

TRAINERS JOURNAL

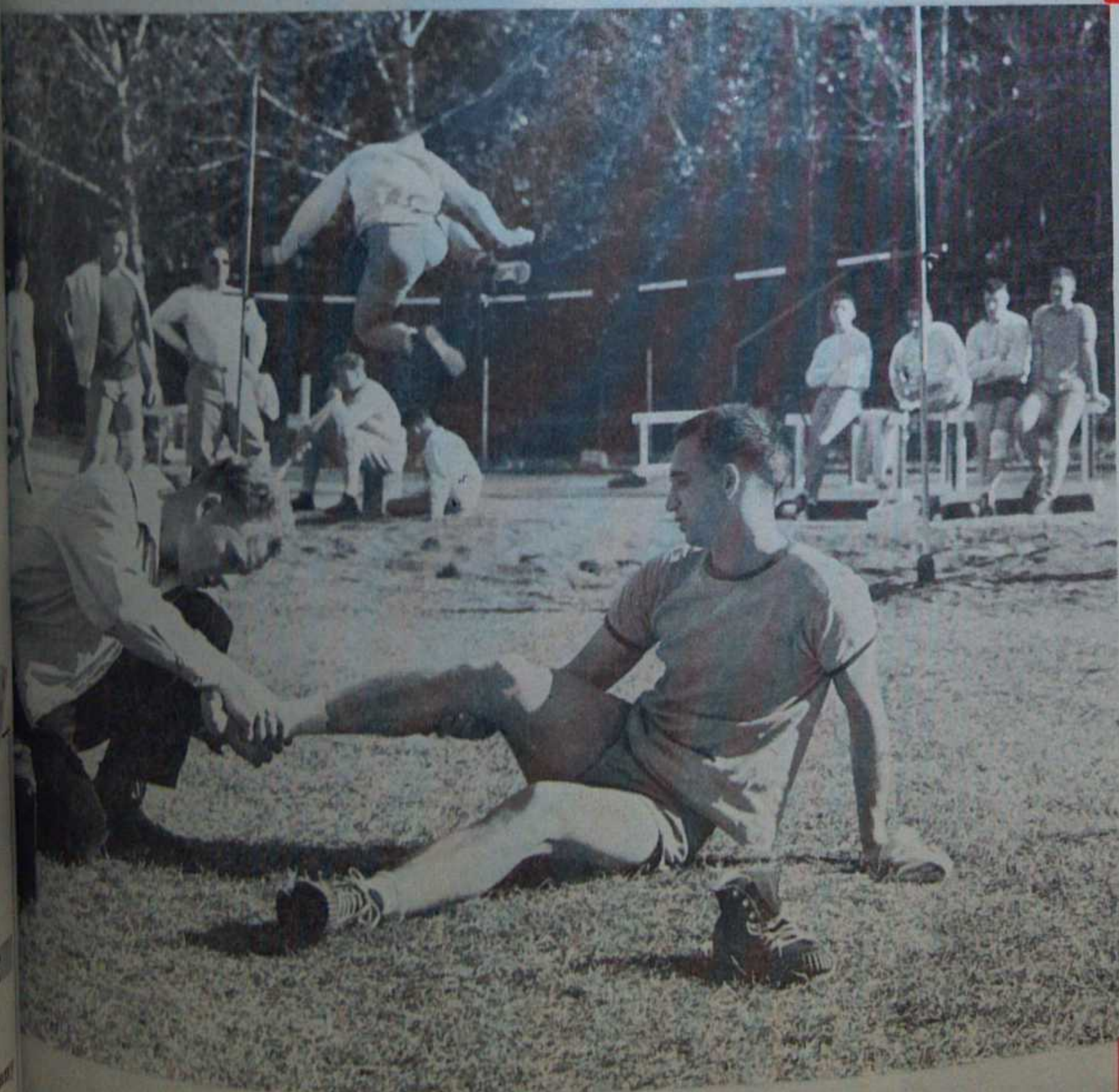
SECTION

The NATIONAL ATHLETIC TRAINERS ASSOCIATION

APRIL, 1943

No. 8

Official Publication
Of the National Athletic
Trainers Association



The Anatomy of the Shoulder
W. W. Tuttle, Ph. D.

Treatment of Acromioclavicular
(Shoulder) Separation
Eddie Wojecki

The War and Athletics
Major S. E. Bilik

Phil Hudson, assistant trainer
at the United States Navy Pre-
Flight School, Athens, Georgia,
checking a cadet's ankle

The Anatomy of the Shoulder

By W. W. Tuttle, Ph.D.

Professor of Physiology, State University of Iowa

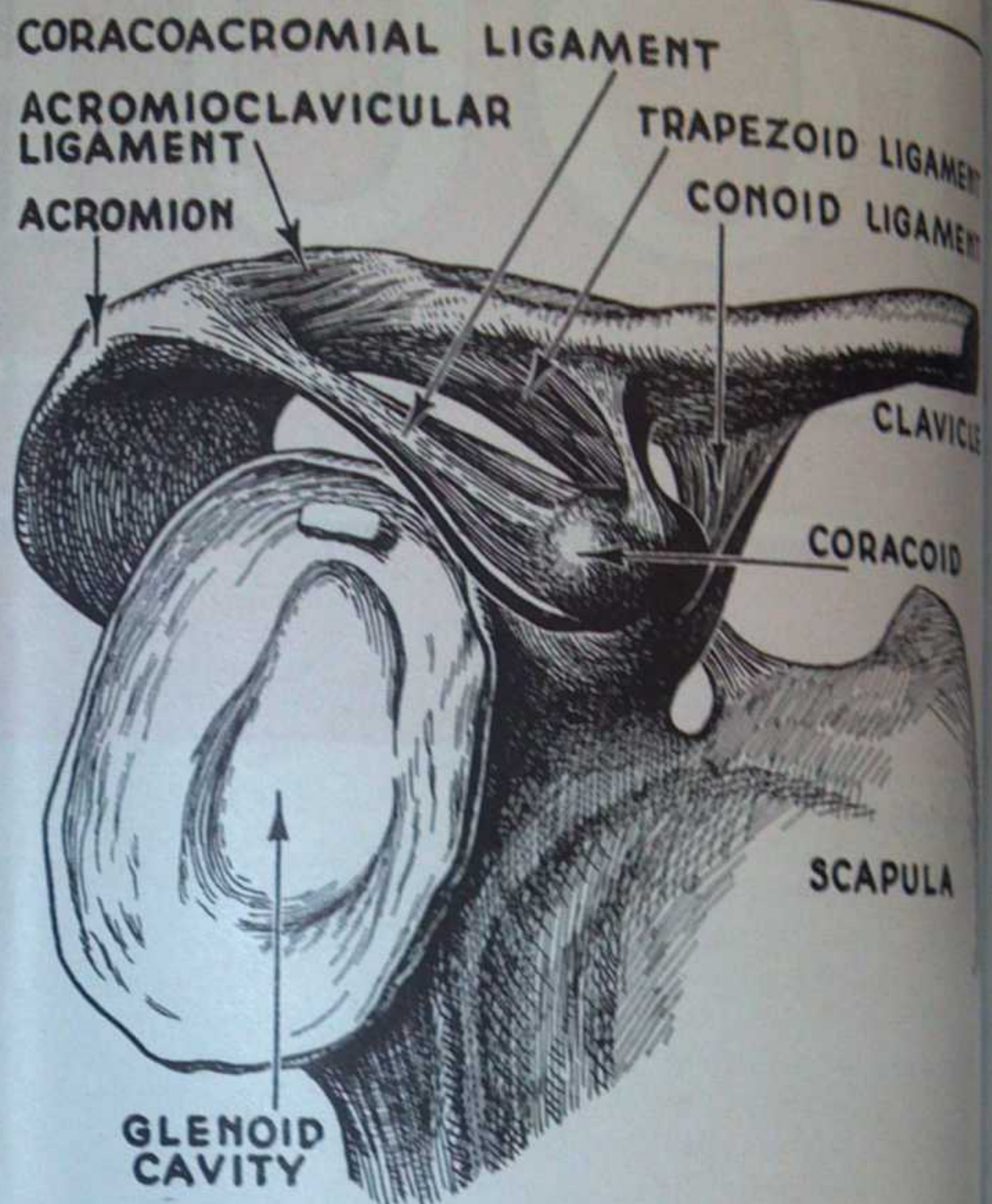
THE region of the shoulder is of special interest from the mechanical point of view because provisions are made for extensive and varied movements. The joints and ligaments of the shoulder are arranged to withstand considerable stress and strain. But since the bony levers are relatively long and the shoulder projects sideward with little muscular protection, unusual stresses often cause injury.

The shoulder girdle consists of two clavicles (collar bones) and two scapulae (the shoulder blades). One end of the clavicle is securely fastened to the sternum, and the other end to the acromion process of the scapula. The posterior part of the girdle is attached to the mid-line of the back only by muscles.

The acromio-clavicular joint, between the clavicle and the acromion process of the scapula permit a small amount of movement in every direction. The articular capsule is strengthened by the acromio-clavicular ligaments. The joint is further secured by the trapezoid and conoid ligaments which are situated some distance from the joint and extend obliquely downward from the under surface of the clavicle to the base and upper surface of the coracoid process.

The scapula literally hangs from the clavicle by the conoid and trapezoid ligaments. A sharp blow downward on the top of the shoulder puts stress on these ligaments as well as on the capsule of the acromio-clavicular joint and the intraclavicular ligament of the sternal joint.

Acromio-clavicular dislocation is perhaps the most common type of shoulder injury especially among those engaging in contact sports, not only because of the flat articular surfaces but also since there is nothing to retain the bones in position except ligaments.



Treatment of Acromioclavicular (Shoulder) Separation

By Eddie Wojecki, Civilian Trainer

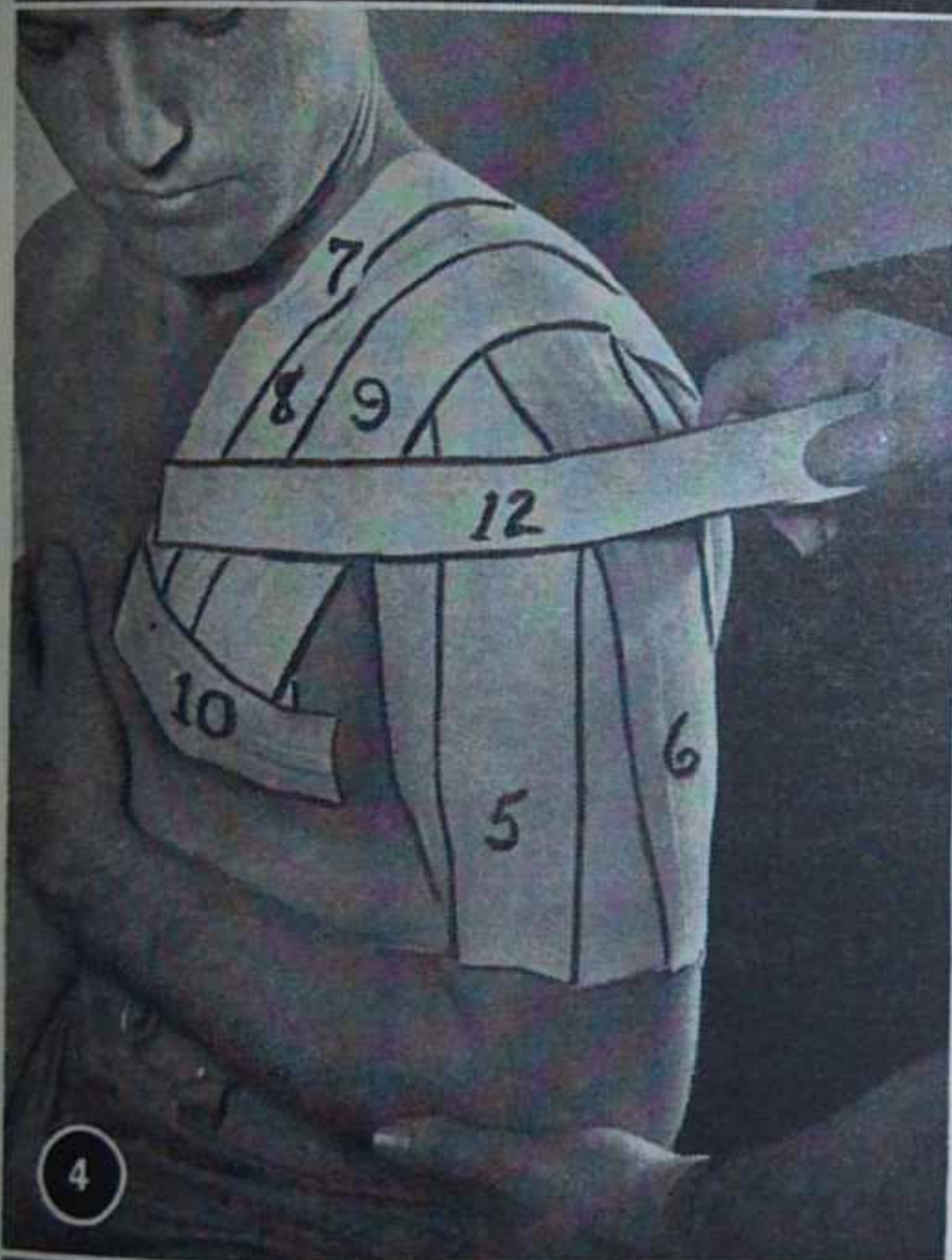
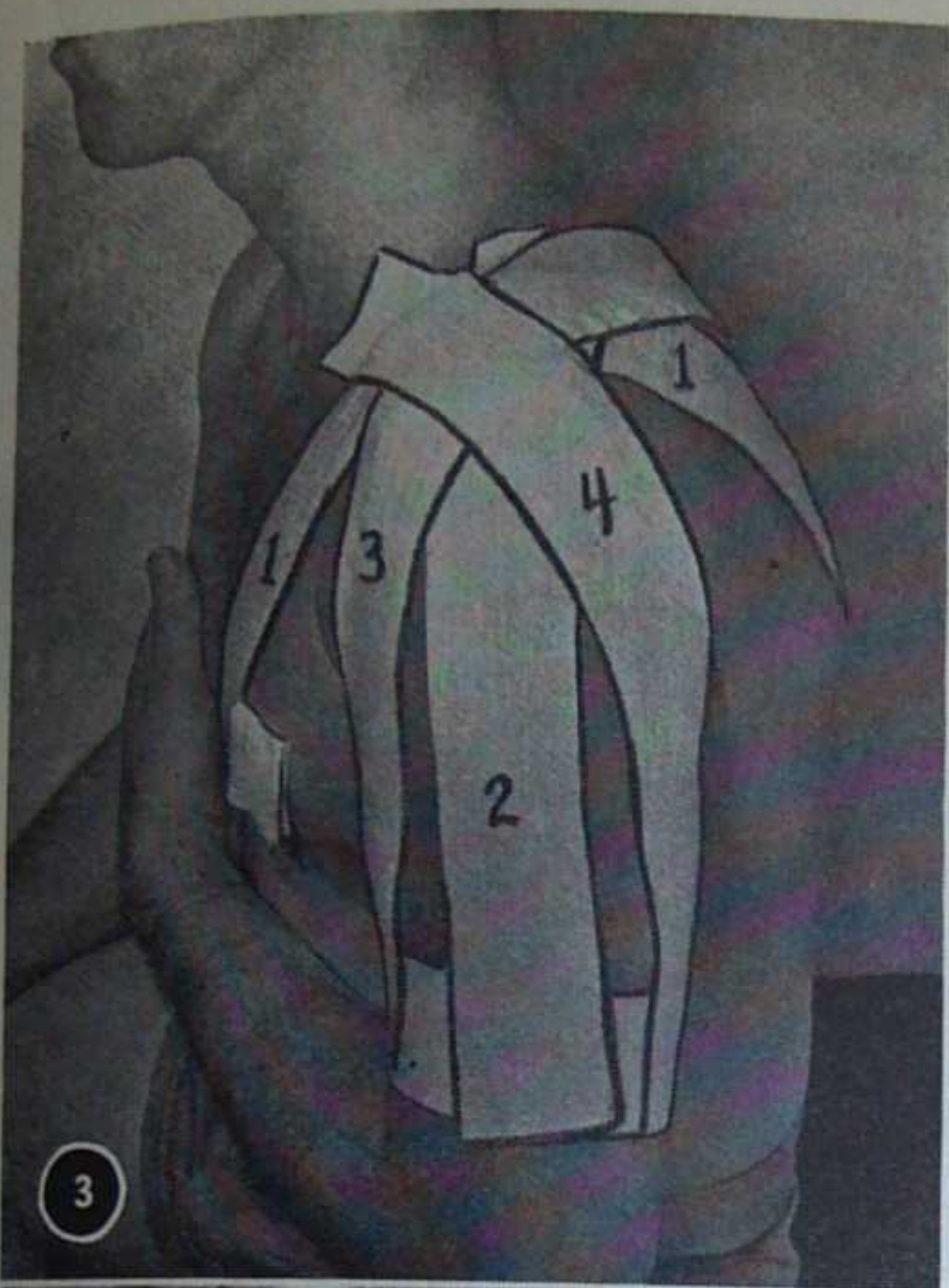
U. S. Navy Pre-Flight School, Athens, Georgia
Formerly Head Trainer at Louisiana Tech.



IN body-contact athletics such as those used to develop toughness and aggressiveness in our Navy's fledgling aviators, no portion of the anatomy carries a greater burden than the shoulder.

oulder
IT
TRAPEZOID LIGAM
CONOID LIGAM
CLAVI
CORACON
SCAPULA

icular



The proper diagnosis and treatment of shoulder injuries is therefore, highly important in a training center like ours, where improper care might bring inexcusable delays to Uncle Sam's fighting plans.

Since space is necessarily limited, I shall confine this discussion to the diagnosis and treatment of only one of the numerous types of injuries to which the shoulder is subject, namely the acromioclavicular separation. Except for the fracture, no shoulder injury requires more painstaking treatment than this, if complete recovery is to be assured.

Shoulder separation, as the acromioclavicular injury is commonly called, may result from falling on the elbow or extended arm with sufficient force to cause a separation in the acromion process. Another common name for this type of injury is football shoulder, because it is so often caused by blocking. The chief reason for the frequency of this injury in football is faulty shoulder pads which give insufficient protection to the shoulder points. The cantilever type of pad is a valuable safeguard against this painful injury. Linemen in football should never go into a game wearing the lighter pads designed for backfield men.

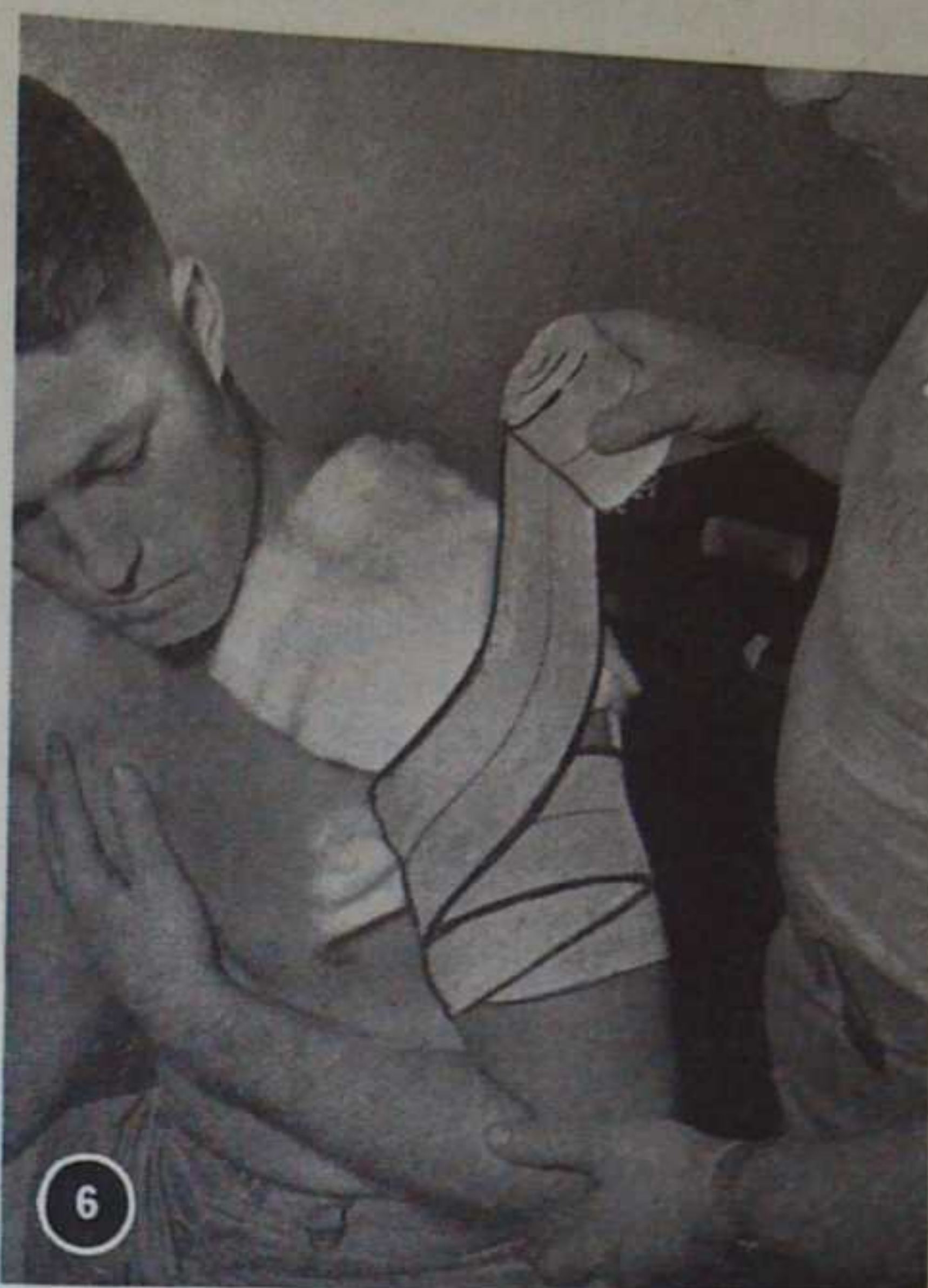
The less serious cases show a bump or lump on top of the shoulder at the acromion process while the more severe give the shoulder a drooping appearance which is often mistaken for a dislocation.

Competent diagnosis is, of course, important since fracture is always a possibility. X-ray is, in fact, the only sure way of detecting particles of chipped bone which may accompany a shoulder separation and give the athlete considerable trouble in later years. More serious shoulder fractures are usually easy to diagnose from the deformity and the pain which they cause. The athlete's tendency in such cases is to push his shoulders back, as far as possible, to ease the pain. Dislocations are equally easy to detect because of the severe pain and the pronounced deformity.

If no fracture or dislocation is present, the shoulder injury may be diagnosed by a function test consisting of flexion, extension and circumduction of the upper arm. Strains and sprains are accompanied by localized tenderness and limited function. Contusions and torn muscles are

detected by means of passive function with palpation, the injured muscle being found by pressure.

Acromioclavicular separation is the diagnosis when the athlete is unable to raise



ONE of the Navy's mighty little men is civilian trainer Eddie Wojecki who helps keep our future "Navyators" in fighting trim. A physical education graduate of the University of Warsaw in Poland, Eddie got a B.S. degree in Biology at Louisiana Tech, Ruston, Louisiana, where he served for eight years as head trainer, track and boxing coach until the Navy claimed him. Earlier he had been head trainer at Howard College, Birmingham, Alabama.

his arm to shoulder level or to slide his hand across the chest to the opposite shoulder.

The first step in the treatment of shoulder separation is reduction of the injury. To accomplish this the athlete, seated in a chair, flexes his arm and places his hand high on the chest near the opposite shoulder. The trainer, standing behind him, grasps the elbow in both hands and pulls upward, as seen in Illustration 1, until the shoulder snaps audibly into position. Next the injury is treated with cold application for at least two hours. Following this, the shoulder is taped in the manner shown in the accompanying illustrations. To prevent irritation and to give greater adhesive quality, the skin is first shaved clean and painted liberally with tincture of benzoin compound before the taping is applied.

As shown in Illustration 2, the athlete's elbow is pressed up with the trainer's knee to maintain reduction while the taping is being applied. Two-inch tape is used throughout.

First, an anchor strip is applied once around the arm just below the bulge of the bicep. A 2 by 4-inch strip of quarter-inch felt is placed at the shoulder tip directly over the acromion process and is secured by a strip of adhesive which is applied with considerable upward pull and

terminates on the lower point of the scapula.

Illustration 3 shows the position of strips 2, 3 and 4, all applied with a strong lift. Strip 2 terminates at the base of the neck, strip 3 at a point between the spine and the lower edge of the scapula, strip 4 at the juncture of clavicle and sternum. Next a strip of gauze is placed over the nipple for protection and held there by a light application of benzoin.

In Illustration 4, strips 5 and 6 are carried up to the base of the neck with the same strong upward pull. The arm has now been securely anchored in position and the next step is to apply strips 7, 8, and 9 which will keep the shoulder back where it belongs. Starting at the gauze over the nipple, the three strips are successively applied with a strong pull over the shoulder to terminate at the lower edge of the scapula. Strip 10 and strip 11 (not shown) are placed horizontally over the forward and rear terminal points of 7, 8 and 9. Strip 12 which terminates at the center of the back is applied as shown, so as to limit the function of the shoulder joint and upper arm.

In Illustration 5, anchor strip 13 is applied and the lower arm is then placed in a comfortable sling so that the shoulder may be immobilized.

This bandage and sling should be kept

on for three days, after which heat treatments and massage are begun. Refer to the article in this series by Bill Dayton on the subject of physiotherapy, which appeared in the March issue.

In severe cases it is well to use the taping as described above after each day's treatment until the shoulder responds enough to permit limited movement. Then hot packs are applied daily as shown in Illustrations 6, 7 and 8. A generous quantity of one of the standard counter-irritants is applied to the shoulder and covered with cotton as seen in Illustration 6. Cotton is also placed under the armpit. A roll of elastic bandage is wound thrice around the upper arm, care being taken that the wrapping is loose enough to permit circulation in the arm. The bandage is then carried over the point of the shoulder, across the back, under the good arm, across the chest (Illustration 7), over and under the injured arm, and back up over the shoulder point to encircle the body a second time. The bandage terminates at the center of the back where it is anchored with a strip of adhesive. In Illustration 8, the completed bandage is shown. The two crossing strips of adhesive are used to keep it firmly in place. This pack is changed daily after each heat and massage treatment, until the shoulder is well.

The War and Athletics

By S. E. Bilik

Major Army Medical Corps

THE orthopedic clinic of a large army camp hospital . . . shoulders, elbows, hands, backs, knees, ankles . . . bones, joints, muscles, ligaments, tendons . . . fractures, dislocations, sprains, strains. . . . A college training room on a vast scale . . . the hospital serves some forty thousand souls.

The athletic coach selects his material from boys of near physical perfection. The army, however, must take men of eighteen to forty-five many of whom have led relatively inactive lives, and proceed to whip them into condition, rivaling that of the best trained football teams. You may with justifiable scepticism question whether this goal is achieved. You would be inclined to doubt it, if all of your time were spent in hospital clinics—the perspective here is obviously distorted. A jaunt to the drill fields quickly drives home the fact that for every soldier who "can't take it" countless hundreds have been metamorphosed into rough and tough fighters just aching to get at the Nazis and the Japs.

We, in the training field, who have always believed that athletes are born and not made, have ample reason to change our viewpoint. Once developed physically to the point where he possesses abundant strength and endurance, even the appar-

FOR many years Dr. Bilik served as trainer of the athletic teams at the University of Illinois. Before his graduation from the New York University school of medicine, he served as hospital sergeant in the medical corps of the United States Army and later as athletic director of Madison Square Garden gymnasium. Dr. Bilik has in recent years engaged in private practice in New York City. Now serving in the medical corps of the army, stationed in a hospital in the South, he is specializing in physical therapy.

— Editor's note.

ently hopelessly clumsy recruit begins to display heretofore dormant and unsuspected agility, co-ordination, and aggressiveness—the three vital essentials of a good athlete—and of a good soldier. The present carefully planned military training routine combined with an equally intensive physical conditioning program in our colleges and schools, should breed vast numbers of excellent athletes. We are going through a period of rejuvenation and revitalization of our man power. Ultimately, when these millions of splendidly conditioned men who have felt the thrill of thorough health and the deep joy of athletic activity, pour back into civil life, we

may anticipate a nation gone utterly mad over competitive sports.

The basic principles that govern scientific training and conditioning in athletics have been made use of in the services. There is the same carefully planned, intelligently graduated period of preliminary training which aims to prepare every tissue and organ of the body to withstand exacting and gruelling demands upon them. Inherent or acquired disabilities are systematically corrected before the recruit is permitted to advance to more rigorous training routines. In the army, even as in athletics, we may find many a splendid specimen of humanity on pedestals of brittle clay—poor feet. Ignoring the latter may lead to the loss of excellent combat material. Again you may recall Floyd Eastwood's insistence on the need of from four to six weeks of carefully progressed basic training in order to lessen the frequency of injuries. Without the weeks of basic training, we would count a terrific loss of potential combat troops. Close observation of modern military training convinces one that it is fully as strenuous as the methods used in conditioning football teams—and perhaps more so.

Incidentally, this is the place where the

physical education schools can be of students and the preparedness effort. fort should be made who will shortly My boy Gene will I have written to education of his boy be made to fo routine of physical him for the exact forced to undergo In military training petitive athletics, i withstanding the avoid them. Their ceptibility—a weak stress. There are th mechanical forces, natural clumsiness their share of inju too, some men will injuries and there "weak sister" makin plaints.

Injuries of the kn loosening or actual lunar cartilages are puzzling that the k the brunt of activity have so profound a ture slip up in maki the menisci so weak fragile? For a good have been stressing t gressively toughenin the knee joint itself against injury. The most apt to produce of the knee should b ening the latter. It to devise a series of this purpose.

Physical therapy g the sun during war. of acute injuries or rehabilitation after ex surgery, the physica great opportunity to his modalities. Out dred surgical cases n an average of four daily received intensi The percentage is ev hospitals where more reliable triad—heat, n —intelligently and kn mains the standby in act type of heat—radi immersions—is not as respective advocates lieve. If I were assign ing fronts of Africa, physical therapy equip want would be plenty few small wash tubs—

physical education staffs of colleges and schools can be of invaluable aid to their students and the nation's military preparedness effort. Even at the cost of actual neglect of academic studies, every effort should be made to condition the boys who will shortly be going into the services. My boy Gene will be eighteen in October. I have written to the director of physical education of his college, pleading that the boy be made to follow an intensive daily routine of physical training, to prepare him for the exacting strain he will be forced to undergo in the army.

In military training, even as in competitive athletics, injuries will occur, notwithstanding the most careful efforts to avoid them. There is the individual susceptibility—a weak spot that gives under stress. There are the chance circumstances, mechanical forces, momentary inalertness, natural clumsiness—all of which cause their share of injuries. In the services too, some men will make light of serious injuries and there will be the occasional "weak sister" making much of minor complaints.

Injuries of the knee and particularly the loosening or actual rupture of the semilunar cartilages are quite frequent. It is puzzling that the knee joint which bears the brunt of activity in modern life should have so profound a weak spot. Did nature slip up in making the attachments of the menisci so weak and their texture so fragile? For a good many years now, we have been stressing the importance of progressively toughening the semilunars and the knee joint itself in order to inure them against injury. The movements that are most apt to produce internal derangement of the knee should be utilized in strengthening the latter. It should not be difficult to devise a series of effective exercises for this purpose.

Physical therapy gains its just place in the sun during war. Whether in the care of acute injuries or in the vital task of rehabilitation after extensive and involved surgery, the physical therapist has his great opportunity to prove the value of his modalities. Out of some seven hundred surgical cases in a general hospital, an average of four hundred, thirty-five daily received intensive physical therapy. The percentage is even higher in station hospitals where more rapidly healing conditions are treated. In general, the old reliable triad—heat, massage, and exercise—intelligently and knowingly applied remains the standby in military medicine. Here too, you begin to realize that the exact type of heat—radiant, diathermy, hot immersions—is not as important as their respective advocates would have us believe. If I were assigned behind the fighting fronts of Africa, Australia, the Solomons, without any of our very elaborate physical therapy equipment, all I would want would be plenty of hot water and a few small wash tubs—and I am certain

the therapeutic results obtained would challenge those of a fully equipped department. Here too, we must keep in mind, that in military service even as in athletics, a man in good physical condition may be expected to show vigorous spontaneous rehabilitation.

The latter can be hastened by means of an intelligently prescribed routine of physical therapy, specific for each case, and applied intensively. If a given routine of physical treatment is good for rehabilitation, why limit this valuable aid to a period of half an hour out of the twenty-four? Ever since my days as an athletic trainer I have adhered to a policy of giving three, or four, or even more, treatments daily in cases wherein I believed that this intensive routine would hasten complete recovery and cut down the duration of hospitalization. This policy has netted rich dividends in the form of most satisfactory results.

**Announcing Interesting Articles
for the May Issue of the
Trainers Journal**

**HAND AND WRIST INJURIES
PHIL HUDSON**

**United States Navy Pre-Flight School
Athens, Georgia**

**TREATMENT OF BASEBALL INJURIES
Lieutenant HOWARD HAAK**

**United States Navy Pre-Flight School
Del Monte, California**

**NUTRITION AND ATHLETICS
FRANK J. WIECHEC**

Athletic Trainer, Temple University

The college trainer strives to keep his injured men in shape by means of special exercises. We are using similar methods in reconditioning our patients. Every effort is made to start the latter on exercises, graded in accord with the patient's general physical condition and his specific disability.

Athlete's heart, the terrifying bugaboo of those who would discourage competitive athletics, should certainly be a common occurrence in the military services where millions of men taken from soft lives of relative inactivity undergo most strenuous training such as running difficult obstacle courses, hiking many miles under heavy pack, double timing, etc. The heart specialist of the station hospital informs me that he has still to see a single case of anything approaching heart strain or "athlete's heart." Is it not about time that this scarecrow be buried for good and all?

While the general training program aims at the development of strength, ruggedness, durability, co-ordination, courage, aggressiveness, team work, the will to win, the readiness to "carry on," when there is nothing in you, except the will which says

to you "hold on," the government lays a great deal of stress on the promotion of athletic activities for recreation and morale. It matters not how hard a soldier drills and trains, when the day is done, he will spontaneously seek to participate in his favorite sport or will hurry to watch a football, basketball, or baseball game by the more expert of his buddies. "It was somewhat amusing," writes a prominent columnist, "that the youngster after all he has been through in the army, sent me, not a picture of himself posing with a big gun, or standing in front of his company, but a photo of himself lacing out a three-base hit. It was truly a typical American boy stunt."

Only men who have never participated in our popular team sports, fail to appreciate the depth of the incurable American malady, we may call "athletitis." Thus intermittently some publicity seeker will take a roundhouse swing at athletics, only to be rewarded with justifiable ridicule. Those who are concerned with the development, and the preservation, of fighting morale have a profound belief in the value of our national competitive games. The love of our sports; the hero worship which we shower on our McMitchells, Sinkwichs, Rices; the bleacher quarterbacking, wisecracking and razzing—all this is part of the American Cavalcade.

In times of stress, athletics constitute recreation far superior, in promoting a combative spirit, to the radio, the movies, flowery speeches or clever editorials. Athletics tend to develop a fighting spirit that does not recognize failure or defeat. When the newspapers trumpet news of our Tunisian retreat, our reaction is, "We'll get them yet!" Incidentally, games are mighty good physical, mental and spiritual exercise for the spectators, too. The 18,000 maniacs watching a track meet or a basketball game at the Madison Square Garden are going through a most vigorous workout which will leave them in a profuse sweat, gasping for breath, and badly in need of a rubdown. Physiologically, we can prove that the muscular hypertonicity brought on by the mental stimulus of an exciting athletic contest is a form of strenuous exercise, perhaps as strenuous as the physical condition of the spectators justifies.

A good many college trainers are now in the services and many more are eager to get in, and put their shoulder to the wheel. Many of you have been writing to me asking my help to assist you in placing yourself, where your specialized training will do the most good. To the older men I say "sit tight!" You can do a world of good right where you are, helping to condition the boys, who are approaching the enlistment age, and those boys assigned to your school by the government for specialized training. Lend a hand with the general physical education program. Be a trainer to all the boys.