

TRAINERS JOURNAL

SECTION

The NATIONAL ATHLETIC TRAINERS ASSOCIATION

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No. 3

Official Publication
Of the National Athletic
Trainers Association

Injuries of the Knee Joint
Frank D. Dickson, M. D.

Taping for Knee Injuries
Bill Frey

Special Exercises for
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Relaxation and Simple Living
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University of Alabama
Frank Thomas, Left
Football Coach
Bill Roney — Trainer, Right





The High School Trainers Plan in Operation

Examination No. 1

THIS is the first examination for the high school students who are taking the training course offered in the Trainers Journal and sponsored by the National Athletic Trainers Association. This examination should be given by the coach, one of the faculty or by the medical supervisor. The student should be graded each month and graded on the final examination that will appear in the June, 1942 issue of the Trainers Journal. A certificate will be awarded to those students who complete the first year's work. A Junior certificate will be awarded to those students who complete the full four-year course. This Junior certificate will enable the student to act as assistant trainer of athletics in a college or university that has an opening for this type of work. Quite often, the assistant trainer can earn his way through college

by working in the training room. We often have calls here at the home office for

STUDENT trainers at work at the Ottawa, Illinois, Township High School are shown in the picture above. The player being taped is William Mooney. Martin Vignoli is senior manager and head trainer with Robert Pierson assisting. Robert Leix in charge of the freshman-sophomore team has as his assistant Harold Ball. Athletic Director Robert McKay and Coach Homer Hankenson are interested spectators. Mr. Hankenson has enlarged somewhat the plan as suggested by the National Athletic Trainers Association, in that he selects six freshman boys each year. Grades, dependability, interest and desire to co-operate determine the selection. The student trainers are given awards and trips.

Mr. Hankenson writes, "These boys save me a lot of wear and tear and they are getting a big kick out of the work."

boys who have just that type of work background.

Some of these questions are taken from the High School Trainer's Lesson No. 1 in the September issue of the Trainers Journal and some are taken from the articles that appeared in that issue.

1. Name the three common types of ankle sprains. Define each. Which type is most common.
2. How is the common type of ankle sprain received.
3. Where do you notice the greatest amount of swelling.
4. Define a Potts fracture.
5. What collects in an ankle that has been sprained.
6. What is the first treatment for a sprained ankle after you have determined that there is no fracture?
7. How often and for how long a time should this treatment be administered?
8. Why should the ankle be X-rayed?

(Continued on page 60)

Another

IN order trustees Trainers Association have recently Our association's response to the questionnaire. We have a trainer in operation throughout the country. Trainers are not necessarily this man with each conference. We hold a good time for trainers in At that meeting the ensuing men appointed men who have National Association published, for the

The conference explain the National Association range for grade

Watch for

What A

SEVERAL that we announce how to attend a meeting of the National Football Coaches Association in Detroit, the trainers are attending a meeting of the association on topics they

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Officers National Athletic Trainers Association
For 1941-1942

President, Lloyd Stein, University of Minnesota
1st Vice-President, John Kelly, New York University
2nd Vice-President, Henry Schmidt, Santa Clara University
3rd Vice-President, Wilbur Bohm, Washington State College
Executive Secretary and Editor of Trainers Journal, Bill Frey
Office of Publication, Iowa City, Iowa

Another Progressive Step

IN order to operate more advantageously, the trustees and officers of the National Athletic Trainers Association by a mail vote of nine to two have recently instituted a so-called conference plan. Our association is becoming too large for all correspondence to be handled direct from the home office. We have, therefore, appointed an athletic trainer in each of the many established conferences throughout the country to act as chairman of the trainers group in his conference. The chairman was necessarily appointed this year, but, in the future, this man will be elected by the trainer members of each conference. Most of the established conferences hold conference track meets. This would be a good time for the chairman to call a meeting of all trainers in the schools belonging to his conference. At that meeting the new conference chairman for the ensuing year would be elected by the group. The men appointed this year to the chairmanships are men who have shown much enthusiasm, since the National Athletic Trainers Association was established, for the association's policies and program.

The conference chairmen will communicate with the athletic trainers in the member institutions, will explain the qualifications for membership in the National Athletic Trainers Association and will arrange for get-together meetings.

Watch for a communication from your chairman.

What About an Annual Meeting?

SEVERAL suggestions have reached your editor that we have an annual meeting. This preliminary announcement is in the form of an inquiry to determine how many athletic trainers would be able to attend a meeting at the time of the annual meetings of the National Collegiate Athletic Association and Football Coaches Association to be held this year in Detroit, the last week in December. All athletic trainers and coaches who would like to attend such a meeting are invited to advise the secretary of the association at once and to offer suggestions for the topics they want discussed.

Bill Frey.

UNDER THE SHOWERS



FOLLOWING his graduation from Kansas University in 1930, Roland Logan became head trainer at that institution, prepared for the position by Phog Allen, athletic director and basketball coach. In 1933, he went to George Washington University, leaving in 1935 to serve as trainer of the Boston Red Sox. In 1938 he became head trainer and an instructor in physical education at the University of Pittsburgh. Since 1940 he has been head trainer at the United States Military Academy. His article on Relaxation and Simple Living, appearing in this issue, will be read with interest by both coaches and trainers.



HEAD trainer at the University of Michigan for the past ten years, Ray Roberts, served in the same capacity at West Point from 1924 to 1930. A member of the National Athletic Trainers Association since its organization, he is one of the trustees. Ray also qualifies as an inventor. He has invented a very fine head and ear protective gear for wrestlers.

MANY of our members are now serving in the Army, the Navy or the Air Corps. Several have written me that their national rating from the Trainers Association helped station them in the branch of the service they liked and for which they were best qualified.



THE present trainer at the University of Mississippi located at Oxford, Jack Stuart, trained the Alabama teams for some years. While at Alabama he served that state as the National Athletic Trainers Association manager. Knowing what a fine job he did for Alabama, we named him state manager of Mississippi, when he moved to that state. Jack also serves the National Athletic Trainers Association as one of its trustees. Guess what! Jack will be a lawyer some day. He spends part of his working days in the law school at Ole Miss.



THE grand old man of the Olympics, that is what they call Jake Weber. He has also served the Fordham University for the past twenty-nine years. Jake, as one of the trustees of the National Athletic Trainers Association, has served the association well.

Injuries of the Knee Joint

By Frank D. Dickson, M.D.
Kansas City, Mo.

IN the October issue the conservative treatment was given for injuries to the semilunar cartilages. We come now to the operative treatment which, in some cases, is necessary, if disability persists.—Editor's Note.

Operative Treatment.—The operation for removal of a semilunar cartilage must be carried out with rigid aseptic technic and with the use of a tourniquet. Various types of approach have been recommended, but our distinct preference is for that described by Sir Robert Jones³ (illustration 6), which may be briefly described as follows: With the knee flexed to 90 degrees over the end of the table, an incision is made, starting at the lower internal angle of the patella, for the exposure of the internal semilunar cartilage, and extending downward and outward for about 3 inches. Care must be exercised so that the incision is not carried too far downward or outward, or the patellar branch of the internal saphenous nerve will be cut, and pain down the leg or a painful neuroma may result. This incision is deepened and the joint is entered. The cartilage is readily discernible and should be examined carefully for mobility and for fracture. As stated, hypermobility of the internal cartilage in patients who come to operation is not frequent, and the usual lesion is a fracture.

This fracture may involve the anterior half (30.8 per cent in our series) or the posterior portion (19.7 per cent in our series); it may be a longitudinal split (12.3 per cent in our series) or the so-called bucket handle type, in which the split-off section turns up and lies in the joint (16 per cent in our series). In 2.6 per cent the type of fracture was not recorded, and in 20 per cent the cartilage was hypermobile. It is our custom to remove the entire cartilage if possible, or at least all except the most posterior part. If complete removal is not carried out, fracture of the posterior part of the cartilage may be overlooked and symptoms reappear later. Naughton Dunn found in two large series of cases that from 49 to 50 per cent of the fractures occurred in the posterior part of the cartilage. It should be stated, however, that many competent operators feel that the removal of the detached portion of the cartilage is sufficient.

Removal of the cartilage should start at its anterior attachment, the operator

THIS is the conclusion of the article begun in the October issue, reprinted from the Journal of the American Medical Association by permission of that publication and of the author.

first cutting the coronary ligaments, and the cartilage should be separated from before backward, while it is kept under considerable tension. One must exercise care not to injure the internal lateral ligament to which the cartilage is attached. After removal of the cartilage, the joint

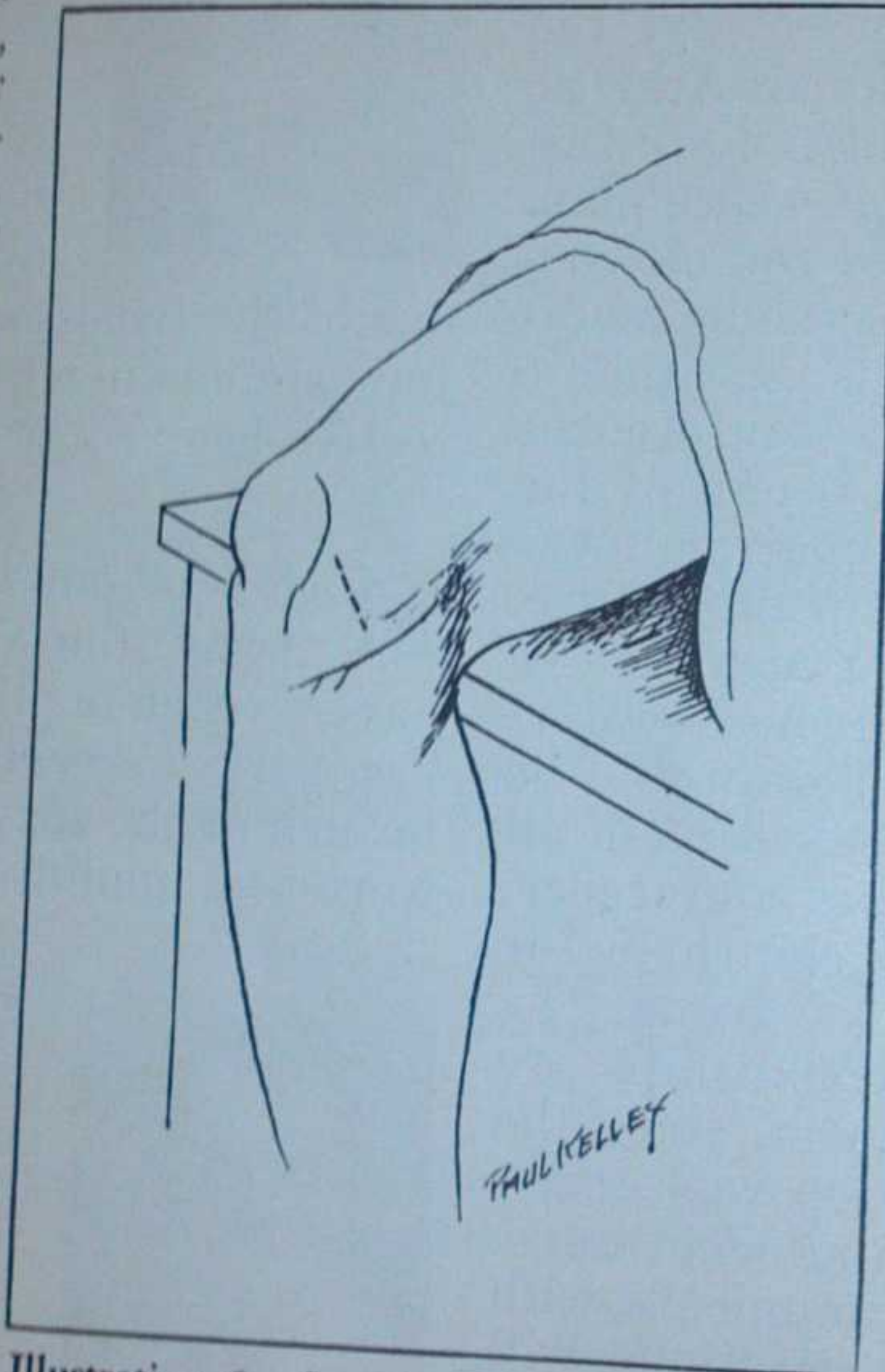


Illustration 6.—Jones's oblique incision with the knee flexed for removal of internal semilunar cartilage. The patellar branch of the internal saphenous nerve is seen below the incision.

should again be carefully inspected and the external cartilage viewed as far as possible. A good view of the anterior part of the external cartilage can be obtained by careful retraction. The wound should be carefully sutured in layers when the closure is being made. No rigid fixation is used in our clinic after operation. A pressure bandage composed of voluminous cotton dressings, tightly compressed by a broad muslin bandage so applied that the cotton projects above and below the circular turns, is all that is used. This bandage controls hemorrhage and sufficiently immobilizes the knee. Mild movements are started in four or five days,

and as soon as the stitches are removed on the tenth day active flexion and extension are encouraged and weight bearing permitted with the knee held in tension. Full use is permitted in two weeks, and normal activity may be resumed in four or five weeks.

The incision for removal of the external semilunar cartilage is exactly the same as that made for the removal of the internal cartilage except that it is placed on the outer side of the joint. At times both cartilages are involved, and both may be removed. This situation occurred in one of our cases. We prefer two separate incisions in such cases, as the cartilage can be removed with less trauma and more satisfactorily than with one large incision. The use of large incisions, such as the split patella and parapatellar approaches, is unnecessary and, in our opinion and in the opinion of many others, has distinct disadvantages in that more damage is done, the period of convalescence is prolonged and at times unnecessary residual disability results. If, on inspecting the cartilage in a knee which has been opened, one finds no fracture, but the cartilage is in any degree hypermobile, it should be removed, even if the degree of hypermobility does not seem sufficiently great to cause many symptoms provided of course definite symptoms of derangement of the cartilage were present at examination before operation.

The results of removal of cartilage when properly carried out have been excellent according to our experience and that of a host of others. In seventy-six, or 86 per cent, of our series of eighty-eight cases in which one or both cartilages were removed, the results were good, in eleven or 12.5 per cent, they might be termed incomplete and in one, or 1.2 per cent, they were unsatisfactory. By a good result is meant one which gives return of function in the knee and relief from disability, permits the resumption of the former occupation and allows the patient normal activity. By an incomplete result is meant one which relieves the symptoms but does not permit extensive activity to be entirely resumed. It should be remembered that when a displacement of cartilage has persisted over a period of months or years, secondary changes in the joint will occur, such as injury to the articular cartilages, arthritic changes, relaxation of the ligaments and loss of muscle control, and that even after the removal of the offending cartilage under such conditions, some interference will

³ Jones, Robert: Notes on Derangements of the Knee, *Ann. Surg.* 50:969-1001 (Dec.), 1909.

tion and some disability may persist although the symptoms attributable to the derangement of cartilage may be entirely eliminated. Most of the incomplete results were of this class.

Injuries to the Internal Lateral Ligament

Injuries to the internal lateral ligament are much more frequent than those to the external lateral ligament—about five to one. They are much less common than injuries to cartilage. In 241 cases of injury to the knee joint, the internal lateral ligament was involved thirteen times.

Etiology.—As in the case of injuries to cartilage, there may be factors predisposing to lesions of the internal lateral ligament, such as faulty statics, due to flat-foot, knock knee and arthritis. However, acute strain of the internal lateral ligament is, as a rule, traumatic in origin, and the form of trauma responsible is usually indirect. The most common form of indirect trauma which causes injury to the internal lateral ligament is inward bending or inward rotation—the same type of injury which causes damage to the internal semilunar cartilage.

Symptoms.—At the time of the injury there is: (1) Often a feeling as if something had torn loose on the inner side of the knee; (2) Acute pain referred to the inner side of the joint; (3) Often definite effusion into the knee and (4) pain on attempts at complete extension, owing to the fact that, in extension of the internal lateral ligament, the ligament is made tense. "Blocking" of extension is not present. The flexed position which the knee assumes is due to the greater comfort it affords, and gentle forcing will bring the knee into full extension; this is impossible with "blocking" due to a displaced cartilage. The greatest point of tenderness is on the inner side of the knee, not over the attachment of the internal semilunar cartilage but farther back and usually higher up over the femoral attachment of the ligament. Less often, the point of tenderness may be over the attachment of the ligament into the tibia.

Treatment.—Treatment of tears of the internal lateral ligament in our clinic consists of complete immobilization of the joint in a cast, extending from the upper part of the thigh to just above the ankle, for four or five weeks. At the end of this time, massage and gradually increased active movements should be used to restore function. The joint should be protected between treatments for another week. At the end of five or six weeks protection should be discarded and resumption of normal activity should be encouraged, but strain on the ligament should be prevented by elevating the inner side of the shoe, heel and sole, three-

sixteenths of an inch. The reason for rigid immobilization lies in the fact that, after strain or tearing of the internal lateral ligament, traumatic exostosis or ossification of the ligament at the site of rupture or tear, usually at the femoral attachment, may occur, and we feel that complete immobilization until repair has taken place is the safest way to prevent or minimize such ossification.

Occasionally a rupture of the internal lateral ligament may result in so much laxity of the joint as to interfere with stability and cause definite disability. Under such conditions, operative procedures designed to re-enforce the ligament by the use of fascial strips or to tighten the ligament by moving its attachment to the tibia downward, as described by Mauck,⁴ are justified and give satisfactory results. Our own preference at the present time, however, is for re-enforcement by fascial strips as being a less extensive procedure and satisfactory as a rule. At times painful ossification of the internal lateral ligament may require surgical intervention, but only if it continues to give painful symptoms. Ample time should be allowed for spontaneous recovery of the patient before one proceeds to operation.

Rupture of Cruciate Ligaments

Ruptures of the cruciate ligaments occur less frequently than injuries to the internal semilunar cartilages and about as frequently as injuries to the internal lateral ligament. In 241 cases of injury to the knee joint, rupture of the anterior cruciate ligament occurred twelve times and of both ligaments but once. The injury is frequently accompanied by evulsion of the tibial spine or its internal tubercle. This complication occurred with rupture of the anterior cruciate ligament four times in our series.

Etiology.—The cause of rupture of the cruciate ligaments with or without fracture of the tibial spine is violence, and usually severe violence. To cause rupture of both cruciate ligaments, extreme violence is necessary—such violence as would produce complete dislocation of the knee. Tears or relaxation of the anterior cruciate ligament also occur with a certain percentage of injuries to cartilage. This fact should not be lost sight of, and when a knee is opened for removal of cartilage a careful inspection of the cruciate ligaments should always be made before it is closed. Failure to recognize a tear or relaxation of the anterior cruciate ligament is often responsible for an incomplete result following removal of cartilage.

Symptoms.—The history of a severe lateral bending or twisting of the knee is always suggestive, and if at the same

time abnormal mobility is present, suspicion should be still further aroused. The anterior cruciate ligament is tense when the knee is fully extended and prevents the tibia from being displaced forward on the femur. It follows then that, if in the extended position the tibia can be displaced forward on the femur, there is a rupture or stretching of the anterior cruciate ligament. The posterior cruciate ligament is tense in complete flexion and prevents the tibia from being displaced backward on the femur. It follows then that, if in complete flexion the tibia can be displaced backward on the femur, there is rupture or stretching of the posterior cruciate ligament.

Our own preference, however, for determining relaxation or rupture of the cruciate ligaments is to have the patient sit on a table with the knee flexed to about a right angle and the heel lightly braced against the seat of the examiner's chair. If the leg is firmly grasped with one hand just below the bend of the knee and the lower end of the femur steadied with the other hand, abnormal forward or backward movement of the knee can be readily determined by firmly pushing and pulling the leg backward and forward. When the knee is in this position, which is midway between complete flexion and complete extension, both ligaments should be moderately tense and permit no backward or forward movement in the knee joint. If such movement is present, a rupture or relaxation of one or both ligaments is present. Further tests with the knee in the extended or flexed position will then make possible a differential diagnosis between involvement of the anterior and of the posterior ligament. If a definite diagnosis is impossible, the final diagnosis should be left for determination at operation.

The most constant sign of fracture of the spine of the tibia or its internal tubercle is obstruction to full extension. The "block" feels like a definite bony obstruction and is quite different from the rubbery "blocking" which occurs when a semilunar cartilage is injured. X-ray examination will demonstrate the fracture of the spine or its internal tubercle.

Treatment.—The management of a ruptured anterior cruciate ligament or evulsion of the tibial spine may be separated into that of the acute case and that of the chronic case with instability of the knee and persistent disability. The former should be conservative, the latter operative.

Conservative treatment consists of absolute immobilization of the knee in complete extension for two or three months. The repair of a ligament requires from five to seven weeks, and no strain should be placed on the knee during the period

(Continued on page 48)

⁴ Mauck, H. P.: Virginia M. Monthly 47:18 (April) 1920.

Taping for Knee Injuries and the Prevention of Injuries

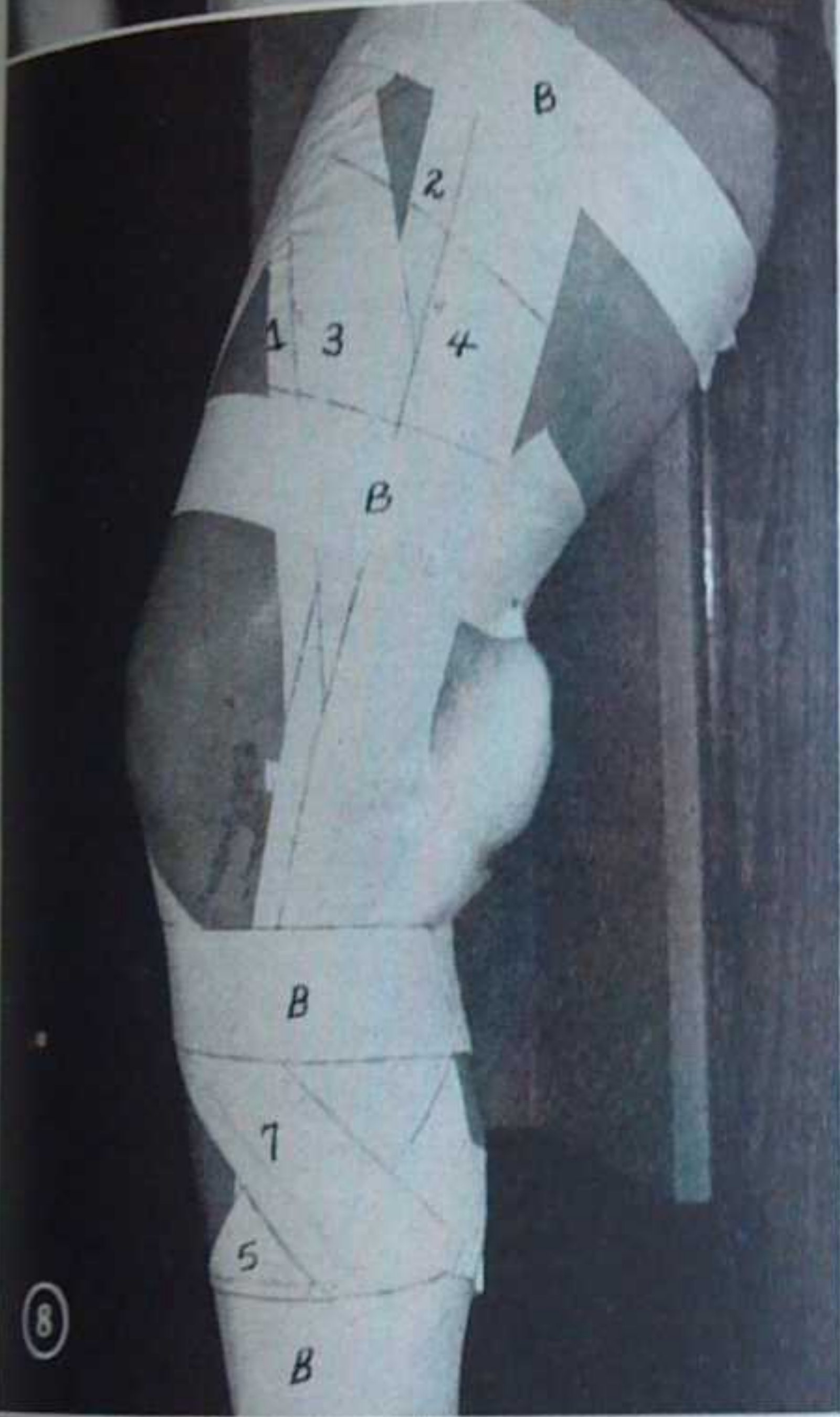
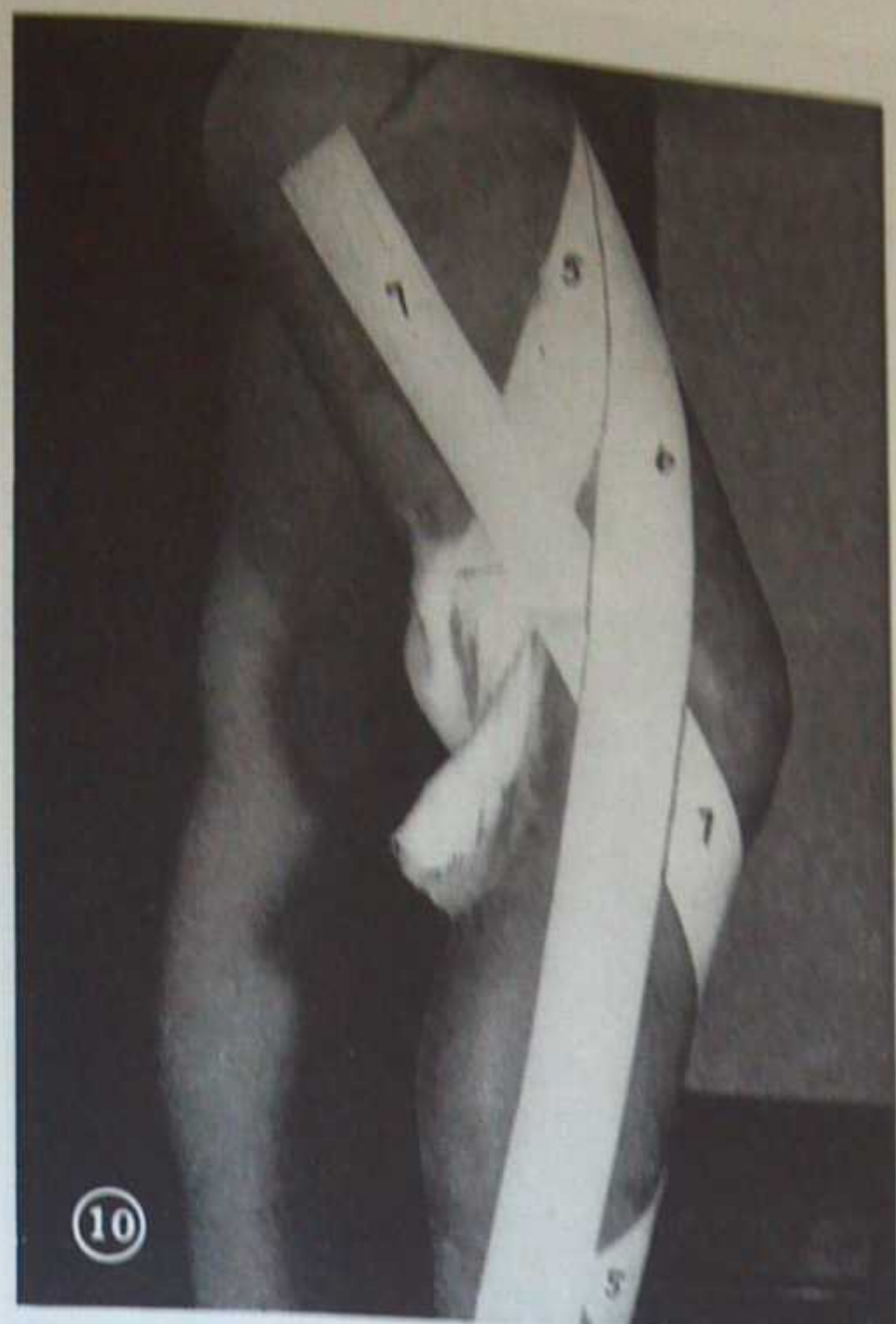
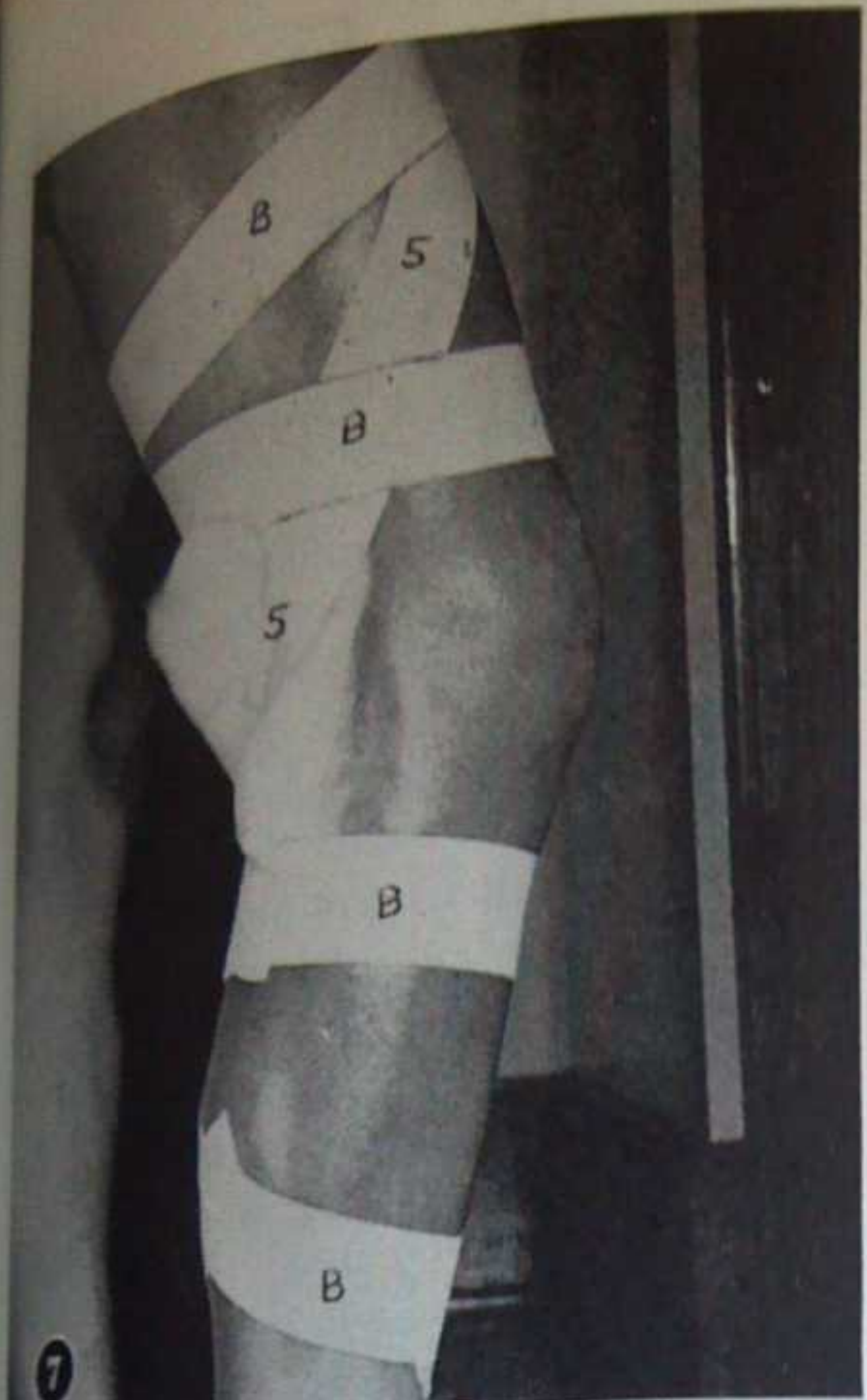
High School Trainers Lesson No. 3

IN every type of knee injury the medical supervisor should make the diagnosis and indicate the treatment to be given. It is the trainer's job to apply the proper tape bandage to the injured part when the boy returns to practice or to the game. If every knee injury had the correct attention and were properly bandaged, trick knees would not be so prevalent among athletes. It is the immediate attention that the trainer gives the injury and the way in which he applies the correct bandage that insures the injured athlete a good knee the rest of his life. At the first sign of an injured knee during practice or a game, the athlete should be taken out, and the injured part should be examined. It may be that he can return to the game immediately, but at least the trainer is safeguarding the injured athlete and the interests of his team by carefully examining the injury.

Knees that have been injured must be given very careful attention for the duration of the injured athlete's competitive days as these injuries require a long time to heal properly. Unless the injured part is given adequate protection, serious after-effects may be expected. It has been found that taping the injured knee is one of the few good ways to prevent the injured part from becoming injured again. The knee is not easy to tape and still retain all of the movements, but if the trainer uses care in applying the type of bandage given in this taping lesson, I am sure that he will be pleased with the results. It is important first that the trainer have the knee bent correctly. Note the ruler in Illustration 1.

It sometimes is necessary to apply the double knee bandage. This will give added strength to the knee and will take care of the injured section on both the outside and inside of the knee. In either type of bandage the trainer should be very careful in applying tape number 5 as this one is the strip that does the job. If the trainer will turn in an anatomy book to the section describing the muscles of the leg, he will find that tape number 5 follows the popliteus muscle. If he imagines that he is inserting a new muscle, this one being tape, directly in place of the injured one,





his taping will turn out very well. This is just exactly what a trainer is doing when he tapes an injured part; he is applying a tape muscle. I do not believe that any trainer can afford to miss reviewing his anatomy from time to time. If he understands the injury, knows the muscles and ligaments involved, and tapes according to the way these muscles are attached and the angle in which they operate, he will not be wrong.

Illustration 1. X marks the spot of injury when the knee has been blocked from the outside. The rule in front of the knee gives you some idea of the amount of bend you should have in the leg before putting this bandage on. Some trainers apply a small round piece of felt over the X mark before they start to tape. This will add more tension to the injured part.

Illustration 2. Start tape 1 just below the calf muscle, pulling upward across the X mark and over the thigh.

Illustration 3. Start strip 2 in front of the shin bone, pulling upward over tape number 1, attaching on the inside of the thigh. Tape number 3, shown in this picture, overlaps tape number 1.

Illustration 4. Strip 5 is the most important strip of tape in this bandage. You will observe that it starts high on the thigh, angling toward the back of the knee, crossing the large piece of cotton placed back of the knee, and continuing on around the lower side of the leg, attached across the thigh in front. It is wise to apply at least three pieces of tape in this manner, each crossing the other directly on top of tape number 5.

Illustration 5 shows how tape number 5 crosses the cotton back of the knee. The strip you see running down the leg is not 5, but is tape number 1.

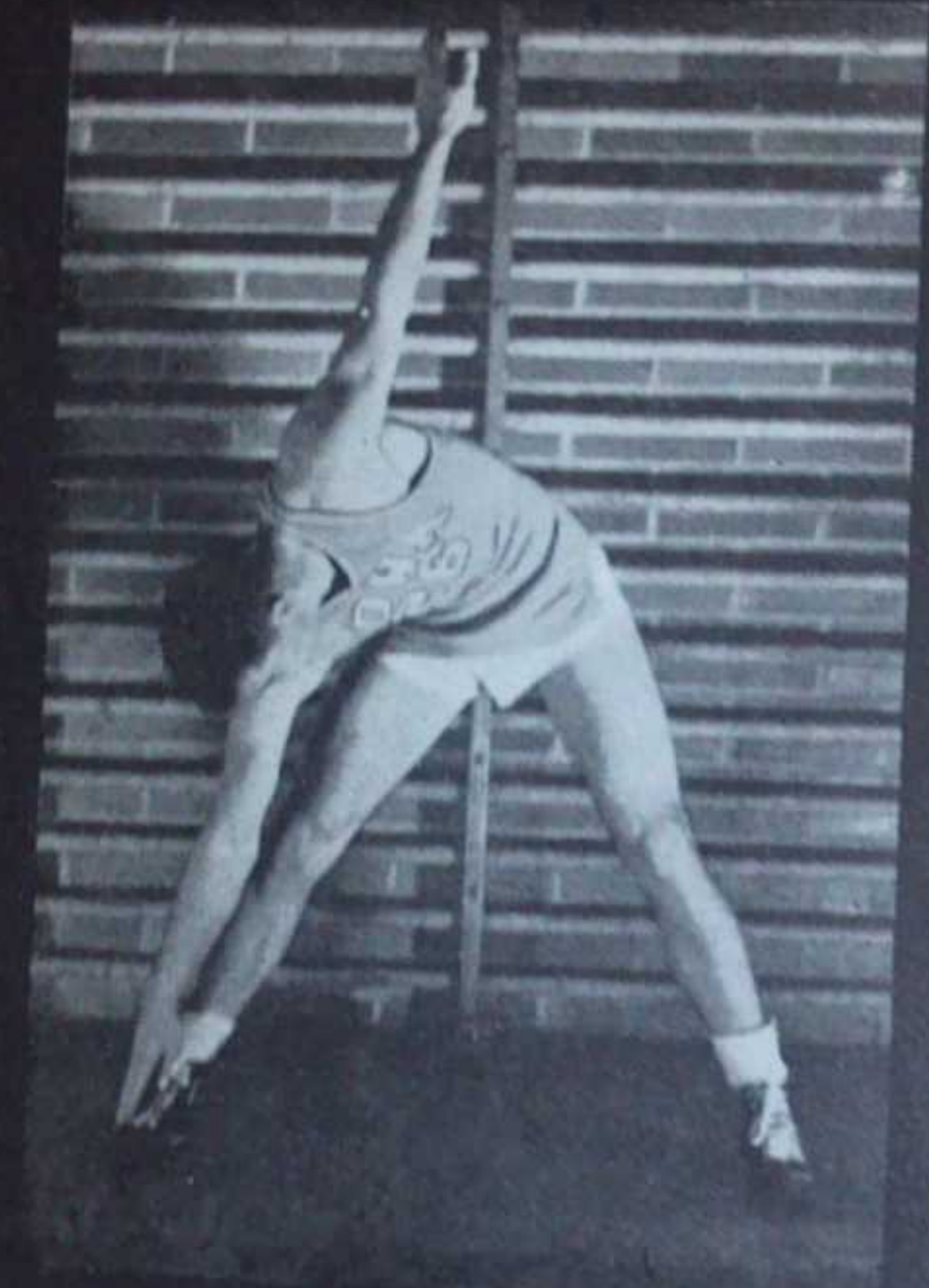
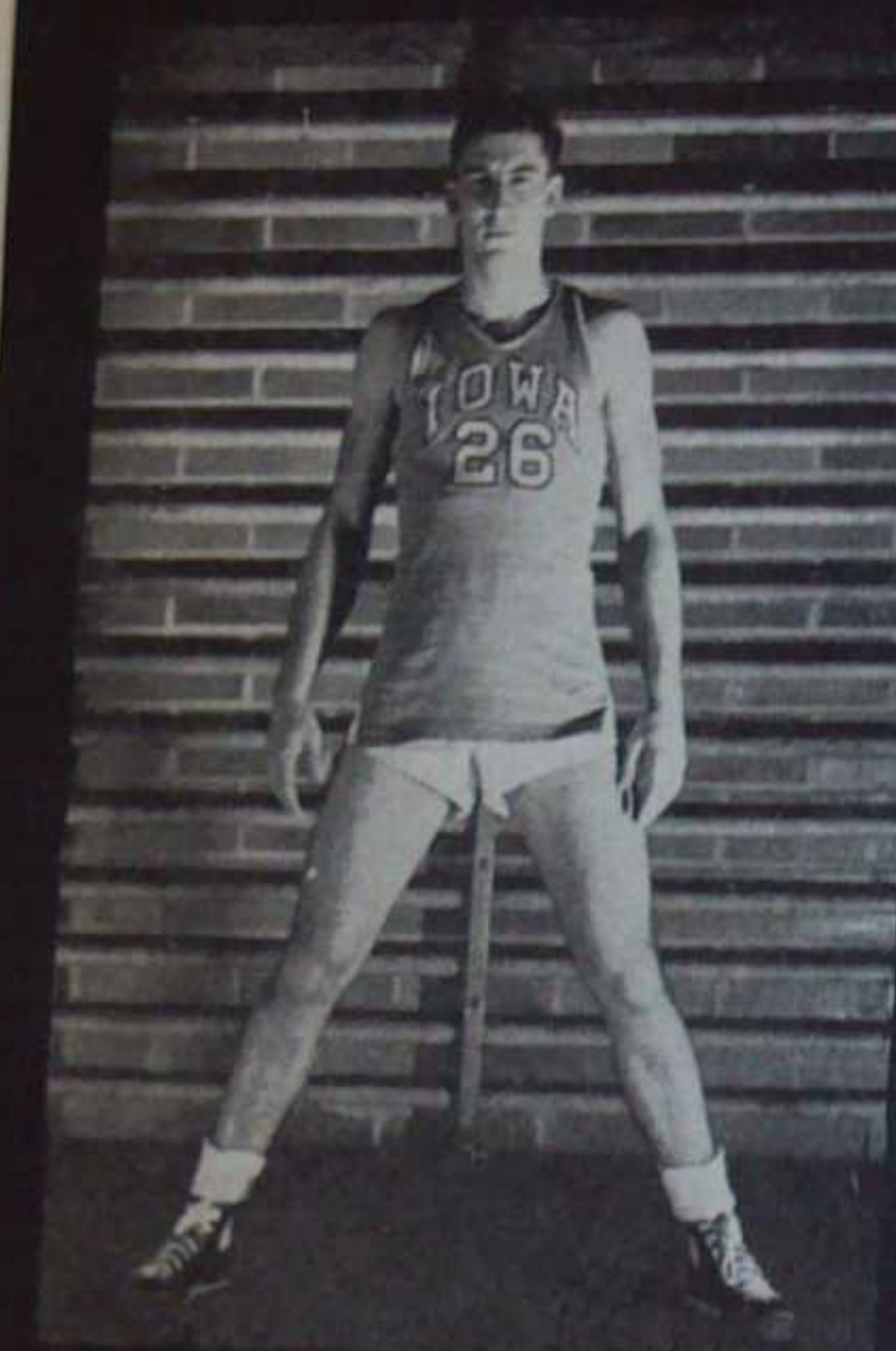
Illustration 6 shows the angle of tape number 5 as you look at the leg from the

(Continued on page 50)





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Special Basketball Exercises

By Albert Baumgartner

THIS is the second of a series of exercises prepared by Albert Baumgartner. We are of the opinion that every sport uses a different set of muscles and a special set of exercises should be given to fit that sport. These exercises will help any high school or university basketball player and should be taken every day. In this article are the exercises that will strengthen the muscles used in the shooting of a basketball and in the many quick stops that must be made are given. Wind exercises are not included, as most basketball players get that exercise on the practice court. Strong legs, good feet, hard working muscles, strong arms, wrists and hands are required of basketball players. The "Big Men" of Iowa went around during the preceding spring and summer during the game in their pockets and used them every time they had a spare moment. Their arms and hands became like pieces of steel with which they were able to hang on to anything with which they came in contact. Just as a boxer is good only so long as his feet and legs are strong enough to take him around the ring, so a basketball player's feet and legs are considered to be important. Basketball players should not overlook the exercise for the abdominal muscles. Eighty per cent of conditioning is done by exercises. It is only after the basketball player has the muscles that are to be used in good condition that he can go ahead with work on the drills for fundamentals. The pictures in this article are by Vic Siegle, State University of Iowa, forward. Editor's note.

To Strengthen the Waist Line

- 1. Position:** Stand erect with feet together and the arms extended sideways (Illustration 1.) **Action:** Rotate the body by swinging the arms around, at the same time rise on the toes. Be sure to give the abdomen a real twist. Swing to the left and then to the right about thirty times.
- 2. Position:** Stand erect with the arms at your sides, legs about twenty-four inches or more apart (Illustration 2.) **Action:** Bend the trunk to the right and touch the right foot with the right hand while extending the left arm behind you. Keep the right knee straight. Repeat the same movement to the opposite side.
- 3. Position:** Sit on the floor, legs extended forward with the heels about four inches off the floor, hands placed on the floor, near the hips; if possible support on the finger-tips (Illustration 5). **Action:**

Exercises for Basketball Players

Raise and lower arms times or more.
To Strengthen the Forearms

- 4. Position:** Stand in an open door, plant your feet on the sides of the door, grasp the end of the door with both arms are flexed (Illustration 4). Move the body backward, extended, then pull forward your fingers and thumb. Repeat exercise at least twenty times.
- 5. Position:** Take a sheet of paper and hold it up to the paper in illustration 5. Crumple it into a ball with the left hand and hold it with the right hand. Pull yourself up and the table will not move.

To Stretch and Strengthen the Feet

- 7. Position:** Stand with the hands on the floor and near the toes. Extend the knees and pull the feet toward the hands.



for NOVEMBER

Special Exercises for Basketball Players

Albert Baumgartner

Gymnasium Coach, State University of Iowa

the second of a series of exercises prepared by Albert Baumgartner. We are of the opinion that a special set of exercises will help any high school or university basketball player and should be included in the shooting of a basketball. The many quick stops that are given. Wind exercises are given. Wind exercises are given. Wind exercises are given.

4. Position: Stand facing the end of an open door, plant your heels tight against the sides of the door to hold it steady; grasp the end of the door with your hands; your arms are flexed (Illustration 3). Action: Move the body backward till the arms are extended, then pull yourself forward with your fingers and thumbs. Repeat this exercise at least twelve times.

5. Position: Take a four-page newspaper and hold it up by one corner. (Note the paper in Illustration 4.) Action: Crumple it into a ball without the help of the other hand. Do this several times with the left hand and then with the right.

6. Position: Lie on your back under a table, grasp the under edge of the table with your fingers (Illustration 6). Action: Pull yourself up as far as you can, keeping the body and legs stiff, then lower yourself slowly and repeat. Be sure that the table will not tip over.

To Strengthen the Wrists, Fingers and Forearms

7. Position: Flex the knees fully, place the hands on the floor outside the knees and near the toes (Illustration 7). Action: Extend the knees sharply, palm of hands

8. Position: Lie on your back under a table, grasp the under edge of the table with your fingers (Illustration 6). Action: Pull yourself up as far as you can, keeping the body and legs stiff, then lower yourself slowly and repeat. Be sure that the table will not tip over.

9. Position: Stand facing the end of an open door, plant your heels tight against the sides of the door to hold it steady; grasp the end of the door with your hands; your arms are flexed (Illustration 3). Action: Move the body backward till the arms are extended, then pull yourself forward with your fingers and thumbs. Repeat this exercise at least twelve times.

To Stretch and Strengthen the Legs

10. Position: Stand facing the end of an open door, plant your heels tight against the sides of the door to hold it steady; grasp the end of the door with your hands; your arms are flexed (Illustration 3). Action: Move the body backward till the arms are extended, then pull yourself forward with your fingers and thumbs. Repeat this exercise at least twelve times.

on the Waist Line

11. Position: Stand facing the end of an open door, plant your heels tight against the sides of the door to hold it steady; grasp the end of the door with your hands; your arms are flexed (Illustration 3). Action: Move the body backward till the arms are extended, then pull yourself forward with your fingers and thumbs. Repeat this exercise at least twelve times.



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Relaxation and Simple Living

By Roland Logan

Athletic Trainer, United States Military Academy

THE ability of an athlete to relax before and during a contest is one of the most important factors with which trainers and coaches have to deal in any type of athletic activity.

At crucial times in contests, the champion will overshadow the novice because the champion has learned to relax. It may be said that relaxation is the secret of physical activity. The champion is always loose, confident, and presses only at the proper time. He always conserves his energy, both mental and physical. The novice is red-faced, tense, constantly pressing. He soon becomes mentally and physically tired, and finally fails.

Glenn Cunningham, whom I have trained at different times for ten years, had the fine faculty of taking a cat nap just before a race. It never lasted longer than twenty minutes—just long enough to rest tired nerves and muscles and to store up energy.

During the three years I trained the Red Sox baseball team, we had some men who could relax and some who could not. Lefty Grove, our famous pitcher, always came into my private training quarters about forty minutes before a game. I would loosen and manipulate his shoulders and arm for a minute or two. Soon he would be sound asleep. At exactly twenty minutes before game time, I would awaken the great pitcher. He would then wash his face and go out and warm up—for eighteen minutes to be exact. At game time he was ready. According to the papers, he is forty-two years old now, and like Old Man River, he just keeps going along—largely because he can relax.

It will be remembered that the Pitt team

of '38 was a championship team. I was head trainer there at that time. It was the day of the Fordham game and 76,000 people were roaring for the "kill." Beneath the concrete stands, in the dark and dismal dressing quarters, sat a group of fine players, relaxed, quiet and sincere. Men walked around silently. Some lay on rubbing tables with their eyes closed. Jock Sutherland walked back and forth, never saying a word. No energy was expended, not a muscle moved. It was quiet and serene—very much in contrast to the cheering and excitement on top of the concrete.

At Boston, I have seen promising rookies come in and face great pitchers of the mounds, and go down swinging, all because they were trying too hard, or swinging at bad balls. It is not a physical fault when a batter who has good form and good eyes faces a good pitcher and constantly goes down swinging. My contention is that it is largely mental. My suggestion to such men is to plant their feet, take their stance and drop their shoulders. This dropping of the shoulders tends to relax the arms, shoulders and upper part of the torso. A cat in a state of fright has its shoulders up and hunched. I have seen this in many members of the animal kingdom. In an unrelaxed state, we all tend to lift our shoulders. The secret then is to drop the shoulders, breathe deeply, and, in the language of my college coach, Bill Hargiss of Kansas, "Take it easy and relax."

The other phase of this article is simple living. To attain great heights in athletics a player does not have to smoke to get relaxation; he does not have to eat cer-

tain foods to knock home runs; he does not have to listen to long-winded pep talks to make a touchdown; he does not have to eat any specially advertised energy foods to run a hundred yards in 9.8 seconds. What he does need to do is to live a simple, normal life. He should eat simple, well-cooked foods; he should have a body-building and energy-yielding diet; he should eat slowly and chew his food well—there are no teeth in the stomach. He should get at least nine hours of sleep, two of which should be before midnight. He should sleep in a well-ventilated room, taking care that he is not sleeping in a draft.

An athlete should get plenty of exercise. There is no short road to success in conditioning. Hard work, and plenty of it, is the axiom to follow. First of all, start slowly. Stretch, relax, get warm and work to a climax of fine body performance. Conditioning for all sports is different in many respects. A runner does not condition as a football player does, but there is one thing certain—hard work is the first rule in all sports if one aspires to be good.

I have trained athletes at Kansas University and at George Washington University; I have trained the Red Sox players, athletes at the University of Pittsburgh, and I am now trainer of the cadets at West Point. Some of the men were outstanding like Jim Bauseh, Tuffy Lee-mans, John Woodruff, and the greatest of the great, Glenn Cunningham. In this time, I have observed some other great performers in the various fields of sport. Their methods and preparation were mere routines built on relaxation, simple living and hard work.

Injuries of the Knee Joint

(Continued from page 43)

of repair. Plenty of extra time should be allowed for complete healing. Only temporary stiffness follows even prolonged immobilization, and such stiffness need not be feared. Excellent results are obtained by such conservative treatment adequately carried out.

Ruptured cruciate ligaments which have failed to heal with conservative measures and neglected conditions require operative intervention if stability is to be improved and disability eliminated or reduced. Sufficient of the original cruciate ligament may remain to permit of its being sutured at operation. When this situation is found, we prefer the use of fascia lata for the suturing material. With fascia lata a firm attachment can be made to the bone and a real repair of the liga-

ment made. When, as often happens, there is but a trace of the ligament left, reconstruction of a new anterior cruciate ligament must be carried out. Hey-Groves of England was the modern pioneer in such work, and most of the operations now used are modifications of his method. In principle the method consists of boring a tunnel through the external condyle of the femur and another tunnel through the inner tuberosity of the tibia and of passing through these tunnels a strong piece of fascia lata or a piece of tendon and suturing it there in such a manner as to reproduce the original ligament.

The results of the various operations for the reconstruction of the anterior cruciate ligament are in the main satisfac-

tory. Complete stability of the knee is not always secured, but, if the operation has been properly performed, satisfactory improvement will nearly always result, and complete relief of symptoms with a wide range of activity may be expected in a fair percentage of cases.

Rupture of the tibial spine or its internal tubercle will often become repaired with fixation of the knee in extension. If, however, healing does not take place, removal is indicated. The incision used is the parapatellar approach.

In conclusion I should like to emphasize the fact that internal derangements of the knee involving the semilunar cartilages or the lateral or the cruciate ligament constitute gravely disabling injuries. An accurate diagnosis made early will in-

quently make possible recovery by conservative measures, while, on the other hand, delay in instituting adequate treatment usually means a prolonged period of disability and frequently a permanent partial disability and makes necessary operative intervention. Finally, it should be generally recognized that, when conservative measures fail to give relief from an acute derangement of the knee or recurring derangements, operation is definitely indicated. If not too long delayed, operation offers a satisfactory outcome with practically no risk to joint or life, provided it is performed with a proper aseptic technic and by one familiar with the condition to be corrected.

Special Exercises for Basketball Players

(Continued from page 47)

remaining on the floor; the back is well curved and the head bent down.

8. *Position:* Stand with the legs straight; grasp a rubber ball in each hand (Illustration 8). *Action:* Inhale, and start squeezing the two balls ten times before exhaling. Repeat ten times. Tennis balls may be used in place of rubber balls. We have found it advisable to have all boys carry small rubber balls with them all the time, using them in their spare time.

9. *Position:* Stand on your toes, arms extended upward (Illustration 9). *Action:* Flex the knees and swing the arms forward downward and at once jump upward with arm swinging forward upward. Repeat the exercises ten times increasing the height of the jump.

Bicycles for Training

A rumor has reached the mid-West that a college in the East has issued thirty-five bicycles to its football squad, with orders to use them. The squad members are advised not to ride in automobiles during the season. This should do a great job of building strong ankles, knees and legs, not to mention the improvement in the wind department.

Training Room Equipment

By Bill Frey
Secretary National Athletic Trainers Association

OUR space for the discussion of training room equipment is limited this month. There are a few instructions for treatment with the infra-red lamps which may be taken up at this time. All infra-red lamps are not of the same voltage, nor do they all radiate the same amount of heat. Trainers should understand thoroughly their lamps and should consult their medical supervisors before starting treatments.

Abscess—After the abscess has been drained, treat daily for 15 minutes. Have lamp as close to patient as he can tolerate without burning.

Bruises—Ray the bruised area at right angles. Use the lamp as close as the patient can tolerate averaging a 30-minute treatment.

Colds—In chest colds, infra-red rays of 20-minute duration, both front and back, will relieve acute congestion. The patient should be kept in the office and after another hour another treatment may be given and after he is removed to his room additional treatments may be given. For head colds, infra-red rays may be given for 20 minutes over the frontal sinuses and at the back of the neck.

Sinus Infections—Local treatment with infra-red of 25 minutes over sinus area.

Infections—Intensive local application of infra-red over the affected areas, 15 minutes.

Fatigue—For the relief of fatigue, a general tonic treatment of infra-red may be given for 20 to 30 minutes daily.

Insomnia—Prolonged treatment with infra-red over the spine for 36 to 40 minutes at a distance of 24 inches.

Sprains—Intense radiation with infra-red 30 to 40 minutes at tolerance of the patient.

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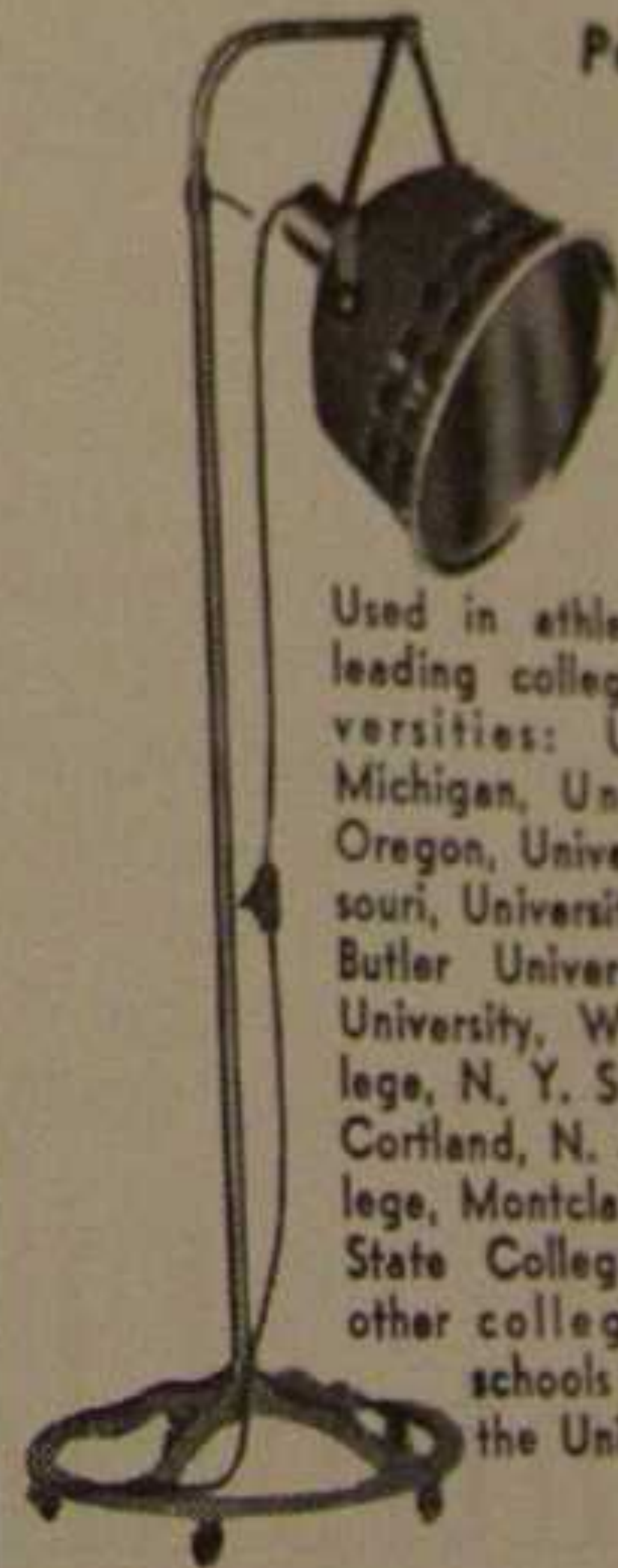
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Taping for Knee Injuries and the Prevention of Injuries

(Continued from page 45)

outside position. It shows the strip attached on the front of the thigh, coming down the side of the thigh, crossing back of the knee and ending up in front of the shin.

Illustration 7 is the outside view of the binders in position, four in all.

Illustration 8 shows the binders on the inside of the leg.

Illustration 9 shows the binders on the front of the leg.

Illustration 10 shows the same bandage, only applied to the outside of the leg. Sometimes it is used with the first bandage in order to give added strength to bad knees. You will note that tape number 7 starts high on the outside of the thigh, continues down the leg and crosses to the front of the shin bone directly below the knee cap. Leave about one half an inch clearance below the knee cap. Tape number 6 is shown starting high on the inside of the thigh, crossing tape number 7, and continuing down the outside of the shin bone. It is wise to apply two more strips of tape in this same manner, one crossing the other.

Illustration 11 is the front view of the double bandage before the binders are applied.

Illustration 12 shows the position of the binders for the double bandage for the knee.

Illustration 13 shows the front view of the double bandage.

Examination No. 1

(Continued from page 40)

9. When do you start heat treatments?
10. Name the various ways to administer heat.
11. When do you start exercising the ankle?
12. Should ankles that have been sprained be taped before the athlete returns to practice or to a game?
13. What heat treatment is always available if the training room is not equipped with heat lamps?
14. What is the standard length for an ankle wrap?
15. Why is tape better to use than ankle wraps?
16. Is it easier to prevent an ankle sprain than it is to recondition the ankle after the sprain?
17. When are paraffin baths indicated?
18. When is massage indicated?

Tape Topics

QUESTION: How many hours before a contest should the athlete eat his meal, and what should it include?

Answer: The game meal should be given three hours before the contest. An ideal meal may include baked potatoes, a pat of butter, 1 baker's dish of peas, slices of toast, 1 lamb chop, 1 cup of tea, honey for the toast. Eggs may be substituted for the lamb chop or a steak may be eaten.

QUESTION: I am now employed in a community house, directing the athletic program. May I become a member of the National Athletic Trainers Association?

Answer: Qualifications for membership in the National Athletic Trainers Association are listed on page 38 of the October issue of the Trainers Journal. We are very happy to have any one connected with athletics as a member of the National Athletic Trainers Association.

QUESTION: Will certificates be issued to high school student trainers?

Answer: Examinations will be given each month by the coach, or medical supervisor and the grades will be recorded by him. At the end of the four-year course a student will be eligible to join membership in the N.A.T.A.

Purposes and Objectives of Fall Track and Field Practice

(Continued from page 45)

believes should be emphasized and purposes of fall practice. They are: 1. To give men in the sport. 2. To give those already engaged in the sport who are not out for an entire season. 3. To help develop team spirit and new men in the sport. 4. To give men who were out for the season but who did not prove themselves. 5. To improve those men who are considered outstanding.

It is with these purposes in mind that a coach may plan his fall practice schedule in the high school or college. During this time the track and field coach has more time to deal with coaching problems than in the spring when the competition is at hand. In certain sections of the country, door track and field coaching degree, benefits that are not necessary. Outdoor coaching is desirable if the season is to be achieved during the summer outdoor season.

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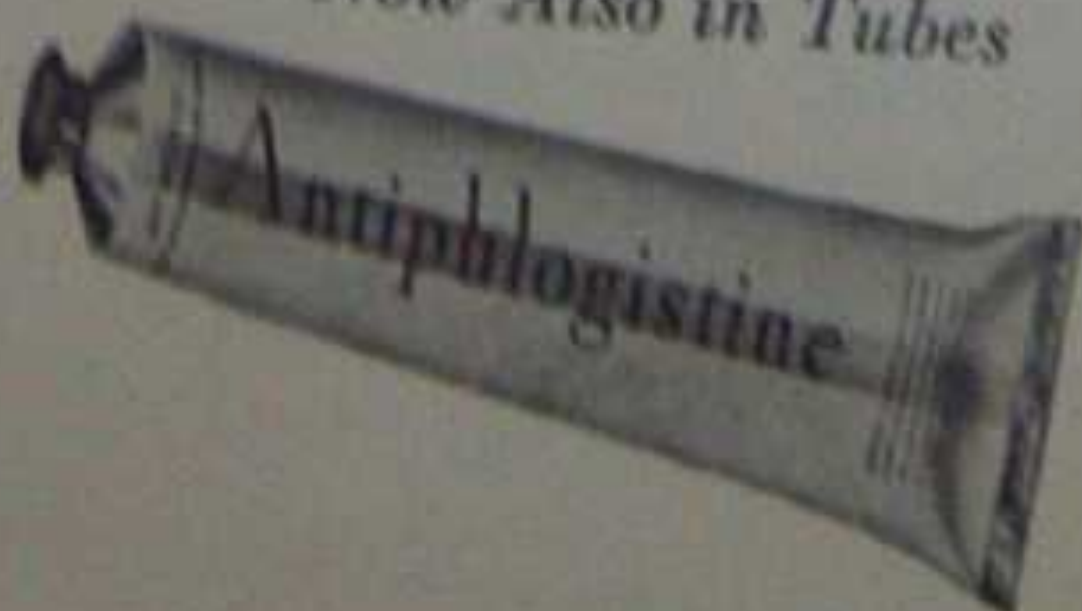
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