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Acknowledged Osgood R. B.

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GENERAL OFFICE

A SURVEY OF THE ORTHOPÆDIC SERVICES IN THE U. S.
ARMY HOSPITALS, GENERAL, BASE, AND DEBARKATION

BY ROBERT B. OSGOOD, LIEUT.-COLONEL, M.C.

SOON after the beginning of the war, General Gorgas created the Division of Orthopædic Surgery in the Surgeon-General's Office, with Major (now Colonel) E. G. Brackett as its director, and Major (now Lieutenant-Colonel) David Silver as assistant director. Major (now Colonel) J. E. Goldthwait had sailed in March, 1917, as director of a unit of twenty orthopædic surgeons, whose services had been requested by the British Medical Department for work in the Orthopædic Centers of Great Britain, under Colonel (now Major General) Sir Robert Jones, director of Military Orthopædic Surgery for Great Britain.

Colonel Goldthwait returned to America in August, 1917, and went back to England in October with 42 more orthopædic surgeons for similar service. As more groups arrived later, well-trained orthopædic surgeons were released to France to help with the organization of the Division of Orthopædic Surgery with the American Expeditionary Forces in France, of which he became director. Between 60 and 70 orthopædic men were constantly maintained in British hospitals during the war, and at the time of the signing of the armistice they numbered 91.

During the winter of 1917-18, the so-called Professional Divisions overseas were reorganized under a single director, Colonel William L. Keller, Regular Army Medical Corps, with Major (now General) J. T. Finney as Chief Consultant in Surgery, Major (finally General) William Thayer as Chief Consultant in Medicine, and Colonel Siler as Director of Laboratories. Colonel Goldthwait's title then became Senior Consultant in Orthopædic Surgery to the American Expeditionary Forces. This title he retained until he returned to America in March, 1919.

Overseas, the responsibility for all the bone and joint work outside the Evacuation Hospitals was placed upon the Senior Consultant in Orthopædic Surgery, acting under the Chief Consultant in Surgery, by circular No. 29, which read as follows:

Circular No 29.

France, 21 May, 1918.

The following instructions are issued for the guidance of all Medical Officers, superseding Circular No. 11, C. S. O., March 6, 1918:

1. Injuries to the bones and joints, as well as of the muscles and tendons adjacent to these structures, represent a large percentage of the casualties of both the Training and Combat Periods of an Army.

2. To restore useful function to these injured structures is one of the purposes of the Medical Organization of the Army. The problems involved in this have to do not only with the cleaning and healing of the wounds, but also with the restoration of motion in the joint and strength to the part. This latter part naturally follows the first, but it is essential that the first part be carried out with reference to that which is to follow. Unless this second part of the treatment, the restoration of strength and motion, is carried out, much of the first part is purposeless.

3. To insure the man not only the proper treatment of this type of injury, but the proper supervision until he is as fully restored as possible, necessitates some form of radical control that makes it impossible for a man to be overlooked in inevitable transfers, from service to service, or hospital to hospital.

4. Since so much of the ultimate result in these conditions depends upon orthopædic measures after the first treatment of the wounds has been carried out, the following will govern:—

The Senior Consultant, Orthopædic Surgery, will, under the Chief Consultant, Surgical Services, make such recommendations relative to treatment of "injuries and diseases of the bones and joints, other than those of the head, as well as to the injuries or diseases (other than nerve lesions) of the structures involved in joint functions," as will insure early restoration of functions, shorten convalescence, and hasten return to active military duty.

He will also supervise the sub-divisions of surgery, pertaining to bones and joints, in a manner which will permit the complete surgical harmony necessary for coöperation in treatment of these cases by either general or orthopædic surgeons, in formations from front to rear. To insure a minimum loss of function to the parts involved, uniform coöperation must be maintained by the Chief Consultant, Surgical Services, during both early treatment and all stages of convalescence.

5. To carry out the provisions of this circular, the Chief Consultant, Surgical Services, will make such provisions as are deemed necessary to insure a complete survey of these cases at regular intervals, and determine if the treatment is progressing in a satisfactory manner. Consultants in orthopædic surgery who are charged with the supervision of such cases within Hospital Centers and other formations will ordinarily be called in consultation for special cases, through the Commanding Officers of the units in question, and the Consultants will report to him prior to completion of their investigations. Commanding Officers of hospitals are expected to freely utilize the services of these

consultants in the manner described above. Any recommendations made by them as to change of treatment, or transfer to some other professional service or hospital, will ordinarily, if the military situation permits, receive favorable consideration.

6. It is not the intention of this order to interfere with the routine work of hospitals, but to insure to the soldier proper supervision during the time of his treatment and the period of his convalescence.

M. W. IRELAND,
Brig. Gen. M.C., N.A.,
Chief Surgeon.

A reorganization of professional divisions in the Surgeon General's Office also took place during the summer of 1918. The three Divisions of Surgery, Medicine, and Laboratories, were created, and General Surgery, Head Surgery, Orthopædic Surgery, Roentgenology, and Urology, became sections of the Division of Surgery. Colonel Brackett became the Chief of the Section of Orthopædic Surgery. This is the organization which at present obtains, with Colonel Moncrief acting as Chief of the Division of Surgery in the Surgeon-General's Office.

The personnel for the Section of Orthopædic Surgery in the Surgeon-General's Office for the past six months has consisted of the Chief of the Section, Colonel E. G. Brackett; the Assistant Chief, Lieutenant-Colonel David Silver; Orthopædic Consultants to General and Base Hospitals and Camp Inspectors, Lieutenant-Colonel Frank Rugh, Lieutenant-Colonel R. B. Osgood, and Major Peters. Lieutenant-Colonel W. S. Baer and Major Z. B. Adams acted as Consultants for a short time after their return from overseas. There has also been an officer of the Sanitary Division in charge of the Orthopædic Medical Officer personnel, Captain Horace Morrison, numbering at its height, 850, on the active list and embracing a total enrollment of over 1000. No service has been more important, and none performed with greater efficiency or in a more helpful spirit.

An officer has also been in charge of the orthopædic equipment and supplies; at first Captain J. L. Morse, and later, Captain Henry L. Mann.

Schools for intensive courses in orthopædic surgery have been held in Los Angeles, Omaha, Chicago, Washington, New York, Philadelphia, Oklahoma City, and Boston. Orthopædic surgeons have been assigned to the different National Army camps and base hospitals, to the evacuation and base hospitals organized for overseas service. Orthopædic services were established in the general and base hospitals des-

ignated to receive overseas cases. Orthopædic surgeons have been assigned to the ports of debarkation.

This résumé of the work of the different orthopædic services has been prepared by the Section of Orthopædic Surgery with the thought that it might interest many general surgeons and orthopædic surgeons who have either themselves been exempted to the Section of Orthopædic Surgery, or whose assistants or students have been serving as military surgeons under this Section.

The latest classification of conditions considered to be included under the heading of orthopædic surgery has been drawn up by a special committee appointed by the Surgeon-General in December, 1918. This classification is as follows:

1. All cases of amputations.
2. Deformities of extremities due to or associated with contractures of muscles, ligaments, and tendons.
3. Derangements and disabilities of joints; including articular fractures.
4. Deformities and disabilities of the feet.
5. Cases requiring tendon transplantation.

While this classification is not as inclusive as that adopted overseas, it furnishes on the whole perhaps as satisfactory a grouping of cases as could be made for the American hospitals. It overlaps frequently the classification considered as belonging to General Surgery. In a given case with two equally well qualified surgeons, one classed as a General Surgeon and the other as an Orthopædic Surgeon, the criterion as to which service the case belongs may be considered to be the relative importance of the coexisting conditions. For example, if the osteomyelitis connected with a contracture of the muscles and tendons is the important feature in the soldier's recovery, the case would be considered as belonging to General Surgery. If, on the other hand, the joint fracture was the important element, the case would be considered orthopædic in spite of the fact that an unhealed osteomyelitis existed as well.

In general, it is to be said that the chiefs of the surgical services in hospitals have been extremely fair in the distribution of cases. It has been their policy to place the surgeon best qualified to care for the case or group of cases in charge of these patients without regard to the specialty to which he belonged. The main difficulty of the Chief of the Orthopedic Section has been to find for both overseas and Amer-

ica enough orthopedic surgeons who were well qualified to deal with the acute and chronic surgical problems as well as to supervise that detailed and often tedious special treatment which has to do with the return of the greatest amount of function in the shortest possible time.

Before an outline of some of the more important orthopaedic services is attempted, it should be said that the cases returning to America presenting bone, joint, and muscle lesions as the result of battle wounds, have shown very conclusively the result of treatment received overseas. In the Army of Great Britain and France, in the early years of the war, the very high percentage of deformities which might have been prevented was truly alarming. The existence of this large percentage in the armies of our allies and the steps taken to prevent their occurrence were known to those in control of our medical department when we entered the war. It must always be a source of great satisfaction to the nation that the cases presenting these potentially crippling lesions which have returned to our home hospitals in America, have shown an almost negligible number of these preventable deformities. In fact, there has been a constant danger that, manned as our home hospitals have been until recently with medical officers without experience with our overseas forces, these deformities would develop in America in the course of the healing of wounds. As has been suggested above, the great value of this system of supervision overseas has been clearly demonstrated and the need of constant watchfulness at home has been emphasized. It has surely been our responsibility to see to it that the wounded soldier did not have an unnecessary burden laid upon him because we failed to appreciate the importance of instituting treatment looking to the attainment of the greatest amount of function as soon as the purely surgical aspects of the cases permitted. This treatment often must be associated with the operative measures undertaken to promote the healing of the wound and the correction of deformities. It must be a concomitant treatment with the treatment of the wound, and not be postponed until the wound is healed.

Amputations. Early in the war, the French were faced by the problem of providing special numbers of artificial limbs for the mutilés. In the spring of 1915, Professor Tuffier made the statement that the amputations in the French Army at that time numbered 7,000, and that the annual output of artificial limbs in France from the regular commercial manufactory was 700. In Great Britain the same conditions have obtained and it has been impossible to supply well-made artificial limbs as quickly as the conditions of the stumps allowed.

There are two very cogent reasons for fitting an artificial limb with a joint mechanism identical with the definitive limb which the soldier is eventually to obtain at the earliest possible moment which the condition of the stump, as far as healing is concerned, warrants. The first of these reasons is, of course, the purely economic one of wage-earning capacity, and affects the body politic. The second reason is that the soldier's initial effort and the early use of the stump muscles overcomes the atrophy of mental effort, and prevents the contraction of the muscles about the stump which leads to unfavorable positions. The plan has been adopted in the medical department of the American Army to supply gratis to the soldier an artificial limb which has all the essential mechanism of his final limb as soon as his stump allows. This limb is known as a "provisional limb" and under conditions of ordinary use, may be expected to last the soldier for a year. It is capable of a very considerable range of adjustment both as to length and, what is of more importance, as to size of socket. The legs which have been used have been made of fibre, are light, and have standard knee joint action. The arms have been made either of fibre or leather, reinforced with steel. The experiment has proved in the main, extremely successful. The men have been promptly fitted to these provisional limbs, have been taught to walk, and have been given special exercises for both arms and legs, and not discharged until a very considerable facility has been obtained.

Unquestionably, this arrangement has saved much time for the soldier and has decreased the time in which he was entirely dependent and possessed no wage-earning capacity. The burden of furnishing the final limb falls entirely upon the War Risk Bureau. This final limb cannot be fitted in case of leg amputation until six months or more have elapsed. The reason for this is that the so-called buckets or sockets into which the stump fits in the definitive limb of the American type are almost universally made of wood, carefully routed out by hand to an absolute accuracy of fit. Once made, this cannot be materially changed, and if the stump shrinks still more, there must be another complete socket made as carefully as the first, which entails considerable expense and time. With this adjustable socket of the provisional limb, this shrinkage can be taken care of and the stump may be expected to be in a suitable condition for the fitting of a definitive limb several months before the provisional limb is worn out. This margin of time

will undoubtedly be of service if, as seems likely, the supply of definitive limbs fails to be adequate to take care of the cases as soon as they are ready for them.

ORTHOPÆDIC AND AMPUTATION SERVICES IN GENERAL HOSPITALS.

Walter Reed General Hospital, Takoma Park, D. C.

This service began to assume important proportions in June, 1918, as the first overseas wounded began to return. Major T. M. Foley acted as the Chief of Service for several weeks and upon his assignment to foreign service was succeeded by Major Albert H. Freiberg as Chief, Major W. D. Erving as first assistant, Captain Carl C. Yount in charge of the amputation service, and Captain Carroll Storey as second lieutenant to the orthopedic surgeon. More and more wards were gradually assigned to the orthopedic service as the cases increased on rather a broad classification of bone and joint conditions.

In the early part of the service, there were many purely static conditions coming in from the surrounding camps and one of the most active parts of the work consisted in rehabilitating soldiers with weak and flattened feet. Lieut. Goldblatt's work in this connection should be especially mentioned.

Here, also, was worked out the outline for a standardized plan of organization of an orthopedic service of 250 beds or over. This standardized plan has been followed with practically no change in all the orthopedic services, in which, as sections of the Surgical Service in the General Hospitals, they have numbered over 250 patients. Along with this outline was sent an operative technique for orthopedic cases, meticulous, but less exacting perhaps than the British orthopedic technique, though an attempt was made to incorporate the essential features of the British scheme.

At the Walter Reed the amputation service soon assumed a very important place, which it has always retained. Over 800 cases of amputation have been in the wards of the Walter Reed Hospital at one time. Since it was the first amputation center to receive large numbers of cases, it has been here that the plan of provisional limbs, conceived by Lt. Colonel Silver, in charge of the amputation work, has been worked out.

Colonel Silver has acted as consultant to the Walter Reed Hospital in connection with the amputation work, and Major Kendall Emerson has been in active charge of the organization of this section, nominally carried on the rolls of the Surgeon General's office, but really spending almost all his time at the Walter Reed Hospital, operating upon the stumps which needed more surgery, devising methods of hastening healing, and with Major Yount, elaborating the details of the fitting of the provisional limbs and working out special appliances for the arm cases.

Major Yount, in charge of the appliance shop, has devised what seems to be the most practical terminal plate appliance for upper extremity amputations. To this end plate can be fastened very quickly, easily and securely, any form of hand-grasping device or recreation device, such as tennis-racket or ping-pong paddle.

After the armistice, Major Freiberg was relieved of duty at his own desire, and Major Erving assumed charge of the service, with Captain John O'Ferrall as assistant chief of the section. Captain Yount was in charge of the amputation section, with Major Emerson in constant attendance in a supervisory capacity.

The service in these days numbered over 1200 patients. Various reorganizations of the Walter Reed took place during the late winter and early spring, while Lt. Col. Edward Martin and Colonel Astley Ashhurst were acting as chief of the surgical service. This resulted in an entirely new distribution of cases. The amputation service still remained under Captain Yount, but nearly all the cases of osteomyelitis, and indeed many of the bone and joint cases requiring surgical attention, were divided into groups and placed under different medical officers, some belonging to the orthopedic section and some to the general surgical section. This new arrangement resulted in cutting down very materially the size of the orthopedic service *per se*.

At the Walter Reed, there has been most satisfactory coöperative endeavor between the orthopedic service and the reconstruction division, and very serious and more or less successful attempts have been made to perfect the curative side of the occupational shops. At the time of the present writing, the orthopedic staff at the Walter Reed Hospital numbers 19. Colonel Glennan has recently been made commanding officer of the Walter Reed, and Colonel Kellar, Regular Army, chief of the surgical service, Colonel Allison and Major Danforth have been assigned to the Walter Reed on the orthopedic service. Major Philip Wilson has been given full charge of the amputation section. On April 1st, there were 1154 overseas patients at the Walter Reed Hospital.

In April the following men were serving on the orthopedic section of this hospital:

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| Lt. Jas. H. Allen, | Lt. Henry T. Simon, |
| Lt. Loren F. Carter, | Lt. Frank G. Walz, |
| Lt. Jas. G. Denelsbeck, | Lt. Barron Johns, |
| Lt. Walter L. Denny, | Capt. J. R. Tilletson, |
| Lt. Wm. O. Hill, | Capt. Carl C. Yount, |
| Lt. Louis J. Livingood, | Major M. Mobley, |
| Lt. Leland E. Phipps, | Major P. D. Wilson, |
| Lt. Hall Shannon, | Major M. S. Danforth, |
| | Colonel Nathaniel Allison. |

Letterman General Hospital.

Crossing the continent now, we come to the Letterman General Hospital, which was one of the Regular Army Hospitals before the war, beautifully situated in the Presidio, San Francisco, overlooking the Golden Gate. In the early summer of 1918, Major R. L. Hull of Oklahoma City was assigned as orthopedic surgeon, and on the visit of the consultant in September, two wards were entirely given up to orthopedic cases, although no overseas cases had arrived.

Major Hull's personality made his service a most happy one. His mature judgment, his excellent operative ability, and his wide experience, added to a rather remarkable executive and administrative faculty made him an extremely valuable person in the hospital.

As soon as the overseas cases began to arrive, the service grew more rapidly, absorbing more and more wards. Major Hull became the supervisor of the physio-therapeutic work, embracing hydro-therapy and massage. At the Letterman there has been, for a considerable time, a rather elaborate hydro-therapeutic plant and this treatment has been one of the features of the hospital in charge of a sergeant, excellently trained by long experience in European spas.

Letterman also, has been designated as an amputation centre. Major Hull's very sad death from influenza and pneumonia in January, represents a loss not only to the service of the Letterman Hospital, where he had made himself respected and loved to a very unusual degree, but to the whole surgical profession. Fearless and kindly, firm yet extraordinarily gentle, he won everyone's heart, and made it possible for the specialty which he represented to perform an extremely useful service.

Major Hull was succeeded by Major Leo Eloesser, who had a wide experience in the German hospitals abroad, especially along orthopedic and prosthetic lines. He brought to the service this wide training and great energy. Under his leadership, both the amputation and the general orthopedic services have increased in importance. He has devised in the appliance shop a special form of artificial limb which bids fair to be almost as durable as the final definitive limb which the War Risk Bureau expect to furnish. This limb, known as the "Letterman Leg," is constructed on somewhat different principles than the common type of the American limb, getting its grip above the condyles of the femur and being really suspended from this point quite as much as from the shoulder strap of the ordinary type. The leg is being given a thorough trial.

Captain S. L. Haas had been first assistant to Major Hull, and is now to Major Eloesser. His very broad training as a surgical pathologist whose attention has been directed chiefly toward the problems of the growth of bone, and to joint work, has made him an unusually valuable man to the service. Captain Haas' service at Letterman has been interrupted by his coming to Washington to organize the Laboratory of Surgical Pathology at the Army Medical Museum. At the time of the present writing the orthopedic staff at the Letterman General Hospital numbers 17. On April 1st there were 772 overseas patients at the Letterman General. The following men were serving on the orthopedic section at this hospital:

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| Capt. John I. Boyer, | Lt. T. J. Nolan, |
| Lt. Chas. A. Craig, | Lt. Victor L. Roche, |
| Lt. Linwood Dozier, | Lt. Arnold M. Scholz, |
| Major Leo Eloesser, | Capt. John Thos. Whitty, |
| Capt. S. L. Haas, | Lt. Col. Chas. F. Eikenbary, |
| Capt. Herman V. Hoffman, | Lt. Col. W. I. Baldwin, |
| Lt. Alva F. Maine, | Lt. John Swancett. |

U. S. A. General Hospital No. 1, Williamsbridge, N. Y.

The hospital at Williamsbridge has been under the officer of the port of Hoboken, and not directly under the Surgeon General's office, but has been functioning as a General Hospital, and still continues to so function.

The orthopedic service in this hospital has been in the hands of Captain Merritt L. Jones, formerly of Boston. Until the overseas cases began to arrive, the service was comparatively small, but noteworthy. Captain Jones has worked out numerous simple exercising machines, applicable to cases of foot-strain and extremely useful in the mobilization of partly ankylosed joints. Since the advent of the overseas cases, the service has increased in importance. While there has been no very sharp demarkation by wards between the orthopedic and general surgical cases, Captain Jones' services have been utilized to a very large extent and almost all bone and joint cases and cases in which the restoration of function was the important factor, have been referred to him. Captain Jones has been the only member of the staff exempted to orthopedic surgery at U.S.A. General Hospital No. 1, Williamsbridge, N. Y. Several valuable critical reviews of groups of cases have been written by Captain Jones for publication.

On April 1st, there were 832 overseas cases at No. 1.

U. S. A. General Hospital No. 2, Fort McHenry, Md.

The orthopedic service at Fort McHenry in February, 1918, was assigned to Major S. C. Baldwin. He maintained his post until November, 1918, when he was assigned to the Port of Hoboken, and was made director of surgery of the port. He was succeeded by Major Guy C. Boughton. Overseas cases began to increase in number at Fort McHenry very rapidly, until on April 1st, 1919, there were more overseas cases at Fort McHenry than at any other U.S.A. hospital except Fort Sheridan.

After the sad death of Major Bissell, chief of the surgical service, Major A. R. Colvin of the orthopedic section was assigned to Ft. McHenry as the chief of the surgical service, Major Boughton still functioning as orthopedic surgeon. In February, Major Boughton was assigned to U.S.A. General Hospital No. 36, at Detroit, and Major A. R. Graves became orthopedic surgeon and has conducted the service with great distinction up to the present time.

A large Neuro-surgical service has developed here, and has many points of contact with the orthopedic section.

The orthopedic staff at U.S.A. General Hospital No. 2, at the present writing, is as follows:

Lt. Walter Thomas Anderson,
Capt. Edward W. Burt.
Capt. G. B. Capite,
Major Sydney M. Cone,
Lt. R. L. Cook,
Lt. John Dane,
Major R. J. Graves,
Lt. T. M. Hart,
Lt. Raymond L. Johnson,
Lt. Geo. V. Lynch,
Lt. Anthony Mangiaracina,

Lt. John Revington,
Lt. H. L. Snaffer,
Capt. Louis I. Skirball,
Major R. T. Taylor,
Major A. H. Parsons,
Capt. Clark Kimball Peterson,
Capt. Eben W. Fiske,
Lt. Norman W. Gillespie,
Capt. I. J. Parsons,
Lt. John A. Key,
Major I. W. Livermore.

U.S.A. General Hospital No. 3, Colonia, N. J.

The general hospital at Colonia was started as a project soon after the beginning of the war, stimulated by the very generous offer of Mr. and Mrs. Charles Freeman to allow the Government to use their beautiful estate for building a hospital. The hospitals division of the surgeon general's office accepted this offer and construction began during the winter of 1917. Toward the end of the summer a plant of 1600 beds was ready, embracing curative shops and educational buildings, hydro-therapy and electro-therapy and massage rooms, as well as an unusually efficient operating and x-ray plant.

Major F. H. Albee became chief of the surgical service when the hospital finally began to receive patients in the fall of 1918, and has continued as chief of the surgical service ever since. This hospital being near the port of debarkation, it was from the beginning designated as an amputation and bone and joint centre. With the exception of the Walter Reed, more cases of amputation have been sent to Colonia than to any other hospital.

Occupational work has been developed at Colonia to a very extraordinary extent. Very exquisite articles have been made, embracing leather and wooden articles of unusual design. They have greatly stimulated the patients' originality. A wave of interest in this work may be said to have swept the hospital and a very large percentage of the patients are engaged in some form of occupational work which is of a distinctly educational or decorative value.

The reconstruction work in general, under Major Johnson, has been most successfully organized.

There were on April 1st, 1452 overseas cases at Colonia. In April the following men were serving on the orthopedic staff of the hospital:

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| Major F. H. Albee, | Lt. George Y. Massenburg, |
| Capt. Thomas D. Buck, | Lt. H. F. Morrison (rec. dis.), |
| Lt. H. E. Bundy, | Lt. A. B. Pemsler, |
| Major Harold D. Corbusier, | Capt. Edw. J. Rose, |
| Lt. D. A. Curtis, | Lt. C. N. Silman, |
| Capt. J. Spencer Davis, | Lt. Elmer P. Weigel, |
| Lt. S. H. Easton, | Capt. L. B. Zintsmaster, |
| Lt. J. M. Gilchrist, | Major F. B. Van Wart |
| Lt. John G. Hart, | Major Henry C. Marble, |
| Lt. Ezra A. Jones, | Capt. Francis J. A. Bennett, |
| Lt. Armin Klein, | Capt. H. P. Mauck, |
| Lt. Thos. L. McNamara, | Lt. D. F. Elmendorf. |

U. S. Army General Hospital No. 5, Ft. Ontario, N. Y.

U.S.A. General Hospital No. 5, Ft. Ontario, at Oswego, New York, is somewhat isolated from contact with other hospitals. Captain Philip D. Bunce has been quietly and most efficiently working as orthopedic surgeon at U.S.A. General Hospital No. 5.

The advent of more overseas cases has led to a very definite increase in the amount of his work, and an assistant orthopedic surgeon, Lieut. L'Episcopo, has been assigned. On April 1st there were 493 overseas cases at General Hospital No. 5.

U. S. Army General Hospital No. 6, Fort McPherson, Ga.

Fort McPherson was one of the earliest of the general hospitals to specialize in orthopedic work, and while at first this consisted largely of foot-strain, back-strain and other static conditions received from the neighboring camps, it gradually developed into a very active service under the direction of Lieut. J. R. Jones.

As overseas cases began to arrive, Capt. J. B. Woodman and Captain J. C. Wilson were assigned to Fort McPherson, and Lieut. Jones was sent overseas as orthopedic surgeon to an evacuation hospital.

Captain Woodman, on account of his surgical ability, served as assistant to Lieut.-Colonel Babcock, who had been made chief of the surgical service. In August, Captain Woodman was made commanding officer of a base hospital, and sent overseas.—Captain Wilson has remained as chief of the orthopedic section at this post up to the present time.

The service has been very active and a very large one, including bone, joint, and muscle cases. Captain Wilson has shown unusual surgical ability.

At Fort McPherson, there has been an amputation centre, at first supervised entirely by Captain Wilson, and later by Captain Oscar R. Miller, acting, of course, under the orthopedic surgeon. Captain Miller has recently been discharged and his place taken by Captain Thomas V. Magruder, who in turn has been succeeded by Captain Marcus Skinner. On April 1st there were 1372 overseas cases at Fort McPherson.

In April the following men were serving on the orthopedic section of this hospital:

Lt. Lee Brady (dis. rec.)
Lt. Clarence Henry Hyman,
Lt. Clarence A. Jacobson,
Capt. T. E. Wilkenson,
Lt. George B. Lynch,
Capt. Thomas V. Magruder,

Capt. Gilbert M. Mason (rec. dis.),
Capt. R. C. Robinson,
Lt. Raymond E. Watkins,
Capt. John C. Wilson,
Lt. C. M. West,
Capt. W. F. Collins.

U. S. Army General Hospital No. 9, Lakewood, N. J.

The development of the orthopedic service at Lakewood, N. J., is due almost entirely to the ability and energy of Capt. E. W. Cleary, who has been acting as orthopedic surgeon here since early summer of 1918. There was in the early days of the service the closest coöperation between Major Cleary and the chief of the surgical service, Major Halsey Thomas.

The distribution of cases was made in consultation and no sharp line was ever drawn, emphasis being placed upon the importance of the return of function. Those cases in which this conservation of function seemed to be the important element, were considered to be orthopedic in type.

At Lakewood, the coöperation between the reconstruction division and the orthopedic section has also been very close. Major Reagle was the first reconstruction officer here, and to his force and resourcefulness is due the fact that a very large percentage of the patients are engaged in some form of reconstruction activity.

Captain Cleary has devised several very ingenious and practical pieces of apparatus which he has carefully tried out before determining upon their final form. An abduction arm splint and an elbow splint for increasing motion in either extension or flexion are distinctly original in their type. The cases here have been of a somewhat lighter type than in many of the other orthopedic centers, since the hospital is listed to receive only a few bed cases on account of a supposedly considerable fire risk. On April 1st there were 643 overseas cases at General Hospital No. 9.

The following men were serving on the orthopedic section of this hospital in April:

Lt. Pio Planco,
Lt. O. W. Butler,
Capt. E. W. Cleary,
Lt. W. F. Cotting,
Lt. Howard B. DuPuy,
Lt. Robert Goodman,

Lt. Dudley J. Morton,
Lt. Arthur F. Sergeant,
Lt. Thomas B. Rafferty,
Lt. Joseph F. O'Brien,
Lt. Norman McL. Dingman,
Capt. J. H. Galbraith,
Lt. Col. A. H. Cillee.

U. S. Army General Hospital No. 10, Boston, Mass.

In Boston, early in the war, the fraternal order of Elks became interested in building a hospital for reconstruction and other surgery, which would be turned over to the Government for the period of the war, and maintained after the war as a permanent hospital for this type of chronic surgery. A site was finally chosen on top of Parker Hill, next to the Robert Brigham Hospital. After the project developed, an arrangement was made with the trustees of the Robert Brigham hospital to include this in the plant for the duration of the war. The arrangement was a very happy one, since the equipment of the Robert Brigham, designed for chronic cases, was unusually good, both as to operating room facilities, x-ray plant, and physio-therapeutic department.

Major Frederic J. Cotton, originally exempted to orthopedic surgery, has been chief of the surgical service since the opening of the hospital. He was released to general surgery while acting as chief of the surgical service in the Walter Reed Hospital. His long interest and wide experience in bone and joint con-

ditions fit him especially for this post, since a very large proportion of the surgical cases sent to No. 10 are operative in type. In addition to the old plant of the Robert Brigham Hospital, and the new hospital plant proper, built by the fraternal order of Elks, the Government has taken over the buildings of the parental home in West Roxbury, which furnishes convalescent beds for 400 more cases.

U.S.A. General Hospital No. 10 is designated as a neuro-surgical centre and an amputation centre. There were on April 1st 674 overseas cases in Boston.

In April the following men were serving on the orthopedic section of this hospital:

Lt. Marshall L. Alling,
Capt. Louis A. Bolling,
Capt. John Brooks,
Capt. Wm. A. Clark,
Lt. Wm. H. Halley,
Lt. H. L. Keim,
Lt. Wm. G. McCormack,

Lt. Frank W. Marvin,
Lt. Nathaniel Mills,
Capt. C. E. Pannaci,
Lt. T. L. Story,
Lt. Arthur M. Washburn (rec. dis.),
Lt. James Blaine Montgomery,
Capt. A. A. Fenton.

U.S.A. General Hospital No. 11, Cape May, N. J.

U. S. A. General Hospital No. 11 at Cape May has been designated to receive cases of deafness, cases requiring oro-plastic surgery, and neuro-surgery. Major Chas. Frazier has been chief of the surgical service at Cape May, and chief consultant in America in neuro-surgery. There has been a small but very useful orthopedic service at Cape May under Major Roades Fayerweather.

Lt. Burkie has devised various simple light forms of hand and foot splints which deserve special mention. They can be made up in large numbers, are almost universal in their fit and are extremely efficient in their mechanical action. On April 1st there were 591 overseas cases at General Hospital No. 11.

U. S. A. General Hospital No. 12, Biltmore, N. C.

U.S.A. General Hospital No. 12 has had practically no orthopedic cases, although it was originally expected that it would be designated to receive them, and Major S. Fosdick Jones, who had returned from work overseas, was assigned to this hospital as orthopedic surgeon. His work has been extremely valuable, although not along orthopedic lines. A large number of empyema cases were congregated here and placed under his charge. He also has been acting chief of the surgical service part of the time, and has been one of the men upon whom the commanding officer has depended for administrative work in the hospital. At present there is no orthopedic service or orthopedic surgeon at Biltmore.

U.S.A. General Hospital No. 14, Fort Oglethorpe, Ga.

It was expected that Ft. Oglethorpe would serve as an important teaching hospital, and while the courses in the medical officers' training camp were going on, it did so serve. Various orthopedic surgeons have been connected with the medical officers' training camp at Fort Oglethorpe and with the General Hospital.

Major John Ridlon, Major Edwin Ryerson, Major Nathan, Lieut. Dudley Morton, have all taken part in the orthopedic activities. At present the hospital has a comparatively small number of overseas cases and it has not been found necessary to establish a distinct orthopedic section.

U.S.A. General Hospital No. 22, Philadelphia, Pa.

U.S.A. General Hospital No. 22 was one of the last general hospitals to be established as the demand for the reception of cases whose homes were in

this region became more insistent. Here, too, have been a comparatively small number of overseas cases, the orthopedic work at first being under the direction of Lieut. Colonel Rugh, assisted by Lt. Wm. C. Ely, and later under Major DeForest Willard, who brings to the service wide overseas experience gained in many positions of great responsibility and importance.

U.S.A. General Hospital No. 24, Parkview Sta., Pittsburgh, Pa.

U.S.A. General Hospital No. 24, was opened as a general hospital in the late winter with an orthopedic service which has grown to be of considerable importance. The chief of the orthopedic service has been Captain D. H. Moore and with him has been Lt. Geo. E. Cramer. On April 1st there were 485 overseas cases at Parkview.

In April the following men were serving on the orthopedic section of this hospital:

| | |
|----------------------|------------------|
| Lt. Geo. E. Cramer, | Lt. N. A. Wolff, |
| Lt. Albion A. Cross, | Lt. Simpson. |
| Capt. B. H. Moore, | |

U.S.A. General Hospital No. 25, Ft. Benj. Harrison, Ind.

U.S.A. General Hospital No. 25 has been designated as a hospital to receive epileptics and mental defectives, but during the winter a certain number of overseas cases were sent here, including a good many important bone and joint lesions. It was thought best to establish a small orthopedic service at Ft. Benjamin Harrison and Major Neal S. McDonald and Captain P. P. Haslett were assigned. Very few additional bone and joint cases have been assigned to General Hospital No. 25 and Major Haslett has been transferred to General Hospital No. 32, Chicago, Ill.

U.S.A. General Hospital No. 26, Ft. Des Moines, Iowa.

U.S.A. General Hospital No. 26 has been one of the largest and most important orthopedic centres since its inception, Originally Major John Prentiss Lord was the orthopedic surgeon and upon his retirement from active service Major J. L. Porter of Chicago became chief of the section. The hospital has been designated to receive both amputation and neuro-surgical cases, and has always had a large number of overseas cases. The orthopedic service has been very large and efficient. There have always been most cordial relations between the orthopedic section and the general surgical section. Major M. B. Tinker, himself a most able bone and joint surgeon, has been chief of the surgical service and has taken keen interest in all the bone and joint problems, the conservation of function, and the prevention of deformities during the course of healing. The service is still running very large and the results have been extremely satisfactory. There were on April 1st 904 overseas cases at Ft. Des Moines. Capt. Baldwin, assigned to the amputation service, has designed an admirable adjustable paper socket.

Sixteen orthopedic surgeons have been associated with the service at Ft. Des Moines, as follows:

| | |
|------------------------|------------------------------|
| Lt. John E. Bentley, | Lt. E. N. Roberts, |
| Capt. R. D. Kennedy, | Capt. C. A. Warner, |
| Lt. L. M. Maitland, | Lt. J. E. Wattenberg, |
| Lt. John Mitchell, | Lt. J. R. Young, |
| Capt. L. C. Nickell, | Capt. Chas. Elroy Llewellyn, |
| Lt. Col. Hiram W. Orr, | Lt. James F. Hanna, |
| Capt. T. G. Orr, | Capt. A. B. Phillips, |
| Lt. H. L. Prince, | Major R. V. Smith. |
| Major John L. Porter, | |

U.S.A. General Hospital No. 28, Fort Sheridan, Ill.

The hospital at Fort Sheridan has been planned as the largest general hospital in the Army. 4800 beds have been provided. Most of the wards are of two story cantonment type, constructed with covered connecting corridors. The old post barracks have been converted also into most excellent wards and administrative offices, and the orthopaedic section is housed in the main in these former post buildings. A cantonment structure ward in close geographic relation to the operating suite makes it possible to conduct an active operative service efficiently. Colonel Dean Lewis is chief of the surgical service and his long interest in reconstruction surgery and tendon work has given him a great appreciation of the importance of the chronic bone and joint surgery. Colonel Lewis is devoting most of his attention to neuro-surgery, a large and important group of these cases having been assigned to General Hospital No. 28. Major Edwin W. Ryerson has been acting as orthopedic surgeon at Fort Sheridan since it was opened, having been transferred to this hospital after the closing of the medical officers' training camp at Fort Oglethorpe, where he had been head of the orthopaedic school. With him have been associated 15 orthopaedic surgeons caring for the service, which has steadily increased in size and been unusually well organized. The work which Lt. John F. McNary has done in the study and recording of the peripheral nerve cases before they were turned over to the neuro-surgical services deserves special mention. On April 1st there were 1819 overseas cases at General Hospital No. 28.

In April the following men were serving on the orthopedic service of this hospital:

Lt. E. J. Barkheiser,
Capt. T. B. Cracroft,
Capt. H. C. Dozier,
Capt. E. B. Fowler,
Capt. Emil Hoglund,
Lt. Yngre Joranen—Medical,
Capt. Albert B. McQuillan,
Lt. John F. McNary,
Capt. Rudolph S. Reich,
Major E. W. Ryerson,

Lt. J. A. Saari,
Capt. John D. Trawick,
Capt. Chas. Wilbur Mercer,
Capt. J. A. Holgren,
Lt. P. B. Greenberg,
Maj. Ralph Kaysen,
Capt. L. J. Quillin,
Lt. Arthur S. Sandler,
Capt. A. N. Wiseley,
Capt. Herman Schuman.

U.S.A. General Hospital No. 29, Ft. Snelling, Minn.

U.S.A. General Hospital No. 29 was opened in the Fall of 1918, at Fort Snelling at the confluence of the Minnesota and Mississippi Rivers at the site of the famous old Ft. Snelling post. It is most attractively placed. The orthopedic surgeon since the opening of the hospital has been Major E. A. Rich. With great energy he has developed the service to a point of great usefulness. One of the remarkable features of his service has been the success which he has had in focusing the attention of the soldiers upon their recovery. A daily schedule of occupation and therapy was established in all the wards. Recreation itself even was planned, and talks on the history of the region were given. The policy of the government in relation to the future care of the men was outlined in lectures, and matters of general Army interest were discussed. There has been a great deal of bone and joint work and a service of very large size. An amputation service has been established at Fort Snelling and the fitting with provisional prostheses has been very speedily done owing to the close proximity of the Minneapolis Artificial Limb Company, who have a contract with the Government for the fitting of these provisional limbs. The occupational and reconstruction work at Ft. Snelling has been

developed very extensively and most cordial help in all occupational matters and in special furnishings for the hospitals have been given by the cities of St. Paul and Minneapolis, between which the Fort is situated. On April 1st there were 770 overseas cases at General Hospital No. 29. Major Rich has lately been discharged and Lt. Col. James C. Graves has been appointed orthopedic surgeon:

In April the following men were serving in the orthopedic section of this hospital:

| | |
|-------------------------|-----------------------------|
| Lt. Walter C. Ayles, | Capt. Jos. R. Kuth, |
| Lt. L. J. Brockman, | Capt. C. J. McCusker, |
| Capt. Chas. F. Clayton, | Lt. E. S. Porter, |
| Lt. M. S. Davis, | Lt. Walter G. Sexton, |
| Lt. Michael A. Desmond, | Lt. James Glowisley Walker, |
| Lt. R. K. Finley, | Lt. Joseph Herbert Wolfe, |
| Lt. Floyd D. Gillis, | Lt. Col. J. C. Graves. |
| Capt. E. A. Klein, | |

U.S.A. General Hospital No. 31, Carlisle.

It has been hoped that at Carlisle a specially efficient reconstruction hospital could be established, for the plant of the Carlisle Industrial School lends itself in an unusual way to this work. Shops of almost every description, which are well adapted for curative shops, are already established. Capt. R. V. A. Bliss has been orthopedic surgeon. The hospital has been open since the middle of the winter. On April 1st there were 655 overseas cases in this hospital.

In April the following men were serving in the orthopedic section of this hospital:

Capt. R. V. A. Bliss,
Capt. Scott A. Norris,
Lt. K. C. Peacock.

U.S.A. General Hospital No. 32, Chicago, Ill.

U.S.A. General Hospital No. 32 was opened late in January. It is situated at Drexel Avenue and 47th Street, adapted from the Cooper-Monotah Building, which was planned for a hotel. The property was taken over before the hotel had been entirely divided into small rooms and thus two large wards of 60 and 80 beds respectively were made possible. A few smaller wards of 10 or 12 beds were arranged, the rest of the hospital consisting of two or three bed wards. A small Zander room and a small gymnasium have been equipped. There are practically no reconstruction activities in connection with the hospital, but arrangements have been made whereby patients may receive instruction in one of the city manual training schools under very excellent instructors.

Lt. Colonel Vanamee has been orthopedic surgeon here, most ably assisted by Major Bacon, whose general surgical experience has been large and whose attention to the restoration of functions has been most constant. On April 1st there were 375 overseas cases at General Hospital No. 32.

In April the following men were serving in the orthopedic section of this hospital:

| | |
|------------------------|-------------------------|
| Major L. W. Bacon, | Lt. Michael F. McGuire, |
| Lt. G. M. DeBeck, | Lt. Col. T. C. Vanamee, |
| Lt. H. S. Edson, | Capt. P. P. Haslitt, |
| Capt. A. S. Lowenthal, | Capt. Carl Paulson. |

U.S.A. General Hospital No. 35, West Baden, Ind.

U.S.A. General Hospital No. 35 is situated in the property of the former West Baden Hotel, advertised as the "Carlsbad of America." The former hotel is arranged in the form of a circle, 6 stories of double tier rooms surrounding a huge atrium surmounted by an enormous dome. While the original property did not lend itself well to hospital purposes, the adaptations which have been made have been very skillfully planned by the commanding officer, Colonel Bliss, and have resulted in an excellent working plant. All possible diversional opportunities have been given the men at West Baden in the bowling alleys, shooting galleries, swimming tanks, etc., of the old hotel property.

Captain Percy Roberts has been acting as orthopedic surgeon at West Baden and Major Halsey W. Thomas, formerly of U.S.A. General Hospital No. 9, Lakewood, N. J., has been chief of the surgical service. This hospital is to be discontinued on June 1st. On April 1st there were 213 overseas cases at West Baden.

In April the following men were serving on the orthopedic section of this hospital:

Capt. Jos. O'Dwyer,

Capt. A. N. Wiseley (rec. dis.).

U.S.A. General Hospital No. 36, Detroit, Mich.

U.S.A. General Hospital No. 36, has been an interesting development. It has been established in the old and new buildings of the Ford Hospital. The plant of the old hospital furnishes an absolutely modern, completely equipped operating suite, laboratory, etc. The new hospital, connected by an underground tunnel with the old hospital, was originally planned to be of the hotel type with separate rooms and very small wards, to accommodate about 500 private patients. The Government, however, has adapted it so that many of the partitions were omitted and large wards arranged, with a corresponding increase in the number of beds totaling now about 1400. These, at the present time, are not all available, since construction has been somewhat delayed. The capacity is rapidly approaching the maximum under the energetic administration of the commanding officer, Colonel Cooper. Major Guy C. Boughton was the first orthopedic surgeon at General Hospital No. 36, and organized the service. He was replaced by Major F. C. Kidner late in February, who brought to the service very wide experience in the orthopedic centres in England. During the last part of Major Kidner's stay in England he was consulting orthopedic surgeon for all the American hospitals in England. In April there were over 500 overseas cases at General Hospital No. 36.

In April the following men were serving on the orthopedic section of this hospital:

Lt. I. I. Bittker,

Lt. Jacob H. Chalot,

Lt. L. B. Cowen,

Major F. C. Kidner,

Capt. Thos. S. Mebane,

Lt. Rudolph H. Ruedemann,

Capt. Carrol L. Storcy,

Capt. S. E. Risendorff,

Maj. Geo. T. Hodgen,

Lt. Frank P. McCarty.

U.S.A. General Hospital No. 38, Eastview, New York.

General Hospital No. 38 at Eastview, New York, was opened in January, 1919, and late in March had over 600 overseas cases. They have in the main been of the less severe type. Major John Homans has been chief of the surgical service, and Major Clarence Coon the orthopedic surgeon, assisted by Lieut. Epstein.

U.S.A. General Hospital No. 41, Fox Hills, Staten Island, N. Y.

U.S.A. General Hospital No. 41, long functionated as a debarkation hospital. The chief of the surgical service has been Major Robert E. Soule. He has now assumed charge of the orthopedic work, since the hospital has become a general hospital, and a far greater scope will be given to his recognized ability as orthopedic surgeon. It is planned to make Fox Hills a very important general hospital. It has been designated as a center for neurological surgery. On April 1st there were 1315 overseas cases at U. S. General Hospital No. 41. The following orthopedic surgeons have been assigned to Fox Hills:

Major Robert E. Soule,
Lt. Chas. D. Reid, Jr.
Capt. Edward L. Cooley.

EMBARKATION AND DEBARKATION HOSPITALS.

Orthopedic surgeons have been on duty at the embarkation hospitals in New York and Newport News inspecting the troops and serving also, since overseas wounded have been arriving, as supervisors of splinting on the transports before the cases were debarked.

When the cases first began to be transported there was a good deal of difficulty experienced because of the failure of the surgeons on the transports to realize the importance of maintaining fixation until the patients landed. The soldiers would often request to have the splints removed and their condition not being acute, the surgeons would frequently comply with these requests and in many instances unnecessary shortening and preventable deformities occurred. This difficulty was also experienced in the debarkation hospitals until surgeons who had had no overseas experience began to appreciate the fact that with these chronic bone injuries, accompanied by infection, union was very much slower than with simple fractures and that the calluses were much softer and more mouldable. Orthopedic surgeons were, on this account, sent to the ports of debarkation and a more careful supervision of splinting was instituted, both before the cases were removed from the transports and while under treatment in the debarkation hospitals. This has resulted in a very much more satisfactory condition as to splinting which obtains at present. The cases arrive at the general or base hospitals as a rule well splinted.

The principal embarkation hospitals have been at the ports of Hoboken and Newport News. Debarkation hospitals have also been established at these ports. Debarkation Hospital No. 52, at Richmond, Va., has now been abandoned, but Debarkation Hospital No. 51, at Hampton, Va., in the buildings of the Old Soldiers' Home, still functionates. Debarkation Hospital No. 2, at Fox Hills, Staten Island, has now been changed to General Hospital No. 41. Debarkation Hospital No. 1, Ellis Island, N. Y.; Debarkation Hospital No. 3, at Greenhut Building, N. Y.; Debarkation Hospital No. 4, at the Polyclinic in New York; and Debarkation Hospital No. 5, at the Grand Central Palace in New York, are still being maintained at the writing of this article. To these hospitals have been assigned the following personnel:

D. H. No. 1, Ellis Island,

Lt. Edwin H. Spies.

D. H. No. 3, Greenhut Bldg, N. Y.

Capt. J. L. Bendell,

Lt. Frederick Gardner.

D. H. No. 4, Polyclinic, N. Y.,

Capt. Robt. M. Yergason.

D. H. No. 5, Grand Central Palace, N.Y.

Lt. Leonard P. Bland,

Lt. Geo. W. Cramm,

Lt. Chas. W. Bruninghaus.

B. H. Camp Merritt, N. J.,

Lt. Morris T. Koven.

B. H. Camp Mills, N. Y.,

Capt. E. R. Kelsey.

General assignments of the following orthopedic men have been made to the surgeon at the port of Hoboken for their assignment as he considers wise:

| | |
|--|---------------------------------------|
| Major S. C. Baldwin, Director of Surgery of the Port. | Lt. F. B. Ring, Lt. Chas. Goldman, |
| Lt. Col. G. W. Hawley, | Major Geo. J. McChesney, |
| Major R. D. Shrock, | Major Wm. B. Carroll, |
| Lt. George L. Chaffin, | Lt. W. W. Lasher, |
| Lt. Russell Pemberton, | Major C. D. Napier, |
| Lt. Milo T. Easton, | Capt. D. C. Paterson, |
| Lt. Chas. A. Wisch, | Capt. L. N. Harris. |

At Debarkation Hospital No. 4, Lt. Colonel George W. Hawley, assisted by Major Schrock and Captain Todd, has organized a special surgical clinic after the plans of Dr. Pietro Chutro, formerly of Paris. Dr. Chutro's bone work, especially on osteomyelitis, has been considered by many to be the most successful of any work overseas. He follows a special technique, and has his operating room specially organized. Dr. Chutro is to visit America and demonstrate his methods at Debarkation Hospital No. 4. Colonel Hawley is familiar with all these methods and is preparing for this visit. The clinic will be opened to all army surgeons.

BASE HOSPITALS.

It will be impossible within the limits of this paper to do justice to the orthopedic activities in all the base hospitals. Only a few, therefore, will be mentioned which have been of considerable size and are contributing much to the welfare of the overseas patients.

Camp Devens, Mass.

At Camp Devens, the service was formerly under the care of Major Schirmer. He was transferred to Camp Meade in January, and Captain Fitzsimmons was made orthopedic surgeon. An excellent spirit of team play exists and an important service has been built up. On April 1st there were 576 overseas cases in Camp Devens.

In April the following men were serving on the orthopedic staff at Camp Devens:

| Base Hospital. | Camp. |
|--------------------------|-------------------------|
| Capt. H. J. Fitzsimmons, | Lt. Charles L. Kerrick, |
| Lt. W. E. Clarke, | Lt. Harold Thomas, |
| Lt. R. S. Perkins. | Capt. Harold L. Burr, |
| | Capt. P. H. O'Conner. |

Camp Dix, N. J.

The orthopedic work at Camp Dix was originally in charge of Captain Meisenbach who was discharged from the service soon after the overseas cases began to arrive. He was succeeded by Major Davidson, who, in turn was succeeded by Major McClain and Captain W. J. Merrill. The operative work has been quite extensive and a most interesting collection of bone and joint cases has been sent here.

The number of overseas cases in this hospital on April first was 1207. The following men were serving on the orthopedic staff at Camp Dix in April:

| Base Hospital. | |
|-------------------------|-------------------------|
| Major Alvah S. McClain, | Capt. J. A. Board, |
| Capt. Wm. J. Merrill, | Capt. Carl Ryden. |
| Capt. J. L. Moriarty, | Capt. Carson Coover, |
| Lt. E. N. Y. Kau, | Lieut. Thomas L. Smyth, |

Camp.

Lt. Clarence F. Fowler,
Capt. John C. Herrick,
Lt. R. C. Hooker,
Lt. Herman M. Hurwitz,

Lt. S. B. Pearce (dis. rec.),
Lt. J. L. Linn,
Lt. C. A. Lee,
Lt. J. W. Smith.

Camp Meade, Md.

The orthopedic work at Camp Meade increased rather suddenly and required much operative attention. Lt. Colonel Ralph Fitch was assigned here on his return from overseas and met the emergency splendidly. After his discharge from the service, Major Schirmer became orthopedic surgeon. He, in turn, has been discharged. Recently a separate service has been organized by Major Billington, whose experience overseas especially well fits him for helpful service with bone and joint cases. The service is large and important. Lt. Colonel Lane, chief of the surgical service, takes keen interest in the functional treatment during the course of wound healing, and special curative work is being planned in the shops.

On April 1st there were 804 overseas cases at Base Hospital, Camp Meade, and the following orthopedic medical officers were serving:

Base Hospital.

Major J. W. Schirmer,
Lt. H. W. Wllam,
Lt. M. E. Harrell,
Capt. W. O. Markell,
Capt. A. G. Fuller,
Lt. Mickelthwaite,

Lt. H. K. Morrison,

Major R. W. Billington,
Lt. Charles H. Phillips.

Camp.

Capt. Dean S. Ince,
Capt. C. A. Cahn,
Lt. C. C. Nohe.

Camp Gordon, Ga.

During the mobilization period, an important orthopedic service was maintained at Base Hospital, Camp Gordon, under the charge of Captain Oscar Miller, who afterwards became camp inspector for this district. He was followed by Captain Jacobson and Captain Sanford, the latter assuming charge of the fracture cases. The base hospital at Camp Gordon has not been utilized for overseas cases until recently. On April 1st there were 506 overseas patients. Lieut. C. M. Turschel had been conducting the service admirably since Captain Sanford's transfer, and with the advent of the overseas cases, Major E. V. Kellar was assigned here also on April 1st.

The following orthopedic medical officers were serving on the orthopedic staff of this hospital in April:

Base Hospital.

Lt. Chas. M. Turschel,
Major E. V. Keller.

Camp.

Lt. W. W. Beck.

Camp Custer, Mich.

The base hospital at Camp Custer has been almost a model base hospital under the extremely able administration of Colonel Irons. The orthopedic work here has been under the charge of Capt. Mercer, to whom all fracture cases as well as most of the bone and joint cases, have been referred. An excellent organization has been worked up in close coöperation with the general surgical service. The overseas cases have now been transferred to general hospitals, and the base hospital made a camp hospital. Before this change there had been over 500 overseas patients here. Captain Mercer has been assigned to Ft. Sheridan.

In April the following medical officers were serving on the orthopedic service at this hospital:

Base Hospital.

Lt. C. R. Crutchfield,

Camp.

Lt. R. H. Baker,
Lt. Carroll S. Thomas,
Lt. J. D. Blackburn.

Camp Grant, Ill.

The hospital is of almost the same size as the base hospital at Camp Custer. Overseas cases have also been received. No orthopedic service here, as distinct from the general surgical service, has been conducted, but Captain George Astley has had charge of the orthopedic work and has been extremely busy as consulting and operating surgeon. Recently he has been made chief of the surgical service, and several orthopedic surgeon assistants have been sent him. On April first there were 586 overseas patients at Camp Grant, and the following medical officers were on duty:

Base Hospital.

Capt. Geo. M. Astley,
Lt. Spencer P. Blim,
Lt. N. F. Crowe,
Lt. C. B. Young,
Lt. R. C. Wolfe,

Lt. J. B. Fitts,

Capt. Edward Jelks.
Camp.
Lt. E. N. Fischer,
Lt. E. O. Swanson,
Capt. H. W. Long.

Camp Sherman, Ohio.

The base hospital at Camp Sherman has had an active service during the mobilization period and has been designated to receive overseas cases as well. It has developed a very active section at first under the charge of Captain Powers, and later under the charge of Captain Chollett. Captain Chollett has had experience in both England and France and is extremely well qualified to care for a large bone and joint section. On April first there were 1076 overseas cases at Camp Sherman. The following men were serving on the orthopedic service of this hospital in April:

Base Hospital.

Lt. N. J. Koztraewzki,
Capt. H. C. Saltzstein,
Capt. John W. Powers,
Capt. Burt G. Chollett,
Lt. W. J. Fenton,

Capt. J. Roscoe Harry,
Lt. William Moncure,
Capt. U. P. Horger.

Camp.

Lt. H. J. Feaster,
Lt. C. L. McNeil,
Lt. J. C. O'Neill.

Camp Taylor, Ky.

The Base Hospital, Camp Taylor, has only recently developed a separate orthopedic service. Major E. A. Coleman, exempted to the section of orthopedic surgery, has been made chief of the surgical service, and Captain E. B. Mumford, who has had a year's foreign service in the orthopedic division, is acting as orthopedic surgeon. The number of overseas cases is large and the importance of bone and joint work is unquestioned. Major Codman's interest in bone and joint cases and his wide experience in bone and joint surgery are a great asset to the service. A very close liaison is being worked out between

the orthopedic convalescent cases in which joint function must be increased and the reconstruction activities. Careful records are taken of the weekly progress in joint motion. The work assigned is specially planned for the restoration of function.

On April first, there were 834 overseas cases at Camp Taylor. The following medical officers were serving on the orthopedic service at this hospital in April:

| | |
|-----------------------|-------------------------|
| Base Hospital. | Lt. F. N. Potts, |
| Capt. T. A. Bryan, | Capt. T. H. Stewart, |
| Lt. H. E. Powers, | Capt. O. P. Hodge. |
| Major E. A. Codman, | Camp. |
| Capt. J. B. Young, | Lt. Geo. E. Lyons, |
| Capt. Louis H. Mayer, | Lt. James L. Shoemaker, |
| Capt. E. B. Mumford, | Lt. E. L. Heakel. |

Fort Riley, Kansas.

At Base Hospital, Fort Riley, Major Napier was assigned early in the mobilization period and continued in this capacity until the latter part of August, 1918. He was then replaced by Major Mark Rogers, who developed a most useful service in connection with the large numbers of overseas cases which began to be sent home. Upon Major Mark Rogers' discharge from the service, he was replaced by Major Hobby, who had formerly been stationed at Camp Funston. Major Dickson, after a year's experience in Europe, has now been assigned to the base hospital at Fort Riley and brings to the service a great ability and splendid training.

On April 1st there were 476 overseas patients in this hospital, and the following orthopedic officers were serving:

| | |
|--------------------|-------------------------|
| Capt. Edw. Adams, | Major F. D. Dickson, |
| Capt. W. M. Holtz, | Capt. Marion Trueheart. |

Camp Upton, N. Y.

The base hospital at Camp Upton has been receiving overseas cases for several months, and the orthopedic service has been ably conducted by Captain H. B. Thomas of Chicago. On April 1st there were 778 overseas cases at the base hospital, and the following medical officer personnel was serving on the orthopedic staff:

| | |
|-----------------------|--------------------------|
| Base Hospital. | Camp. |
| Capt. H. B. Thomas, | Capt. J. C. Davis, |
| Lt. Alfred H. Yason, | Lt. Chas. S. Bergman, |
| Lt. Lysander S. Kemp, | Lt. Horace H. McCoy, |
| Lt. Wm. H. MacKay, | Lt. Nathan Rosenberg, |
| Capt. C. M. Allaben, | Lt. Gerard J. B. Schoot, |
| Lt. E. A. Spies. | Lt. Geo. L. Venable. |

Camp Lee, Va.

At the base hospital at Camp Lee, near Petersburg, Va., the surgical service under Major Parker has been excellently organized and the orthopedic section has functionated efficiently under Capt. Wheeden, Major Jerrauld and several assistants. A good *esprit de corps* exists, and overseas wounded have done excellently well. On April 1st there were 419 overseas cases at the base hospital, and the following orthopedic surgeons were on duty:

| | |
|---------------------|---------------------|
| Base Hospital. | Camp. |
| Capt. A. A. Weeden, | Lt. E. B. Buchanan, |
| Lt. Hugh I. Battey, | Lt. M. E. Simmons, |
| Capt. A. A. Fenton, | Lt. John D. Gillis. |
| Lt. W. W. Tracey. | |

Camp Dodge, Iowa.

Camp Dodge has been an active mobilization and demobilization centre, near Des Moines, Iowa. At the base hospital, even before overseas cases were sent here, Major Test organized an orthopedic section which was kept very busy and served most usefully. With the advent of our overseas cases assistants were sent. Lieut. Wolcott, fresh from very extensive bone and joint experience overseas, both in England and France, was placed in charge of most of the bone and joint operative work, which he handled with much skill. Lt. Colonel Orr has now been made consultant at the base hospital, with Major Durham as orthopedic surgeon.

On April 1st there were 616 overseas cases at the base hospital and the following orthopedic medical officer personnel were assigned to Camp Dodge:

Base Hospital.

Major F. C. Test,
Lt. T. A. Willis,
Lt. T. S. Mark,
Lt. W. E. Wolcott,
Capt. E. D. Wise,
Major H. A. Durham.

Camp.

Capt. W. G. Bouse,
Lt. R. M. Baker,
Lt. L. K. Strate.

Camp Shelby, Miss.

At the base hospital at Camp Shelby, there has never been a large number of overseas cases, but the orthopedic service there has been well conducted by Lieut. L. F. Carlton. On April 1st there were 139 overseas cases.

Ft. Sam Houston, Texas.

The department base hospital at Ft. Sam Houston, Texas, has been nearly as important as a General Hospital during the early stages of the war. Major Ansel G. Cook has been stationed here almost since its opening, and his skill in handling the foot conditions has been greatly appreciated. Major A. R. Colvin was stationed here for several months before his transfer to Ft. McHenry, where he has been chief of the surgical service. For the last few weeks, Capt. J. T. O'Ferrall has been made orthopedic surgeon and has helped materially with the bone and joint operative cases. On April 1st there were 262 overseas cases. The following orthopedic surgeons were serving at this base hospital in April:

Capt. G. H. Applewhite,
Lt. R. J. Wharton,
Lt. Robert F. Patterson,

Capt. F. B. Hudson,
Capt. John T. O'Ferrall,
Capt. J. H. Shelton.

Camp Bowie, Texas.

Only a comparatively small number of overseas cases have been sent to the base hospital, Camp Bowie, but many of these have been important and an orthopedic section of the surgical service has been maintained. Recently Capt. Wm. C. Durringer has been orthopedic surgeon and in April Major Pinneo was assigned to the service. His overseas experience should make him capable of being of great assistance with the operative bone and joint work. In April there were 335 overseas cases in this hospital, and the following medical officers were serving on the orthopedic staff:

Base Hospital.

Capt. Wm. C. Durringer,
Major Frank W. Pinneo,
Capt. G. W. Day.

Camp.

Lt. Kent A. Bowman.

Camp Pike, Ark.

The base hospital at Camp Pike has had a small overseas surgical service, and an orthopedic section. Captain Charles H. Sanford became orthopedic surgeon, transferred here from Camp Gordon, and was afterwards made Chief of the surgical service, being replaced by Captain W. S. Roberts. Recently Fred H. Hodgson has been transferred to this post because of his wide overseas experience in the treatment of bone and joint conditions. On April 1st there were 250 overseas patients in this hospital, and the following medical officers were assigned to the orthopedic service:

Base Hospital.

Lt. E. D. King,
Capt. Chas. H. Sanford,
Capt. W. S. Roberts,
Major Fred Hodgson.

Camp.

Lt. J. W. Gordon,
Lt. Henry R. Leibinger,
Capt. Homer Sylvester.

Camp Lewis, Washington.

The orthopedic service at Camp Lewis, both in the base hospital and in the camp, has always been active. Originally, Major E. A. Rich organized the work and after he was made camp inspector, the service at the base hospital was taken over by Captain Harding, whose successful conduct of it deserves special mention. No large numbers of overseas cases have been sent here, but the work has been extremely high grade. On April 1st there were 249 overseas cases in this hospital.

The following men were assigned to the orthopedic service at the base hospital at Camp Lewis in April:

Base Hospital.

Major Maynard C. Harding,
Lt. Sherman Rodgers.

Camp.

Capt. John Carling,
Lt. Geo. E. Lindow,
Lt. Doxey R. Wilson.

This entirely inadequate and brief summary of the main activities of the Section of Orthopaedic Surgery may suggest that an attempt has been made to meet some of the obligations of the specialty. Little has been said of the devoted and unspectacular work of the orthopaedic medical officers assigned to camp work. Their original careful examinations of the draft cases and their later important services on discharge boards may seem to have passed unnoticed, but this is not so. It has been generally recognized as necessary and important by the Division Surgeons. If, in the treatment of the wounded soldiers, the attention of the surgeons has been directed to the importance of combining the conservation of function with the treatment of the wound itself, a service to surgery as well as to the soldiers may have been rendered.