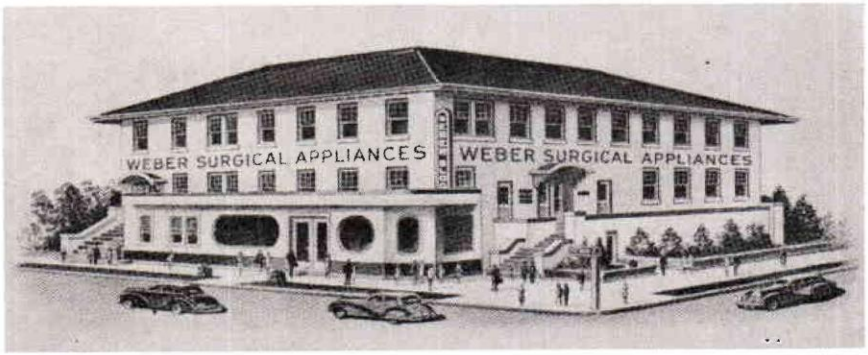


LLOYD A. TANKERSLEY

Lloyd A. Tankersley is owner of the Charleston Orthopedic Appliances Company, located at 1026 Central Avenue, Charleston, West Virginia. (Telephone: DI. 3-6522.)

Mr. Tankersley began his training for orthopedic work in 1946, while employed by the George Rinck Orthopedic Company, and in 1950 opened his own business. In 1953 he established a branch office in Morgantown, W. Va. His facility has serviced the crippled children's hospital at Marmet exclusively since 1950, and Charleston, Welch, Beckley, and Morgantown for ten years. His company specializes in ball bearing braces for cerebral palsy, and has been manufacturing ball bearing joints since 1953.

Mr. Tankersley will supply orthopedic appliances for the West Virginia University Medical Center at Morgantown, and plans a new building there from which he hopes to operate in 1961.



RUDOLPH H. WEBER

Rudolph H. Weber, President of Weber Surgical Appliances, has been a leading figure in this field in Louisiana for many years. His company, Weber Surgical Appliances, 3601 Prytania St., New Orleans, is advantageously located for its many services to physicians. Of special interest to Mr. Weber has been the improvements in existing types of braces to lighten their weight without sacrificing other advantages. The facility which he operates is certified.

JOHN A. METZGER

John A. Metzger is the President of the Company bearing his name, located at 849 Pine Avenue, Long Beach, California. This is a complete orthopedic appliance facility, certified by the American Board of Certification. Mr. Metzger has been active in the company since its inception. In this issue we show a photograph of the attractive store front.

The attractiveness of the store front is borne out by the interior. Quiet, comfortable waiting and fitting rooms are the scene of courteous and professional fitting services. Among the features of the Metzger Company is a complete department for the manufacture and fitting of all types of bracing — lower extremity, spinal, post polio, cerebral palsy and functional upper extremity.

Another department handles the manufacture and fitting of orthopedic, post-operative, and general wear corsets in connection with a department for all prenatal needs.

The company is particularly proud of its shoe department, which takes care of the needs of children and growing girls and boys who are in need of basic long counter thomas heel foot wear. This department is completed by the maintenance of a shoe repair department to provide additional modifications as required by the prescribing physician.

Mr. Metzger has long been concerned with the development of professional standards in this field and is a former president of the Society of Orthotists and Prosthetists, Inc. (SOPI), which has been a constructive force in the Southern California area.

Mr. Metzger represented the Association at the recent meeting of the Western Orthopedic Association at Coronado Beach, California.

A REPORT BY THE PRESIDENT OF AOPA

Dear Reader:

The majority of the readers of our Journal do not belong to the American Orthotic and Prosthetic Association. This gives me the opportunity to write to those readers on behalf of our members. We recognize that you are part of that large and important group serving with the same primary goal that we have, i.e., "Dedicated to Serving the Handicapped."

We are proud that through individual desires and interests our members have established this Association and recognize that it is worthy of each individual member's financial support as well as their time toward the furtherance of our goals. As a result of this interest, we can review the results and see that basically, many avenues to greater knowledge are available to us. In this highly technical age constant individual advances in knowledge and technique are a prerequisite to better patient service and are an important factor in the cooperative efforts of those concerned with the best rehabilitation possible.

It seems appropriate, therefore, to use this column to report on what we are doing in this Association, a group fostered by our members so that they can progressively increase their contributions for the well-being of mankind. We are happy to receive the increasing recognition that you are granting us in reward for the effort we are making. We hope you will continue to help us in seeking the added knowledge we need.

1. *Educational Activities*

As our field evolves from a craft to a profession, the problem of education is of utmost importance. The development of basic training courses in our subject matter is important. "Refresher" training programs to bring the practicing Orthotist and Prosthetist up to date are of equal importance. The general problem of encouraging development of the training programs us under our AOPA Educational Committee, headed by Mr. Edward Snygg of San Francisco. Two eminent surgeons, Dr. Roy M. Hoover and Dr. Charles O. Bechtol, also serve as members of the Committee. This committee is at work on a "Profile" or outline of what an Orthotist or a Prosthetist should know in order to have at hand the knowledge most helpful to them in this field. How much chemistry is required for necessary familiarity with the use of plastics? How much engineering and metallurgy are essential?

What different phases of anatomy are requisite to effective application of orthotic and prosthetic aids? This outline will assist in spelling out the courses, curriculum, and training programs that are essential to this field.

"Refresher" programs which are continuing the education for the man in active practice of this profession will be emphasized at our eleven regional meetings. These are scheduled to be held in the spring of 1961. Many of these sessions will be of special interest to the medical profession and other para-medical groups which work with us.

2. *Professional and Technical Orthotics and Prosthetics Convention*

Ours is a professional Association and one of the important tasks of such a group is the planning and carrying out of scientific and technical conventions as a meeting place for all who are concerned with the subject. In Prosthetics and Orthotics, this is the annual National Assembly. Plans are already underway for the 1961 Assembly to make it outstanding from the standpoint of content and value to the participants.

We have chosen the place and the date: The Eden Roc Hotel, Miami Beach, Florida, October 19 to 26, 1961. This is a return to the place where the Assembly met two years ago. Mr. Richard Bidwell, Certified Prothetist and Orthotist, Milwaukee, has been named Program Chairman. He will be assisted by Mr. Bert Titus of Duke University Hospital as Vice-Chairman, and by Mr. George H. Lambert of Snell's in Baton Rouge, Louisiana, as Chairman of the Technical and Scientific Exhibits.

These gentlemen are anxious to have the Assembly develop into one of outstanding value and they, accordingly, will welcome any suggestions and comments from the readers of this *Journal.* All of you are eligible to attend and we hope you will check the preliminary program and other Assembly information which will appear in the March and June issues of this *Journal.*

3. *The Publications:* This *Journal,* the AOPA Yearbook and the *Almanac.*

In a country as large as ours and where the field of activity of prosthetics and orthotics is dispersed through all fifty States, the printed word is most important as the medium of communication. With this in mind, the AOPA Board of Directors has authorized an expansion in our publication field. The first month of 1961 will see the publication of the new AOPA Yearbook and Membership Roster. A Supplier's Index Section will be an important part of the Yearbook. It will list the items and supplies of the members who are sources of delivery in this field.

The AOPA *Almanac,* the only management bulletin in this field, will be published twelve months a year instead of eight months as in the past. Its scope will be broadened to increase its value to that "forgotten man," the manager of the Orthotic and Prosthetic facility.

The *Journal* itself will be expanded. Surveys of Prosthetic-Orthotic facilities in Southern California and Metropolitan New York are scheduled for early publication. Attention will be paid to the educational programs at the University of California, Los Angeles, and Northwestern University, supplementing the report on New York University which appeared in the September 1960 issue.

4. *Informational Services*

Washington Headquarters of this Association is increasingly a center of information in our field, nationally and internationally. It works closely with officials of the Veterans Administration, the Office of Vocational Rehabilitation and other government agencies. As a result, the Association, through its Washington office and its committees, handles an increasing

number of requests for information in our field. Many specialists from abroad make the Washington headquarters of AOPA a first "port of call" before studying prosthetic-orthotic services in our country.

The Association is able to perform all of these services because of the experience and knowledge of all its members in the United States, Canada, Mexico, and Venezuela. In 1961 it is our hope to continue to expand these activities, the better to fulfill our real reason for being: Service to the Handicapped and their Physicians.

RALPH STORRS, *President*

REVIEWS

Re-education of the Injured Shoulder by R. Barrie Brookes, F.C.S.P., Rehabilitation Officer Birmingham Accident Hospital, E. S. Livingston Ltd., 1959, Williams & Wilkins Co., Baltimore, Maryland. Reviewed by Joseph Ardizzone, R.P.T.

The author presents a study of shoulder injuries involving 779 patients. As stated in Chapter I of this book, emphasis of the study was mainly on those injuries involving the subacromial tissues of the middle-age group and beyond. Gleno-humeral dislocations and fractures involving the surgical neck and greater tuberosity of the humerus were considered because of the frequency with which surrounding soft structures are involved and contribute to a poor functional result.

The book deals first with pathologically significant structures of the shoulder joint, and with normal and abnormal functions of the shoulder. Chapter IV is devoted to specific injuries and their treatment and Chapter V discusses the causes of subacromial bursitis and methods of treatment. Subsequent chapters deal with lesions of the biceps tendon; the development and treatment of calcium deposits; causes and treatment of uncomplicated and complicated dislocations of the shoulder; lesions of the acromioclavicular joint; and fractures of the surgical neck and greater tuberosity of of the humerus. Diagnosis, treatment and complications, along with case histories, are included in most chapters.

A useful table of comparative signs and symptoms of the common shoulder lesions from which differential diagnosis can be made as well as a list of shoulder exercises is presented by the author in the appendix of the book.

The author points out in his conclusion that one of the outstanding principles which emerged from his study, is movement should be given at the earliest possible moment. Treatment given should be given under direct supervision of Physical Therapist until exercise program is well known by the patient. One final statement made by the author is that the exact diagnosis of the extent and location of acute cuff lesion is not only extremely difficult, but is of little consequence when treated conservatively.

This book may well be of some assistance to Physical Therapists and others in securing limited and basic information on shoulder lesions encountered in average physical therapy clinics and in their daily treatment. The book is well written and easily read.

INSTRUCTIONAL COURSE LECTURES, 1959

The American Academy of Orthopedic Surgeons, Fred C. Reynolds, Editor

Published by the C. V. Mosby Co., St. Louis, 1959, 333 pages, illus.

Reviewed by Ralph Storrs

This presentation of lectures from the so-called Instructional Courses can be of extreme value to the Orthotists and Prosthetists who are operating as members of the Para-Medical group. After consulting this book they will at least be more conversant with the latest studies and lectures by outstanding Orthopedic Surgeons, even though they may not receive any specific or technical benefit from the book.

The Instructional Courses are one of the most important features of the annual meetings of the American Academy of Orthopaedic Surgeons. Any person may submit contributions of interest or benefit to the Orthopedic Surgeon to the Instructional Course Committee. The committee carefully evaluates and determines the papers or courses that are to be presented. Every paper is studied completely to determine whether the author (or authors) have something of value before inviting him to present his paper at the next annual meeting. These papers are original and generally reflect much study and research, and a full review of findings and results. This type of program has become extremely successful and is one of the major ways the Orthopods keep abreast of new methods, techniques, and devices in their field. Their success is indicated by the fact that in 1959 one hundred and twenty-four courses were presented by one hundred and eighty-one instructors and attended by seventeen hundred of the Orthopods.

This book is broken down into seven sections: (1) A Symposium on Injuries to Athletes; (2) The Hand; (3) The Foot; (4) The Knee; (5) The Spine; (6) Unequal Extremities, Osteomyelitis, Electromyography in Orthopaedic Surgery; and (7) Fractures. As we review each of these parts carefully, we can see that it contains information of great value to Orthotists and Prosthetists, and will give us a more complete picture of the problems that the Orthopedic Surgeon is faced with. In addition we will more readily understand why surgery is undertaken instead of the application of an Orthotic or Prosthetic device.

Specifically, the lectures deal with the anatomy of the hand and then with surgery of the paralytic hand. This we are deeply interested in because of the current interest shown in our functional hand bracing program. We all are interested in the problems of clubfoot. What is conservative treatment in this area and where do we enter the picture with a device to assist in corrections?

The section on injuries to the knee again will give us an insight into the various types of injuries that can occur and the possibilities of commonly applied devices that will be of benefit. Next we come to the section on the spine, which is quite unusual. Interestingly, there is a chapter on Fundamental Prinicples and Treatment of Scoliosis that is most enlightening. Possibly many of us have never had an opportunity to read such an informative paper and could gain a much better understanding of the problem from this discussion.

Finally there is the section on fractures, which again we are vitally interested in because of the role that we have to assume.

As mentioned previously, this book, though not written for us primarily, does contain the latest developments which are of great interest to us. Through the knowledge gained in such fields we improve ourselves intellectually so that we can better serve the patient and the doctor.

A REPORT TO *JOURNAL* READERS FROM THE PRESIDENT OF THE AMERICAN BOARD FOR CERTIFICATION

Although many persons attending the Certification luncheon at the Waldorf in New York know that Dr. Roy M. Hoover was the nominee from the American Academy of Orthopaedic Surgeons as their new representative on the American Certification Board, few realize that this an unprecedented honor, in that Dr. Hoover is the first surgeon ever to be renominated to the Board. Dr. Hoover has done much in our behalf, and we are pleased to again enjoy his wise counsel. Dr. Hoover, it should be remembered, served as President of the American Board for Certification for two years previously.

It is also a pleasure to welcome Mr. Richard Bidwell as an AOPA Nominee on the Certification Board. Those of you who know Dick know that he is a very conscientious, hard working individual. We are indeed happy to have his wise counsel.

The certification examinations, as many of you know, were given in Chicago at Northwestern University on October 10 through 12. The facilities and the cooperation received were excellent, and we should like to take this opportunity to pay tribute to Dr. J. Warren Perry and to Blair Hanger and their staff for the many courtesies rendered.

We also wish to acknowledge the assistance of these orthopedic surgeons who gave liberally of their time to participate in the Examinations: Drs. George T. Aitken, Grand Rapids, Michigan; Roy M. Hoover, Roanoke, Virginia; Eugene Record, Boston, Massachusetts; Claude Lambert, Chicago, Illinois; Alfred Swanson, Grand Rapids, Michigan; Donald Blair, Des Moines, Iowa; Edward Holscher, St. Louis, Missouri; Pete Carnesale, Milwaukee, Wisconsin; C. Hugh Hickey, Milwaukee, Wisconsin; and Raymond Pelicore, Chicago, Illinois.

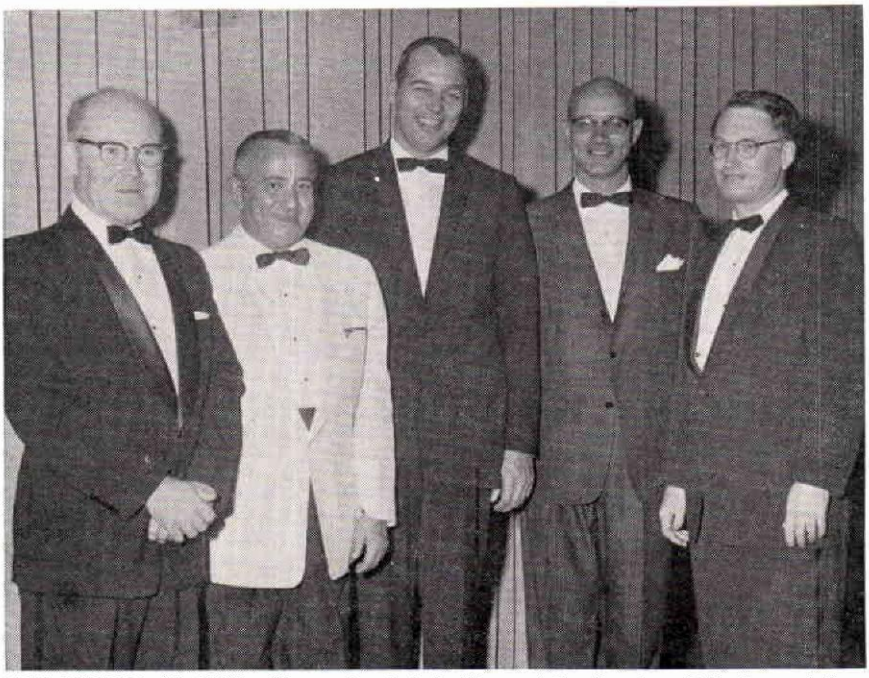
The Examinations are now in the process of being graded, and the results will be announced as soon as humanly possible.

The annual meeting of the American Board for Certification was held in Chicago just preliminary to the Certification Examinations. Many of the routine matters were disposed of and then we tackled the job of working over our Book of Rules. This was done in an effort to clarify several of the conflicting statements as well as to bring our Book of Rules up to date. There will be, of course, a lapse of time before the new Book of Rules can be issued. The job is well under way, however, and I feel a major portion of the clarification has been accomplished.

Last but not least, Mr. Lee Nattress (as most of you know by now) was officially named Executive Director of the Board for Certification.

May I takes this means of expressing to one and all my wishes for A Very Merry Christmas and a Happy and Prosperous New Year.

H. R. THRANHARDT



NEW OFFICERS OF AOPA—The newly elected officers of the American Orthotics and Prosthetics Association are shown at the National Assembly held at the Waldorf-Astoria in New York City September 2-6. They are left to right: Fred Quisenberry, President-elect of Los Angeles, California; M. P. Cestaro of New York City and Washington, re-elected Secretary-Treasurer; Ralph Storrs of Kankakee, Illinois, who will head the Association as Pesident for the coming year; Vice President Carlton Fillauer of Chattanooga, Tennessee, and Executive Director Lester A. Smith.

AOPA ELECTS STORRS AS LEADER

The American Orthotics and Prosthetics Association held its annual National Assembly in New York City at the Waldorf-Astoria Hotel, September 2nd to 6th, 1960. Total registration exceeded 400.

A series of technical papers were presented in the four-day session. Most of these will appear in the issues of this Journal in the months ahead. One account of Prosthetics in the Philippine Islands is printed in this issue.

The technical and supply exhibits numbering thirty-eight attracted the attention of many Assembly visitors. The exhibits were arranged by a committee headed by Richard Bidwell of Milwaukee and opened with a formal ribbon-cutting ceremony, using the services of Mrs. Kay Leimkuehler, wife of the retiring President, Paul Leimkuehler.

National Officers

Members of the Association at the annual business meeting by unanimous vote chose Vice President Ralph Storrs to be President for the year 1960-1961. To fill a new post, that of President-Elect, members picked Fred Quisenberry, C.P.O., of Los Angeles. Mr. Quisenberry will take office as President at the conclusion of the 1961 Assembly. Carlton Fillauer, C.P.O., was elected Vice President. M. P. Cestaro was reelected Secretary-Treasurer of the Association.

Director Jackson Retires

The New York Assembly marked the retirement of Glenn E. Jackson, who has served as Executive Director of the American Orthotics and Prosthetics Association and its predecessor, The Orthopedic Appliance and Limb Manufacturers Association, since 1946. Mr. and Mrs. Jackson are making their home in Pompano Beach, Florida. He was succeeded by Lester A. Smith who served as Assistant Director of the Association and as Editor of the Journal since *1952*.

Before adjourning the Association adopted resolutions of appreciation and praise to all program participants and in addition to Program Chairman Ted W. Smith of Kansas City, Exhibits Chairman Richard G. Bidwell of Milwaukee, and the members of the Metropolitan Orthopedic Appliance and the Manufacturers Association.

GERMAN DELEGATES GREETED—President Paul Leimkuehler welcomes Mr. L. Koeser, Jr., of Essen, Germany, to the Assembly of the American Orthotics and Prosthetics Association in New York. Mr. Roeser and Mr. Halmut Habermann, Jr., were official delegates to the Assembly. Newly-elected President Ralph Storrs, Mrs. Storrs, Mrs. Leimkuehler and Mrs. Habermann complete the group.

Certification Meeting at the Assembly

The annual meeting of the American Board for Certification was a part of the National Assembly as it has been for many years. President Howard Thranhardt presided at the luncheon meeting of the Certification movement on September 4th. Tribute was paid to retiring Directors Vernon L. Nickel, M.D., and Charles A. Hennessy, C.O.

To fill the vacancies created by their departure, the meeting unanimously elected Roy M. Hoover, M.D. of Roanoke, Virginia, and Richard G. Bidwell, C.P.C.O. of Milwaukee. Dr. Hoover, a former member of the

Board, serves by nomination in the American Academy of Orthopedic Surgeons. Mr. Richard G. Bidwell, who is Director of Region VI, was nominated by the Board of Directors of the American Orthotics and Prosthetics Association.

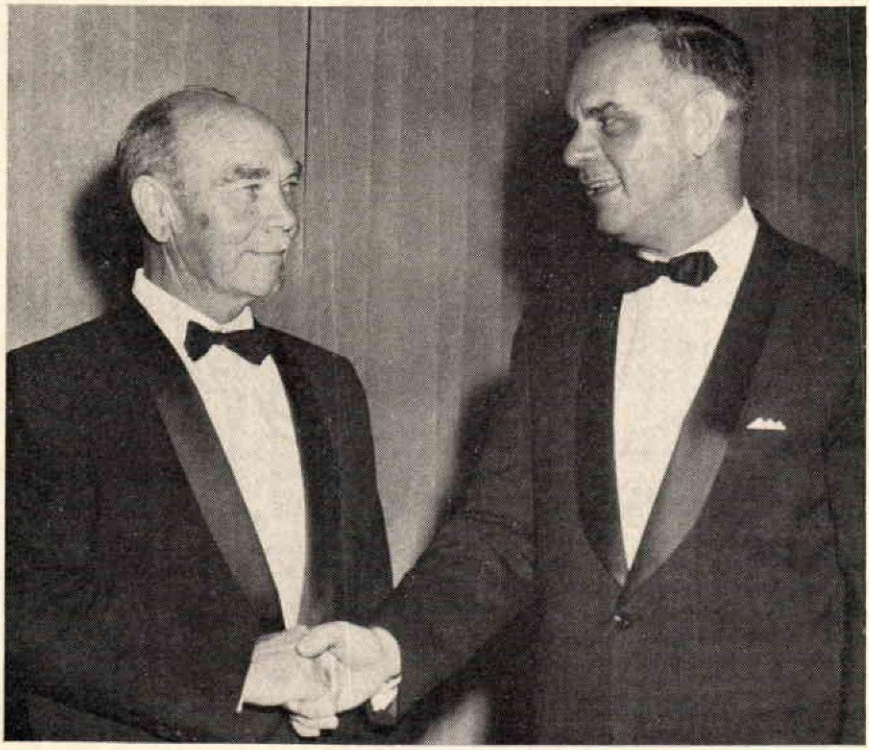
A review of the year's activities on Certification was given by Leroy William Nattress, Jr., Mr. Nattress, who had served as Assistant Executive Director of the Certification Board, was chosen Executive Director, succeeding Glenn E. Jackson. This appointment was confirmed at the business meeting of the seven directors held in Chicago October 8th.

Committee Appointments by President Storrs

Much of the work of the American Orthotics and Prosthetics Association is carried on by various committees named by the President. Among the committees which have been appointed by President Storrs are the following: (Others are to be named early in 1961):

Program Committee to plan the 1961 Assembly. Mr. Richard Bidwell of Milwaukee has been named Chairman and other members are to be appointed. Mr. Bert Titus, Director of Region IV, has been named Vice Chairman of the Assembly's Program Committee.

The *Committee on Scientific Technical and Supply Exhibits* at the National Assembly will be headed by Mr. George H. Lambert, Sr., of Baton Rouge, Louisiana. Other members of the Committee will be appointed.



CONGRATULATIONS! Program Chairman Ted W. Smith (at right) is commended by Past President Karl Buschenfeldt for his planning of the 1960 Assembly.

Mr. Erich Hanicke, Kansas City, Missouri, heads a new committee on Special Technical Devices. This will represent new concepts or devices developed by members, and will be separate from the new technical and supply exhibits.

Canadian Committee

Mr. Norris Menzies of Fredricton, Canada, has been named Chairman of the Canadian Committee to represent the Association in activities in the Dominion. The Association now has six members in Canada and plans to conduct a membership campaign among the non-members this year.

Reappointments

Several of the Association's Committees are standing committees with some rotation of membership. Among them are the following:

Surgical Appliances Committee. Ted W. Smith of Kansas City, Chairman. Other members include Mr. Charles Ross of Washington, D. C., David McGraw of Shreveport, Louisiana, Kenneth Dodd of Santa Monica California, Arthur Pomeroy of New York City and C. H. Hittenberger of San Francisco.

The *Committee on Education* is a standing committee, consisting of Edward W. Snygg as Chairman, Alvin L. Muilenburg, Houston, Texas, Charles W. Rosenquist, Columbus, Ohio, and W. Frank Harmon of Atlanta, Georgia. Dr. Charles O. Bechtol and Dr. Roy M. Hoover are also members of the Committee. Leroy Nattress, Jr. is Secretary.

The *Committee on the Financing of Appliances* is headed by Stanley E. Hedges of Indianapolis as Chairman.

The *Committee on Advances in Prosthetics* consists of Carlton Fillauer as Chairman, Howard R. Thranhardt, Fred Eschen, Charles Hennessy of Los Angeles, and M. P. Cestaro of Washington. Lester A. Smith, Executive Director of the Association, is Secretary of the Committee.

The *Journal Committee* of the Association includes one member from each of the eleven Regions in which AOPA is divided and, in addition, one in the Dominion of Canada. The Committee for the year 1961 consists of Howard Mooney of Boston, William A. Tosberg of New York City, Kurt B. Nelson of Pittsburgh, Wilbur L. Floyd of Charleston, L. B. Barghausen of Columbus, Stanley Hedges of Indiana, Erich Hanicke of Kansas City, Lester Sabolich of Oklahoma City, Fred Karg of Los Angeles, C. O. Anderson of San Francisco, Robert Horne, Walla Walla, Washington, and William H. Stauffer, Edmonton, Canada.

The *Journal Advertising and Supplier's Committee* consists of Armand Roy, Burlington, Vermont, Leo Waller, New York City, N. Y., Charles Dankmeyer, Baltimore, Md., John Hinnant, Charlotte, N. C., Otto Becker, Birmingham, Michigan, Howard Reinherz, Kenosha, Wisc., Lucius Trautman, Minneapolis, Minn., Charles Kymes, San Antonio, Texas, Edward L. Jachowski, Phoenix, Ariz., Harold Lloyd, Reno, Nevada, Lenart Ceder, Tacoma, Wash., and Norris Menzies, Fredricton, Canada.

MONFARDINI TO HEAD MEMBERSHIP COMMITTEE

Louis Monfardini has been picked by AOPA President Ralph Storrs to head the Association's important Membership Committee. Mr. Monfardini is Sales Manager of the Florida Brace Corporation.

As Chairman, Mr. Monfardini will work with the eleven Regional Directors in acquainting non-member firms with AOPA's Services and Privileges of Membership.

AOPA—"A SCIENTIFIC SOCIETY"

Over our desk has come a long and informative statement from Dr. Robert Stewart, representing the VA, and given to the Subcommittee on Patents, Trade Marks, and Copyrights of the Committee of the Judiciary of the United States Senate in May, 1960. Dr. Stewart explained in detail the VA's Program on Research and Development in Prosthetic and Sensory Aids, with special reference to the National patent policy. Dr. Stewart pointed out that the VA spends approximately $1,000,000 a year for research on prosthetic and sensory aids. Most of this research development and evaluation is carried out through contracts with universities and research organizations. However, there has been a trend towards more research by the VA itself, particularly since the organization in 1956 of the VA Prosthetics Center in New York City.

Dr. Stewart points out that a most significant advance resulting from the Research Program has been the introduction of the clinic team concept. This brings together the physician, the prosthetist, the therapist, the amputee himself, and the administrative specialist.

Dr. Stewart notes an encouraging sign: Manufacturers of components and hardwares are now beginning to introduce small improvements and new models at their own expense. This trend frees government support for work on fundamental problems in prosthetics.

Commenting on the ideas developed by the VA Prosthetics Center, Dr. Stewart takes as an example the refinement of the method of plastic lamination over a wooden artificial limb structure in place of the rawhide covering. He says, "A number of groups have played a role in the development of this concept culminating in the VA Prosthetics Center evaluation on a substantial clinical scale and then conduct by VAPC members of demonstrations at National and Regional Meetings of the Trade Association of the limb industry, the Orthopedic Appliance and Limb Manufacturers Association, and its successor, The American Orthotics and Prosthetics Association, which is approaching the status of a scientific soicety."

To the Ladies:
FROM OALMA'S AUXILIARY

Mrs. Pearl Leavy
President

Mrs. Margaret Brownfield
Vice President

Mrs. Lorraine Scheck
Secretary-Treasurer

Mrs. Margaret Peters
Past President

Hello to all from "out West".

I was very sorry to have been among those who missed this year's convention in the "big city." We understand it was a very great success.

I received a wonderful letter from Gladys De Bender telling me some of the highlights of the convention and it sounded as if everyone had a wonderful time. I would enjoy very much hearing from more of you concerning any news that may be of interest to us all.

As many of you may know, Jerry and I missed the convention this year in New York City because of an assignment Jerry undertook for the Department of Commerce in Washington, D. C. to conduct the "Prosthetics Exhibit" at the International Trades Fair held in Thessaloniki, Greece during the month of September. We were fortunate enough to take along our three children to see and enjoy the many interesting things in the European countries.

The International Trades Fair is a very large Fair with most every country in the world participating to display the many types of manufactured products made in each country. The American Pavilion was displaying RCA Color Television, Westinghouse with its kitchens, the three American Compact Automobiles and many others too numerous to mention. This year it was decided to show the American types of Prosthetic Devices of which most every supplier in the United States contributed.

To fill you in on some of the details of our trip, we took a Jet from Los Angeles to Copenhagen which took us about eleven hours which we all enjoyed thoroughly. We spent a few days in Copenhagen seeing the sights. and the children enjoyed "Tivoli", a large tree shaded amusement park in the center of the city which could be classified as a "European Disneyland."

We next flew on to Amsterdam, Holland, where we picked up a German Borgword stationwagon that was to be our transportation for the next eight days enroute to Greece. We squeezed bags and kids into this small car and started down through Europe, passing through Holland, Belgium, France, Switzerland, Italy and on to Greece.

Many very beautiful sights were enjoyed during this trip with, of

course, the mountains and valleys of Switzerland topping all scenery. Arriving in Western Greece we started Eastward to our destination at Thessaloniki. We passed through many small poverty stricken villages where people lived under the most primitive circumstances. The major portion of the driving in Greece had been on very bad roads and in many cases hardly fit for a "jeep".

We finally arrived in Thessaloniki and settled in a third floor apartment directly across from the fairgrounds. Our balcony afforded us with a panoramic view of the entire fair which covered acres of ground. It is interesting to point out that to obtain living quarters for the tourists or transit trade in Northern Greece is almost impossible. Therefore, it was necessary to work out a favorable arrangement by offering a sizeable amount of money to the individuals owning their own homes and apartments in order to have living quarters during the fair.

Many thousands of people in Greece and nearby countries came to visit the fair daily to see the many manufactured products on display by some twenty-eight foreign countries. On one Sunday afternoon more than 66,000 people passed through the American Pavilion to see the displays.

We found the people in Greece extremely friendly and congenial. The women dressed very nicely, not expensively but always in heels and their best dresses. Most of these people are very poor but extremely proud and happy. Living in Greece was quite an experience and one we shall remember for a very long time, but I must admit I missed my automatic washer and the million and one other things we take for granted every day here in this country. The children missed their television most of all since Greece has yet to install TV Stations. After living in Greece for one month, home was beginning to sound like heaven. The children had missed about two weeks of school, but the education they were receiving visiting these countries far outweighed any disadvantages.

From Thessaloniki we drove on to Athens for a day's visit to see the many sights such as the Acropolis, Parthenon and other places. These are sights you don't easily forget and find extremely educational. A day or two later we arrived back in Western Greece for a boat journey across the water to Italy with visits in Rome, Florence and on up into Switzerland, Germany and Holland. In Holland we left our car where it would eventually be shipped to San Francisco and San Jose to our home.

The last leg of our trip was from Amsterdam to London where again we boarded a Jet and arrived home on October 7th, and needless to say, we were five very happy people to have been able to make this wonderful trip, but more than this, we were happy that we were Americans coming home to live and enjoy this wonderful country.

Enough about our trip—I want to thank all of you for electing me your next president, and I will try to the best of my ability to deserve your confidence.

I believe our congratulations should go out to the ladies of Region IX who have formed the first regional ladies auxiliary under the guidance of Mrs. Bernadette Snelson, Kay Quisenberry and Esther Pava.

Approximately twenty-five women are members of this newly formed group. We will be looking forward to seeing these same women in Miami Beach in the Fall. Good luck and best wishes to all, and I would like to wish all of you a very Merry Christmas and the best for the coming new year.

Until next time, best wishes.

PEARL LEAVY

CERTIFIED: THE SUCCESSFUL CANDIDATES

The American Board for Certification announces the following men received Certification as a result of successfully passing the recent Examinations of the Board. These Examinations were held at the Rehabilitation Institute of Chicago, October 10-12, 1960.

Each of these men should receive the congratulations of those of us who practice the art-sciences of prosthetics and orthotics for their performance in the Examinations and for the effort which they are making to raise the standards of practice and of service to the disabled.

Howard Tharnhardt,
President, American Board for Certification

Certified as Orthotists-Prosthetists

Jesswein, Siegfried W., Chicago, Illinois
Karsten, Ludwig F., Milwaukee, Wisconsin
Parsley, George M., Charleston, West Virginia

Certified as Prosthetists

Ford, Edward Rr., Seaford, L. I., New York
Hampton, Frederick L., Glenview, Illinois
Iida, Unokichi, Tokyo, Japan
Lambert, Claude J., Baton Rouge, Louisiana
Malone, Frank J., Jr., Philadelphia, Pennsylvania
Martin, Richard E., Ft. Lauderdale, Florida
Meyer, Theodore C., Detroit, Michigan
Niehuus, Herbert E., Chinchilla, Pennsylvania
Nobbe, Erwin A., Washington, D. C.
Paul, Siegfried W., Chattanooga, Tennessee
Peterson, Olgert, Coon Rapids, Minnesota

Certified as Orthotists

Apitzsch, Robert C., Pittsburgh, Pennsylvania
Bridges, Jerry G., USAF, APO, San Francisco, California
Bullock, William W., Medford, Oregon
Burleson, Bobby S., Johnson City, Tennessee
Clark, Delbert L., Aloha, Oregon
Cruz, Tony J., Jr., Lawton, Oklahoma
Fannin, Robert E., Columbus, Ohio
Fleishauer, Eugene C., Anchorage, Alaska
Froysland, Andrew F., Biloxi, Mississippi
Joyce, Raymond D., USAF, APO, San Francisco, California
Potenberg, Johannes W., Royal Oak, Michigan
Rappleyea, Henry E., Rantoul, Illinois
Ricciardi, John, Paterson, New Jersey
Rice, Rowland S., Santa Ana, California
Taylor, Kermit K., Indianapolis, Indiana
Whitehead, Bobby W., Raleigh, North Carolina

Swing into ACTION

WITH HYDRAULIC PROSTHESIS

The hydraulic principle brings a wonderful natural feel to the amputee — gives positive control and a more natural gait — coordinates knee and toe motions. The Hydra-Cadence restores freedom of action . . . makes possible many activities formerly denied.

Designed by an amputee, the Hydra-Cadence has a self-contained hydraulic control system which uses the knee motion to lift the toe. This system also provides adjustable damping which permits the amputee to walk fast or slow with comfort and assurance. It is manufactured under the highest standards and quality control methods — assuring dependable, long, service-free use.

For further information contact your local Prosthetist—or write:

Hydra-Cadence Inc.

623 South Central Avenue
P. O. Box 110, Glendale, California

NRA MEETS AT OKLAHOMA CITY

The annual conference of the National Rehabilitation Association was held this year at Oklahoma City, October 10 to 12 with an attendance of over 1500. Miss Mary E. Switzer, director of the Office of Vocational Rehabilitation, took office at the close of the conference as President of the NRA.

Mr. C. Esco Obermann was designated president-elect and will assume the presidency in October, 1961, at the conference which will be held that year in San Francisco.

Voyle Scurlock, director of the Oklahoma City Vocational Rehabilitation Division, received the W. F. Faulkes Award for his leadership and development of the Oklahoma public rehabilitation program, and his contribution to NRA, States Council, OVR, and other national organizations and groups concerned with the handicapped. This award honors rehabilitation achievement in a professional or technical area.

W. Scott Allan received the NRA's President's Award for services contributed to the well-being of handicapped individuals. This concerned the development of rehabilitation services in insurance programs. Mr. Allan is manager of the medical services division of Liberty Mutual Insurance Company in Boston which is an associate member of AOPA.

AOPA members were prominent in the technical sessions and in the exhibits. David C. McGraw, AOPA Regional Director, and former vice president Jim Snell, represented the American Orthotics and Prosthetics Association. Other Prosthetists and Orthotists in attendance included, Harold Prescott, San Antonio, Texas, James McFarlen, Dallas, and from Oklahoma City, Lester Sabolich, Flavel L. Lake, Gordon Johnson and Sam Peiffer.

Robert Gruman who is president of the Minnesota-Minneapolis Association, also attended. Among the exhibitors were the W. E. Isle Co., represented by Ted W. Smith. Snell's organization had an exhibit largely featuring certification services. TruForm Anatomical Supports had a booth which was manned by Mrs. Alice Crowell and Howard DuKate. Mr. Ray Crowell represented the Hosmer Organization.

CELEBRATES FIFTIETH YEAR

1960 marks the 50th Anniversary of the Hedgecock Artificial Limb and Brace Company which operates one of the Southwest's noted Prosthetic facilities in Dallas, Texas.

The facility, which is now managed by Mrs. D. E. Hedgecock, is a lasting memorial to the memory of its founder, David E. Hedgecock, who died in 1940. Mr. Hedgecock, who was born in Tennessee in 1879, came to Texas in 1902 and entered railroad employment. As is the case with so many Prosthetists in this Country, it was a misfortune of fate which turned his attention to the manufacture of artificial limbs. In 1903 he met with an accident which cost him his left leg 2½ inches below the hip joint and in which he suffered other serious injuries. During the course of his recovery, his thoughts turned to the rehabilitation of the handicapped. He was especially distressed by the growing number of accidents resulting from the motorized age into which the country was then entering.

Motivated by these needs and the desire to help others, he gave up his position with the railroad company and on June 6, 1910 opened his first artificial limb and brace making plant. In the years that followed, he devoted his entire time and much of his earnings in a struggle to improve the quality and efficiency of artificial limbs and braces. He was an early supporter of the vocational rehabilitation movement in Texas. He was as-

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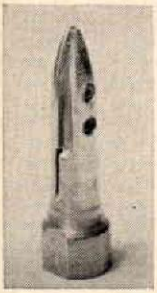

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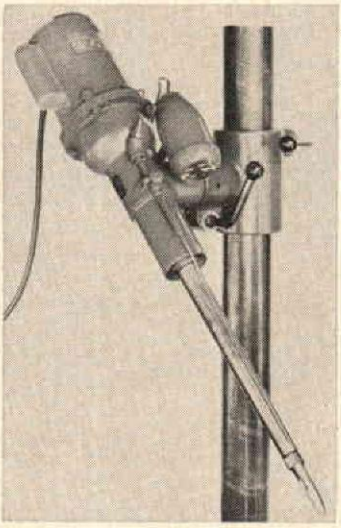

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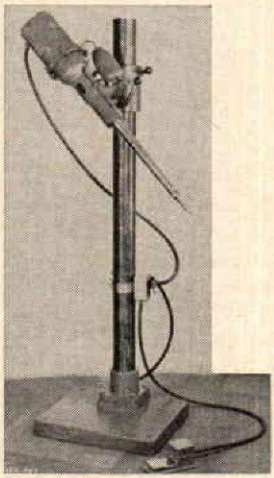

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sisted in these efforts by his wife, Mrs. D. E. Hedgecock, who gave up a career in schoolteaching to assist him in the conduct of the facility. Since his death in 1940, she has continued to expand the operations for the company.

The Hedgecock Company took an early interest in the development of a Prosthetics and Orthotic profession and became a member of the old Artificial Limb Makers Association. The Company is now a member of the American Orthotics and Prosthetics Association in which Mrs. Hedgecock has served in the past as Regional Director for the Southwestern States.

As the Company enters its second half-century of activity, the *Journal* extends its felicitations on this important anniversary and its best wishes for the future.

In Memoriam

Russell E. Johnson

Jan. 4, 1890 - Nov. 22, 1960

Russell Johnson passed away on November 22 after a long illness which extended back to the last OALMA meeting in Miami Beach, Florida.

"Russ" Johnson was born in Norwood, N. D. and came into the old Cincinnati Truss Company shortly after it was purchased on August 31, 1942 and for a good many years worked as a salesman in the eastern, southeastern and central areas of the country. On January 1, 1947 he was appointed working sales manager for the Cincinnati Truss Co. and was responsible for sales throughout the forty-eight states.

When we moved into our new plant and adopted the name of Truform, Mr. Johnson was appointed full time sales manager working both in and out of the office in that capacity, and he at one time or another covered the entire country.

He was a staunch believer and supporter of ALMA - OALMA - AOPA and ABC.

"Russ" was a member of Ark Lodge #176 in Minneapolis; Knight Templers Mounted Commandery #23; and the Syrian Temple AAONMS.

He was well known at conventions and regional meetings and had many friends among the trade; he is survived by a sister and his wife, Mrs. Christine Johnson, at 2868 Pine Ridge Lane, Faxon Hills, Cincinnati 8, Ohio.

His co-workers sincerely feel the loss of a beloved friend, as well as a dedicated worker for Truform.

Robert N. Bidwell

Robert N. Bidwell, C.P., C.O., died November 23 at Madison, Wisconsin. He was head of the Certified Facility operated at Madison by the House of Bidwell, Inc. Mr. Bidwell was trained by his father, the late Guy L. Bidwell, and was certified in 1949. He is survived by his wife, Audrey, a son and daughter, Thomas and Susan, his mother, Mrs. Henrietta Bidwell, his sister Doris, and his brother, Richard G., of Milwaukee. President Ralph Storrs represented the Association at the funeral services.

John G. Cranford

John G. Cranford, C.P., died suddenly Nov. 24 at his home in Richmond, Virginia, at the age of 46. Mr. Cranford has been connected with the Hanger organization for twenty-five years, and at the time of his death, was Vice President of J. E. Hanger, Inc. of Virginia. He was trained as a prosthetist by the late Thomas E. Griffith, and was certified in 1948. Mr. Cranford was the prosthetist on the Clinic Team at Woodrow Wilson Rehabilitation Center, Fishersville, Virginia.

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THE LATE WILLIAM SCOVILLE AN APPRECIATION

One of America's veteran Prosthetists died August 11, 1960 at Hartford, Connecticut. This was William Scoville, C.P. who began his career in this field in 1919 and was active until his death.

The passing of these key men in our field is a loss to our profession. To the natural grief at the loss of a colleague, there is added a feeling of regret we never had time to adequately talk with him about his experiences in this field. In these days of emphasis on education and on new developments, it is a good thing, we believe, to stop a moment. To "let time have a halt" as the poet said and review briefly the contribution which these "oldtimers" have made to our field.

Bill Scoville, as he was affectionately called, has been described by many friends as one of the old school limb fitters, a man who was aware that prosthetics is an art as much as it is a science and that we are dealing primarily with human beings and only secondarily with materials, measurements and theory. We never knew Bill personally though we admired the reflection of his character and skill that is found in his son George. But some of our leaders, A. P. Gruman and Ted Smith, among others, have told us something about the man.

In the closing years of World War II, Bill Scoville joined the technical staff of the Winkley Company and was assigned by them first to Minneapolis and later to Wichita where he made a notable record. During this period he trained his son in this field and as A. P. Gruman says, Bill's son

SCOVILLE

is living evidence of his ability to impart technical knowledge successfully.

As he reached the age of retirement, Mr. Scoville's health was not particularly good. But inactivity was foreign to his nature. He and his wife moved to Hartford, Connecticut, where he joined his son on a part-time basis.

Bill Scoville, like so many other Prosthetists of his time, was an individualist first and last. Some of the ideas of mechanization seemed strange to him. He was a fast and accurate technician who placed the needs and circumstances of the amputee above his personal opinion.

Many an amputee found Bill Scoville not only a competent technician but also a friendly and sympathetic adviser in many of their problems.

In summary, it might be said that the technical methods which he used may in time be entirely superseded, but his percentage of success in fittings and the success he achieved in the lives of the amputees will remain as a standard to be met by the successors in his field.

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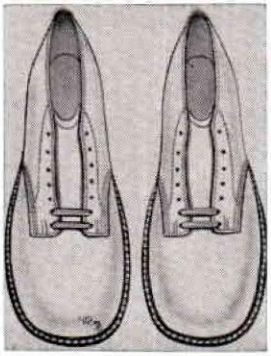

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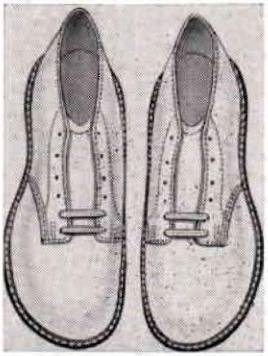

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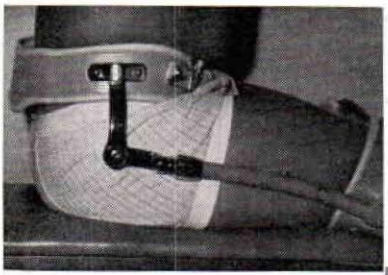

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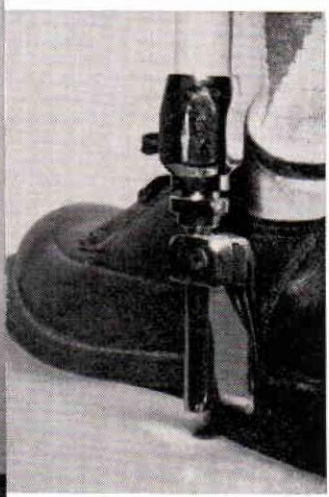

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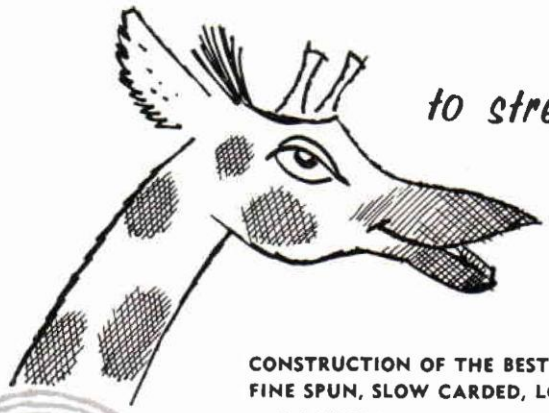

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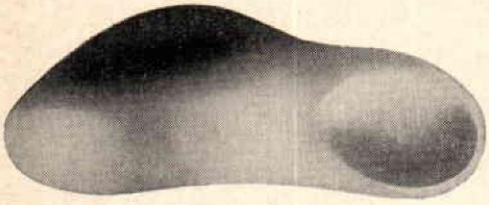

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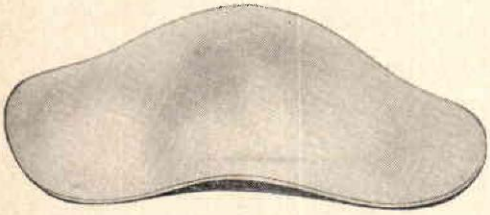

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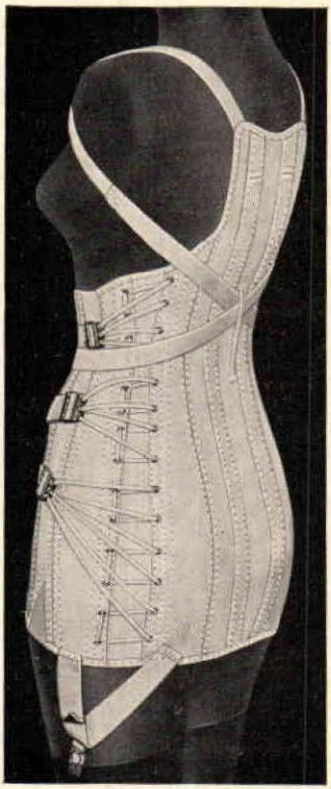

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