

pulse, and it should be remembered that it may be absent in rare instances; or it may be much smaller than normal, terminating in muscular branches above the wrist; or it may lie upon the deep fascia instead of beneath it; or it may be covered by fascia so thick and hard that the pulsation cannot readily be transmitted to the finger tips; finally, it may turn backward beneath the extensor muscles of the thumb. When in its normal position it is easily felt, pulsating almost subcutaneously over the bones of the wrist.

ATHEROMA OF THE ARTERIES manifests itself through thickening of the vessel wall, either localized or diffuse, and often accompanied by the deposit of calcareous salts until a condition of the vessel is produced well expressed by the term "pipe-stem artery." It is most readily appreciable in the radial artery near the wrist. Its chief importance in this connection is not with regard to the function of the vessels of the arm, but as an indication of the condition of the vascular system throughout the body. The vascular sclerosis will often be found more marked in the right arm than in the left, in individuals such as stonecutters and blacksmiths who habitually perform much heavier labor with that arm than with the left. When this condition of arterio-sclerosis is found to be present, it is an important guide to the surgeon in leading him to make a guarded prognosis as to the result of severe operation anywhere in the body.

ANEURISMS occur in the vessels of the arm as elsewhere. They may be present at any age; indeed Schmidt reports an aneurism of the radial artery in an infant of eight weeks.

The traumatic forms affecting the arm are chiefly those springing from the axillary artery and showing in the arm pit. The arterio-venous form of aneurism was formerly quite a common occurrence when venesection was more generally practised. The adjacent artery being wounded by the incision which opened the vein, adhesions form between the two vessels and part of the arterial blood is thrown into the vein at each pulsation, the vein greatly dilating under the strain.

CIRROID ANEURISMS are occasionally met with on the forearm. They are formed of dilated and tortuous arteries. In a case that came under my observation, the tumor extended from a little below the elbow almost to the wrist, and was about three inches wide. On operation a mass of dilated arteries was found lying in the superficial fascia, fed by numerous branches perforating the deep fascia from below. The treatment of this form of aneurism, which stands on the border line between tumors and malformations, consists in thorough extirpation, approaching the mass of pulsating vessels from the periphery and tying all the feeders at their point of emergence from the deep fascia. With careful dissection, working from the ends toward the centre of the tumor, dangerous hemorrhage can usually be avoided. The diagnosis of aneurism can usually be made by observing that the tumor has an expansile pulsation which ceases on application of firm pressure on its proximal side. In the case of cirroid aneurism in which the feeders are numerous and come from the parts directly underneath the tumor, pressure on the proximal side will not suffice to interrupt the pulsation of the mass. A characteristic bruit can in most cases be heard over the tumor. The treatment of aneurism of the upper extremity does not differ from the treatment of the condition elsewhere.

(b) *The Veins.*—The veins of the upper extremity are subject to the same affections as those elsewhere in the body; such as wounds, phlebitis, thrombosis, and varices. The condition of the veins of the hand and forearm is a valuable index of the condition of the general circulation as regards aeration of the blood and possible obstruction to the venous circulation. These veins dilate when the heart is weak, or when there is any impediment to the return circulation in the domain of the vena cava superior.

PHLEBITIS may be caused by inflammation near the vessel, by thrombus formation, by traumatism, or by direct infection. It gives rise to pain and tenderness in

the course of the vessel, to edema and discoloration of the skin, and if at all extensive, systemic symptoms occur which are those of mild or severe sepsis.

The treatment of simple phlebitis consists first of all in rest, which should be insisted on as most important to prevent the detachment of emboli. Next it is necessary to secure as near an approximation to asepsis of the intestinal tract as may be practicable, and finally some benefit may be expected from the use of antiseptic and stimulating substances applied along the course of the affected vein, such as a fifty-per-cent. ointment of ichthyol or Credé's silver ointment; the object of the treatment being to maintain the integrity of the thrombus within the inflamed vessel until such time as shrinking of the coagulated fibrin may allow a partial restoration of the vascular canal, and to stimulate the absorptive function of the perivascular lymph channels. Upon the first indication of septic infection of the thrombus, as evidenced by chills and septic fever, or by local abscess formation, it is proper and necessary to incise the tissues freely over the affected vessel, to clean out the septic clot, and establish free drainage. During such an operation it may be possible to restore the patulousness of many adjacent veins which may have become thrombotic, by extracting from their lumen long, more or less firm clots of coagulated blood and fibrin. Great care, however, must be used in manipulation of the affected limb to avoid breaking loose portions of the blood clot within the veins which might be carried as emboli to the lungs or to the brain, and give rise to dangerous or even fatal infarctions.

THROMBOSIS is due to conditions that slow the blood stream associated with abnormal conditions of the endothelial coat. It gives rise to sudden and severe pain and to edema on the distal side of the coagulum. The treatment is essentially that of the phlebitis, which is an almost invariable attendant.

VARICES are rare in the upper extremity, owing to the less unfavorable action of gravity as compared with the lower extremity, but they may occasionally be found.

VI. AFFECTIONS OF THE LYMPHATIC VESSELS, GLANDS, AND BURSAE.

(a) *The Lymph Vessels and Lymph Glands.*—In considering the affections of the lymphatic system of the arm, one anatomical peculiarity should be borne in mind—namely, this: that the greater part of the lymphatic current from the hand and forearm passes directly to the axillary and subscapular nodes without traversing the epitrochlear gland and the other lymphatic nodes at the bend of the elbow. The importance of this course of the lymphatic canals is indicated in cases of septic and malignant disease of the hand, as some cases on record tend to prove that the lymphatic vessels, as compared with the lymphatic nodes, may with considerable impunity serve in the transmission of both septic and malignant particles. Thus in cancer of the hand, with more or less extensive involvement of the axillary nodes, it has been recorded in some cases that amputation of the hand and radical extirpation of the axillary lymphatics has succeeded in leaving the patient free from recurrence of the disease, and in a similar manner we frequently find the axillary glands fatally compromised and breaking down into abscesses with the lymphatic vessels, by which infection from the hand must have travelled, remaining to all appearances intact. It behooves the surgeon in all cases of disease of the distal part of the upper extremity to examine with care the condition of the cubital and axillary glands and to palpate also the course of the deeper lymphatic vessels, which is to all intents and purposes that of the main arteries.

The **EPITROCHLEAR NODE** is situated in the bicipital sulcus just in front of the inner epicondyle of the humerus. It is one of the first glands to become enlarged and indurated in the general adenitis of syphilis.

ELEPHANTIASIS appears occasionally in the arms, but more rarely than in the lower extremities. **LYMPHANGI-**

VII. AFFECTIONS OF THE NERVES.

The nerves of the arm and forearm are liable to the usual forms of disease of these tissues elsewhere (neuralgia, neuritis, etc.), with similar symptoms and demanding similar treatment. The main interest attaching to disease of the nerves of the arm is due to their anatomical distribution, giving motor and sensory disturbances in certain well-defined regions. The three chief types of such lesions are exhibited respectively in interference with the function of the ulnar, of the median, and of the musculo-spiral nerve.

In **ULNAR PARALYSIS**, the muscles affected are the ulnar half of the deep flexor of the fingers (perforatus), the ulnar flexor of the wrist, the hypothenar muscles, the two external lumbrical muscles, all of the interossei, the adductor pollicis, and the inner head of the flexor pollicis brevis. The position assumed by the hand, due to the unopposed action of the antagonist muscles, is characteristic. The hand becomes more or less claw-shaped and the condition is known as "main en griffe." This typical position is assumed by the hand only when the paralysis has lasted some time (three or four weeks or longer). The wrist is slightly bent backward and to the radial side of the forearm by the unopposed action of the extensors and flexors of the radial side of the wrist and of the extensor carpi ulnaris. It is the defect of the interossei which gives, however, the most marked and characteristic deformity of ulnar paralysis. The fingers cannot be flexed at the first phalanges nor extended at the second and third, and in consequence of this, through the continued action of the extensor communis digitorum, the first phalanges are markedly over-extended, owing to the want of opposition from the lumbricales and interossei, while the continued action of the flexor sublimis and the unparalyzed portion of the flexor profundus digitorum bring the second and third phalanges into extreme flexion. The loss of sensation in ulnar paralysis varies considerably: in some cases the sensation is lost in the little finger and the ulnar portion of the ring finger, also throughout the ulnar portion of the palm and the dorsum of the hand. In other cases there is but little attendant anaesthesia.

The second marked picture of nerve lesion in the forearm is found in **PARALYSIS OF THE MEDIAN NERVE**. Destructive injury to this nerve above its muscular branches causes paralysis of the flexors of the fingers excepting the ulnar half of the flexor profundus, and of the other muscles to which the median is distributed; to wit, the pronators, the flexor carpi radialis, the two outer lumbricales, and all the muscles of the ball of the thumb, except the abductor pollicis and the inner head of the flexor pollicis brevis. The flexion of the wrist and of the hand, and the pronation of the forearm are very greatly impeded but not altogether abolished by the loss of function in these muscles. The flexor carpi ulnaris is still in action and some pronation is possible through the weight of the hand when the supinators are relaxed. The extension and abduction of the thumb are characteristic, and the thumb cannot be made to touch the tips of the fingers. Flexion of the two distal phalanges is no longer possible, though the first phalanges are flexed by the interossei. The loss of sensation is again variable; the most characteristic distribution of the anaesthesia being the thumb, index and middle fingers, and the radial side of the ring finger with the radial side of the palm of the hand. The sensation of the dorsum of the hand is not greatly affected. Again, a characteristic appearance of the hand and forearm is produced, with great atrophy of the forearm on the radial side and in front. The wrist is inclined to the ulnar side, and the thumb, whose flexor and adductor muscles are wasted, is usually rotated outward so that its palmar surface is on a plane with that of the wrist and the fingers, as in apes.

The third characteristic picture of injury to the nerves of the arm is that afforded by **PARALYSIS OF THE MUSCULO-SPIRAL NERVE**. In paralysis of the musculo-spiral nerve loss of power occurs in all the extensors of the forearm and

OMA is also rarely met with, but may occur, particularly along the course of the deep lymphatics. **LYMPHADENITIS** may of course affect the nodes of the arm as those elsewhere, and is due either to infection in the acute form from some focus of sepsis on the line of drainage, or, in the chronic form, is usually due to tuberculous or syphilitic disease. As in all cases of adenitis, it is important to study the anatomical distribution of the lymphatic vessels which centre in the affected node with a view to determine the portal of infection. The axillary glands may be involved as a result of disease of the upper extremity, but more frequently as a result of disease of the thorax and of the neck.

(b) *The Bursa.*—Of the bursae of the arm that most frequently diseased is the one over the tip of the olecranon process. This bursa when inflamed and distended gives a characteristic alteration of the contour of the arm. It is sometimes present as an occupation lesion, and is known as "miner's elbow."

The type of inflammation present may be either a simple traumatic bursitis, a septic bursitis, or in some cases a gummatous bursitis. In addition to these are the various forms of secondary bursitis due to extension of disease of the bone or of the joint. The only case in which the diagnosis of bursitis is likely to offer any difficulty is in its earlier stages before effusion in the bursal sac has taken place. In this case it may be difficult to differentiate it from periostitis and perhaps from rheumatism.

The treatment of **SIMPLE BURSIITIS** should be directed either toward causing absorption of effused fluid, or in default of this, toward the obliteration of the sac. To this end it is wise in the acute form of the disease to try the effect of heat, compression, and the use of various agents such as iodine and ichthyol, whose function it is to stimulate lymphatic absorption. Later in the disease a different form of therapeutic effort will be more likely to be successful, ranging from tapping alone, to tapping followed by the injection of irritating fluids, if necessary to incision and packing, or even total excision of the walls of the bursa.

In the **SEPTIC FORM** of the disease the contents of the bursa will probably be purulent and the surrounding tissues will be angry and inflamed, and what was in the simple form of the disease a painless fluctuating tumor may take on all the characteristics of an acute abscess. In this case no treatment is of avail which does not involve prompt and free incision and the evacuation of the pus. It is particularly in septic cases that the danger of joint involvement by contiguity of tissue must be considered. In the other forms of disease of this bursa, the liability to secondary joint involvement is slight.

As already stated, the bursa frequently becomes sympathetically involved in any of the diseased processes of the joint (rheumatism, tuberculosis, syphilis, etc.); and in view of this we are not surprised to find occasionally an acute syphilitic bursitis over the olecranon appearing at the time of the severe joint pains which characterize the earlier stages of secondary syphilitic invasion. This type of bursitis tends to spontaneous amelioration and subsides *pari passu* with the joint affection.

A more characteristic form of **SYPHILITIC BURSIITIS** occurs in this region as a late secondary lesion (second or third year). This difficulty is independent of the joint itself and consists in the development of gummatous nodules in the wall of the bursa, presently enlarging and becoming confluent until the whole bursa represents one large gummatous mass. The process soon extends beyond the walls of the bursa and involves the skin in gummatous infiltration. When the skin has become involved, this vulnerable mass is very prone to pyogenic infection and secondary ulceration of an obstinate and destructive character. Like syphilitic affections elsewhere, in the absence of special constitutional depression the lesion will yield readily to the combined use of antisyphilitic and antiseptic measures, neither of which alone may suffice for a cure.

of the wrist and in the supinators, with the occasional exception of the supinator longus. The wrist drops and the fingers are flexed at their distal joints. Some extension of the fingers, however, can be obtained through the action of the interossei and lumbricales. The typical distribution of the anæsthesia after actual division of the nerve above its cutaneous branches is along the outer part of the arm from the insertion of the deltoid to the lower third of the forearm, and there is more or less affection of the sensation of the dorsum of the hand, though in many cases there is little or no involvement of sensation.

The ULNAR NERVE is more exposed to INJURY than any other nerve in the body. In the wrist, at the elbow, and in the upper arm the nerve is liable to division from incised wounds, to pressure or contusion, or to involvement in fractures of the bone. Sometimes an apparently spontaneous ulnar neuritis is observed in persons otherwise in good health.

One peculiar accident is liable to affect the ulnar nerve as it passes behind the inner condyle of the humerus, namely, DISLOCATION from its bed. This accident is accompanied with more or less neuralgic pain referred to the region of distribution of its cutaneous branches, and with more or less involvement of the functions of the muscles to which it is distributed. The pain as well as the motor symptoms will be most marked when the arm is flexed. In short there is excited in the nerve at this point a localized neuritis. The accident, which is rare, may occur spontaneously during violent use of the arm, as in ball-playing and gymnastic exercise, or as the result of a contusion. Pain, numbness, and tingling along the ulnar side of the forearm and of the hand will indicate the moment of its occurrence and a cord can be felt running along the inner side of the epicondyle which reveals itself as the dislocated nerve through the aggravation of all these symptoms when pressed upon by the examining finger. To avoid extension of the neuritis and all the undesirable sequelæ of nerve degeneration, it is important that the nerve should be returned to its bed and securely fastened there. For this purpose a free incision should be made over the course of the dislocated nerve and a firm flap of connective tissue should be dissected up from the inner side of the condyle and turned outward over the nerve so as to bind it in its proper bed. The edge of this flap of connective tissue should be sutured to the capsular ligament of the elbow joint or to the periosteum of the humerus. It is wiser not to allow the needle to pass through the nerve sheath for fear of exciting neuralgic pains. The arm should be put up and fixed in extension and this position maintained until the parts shall have firmly united. If the symptoms of neuritis in the mean time have disappeared, the limb should be treated with massage, faradization, counter-irritation, active and passive motion, etc.

The MEDIAN NERVE is often INJURED, most frequently in incised wounds of the wrist. In the forearm it suffers in case of fracture of the ulnar and radius, and just above the elbow its course to the bicipital groove exposes it to injury. The nerve perforates the pronator radii teres, and it is possible for it to be injured in forcible contraction of this muscle without direct external violence.

The MUSCULO-SPIRAL NERVE is generally the sufferer in crutch paralysis from pressure in the axilla. Its close connection with the humerus leads to its frequent INJURY in case of fracture and to its frequent involvement in the callus or between the fragments. The most frequent cause of the paralysis is, however, damage to the nerve during sleep, the patient lying upon a hard bed with his arm under him. This is seen particularly in drunkards. In many cases this injury of the musculo-spiral nerve is due not so much to pressure as to stretching of the plexus by prolonged extension of the arm above the head. It is important for the surgeon to bear this in mind, as it is the frequent cause of arm paralysis after anæsthesia. The prognosis in paralysis of this description is almost invariably good; the most potent therapeutic agent being faradization of the affected muscles.

Progressive muscular atrophy and syringomyelia, together with the otherspastic and paretic affections of the arm, though more properly due to nerve influences than to actual affections of the muscle, have nevertheless, for the sake of convenience, been treated above under the head of affections of the muscles.

VIII. HYSTERICAL LESIONS.

The elbow is a favorite seat for hysterical lesions, and the arm as a whole is frequently declared by the patient to be powerless, or may be held by perverted volition in some constrained attitude which may be the more natural one of extension, or of partial flexion, or again some strange or bizarre position from which the patient declares herself unable to move it.

The differentiation of hysterical from organic disease of the arm may be extremely difficult. Hysterical affections simulate especially disease of the joints. The differential diagnosis has been formulated by Dercum as follows: Hysterical disease of the joints is not associated with deformity and shortening of bone, nor with the formation of pus, nor with the local rigidity, nor with the septic temperature that is seen in tuberculous diseases. The stiffness is caused by contracture of the muscles, which is usually much more extensive than in organic disease, and the pain is usually more diffuse and more spontaneous. There are, moreover, characteristic mental and physical stigmata present. The hysterical patient dreads to move or assist in the examination of the limb, and obviously dwells upon each symptom, while she is very apt to have segmental anæsthesia in the affected limb or even hemianæsthesia of the body. A very significant symptom is paralysis of the limb, which is never present in tuberculous joint disease. Finally, under full etherization the hysterical joint is found to be freely movable in all directions. It must not be forgotten, however, that hysterical symptoms may be added to those of genuine organic disease of the joint.

Hysterical paralysis may be caused by emotion, such as fright, anger, chagrin, or disappointed love. It may vary in degree from slight loss of power to total palsy. The deep reflexes of the affected side are usually increased and the skin reflexes abolished. The tendency to contracture is often marked; some cases, however, present a flaccid type. In mild cases the nutrition of the limb is not affected, but in severe cases of long duration slight but distinct loss of volume may be noted. True atrophy with reaction of degeneration is practically unknown, and when present must throw a doubt over the exactness of the diagnosis. Hysterical paralysis is often accompanied also with anæsthesia or hyperæsthesia. The anæsthesia is likely to be sharply defined and limited to the paralyzed part. The boundary of the anæsthetic area will be at right angles to the long diameter of the limb. The paralyzed part may become œdematous and blue or mottled. The hyperæsthesia accompanying hysterical paralysis is usually hyperalgesia. This hyperalgesia may be attended with contracture. The painful cramp-like state of the muscles causes the patient to cry out and to shed tears. Hysterical paralysis is not as a rule confined to the distribution of particular nerve trunks; in other words, it is central, not peripheral. Contracture is very likely to coexist with paralysis in hysteria, still this is not a constant rule. Neither is the reverse true: that a contracted limb or muscle is always paralyzed. Hysterical contracture is most obstinate and resisting, being very difficult to overcome even with great force. Moreover, the antagonistic muscles are involved; in other words, the limb is drawn into a vise-like immobility. The contracture is sometimes so persistent that it does not relax even in sleep. It does relax, however, under ether or chloroform.

The duration of hysterical paralysis may be greatly prolonged. Some cases recover promptly, but others persist so long and simulate so closely the effects of organic disease that even the most careful observer may come to distrust the exactness of his diagnosis. The

termination of hysterical paralysis is sometimes sudden, following some shock or strong mental or moral impression. Sometimes, however, recovery is gradual under well-directed treatment.

IX. TUMORS.

Of the tumors affecting the arm and forearm none is peculiar to this locality. KELOIDS following scars of any sort are found here as elsewhere, as are the other forms of neoplasm which may develop from the skin or its appendages. FIBROMATA may occur on the arm in the form of painful subcutaneous nodules over the course of the superficial nerves. LIPOMATA are found with considerable frequency upon the upper extremities. They are most commonly of the cutaneous variety, and are found chiefly upon the posterior side of the arm and upon the ulnar side of the forearm, frequently also upon the shoulders and over the scapula. They have also been found burrowing beneath the muscles of the forearm.

SARCOMA sometimes occurs here as a primary growth, usually in the callus of a fracture or as a tumor of the bone. Secondary metastatic sarcomata may of course be deposited from the blood-vessels in the arm as elsewhere. In this case they are generally seen as subcutaneous sarcomatous nodules.

CARCINOMA very rarely occurs excepting as a secondary growth from epithelioma of the hand. Epithelioma of the hand in turn develops with comparative frequency in old age from purely benign warts which are so frequently encountered upon the fingers, and a case has recently come under observation in which a verrucous condition existed symmetrically on the extensor aspect of each elbow, suggesting the possibility of a primary carcinoma in this region with a pathological history similar to that of epithelioma of the hand.

Leonard W. Bacon, Jr.

ARMY FIELD HOSPITAL ORGANIZATION.—The organization of a national military force must be so flexible as to permit of an efficient adjustment to the conditions of peace as well as to those of war. The United States Army as authorized by Congress consists of a number of regiments each subdivided into companies composed of a prescribed number of officers and enlisted men. In times of peace the regimental organization may be said to exist only in a latent condition, as the companies of a regiment may be scattered for garrison duty at various military stations, each having no communication with the others except that usually, but not always, all are serving in the same military department and under the command of the same general officer. The army practically consists of the garrisons of sea-coast fortifications, of posts on the national frontiers, and of certain important points in the interior. In time of war, however, the companies are aggregated under the regimental flag, the regiment being the tactical unit for war purposes. Two or more regiments under the same immediate commander constitute a brigade; two or more brigades constitute a division, and two or more divisions form an army corps. The medical organization of the army must have a similar flexibility to enable it to do its duty efficiently under these different conditions.

At a small post garrisoned by one or two companies in time of peace, one medical officer has to discharge all the duties of the medical department. He is the sanitary or health officer of the command, charged with the duty of supervising the hygiene of the post under the direction of the commanding officer and of recommending such measures as he may deem necessary to prevent or diminish disease. He is the surgeon in charge of the post hospital, responsible for its condition and efficiency, its food and medical supplies and its medical records. He is attending surgeon, responsible for the proper care and judicious treatment of the sick and wounded; and as commanding officer of the detachment of hospital corps men on duty at the post, he is responsible for their subsistence, clothing, and equipment, for their instruction

in their special duties, and for their discipline. At a larger post, where two or more medical officers are stationed, the senior medical officer is responsible for the whole of the work of his department, but the details of certain of the duties are carried out by his assistants.

When a small expeditionary force of one or two companies leaves a military post a medical officer is assigned to accompany it. Before starting, this medical officer duly considers the probable issues of the expedition as affecting the well-being of the men engaged in it, and makes suitable provision for their occurrence so far as can be done with existing facilities or under existing restrictions. From the supplies of the post hospital he obtains such medicines, instruments, dressings, stimulants, and medical comforts as may be necessary. If the military operations are to be conducted in a difficult mountain country these supplies are packed on mule-back; but if the roads are passable to wheeled vehicles, an ambulance wagon accompanies the expedition for the transportation of sick or wounded men, while stores and hospital canvas are carried in one of the heavier wagons. An acting hospital steward and a few privates of the hospital corps constitute the personnel of this elementary field hospital. On the march the ambulance wagon follows in rear of the column of troops, constituting an ambulanc or travelling hospital. When camp is reached the medical officer selects a suitable site for his hospital tents, to which his patients are transferred and in which they are fed and otherwise cared for by his men. If casualties occur from an engagement with the enemy, the medical officer gives such aid to the wounded as is possible on the field and superintends their removal to the hospital, the ambulance wagon or stretchers being used for their transportation according to the distance or to the character of the injuries sustained in individual cases. At the hospital the needful surgical assistance is rendered and the wounded are treated until facilities are afforded for their transfer to some permanent military post. But the military conditions necessitating advance or retreat may call for the removal of the wounded from the field hospital at the earliest possible moment, in which case, if the ambulance is insufficient for the needs of the occasion, certain of the supply wagons which have been emptied during the progress of the march or campaign may be utilized for their transportation to some neighboring post or with the command until an opportunity is afforded of transporting them to a permanent establishment.

If the command is larger, consisting of several hundred men, provision is necessarily made for a larger number of sick and wounded. The surgeon is accompanied by one or more assistants, and by a hospital steward in charge of supplies. The hospital train consists of two or three ambulances and a heavy wagon containing the supplies, tents, stretchers, hair mattresses, blankets, and a mess chest and kitchen utensils. Before starting on the expedition assignments of men are made for hospital duty, as for stretcher bearers, cooks, and nurses. The surgeon exercises general supervision, acting as medical officer on the staff of the commander, or as health officer of the command. The senior assistant has charge of the ambulanc hospital; the junior keeps the records and carries out special instructions in individual cases.

Since the close of the civil war many such expeditions have been sent out from our military posts, and in some of these, as in the Sioux Indian disturbances of 1890, several thousand men, detached from various military posts, were organized for field service. Each detachment brought with it to the rendezvous its medical officers, hospital corps men, ambulances, and medical supplies for the formation of the medical department of the expeditionary force. The chief surgeon of the consolidated command organized this department. He established a hospital for the treatment of serious cases of sickness or wounds, and assigned medical officers, stewards, nurses, cooks, and attendants to carry on its work. He organized an ambulance corps and a company of litter bearers to operate in connection with the hos-