OLYMPIAN FIELD EVENTS

F. A. M. WEBSTER

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THEIR HISTORY AND PRACTICE

. . *By* . .

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PREFACE.

In offering this book to the public I have been actuated by the hope that it may arouse an interest in a much neglected branch of athletics, a branch which it is of vital importance to the nation to encourage if we are to regain and hold our athletic supremacy which we forfeited at Stockholm last year.

The greatest hope we have of regaining our supremacy as an Olympic nation is to get athletics taken up scientifically in the Army, where men are trained to stick to a thing and persevere until they have attained the best results of which they are capable, and also by getting all the events which make up the athletic section of the Olympian programme included at school sports, and in having the boys properly coached; there must also be introduced the spirit of competition between clubs, schools and towns, which has made football so popular.

The fundamental basis of the American successes are the Inter-Collegiate competitions.

There is also a great need for the professional coach, but until such time as these coaches are obtained it is my hope that the suggestions as to methods of practice set forth in this volume may be of assistance to those who practise field events and those who may be induced to take them up.

For many years past, sports-promoting bodies have been exceedingly loth to include field events in their programmes, on the grounds that they do not interest spectators, and also that they occupy a considerable time in carrying out.

With the first I entirely disagree, for if these competitions be well carried out and properly managed they are of the greatest possible interest.

In athletics, at any rate, that it is our methods and not the men who are wrong is clearly evidenced by the fact that numbers of the greatest exponents of field events in the United States of America are Scotchmen and Irishmen who have migrated across the Atlantic.

In my opinion, the excellence of the performances done by Americans, Swedes, Finns and Germans, is due to the careful attention they pay to style and method, and the encouragement given by the spectators, who are kept interested by being constantly informed as to what is taking place.

As regards the time occupied in carrying out these events, a sufficient argument to refute the statement that they take too long is that these events are held in the field and can therefore be carried on simultaneously with the track races.

It has now come to this (quite apart from whether field events are interesting or not, or any question of the time they occupy in carrying out), that it must be the desire of every good sportsman to see Great Britain again at the head of the nations at the next Olympiad at Berlin in 1916. Therefore it is the obvious duty of all sports-promoting bodies and athletic clubs to encourage the practice of these events by including them in their programmes at sports meetings, and providing impedimenta for the use of members.

The athletes themselves must not be too hardly blamed for not taking up these events with greater keenness, for although a man who might be a champion javelin thrower may be but a very modest sprinter, yet he will inevitably prefer to train for the 100 yards and 220 yards races, as, in these events, he may be perfectly certain of having the chance of competing at least once a week—as a javelin thrower he will be lucky if he has the opportunity of competing three times in the year.

This state of things is truly deplorable, and if we hope to produce field-events-men worthy to meet the representatives of other nations at future Olympiads steps

must at once be taken to ensure that more competitions are instituted.

Throughout the book the results of Olympic competitions, together with World's and Olympian records, are given to emphasise Great Britain's position in relation to the other nations.

The Olympic rules governing competitions are used throughout where possible.

In many cases the photographs used are of the Olympic champions or world's record holders, but in the case of the javelin, discus and 56lb. weight, great difficulty has been experienced in getting any photos at all.

I should like to take this opportunity of thanking Mr. S. S. Abrahams, C.U.A.C., for the very valuable information he has given me concerning the hop, step and jump.

F. A. M. WEBSTER.

"Highways," Harpenden,
July, 1913.

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INTRODUCTION.

THE present time is a very critical one for British athletic sport. It is abundantly clear that in international competitions there are only two possible courses for this country to follow, the one being to cease to compete, and the other to take the matter more seriously and to adopt those scientific methods which are used by the athletes of other nations.

There are some of us (good sportsmen, too) who, in their dislike to the over-specialisation of sport, and to the undue desire for victory encouraged by such competitions, are in favour of retiring from them altogether. But I am convinced that these gentlemen have not considered the whole situation. It is easy to retire gracefully when you are as good as your rivals. It is another matter to retire after a defeat. Such an action must infallibly be put down as the result of despair; and why should we lay ourselves open to such an imputation when we have the men who can retrieve our laurels if we can but put them on an equality in teaching and training with their foreign antagonists? No department of national life stands alone, and such a climb down in sport as would be involved by a retirement from the Olympic Games would have an enervating effect in every field of activity. Besides, it is certain that Greater Britain would not retire, and we should be faced by the unbearable spectacle of the Union Jack being occasionally mastheaded by some African or Canadian after the British had given up the contest. We must all feel that such a position would be impossible, if we consider our own feelings of humiliation if we were present at such a sight.

There remains, then, only the one alternative, which is to take the matter more earnestly, and work not only by the light of nature but by that of science. Mr. Webster's book is one of those which will help us to do so. He is himself an expert in most of the branches

of sport which he describes, and he has been at pains to get at the root principles and to convey them to others. Without them little can be done. One blunders on as a golfer would do who tried to play by his own lights without ever having heard that one should follow through, keep one's eye on the ball, or any other elementary maxim of the game. Failing the assistance of a competent coach, it is only by such a book as this that the novice can be saved from wasting his time, his strength, and his temper by attempting the impossible. But with this guide to help him, a man may in certain sports, at the cost of a weight, a javelin, or a discus, train himself into prize-winning form in the nearest field.

We have lots of undiscovered talent. That is certain. It is not one in a hundred of us who ever happens to have his attention drawn strongly to athletic sports. Among the odd ninety-nine there must be many who are natural jumpers, sprinters, or weight-throwers. We have to find them. Let every country gentleman who wants to help a good cause keep a few of the impedimenta in the house, let him cast round in his mind as to his neighbours and pick the active youngsters or the strong men of the village. Then let him test them and set them on the path in which they should go. That is the way, and no other, in which champions are found. Very specially does this apply also to organised bodies, schools, regiments, the police, the crews of men-of-war. If those in authority have their eyes open for talent I am convinced that plenty will be forthcoming. See what is done by the New York Police in that direction. They have produced numerous Olympic champions. If the same care were exercised in so splendid a body as the Irish Constabulary it is incredible to me that we should fail to find some of the men that we need. If we are beaten because we are the worse athletes we must smile and congratulate the better men. But at least let us make sure next time that our best men have been found and brought to the field.

ARTHUR CONAN DOYLE.

Windlesham, Crowborough,
July 9, 1913.

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THEIR HISTORY AND PRACTICE.

PART ONE.

THROWING.—General Rules.

(*a*) Each competitor shall be allowed three throws, and the three best shall throw again three times; the farthest throw of the six throws shall decide the order between the three. In the case of a tie, another throw must be made to decide the winner. The result of the additional throwing shall determine the position only of those who have thrown again.

(*b*) A throw is counted as a trial, yet without being measured, when the competitor, before the throw has been marked by the proper official, with any part of his body touches the ground outside the outer part of the throwing circle, or with any part of his body passes over the taking-off limit.

(By the taking-off limit is meant the inner edge of the marked scratch-line.)

CHAPTER I.

JAVELIN THROWING.

Of all sports one of the most ancient is undoubtedly that of javelin throwing. We have certain proof that it was a part of the Pentathlon in the Ancient Olympiads held at Athens over 700 years B.C., and if one may rely upon the authority of the Book of Leinster it would appear that the pastime is of still greater antiquity, for one learns therein that javelin throwing was included in the Tailtin games of Ireland which took place some 600 years prior to the first Olympiad, and were held as long ago as 1829 B.C.

In those far distant days Cuchulain, the Irish Hercules, excelled in this as in all other manly pastimes.

From the very first, when the flint-headed spear was devised by the cave dweller up till the time of the Norman Conquest, the British people were essentially a spear bearing race, in proof of which the British Yeoman is always found buried with his six-foot ashen spear beside him.

From the beginning of the Olympic Games in 776 B.C., until they were finally terminated in the reign of Theodosius the Great, A.D. 394, javelin throwing was a regular feature of the programme. After that date, and until the inception of the modern Olympiads at Athens in 1896, there are no reliable records of any kind. About that time, however, the sport began to be largely practised on the Continent, with the consequence that javelin throwing, "free style," was included at the fourth of the Modern Olympiads held at Athens in 1906, when Eric Lemming of Sweden won with a throw of 175ft. 6in. Two years later, at the Olympic Games of London, javelin throwing (held in the middle) was added to the programme, the same athlete again being successful with throws of 178ft. 7½in. and 179ft. 10½in. respectively. This was the first year that javelin throwing had been seen in this country, and our athletes' attempts to master the art were, to say the least of it, extremely crude. The best throw accomplished by an Englishman in the restricted style at that time was done by A. H. Fyffe, the old Oxford hammer throwing Blue, who reached 108ft. From 1908 the sport has improved very rapidly on the Continent and in America, until last year J. J. Saaristo, of Finland, accomplished the magnificent throw of 200ft. 1½in. This is said to have since been beaten by Eric Lemming, but no official confirmation has yet been obtained.

In America the record of 166ft. 10in. stands to the credit of H. G. Lott of the Mohawk A.C. Here in England, owing to lack of opportunities for competition,

progress has been somewhat slow; the best performance we can show so far is 142ft. 3½in. by O. Pirow, of the London Athletic Club, accomplished in the Amateur Field Events Association Championships, 1913.

The athlete who aspires to join the ranks of the world's crack javelin throwers must be tall (or he will meet with difficulty in swinging back for the throw owing to the length of the implement) and well developed, with plenty of muscle behind the shoulder to aid in the throwing. He must also acquire a pretty turn of speed, for the pace at which he approaches the throwing line contributes largely to the distance thrown. He must also be endowed with considerable patience to master the somewhat complicated evolutions through which his body passes. Before attempting the throw in earnest, the novice must first learn to hold the javelin correctly. This is best done by grasping the binding in the way shown in the illustration entitled "The Grip." The peculiar method of arranging the fingers is that adopted by Saaristo, holder of the world's record, and one which I have found better than any other for imparting the proper spin to the weapon as it leaves the hand. The javelin should be held firmly, but not gripped, or the sinews of the forearm will be unnecessarily contracted.

Preparatory to the run up to the point from which the throw is made, the athlete takes up his position some twenty or thirty yards behind the throwing board, posed as shown in Fig. 1. From here the thrower sinks back over the bent knee, Fig. 2. As will be seen, the left arm and leg are now extended forwards, the right arm with javelin in hand is as far back as possible so that the figure is in two perfectly symmetrical lines, the one formed by the arms and javelin, the other slanting from the chin to the extended left foot. Care should be taken to keep the head thrown well back; if it is allowed to fall forward the muscles of the chest and neck are not given a fair chance of performing their functions. The body now rises to the position shown in Fig. 1, at

the same time bringing the javelin level with the eyes. This movement is repeated several times until all the muscles are felt to be sufficiently tautened for the run forward. As the body rises for the last time, and the throwing hand comes level with the eyes, care must be taken that the weapon is parallel to the ground, the elbow close into the body, and well centralised under the javelin, as it has the effect of keeping the head of the weapon pointed in the direction in which the throw is to be made.

The athlete now dashes forward at the greatest speed of which he is capable. Every thought should be concentrated upon making use of all the muscles, striding right up to the board without overstepping it, and to getting the missile away from the hand in good style.

Some thirteen or fourteen yards from the throwing board the athlete should be at the zenith of his speed. Now comes the most difficult part of the whole evolution, for the novice must learn to turn his body from the hips without in any way affecting his gait, that is to say, the right shoulder begins to sink back as the right leg comes to the front, and the left arm comes inwards across the body to the right side, the right foot is jabbed hard down, the left leg outflung so that all the weight is now disposed over the right knee, which is slightly bent. Simultaneously the throwing hand flashes back, passing back in a direct straight line as far as may be possible, the left leg and arm are outflung. In doing this a tendency will be found to turn the whole body to the left and to make a pause for the merest fraction of a second, but this must be firmly overcome by constant practice, for if the direction of the body varies in the slightest degree or the rhythm of the motion be broken in any way, the whole effort will be spoiled. As the right knee is bent it must be lowered directly to the front; if lateral movement is imparted the full force of the downward drive in making the spring forward is lost, and grave risk of a displaced cartilage with the consequent attack of "water on the

knee " is incurred, as I know to my cost. The finish of this movement is the sinking back of the body to the fullest extent, as it is twisted from the hips, to get the greatest advantage of the heave up which, with the speed at which the throwing board has been approached, are the main contributing factors to a perfect throw.

At the end of the movement just described the athlete springs forward by straightening the right leg with a powerful drive; this spring is further aided by a terrific heave up of the shoulders and cutting the left hand away to the left side; the left leg should now be slightly in advance of the right, which is bent as shown in Fig. 3, and about to touch the ground.

As the right shoulder comes around to the front, but on no account before, the right arm flashes out, as seen in Fig. 3, sending the javelin hurtling upon its flight; the fingers should impart an underhand spin to the weapon as it leaves the hand. The right leg now straightens out as shown in Fig. 4, the impetus of the throw carrying the body forward to the throwing board, where the athlete remains poised (Fig. 5) until the javelin has come to earth, for if the board be overstepped before the javelin touches the ground, it will be counted a foul.

If the throw has been properly made the javelin should now have sped upon its way, flying upon an almost flat trajectory for some distance, but with the head slightly uplifted, owing to the pull put upon the weapon, as shown in Fig. 3. It will fly in this way until the momentum begins to decrease and the resistance of the air is sufficiently lessened to allow the tail to flick out straight, which causes the weapon to mount to a still greater altitude. From the point at which the straightening out takes place the momentum begins to decrease until the weight of the steel shod head causes the javelin to turn head downwards, and to come crashing to the earth point foremost.

Fig. 5 should be carefully studied, as showing the position of the hand after imparting the " underhand "

spin to the javelin; it will also be seen from the direction of the eyes that good elevation has been given to the weapon in making the throw.

Although the method of throwing has now been fully described, there still remain a number of small but important points to be dealt with.

Before the beginner essays a throw at all he should spend quite a week on the track improving his sprinting powers; several short dashes each day, varying from twenty to fifty yards, should be sufficient. He should not attempt to start from the sprinter's crouching attitude, but should spring straight into his stride, running hard and finishing strongly; indeed, every effort should be concentrated upon the final burst, for that will be the crucial second when he comes to the actual throwing.

Next he must learn to judge the run up in such a way that he will always make the effort at exactly the same distance from the throwing board, landing right up to it with the right foot as the throw is completed. Having ascertained the requisite length of the run up, it should be measured so that on the day of competition the starting point may be marked and a piece of white paper put down to mark the point from which the throw commences, and what may be termed "the reverse" takes place.

Also it must be remembered to carry the head upright throughout, to reserve the throwing arm until the right shoulder is right round, nor should any movement be stiff, and the arm must come back to its fullest extent when flinging back for the throw.

It will be as well for the beginner to go in for a course of weight putting, which will build up the muscles behind the shoulder, develop the biceps, forearm, thigh and calf muscles—all of which are essential—and will greatly aid him to acquire style in the Reverse.

Finally he must most assiduously practice balancing on the right leg; this is most important, for the athlete who can be certain of staying balanced accurately at the

throwing board after his greatest effort has a distinct advantage over another competitor who can never be sure of not fouling.

In javelin throwing, as in most other sports, the athlete who practises so assiduously that he reduces all the minor parts of the sport to second nature and can therefore concentrate all his attention upon the main effort, is the one who will win time and again, even from men who are far superior to him in mere strength!

As all throws are measured perpendicularly from the point of impact to the scratch-line or scratch-line produced, it will be seen that the thrower must learn to get good direction in making his throw, for, if the javelin be permitted to break sideways from the hand, so that its direction of flight is other than at a right angle to the throwing board or scratch-line, distance must be lost when the measurement is taken.

As regards the actual training for this event, it must be remembered that a tremendous strain is put upon the right leg in making the throw; therefore, a dozen throws at full pace three or four times a week should be ample, while the sprinting should be practised on the other two days out of the seven.

A certain amount of physical culture before one's bath in the morning is essential, and I would particularly recommend the following:—

*1. Stand with the feet some 18in. apart, extend the arms as far as possible above the head, now circle the body completely round from the hips—six times to the right and six times to the left.

*2. Sit upon a stool with the feet tucked under some solid piece of furniture, fold the arms across the chest and let the body sink back until the head touches the floor; repeat this half a dozen times.

3. Stand with feet 18in. apart, fists clenched, arms bent from the elbow—the one across the stomach, the

*As recommended by Lieut. Muller in "My System," published by Ewart, Seymour & Co., 2/6.

other behind the back; reverse the position slowly, pressing the arms firmly across at the end of each stroke. Repeat twelve times.

4. Grasp the back of a chair with the left hand, rise upon the toes of the left foot and circle the right leg level with the hip from front to back ten times, then from back to front ten times. Carry out the same exercise, circling the left leg.

5. Place the feet close together, arms hanging loosely by the sides; rise right up on the toes, at the same time raising the arms to the level of the shoulders, elevating the chest and inhaling a deep breath. This should be done about thirty times, or may be done in this way at the end of each set of exercises; carry this exercise out ten or twelve times.

A certain amount of work with the dumb-bells and Indian clubs may be done, but not sufficient to render the athlete heavy or ponderous in his movements. Skipping is also a very fine form of exercise.

The special rules governing javelin-throwing are given hereunder.

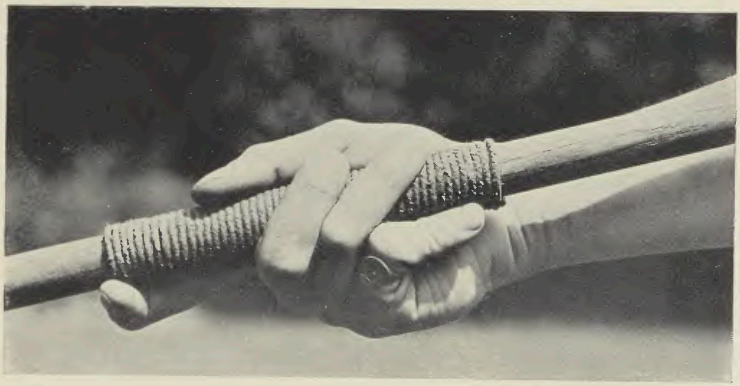
OLYMPIC RULE.—Javelin Throwing.

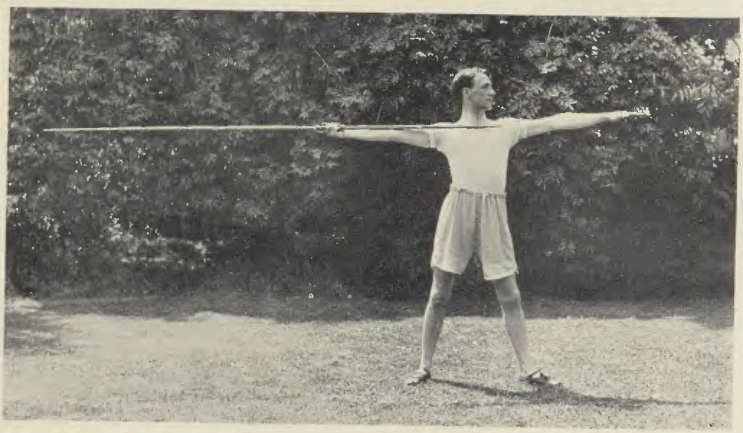
(*a*) The javelin shall be of wood with a sharp iron point. It shall be 800 grammes (1.6lbs) in weight, and 2.6 metres (8.5ft.) in length. The javelin shall, about the centre of gravity, have a grip formed by a binding 16cm. (6.3in.) broad; neither thongs nor notches shall be allowed in the shaft, and no other hold than the above-mentioned binding shall be permitted.

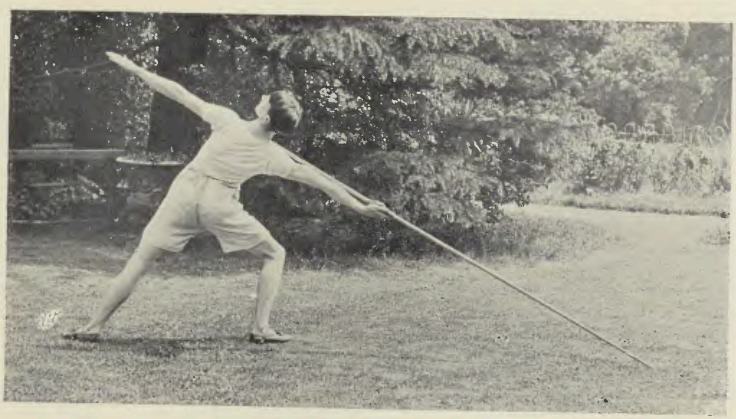
(*b*) The throwing shall take place from behind a scratch line, consisting of a wooden bar of at least 10cm. (3.9in.) width, and about 3cm. (1.18in.) thickness, securely fastened to the ground; the extent of run is unlimited.

(*c*) The javelin must be held by the grip and no other method of holding is admissible.

(*d*) No throw shall be counted in which the point of the







Photos by Sport and General.

The Grip.

Fig. 1. Attitude, preparatory to run forward.

Fig. 2. Bending back to tauten muscles. Observe true line of arms and Javelin.

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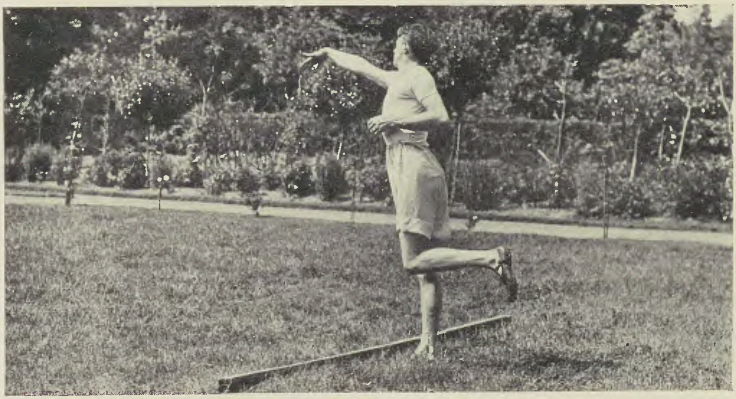
JAVELIN THROWING.



Photos by Daily Mirror and Sport and General.

Fig. 3. "The Throw." Javelin is bent by pull and spin imparted by fingers.
Fig. 4. Coming well up to board after throwing.
Fig. 5. "Balancing" at board until javelin has come to earth.

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javelin does not strike the ground before any part of the shaft.

(*e*) The throw is measured from the point at which the point of the javelin first strikes the ground perpendicularly to the scratch line or the scratch line produced.

CHAPTER II.

HAMMER THROWING.

THIS event is of equal antiquity with the art of javelin throwing, dealt with in the last chapter, and was also a feature in the programme of the Tailtin Games of Ireland; it was known in the Celtic language as the "roth cleas."

In hammer throwing, as in javelin throwing, we are told that Cuchalain far excelled all other throwers. Needless to say, there are no records, nor, so far as I know, even mythical statements of his performances.

In the ancient Olympian Games hammer throwing was entirely unknown. The earliest traces I have been able to find of the sport in mediæval England are in Charles Kingsley's book, "Hereward the Wake," in which we are told that Hereward's mother rated him very soundly for his fondness for the "low" society of wrestlers and hammer throwers. Coming still further down the ages, we learn that Henry the Eighth was a notable performer; still nearer to our own times, one finds that George Stephenson, before he invented the first steam engine, was a celebrity—at any rate in his own district—in the noble art of hammer throwing.

Of our own day, one may quote such men as McGrath, Flanagan, Nicholson, Carey, Reynolds, and Flaxman. I include the latter, for, although he is no record-breaker, I regard him as one of the most scientific

hammer throwers I have ever had the privilege of watching perform.

The sport figured in the English championships as long ago as 1866, and the premier honours in that year went to W. J. James, who threw 78ft. 5in. Compared with Tom Nicholson's throw of 162ft. 2¼in. at last year's championship, the 1866 performance seems absurd, but it must be borne in mind that in the early championship days the hammer used had an iron head and a straight stiff handle of ash, 3ft. 6in. in length, and was thrown with unlimited run and follow. As the sport became popular, a marked improvement in the "hammer" was seen, the stiff handle of ash giving way to pliable malacca cane, and the length over all was increased to 4ft., which has remained the standard length until this day. The great disadvantage of both cane and ash handles was that they frequently broke in competition. Brass cables and steel shafts were a marked improvement, but still the shaft would occasionally snap when falling on and rolling over uneven ground; also the exceedingly awkward straight wooden handhold still remained. By this time the sport had become very popular in America, and it is to the ingenuity of the Americans that we owe the perfect form of implement in vogue. First of all, they replaced the steel shaft with piano wire, to which they attached the fixed loop in the hammer head by a swivel, thus allowing the hammer to roll freely; but their most ingenious device, and one which is in a large measure responsible for the great improvement which has taken place since its acceptance by the powers that be, was that of replacing the straight piece of wood at the end of the wire by the stirrup handle, consisting of two loops, one for the fingers of each hand.

It will be readily seen what a blessing this new form of handle was, the thrower being enabled to place his hands side by side, thus materially increasing the radius of the hammer head around its centre (which, of course,

is the thrower's body), whereas in the old method the handle was held as is a golf club, with the left hand as near the end as possible, to attain the maximum swing; in this way a great deal of the handle was wasted.

Very frequently I have heard it stated that the finest hammer throwers in the whole world are the Americans, but this I regard as hardly fair criticism without a qualifying statement. If it is said that the finest exponents of the art are *produced* in the United States, then one is bound to agree, but, in spite of the fact that they are brought to perfection on the other side of the Atlantic, the majority of them have been born in Ireland or Scotland, or are of British parentage. Take, for instance, Matt J. McGrath, the holder of the world's record, who was born in County Tipperary in 1878; Cornelius Walsh, born in Cork in 1886; and J. J. Flanagan, who won this event at the Olympic Games of London, 1908, with a throw of 170ft. 4¼in., when representing the United States.

Curiously enough, hammer throwing did not figure in the programme at the first of the modern Olympiads held at Athens in 1896. It was, however, introduced at the Games in Paris four years later, since when it has always been included. Flanagan won in 1900 (167ft. 4in.), 1904 (168ft. 11in.), and 1908 (170ft. 4¼in.). In 1912 he did not compete, but his old opponent, M. J. McGrath, maintained the unbroken sequence of Irish-American victories with the wonderful throw of 179ft. 7.11in. This is a new Olympic record, but does not approach McGrath's own world's record of 187ft. 4in., established at Celtic Park, New York, on October 29th, 1911.

Hjertberg, the famous Swedish trainer, once stated that hammer throwing is the most scientific of all the athletic events! As to this I am not at all sure, but it is certainly one which requires a vast amount of patience to acquire.

Hammer throwing is a sport which any man of 11st. or over may take up, provided he only hopes to win handicap events, but when it comes to open scratch events and international competitions, then it is essentially a pastime for the heavy brigade.

I do not wish to convey the idea that the lighter man cannot go a long way in the sport; one need only instance A. E. Flaxman to prove this. To my personal knowledge he has thrown 142ft. when weighing only 149lb.—that is almost a foot of distance for every pound in weight—a performance which has only once been beaten, when an American (one Quinn, the professional field events coach at Harvard University), weighing 150lb., threw the hammer 151ft. One might usefully add that McGrath's weight when his world's record of 187ft. 4in. was made was approximately 240lb.

In a sport of this kind it is bound to be the old tale of "the good big 'un beating the good little 'un."

Mere bulk alone is not all that is required, however. For this sport a man must be in the very pink of condition, with finely developed muscles, perfectly controlled, an abounding understanding of the science, which constant, systematic practice will make almost second nature. To this must be added great agility for the proper carrying out of all the evolutions with a cool and steady nerve to enable a man to get the last ounce out of himself.

In dealing with the hammer, the first essential is to get "something to pull at," and here it may be stated that the athlete taking up this sport should provide himself with a pair of stout leather gloves, or wrap the loops of the handles in washleather, to prevent them from cutting into the fingers.

The beginner must first of all learn to stand correctly and to swing the hammer about the head in a proper manner. He takes up his position at the back of the circle, with the feet as shown in Fig. 1, and about two feet apart, the hammer head inside the circle to the

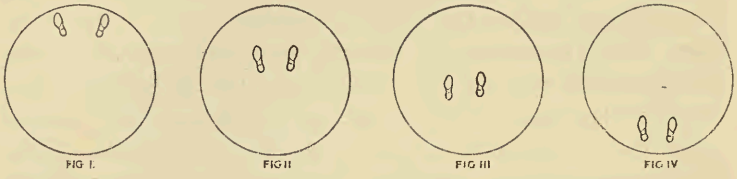
right side of and slightly behind the competitor. The hammer is now lifted, the arms stretched out, and with a loose swing it passes across the body to the left over the head and around again to the front. The object now is to acquire perfectly balanced resistance; therefore, when the hammer is passing in front of the body, the athlete must lean back to pull against it. Similarly he must lean forward as it passes over the head to the back. Three swings about the head will be found enough to attain the desired momentum for the first turn, but the swinging should be started slowly, care being taken to raise and open up the shoulders, and to reach the hands back as far as may be as the hammer goes to the back, thus giving as large a radius to the circle described as possible; also the shaft, when passing over the head, should be virtually parallel with the ground, and should only just clear the crown.

The novice will be well advised to content himself with throwing from a standing position, without attempting the turn until such time as he has accustomed himself to handling the implement.

Next, he will throw with one turn, working up to two, and finally three turns, if he is agile enough to accomplish so much and still remain within the circle.

When the one turn is attempted, the thrower, having first worked up a certain amount of momentum by swinging the hammer around the head, pivots on the left foot as the hammer comes to the front, keeping the arms out straight, when they become merely an elongation of the handles, which adds materially to the momentum generated by increasing the radius of the circle described by the hammer head, springing clear around to position shown in Fig. 2. He should not have covered a great deal of distance in making this turn, but should have travelled about 18in. to 2ft. towards the centre of the circle, and the feet should now be exactly behind the position they originally occupied. From here the throw with one turn will be made, but when the three turns

are worked up to each turn gets gradually faster than the last. For the second turn the thrower pivots again, covering another 2ft. to 2½ft. to position shown in Fig. 3, taking care that all the while the body is travelling in advance of the hammer, as by this means the athlete is enabled to keep a continuous even pull; it also helps him in getting a good heave-up at the end of the third turn.



From Fig. 3 he pivots again to Fig. 4, coming well up on the toes in turning; this should use up all the remainder of the circle. This last turn is made at the utmost speed of which the performer is capable. As the thrower comes around to Fig. 4 he comes well up on the toes and slings the hammer away over the left shoulder with all his force. The body spins round another half turn, which brings the thrower around in such a way that he can watch the hammer speeding on its flight. At the same time the arms are flung wide by the effort, as the handles are released, which is a material aid in balancing. Till such time as the novice is quite sure of staying within the circle after the hammer has been released, and until it has come to ground, it may be found convenient to drop back into the circle on the haunches, with the fingers resting upon the ground for a second.

There are many things to discourage the hammer thrower in embryo, for it is an art not to be acquired in an afternoon, but only after much thought and painstaking practice. If the knack does not come at first, or you fall in making the turn, do not be disappointed; all these things can be overcome by sticking to it, and

as soon as poise and balance are acquired, the novice is on the high road to success.

Perhaps the greatest secret in the game is to keep all the movements perfectly smooth and accurately timed, for if there is the least jumpiness the rhythm will be destroyed and the throw but a poor one.

As this is a strong man's event, and only likely to be undertaken by those of exceptionally good physique, the best advice as to training is to throw and keep on throwing; this for the novice, until he has worked up to, say, 115ft., after which he may take things rather more easily and suit his training to his requirements, but until the art is thoroughly mastered the beginner cannot get too much practice.

As to exercises, those recommended to the javelin thrower may well be used by the hammer thrower; also, the hammer thrower's attention should be given to the development of back, abdominal and leg muscles. The idea that the arms play an important part is quite erroneous; as a matter of fact, they are merely an elongation of the hammer handle connecting it with the body.

In some hammers it will be found that one of the loops is rather longer than the other; when this is the case, the longer loop should be held in the left hand.

The sole purpose of the turns is to generate centrifugal force; therefore it is of the utmost importance that the turns should be gradually increased in pace. Starting off too fast means almost invariably loss of speed in the last turn. In making the turns the thrower should lean against the pull of the hammer in precisely the same way as a man gets on to the rope when "taking a strain" in the tug of war; that the strain is pretty considerable is obvious when it is stated that it has been calculated that the direct pull on the handle of a 16lb. hammer, when thrown 170ft., is equal to 700lb.

As regards diet, the hammer thrower is exceedingly fortunate in that he may eat practically what he likes,

in reason; all muscle-building foods are good, but stodgy foods are to be avoided. The athlete should always arrange to be well rubbed down after training or competition, as this keeps the muscles supple and also prevents soreness.

There has been a popular idea for many years that because a man is a weight putter he must of necessity be a hammer thrower also; hence the sports promoters who include field events in their programmes usually choose the shot and hammer, if only two field events are to be included. The idea is entirely without reason, for it is obvious that in weight putting pushing muscles are employed, whereas in hammer throwing pulling muscles come into play. The mere practising of the one by an expert in the other can only tend to retard both sets of muscles, therefore the hammer thrower who aspires to first-class honours is advised to let the weight severely alone, and *vice versa*.

A certain amount of sprinting, with an occasional half-mile jog or so, should be done, as they not only keep the athlete fit, but tend to improve his speed across the circle.

In getting the hammer away from the hands, good elevation must be given to it, or the best results will not be obtained, and here it may be as well to say a word as to direction. So far as the actual measurement is concerned, in this country it does not matter one atom in what direction the missile may fly, for the distance will be measured from wherever it first touches the ground to the edge of the circle, but for the athlete's own peace of mind it is as well for him to be sure of which way he is going to let the hammer fly. In actual competition the circle is frequently quite close to the crowd, and a man who has the fear on him that he may send the hammer crashing into the crowd, in all probability with fatal results, cannot give a proper amount of attention to his throwing. It is most important that the athlete should be determined, confident, and have his

Photos by Sport and General.

1. J. J. Flannagan (Ireland). Getting the hammer up with a perfectly steady pull for first swing round the head.
2. M. McGrath (U.S.A.) holder of the World's Record. Commencing to turn. Note position of left foot, which is not drawn back.

HAMMER THROWING.

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Photo of Nicholson by Sport and General.

3. Tom Nicholson (Scotland) ex English Champion. "Turning" with arms perfectly straight to give greater radius to hammer head.
4. A. E. Flaxman, ex-English Champion. "Completing the final turn at lightning speed."

HAMMER THROWING.

To face page 23.

mind absolutely free to concentrate his thoughts upon the throwing.

The athlete taking up this event should provide himself with a good strong pair of hurdling or jumping shoes, with a small heel piece having in it one or two long spikes; the soles of the shoes will, of course, have spikes in the usual way.

Summarising briefly the chief points to be remembered, they are as follows:—

1. Keep the arms straight from the first turn of the body till the hammer leaves the hands.
2. Always keep the body turning in advance of the hammer.
3. Open up the shoulders and let the hands pass as far behind the head as possible in the preliminary swing.
4. The second turn must be faster than the first, and the third turn faster than the second.
5. All movements must be perfectly smooth and accurately timed.
6. The mind must be firmly concentrated.
7. The thrower must acquire confidence in his own powers.

Results at Modern Olympiads follow:—

ATHENS, 1896.	ST. LOUIS, 1904.
—	Flanagan - 168ft. 1in
PARIS, 1900.	LONDON, 1908.
Flanagan (U.S.A.) - 167ft. 4in.	Flanagan (U.S.A.) - 170ft. 4¼in

STOCKHOLM, 1912.

McGrath (U.S.A.) - 179ft. $7\frac{1}{10}$in.

The full Olympic rules governing hammer throwing are given hereunder.

THROWING THE HAMMER.

The head shall be a metal sphere and the handle shall be made of wire. Such wire must be best grade steel wire, not less than one-eighth of an inch in diameter, or No. 36 piano wire, the diameter of which is 102-1000 of an inch. If a loop grip is used it must be of rigid construction.

The length of the complete implement shall not be more than four feet, and its weight not less than sixteen pounds.

The competitor may assume any position he chooses, and use either one or both hands.

All throws shall be made from a circle seven feet in diameter, the circle to be a metal or wooden ring, painted or whitewashed, and sunk almost flush with the ground.

A fair throw shall be where no part of the person of the competitor touches the circle or the ground outside the circle.

Foul throws and letting go of the hammer in an attempt shall count as trial throws.

The measurement of each throw shall be from the nearest mark made by the fall of the head of the hammer to the inside circumference of the circle, on a line from the mark to the centre of the circle.

The number of trials and methods of decision shall be the same as in the running broad jump.

Hammers shall be furnished by the Games Committee. Any contestant may use his private hammer if correct in weight and length; in which case the other contestants must also be allowed to use it if they wish.

CHAPTER III.

SLINGING THE 56LB. WEIGHT.

After the consideration of the art of hammer throwing one's thoughts turn naturally to slinging the 56lb. weight as being the sport most closely allied to hammer throwing both in style and method of procedure.

The sport is purely Celtic in its origin, and would appear to be the modern form of the ancient game of hurling the heavy stone.

This event is the only one confined purely and simply to the extra heavy man, and in which absolute bulk is indispensable before an athlete can even try his hand at it.

Slinging the "56" is an almost unknown event in England, but it is still popular both in Ireland and Scotland. The real home of the heavy weight thrower is America, where the sport first came into vogue in the early "sixties."

Almost the first things purchased when the New York A.C. was formed in 1868 were a 56lb. weight, a 16lb. shot, and a 16lb. hammer. The sport did not at first come into great prominence; it was not until 1887 that it was included in the A.A.U. Championships, in which year it was won by W. B. Curtis, of the New York A.C. with a throw of 21ft. From thence onwards until 1887 the weight was thrown with one hand from the side without run or follow. From 1888 right up to the present day the throwing has taken place from a 7ft. circle, without follow, the weight being whirled around the head and thrown with both hands. The American Athletic Union Championship was won last year by P. Ryan, of the Irish American A.C., with a throw of 37.87 feet, which shows what a wonderful improvement has taken place during the last thirty-four years.

In 1911 a 56lb. weight championship was promoted by the English Amateur Field Events Association, and was won by H. A. Leeke, the famous Cambridge hammer throwing Blue, with a cast of 25ft. 2½ins.

This event has only once appeared in the programme of the Olympian Games, *i.e.*, when they were held at St. Louis, U.S.A., in 1904. In that year Desmarteau of the Canadian team was victorious, throwing 34ft. 4ins.

A new world's record of 40ft. 6⅝ins. was established by M. J. McGrath, holder also of the hammer throwing record, at Montreal on the 23rd September, 1911; the nearest approach to this is J. Flanagan's throw of 39ft. 3ins. at Dublin on September 3rd, 1911.

Prior to the inclusion of this event in the A.A.U.

championship programme the weight was pushed from the shoulder, but this method soon gave place to the one-handed swing from the side, which in its turn was superseded by the two-handed swing around the head. This change in method has materially increased the distances thrown, but has put many men out of the game, as in the old days the difference between a first-class performer and one who was but medium was not so marked as it is to-day.

The latest addition to the method of throwing is the two turns which was, I believe, first introduced by James Mitchell, the celebrated American heavy weight athlete.

Concerning the style of throwing and dealing with the method from the very beginning, the athlete must first of all learn to hold the weight properly. To explain what follows it may be stated that the weight is made up of a spherical iron mass attached to a triangular handle by a swivel. The bar of the crook which forms the base of the triangle should be wide to allow of the hands being well apart. The total weight is 56lb., and the height of the weight and handle together must not exceed sixteen inches.

The athlete takes up his position in the circle with the feet as shown in the accompanying diagram, Fig. 1. The bar forming the base of the triangle is grasped with both hands, the backs of the hands being to the front and the thumbs turned towards the body. This method of holding the bar is most important, as should the position of the hands be reversed the shoulder muscles do not get fair play The hands should be as far apart as possible to allow the chest to open up as the weight is whirled around the head.

As will be seen from Fig. 1 the athlete stands at the rear of the circle with his back turned in the direction in which the throw is to be made, the feet about twenty-four inches apart, and the toes touching the edge of the circle.

The left shoulder is slightly lowered to aid the athlete in making the turn, the weight of the body disposed

on the left leg, the throwing weight hanging from the hands at the right side at the outside of and slightly behind the right knee.

To work up to the whirl around the head the weight is now swung between the legs, back to the right, across the body outside the left knee, then right back again to the first position well behind the right side. With arms outstretched to the fullest extent the athlete swings the weight up and over the head, as he does so contracting the muscles of the back and swaying the body slightly from the hips; that is to say, the body sways backwards while the weight is in front and forwards as the hands pass behind the head; meanwhile the feet are kept firmly planted, the knees bend a very little as the weight passes back over the head. The movement is again repeated, but this time quicker and with considerably more force.

The beginner will do well to bear in mind the fact that the second swing is always faster than the first. It is the greatest possible folly for the athlete to whirl the weight around his head with all his force the first time, for by so doing the poise of the whole figure is disturbed, the rhythm of movement is broken, and it will be found when the turning commences the weight is travelling ahead of the body.

When the second swing is being completed, and as the weight comes round and down *behind* the right side, the athlete commences to turn by twisting the body around upon the ball of the left foot, swinging the right foot around to the position "R" in Fig. 2. Practically simultaneously the left foot arrives on "L." The turning round should be carried out in such a way that the right foot arrives at its new position before the left one leaves the centre upon which the body has turned; in this way the thrower does not even for the merest fraction of a second lose his purchase upon the ground. Having arrived at Fig. 2, the athlete carries out an exactly similar movement to that just described, but without the slightest break or pause between the two, and it may

here be as well to state that the movement from start to finish must be absolutely continuous. The second turn will bring him to Fig. 3, and this is the critical point; as the athlete swishes around for the last time, the weight is brought up and hurled away over the left shoulder with a tremendous heave, the straightness of the arms throughout the turns materially adding to the distance. The athlete should come well up on the toes when heaving the weight away, giving it good elevation as it flies, and must learn to set his muscles again after the fractional relaxation there has been as the weight leaves the hands. This resetting of the muscles enables the thrower to stay within the ring, thus preventing him from fouling. This final heave is made when the thrower's back is to the front of the circle, but the momentum of the turn will carry him round to face the direction in which the weight is flying.

Points to be remembered are:

The second turn should always be faster than the first.

In commencing the swing preparatory to whirling the weight about the head, always get it well behind the right thigh before the heave up.

Let the hands pass well behind the head to increase the radius of the circle. In this way the greatest momentum is imparted to the spinning weight with the least output of energy; for the same reason the arms should be outstretched to the fullest extent in making the turns.

The action gone through in crossing the circle is not unlike the waltz "Reverse." The feet in turning round must pass as close to the surface of the ground as possible; less energy is expended so than in leaping round, which tends to retard the speed.

The principle of centrifugal force being involved, it must follow that the greater the momentum set up the further will be the distance thrown.

Always keep the body travelling ahead of the weight.

Above all let each and every movement fit into the next with perfect smoothness and rhythm.

In training for this event it must be borne in mind that sheer weight and strength are more the governing factors than skill. The athlete must therefore turn his attention to putting on weight and developing muscle. A great amount of practice is necessary, but it should be done with the 35lb. weight, or if such a weight is not available, much useful work may be done with the 16lb. hammer.

The effort of throwing is a tremendous strain on the muscles of the back and abdomen, therefore work with the "56" should be distinctly limited; four or five throws a day are ample.

The shoes should be stout with six good strong spikes fixed in each sole and two in each heel.

Summarising the things to be learnt in their proper sequence, the novice must first learn to swing the weight about the head, next he must learn the turns, practising to acquire great rapidity; the item following this is to get the weight away from the hands in good style with a tremendous heave; finally, he must learn to stay within the circle.

Plenty of walking exercise should be taken, and the exercises prescribed for the hammer and javelin throwers may be used.

Food should be somewhat carefully selected; good plain joints with plenty of green vegetables, and good fresh fruit are excellent.

Eggs lightly boiled or fish are a good staple dish for breakfast.

It is always better to eat too little than to over feed, which leads to biliousness and loss of vigour, producing a horrible feeling of lassitude.

The use of both alcohol and tobacco should be strictly limited.

Most heavy men are inclined to run to fat when out of training, with the consequence that they suffer

considerable inconvenience and shortness of breath when commencing work after an easy winter. Before starting throwing it is well to take a strong purgative and to indulge in several long walks, wearing a couple of thick sweaters to produce a heavy perspiration.

The sport is most fascinating, and once the knack has been acquired stays with a man all through his life.

Another form of the sport is that in which the weight is thrown for height. This form is, however, little practised except in America; the rule which follows hereunder explains the method. A new world's record for throwing the 56lb. weight for height was established on the 23rd of October, 1912, at Los Angeles by P. Donovan, who accomplished the remarkable throw of 16ft. 6½ins.

The American rules governing both forms of competition are given hereunder.

THROWING THE 56LB. WEIGHT.

SECT. 1. The weight shall be a metal sphere, with handle of any shape and material. Their combined weight shall be at least fifty-six pounds, and their combined height shall not be more than sixteen inches.

All throws shall be made from a circle seven feet in diameter.

The circle to be a metal or wooden ring, painted or whitewashed, and sunk almost flush with the ground.

In making his throws the competitor may assume any position he chooses, and use one or both hands.

Foul throws and letting go the weight in an attempt shall count as trial throws without result.

Weights shall be furnished by the Games Committee. Any contestant may use his private weight, if correct in weight and shape; in which case the other contestants must also be allowed to use it if they wish.

IN THROWING FOR DISTANCE.

SECT. 2. A fair throw shall be one where no part of the person of the competitor touches the circle, or the ground outside the circle, and the competitor leaves the

Photos by Topical and N.I.L.

1. M. Sheridan (U.S.A.). Preparing for a preliminary swing. Note the position of hands.
2. H. A. Leeke (England) English Champion. Weight in flight. Good elevation has been given to the weight, and thrower has kept his upright poise.

56lb. WEIGHT.

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Position 2. H. A. Leeke (England). "Swinging back."

Photos by Sport and General.

Position 1. M. Sheridan (U.S.A.). Olympic and U.S.A. Champion. "Preparing for the throw."

Position 3. M. Sheridan (U.S.A.) In the act of delivering the throw. Observe the method of holding discus to make it "scale."

DISCUS (Greek Style).

To face page 31.

circle by its rear half, which shall be that part of the circle directly opposite the half occupied by the competitor at the moment of delivery, and shall be designated by an imaginary line drawn through the centre of the circle at right angles to the direction of the throw.

The measurement of each throw shall be from the nearest mark made by the fall of any part of the weight or handle to the inside edge of the circumference of the circle on a line from the mark to the centre of the circle.

The number of trials and method of decision shall be the same as in the running broad jump.

IN THROWING FOR HEIGHT.

SECT. 3. A barrel head three feet in diameter shall be suspended horizontally in the air.

The field judges shall determine the height at which the barrel head shall be fixed at the beginning of the competition, and at each successive elevation.

A fair throw shall be one where no part of the person of the competitor shall touch the circle or the ground outside the circle before the weight touches the barrel head, and where any part of the weight or handle touches any part of the barrel head.

The measurement of each throw shall be from the ground perpendicularly up to the lowest part of the barrel head.

The method of competition shall be the same as in the running high jump.

FIG I. FIG II FIG III

CHAPTER IV.

DISCUS THROWING.

As an item of historical interest throwing the discus is of great importance, and is the most classical of all the sports practised at the present day.

Homer repeatedly refers to the pastime, and the method of throwing is exhaustively described by Statius in Thebais.

The first traces one finds of the sport as practised by the ancients is at the institution of the Olympian Games, where we find it figuring in the Pentathlon, which was made up of leaping, wrestling, running, discus and javelin throwing.

As in all sports, the implements used in the very early days were exceedingly crude.

The original form of discus may best be described as a stone plate. This would appear to have been quickly superseded by a metal implement.

Judging from specimens found by excavators, the ancient discus would appear to have varied in weight from four to five pounds and in diameter from eight to nine inches. Some of these metal discii were very beautifully engraved.

One discus which is preserved in the British Museum weighs nearly nine pounds. From this specimen it has been argued that the ancients had two distinct competitions, one with the light and one with the heavy discus, but my own opinon is that the specimen now in the British Museum is a trophy which was the reward of a successful competitor.

Still another form of discus is said to have been used, one that was spherical in shape and provided with holes through which a strip of hide was passed to aid the thrower.

Myron's famous statue of the "Discobolos" is too well known to need any special description, but must be mentioned lest the error in its reconstruction should lead the novice astray in practising the art.

Discus throwing, as above stated, formed a part of the Quintuple games in the ancient Olympiads, retaining its place until the games were finally abolished in the first year of the 293rd Olympiad.

Quoit playing is undoubtedly a debased form of the art of discus throwing, which would appear to have fallen into disuse until the inception of the modern Olympiads, the first of which was held at Athens in 1896, when the free style of discus throwing in which the throw is made with one turn from a 7ft. circle was introduced; in that year Garrett of the U.S.A. was the winner with a throw of 95ft. 7½ins. The following year this event appeared in the programme at the American Athletic Union Championships, and was won by Hennemann with a throw of 118ft. 9ins. The sport caught on very rapidly in America, and has always remained a Championship event. The improvement has been steady, last year Muller won with a throw of 130.22 feet.

At the Olympian contests the Americans have almost entirely "ruled the roost" at this particular sport until last year, as will be seen by the table which follows:—

ATHENS, 1896.	PARIS, 1900.	ST. LOUIS, 1904.
Garrett (U.S.A.)	Bauer (Hungary)	Sheridan (U.S.A.)
95ft. 7½ins.	118ft. 2 9/10ins.	128ft. 10½ins
ATHENS, 1906.	LONDON, 1908.	STOCKHOLM, 1912.
Sheridan (U.S.A.)	Sheridan (U.S.A.)	Taipale (Finland)
136ft. 0⅓ins.	134ft. 2ins.	148ft. 3 9/10 ins

In England championships have been promoted since 1911 by the Amateur Field Events Association. Each year W. E. B. Henderson has won, with A. E. Flaxman second. Henderson's best throw of 128ft. 4½ins. was accomplished at the Championship, 1912, which constitutes a record throw for an Englishman. In

Ireland the sport was raised to championship rank in 1912, P. Quinn being the first holder with a throw of 118ft.

The Greek Style.

The Greek style of discus throwing has only once appeared in the Olympian programme, when it was included at the games of London, 1908. In this style the competitor takes up his stand upon a rectangular pedestal, 31½ins. long, 27½ins. wide, 6ins. in height at the back, sloping down to 2ins. in the front.

The thrower places himself upon the pedestal with feet apart, the left being at the back of the slope and the right advanced about half-way down. The discus is held in front of the body between the palms of the hands; the first joints of the fingers of the right hand are passed over the rim, the arms are then raised above the head to the fullest extent and the body extended, the athlete turns slightly to the right (Position 1), rising upon the toes of the left foot; the discus now has that face, which is covered by the thrower's left hand, turned to the front; the thrower bends the trunk over the right knee, both knees being slightly bent, the right foot planted firmly and the left up on the toes; as the trunk comes forward the arms are swept down and to the right, the left hand releasing its hold and grasping the right knee as it reaches that point in the swing (Position 2); the right arm travels as far on behind the body as may be possible, reaching the end of the swing with a sharp jerk (Position 3). At the end of the swing the athlete straightens out the body with all his might, and brings the throwing arm forward and round so that the tips of the fingers overlapping the rim may impart a "left to right" spin to the discus as it leaves the hand, at the same time the thrower's right leg comes forward off the pedestal. The athlete's body in making the throw turns in such a way that the right shoulder comes round to the front; the left foot remains stationary.

This form of throwing has never attained to any great degree of favour with athletes, and is not likely to again figure in the Olympian programme. It was included at the games of London, 1908, when M. J. Sheridan, U.S.A., won with a throw of 124ft. 8ins. It also figured as an event at the Athenian Celebration, 1906, and was won by Jaervinen, of Finland, at 115ft. 4ins. In 1907 it was included at the American Athletic Union Championships, and won by Sheridan, 97ft. 3½ins., but was deleted in 1908.

The rules governing the Greek style of discus throwing are given hereunder.

Throwing the discus as at Athens:—

(*a*) The discus is thrown from a rectangular pedestal 80 centimetres (31½ins.) long and 70 centimetres (27½ins.) broad, sloping forward from a height of 15 centimetres (6ins.) at the back to a height of 5 centimetres (2ins.) at the front.

(*b*) The method of throwing is as follows: The thrower places himself on the pedestal with the feet apart and holding the discus in either hand. He then grasps it with both hands and raises them without letting go the discus with either, extending the rest of his body at the same time in the same direction. After that he turns the trunk to the right and bends sharply so as to bring the left hand, which has now left hold of the discus, to the right knee, and the right hand (still holding the discus) as far back as possible. At this moment the right foot should be forward and both legs bent; the right foot rests full on the sole, and the left on the toes only. Then by a sharp and simultaneous extension of the whole body the thrower throws the discus forward.

(*c*) The thrower may leave the pedestal at the moment of throwing.

(*d*) The measurement of the throw shall be from the point at which the discus first strikes the ground to the centre of the front side of the pedestal.

The Free Style.

The free style of discus throwing has attained to great popularity among the Continental nations and in America. So great is its popularity, indeed, that no athletic programme is considered complete from which this event is excluded. The sport is gradually becoming known in Great Britain, but sports promoters are somewhat slow in taking it up.

The beginner will encounter some difficulty in handling the discus, and this must be overcome before any attempt at throwing is made.

To hold the discus, lay it flat upon the palm of the outstretched right hand, as shown in the accompanying photograph, Position 1. It is retained from slipping by the tips of the fingers curled about the edge, and is supported by the palm of the hand and the out-turned thumb. From this position the discus is swung across in front of the body, the back of the hand being turned uppermost as it comes across; the discus is then retained in position by centrifugal force until it comes to rest on the palm of the left hand (Position 2).

The next thing to be learned by the novice is to get the discus properly away from the hand when making the throw, and this should be learned from a standing position. The acceleratory turn may be left alone until the throwing has been mastered.

The greatest secret of the art is to cause the discus to leave the hand in such a way that it will fly gyroscopically flat, or, in other words, to make the discus "scale." This is accomplished by imparting a considerable spin from left to right on a horizontal plane by means of the finger-tips as the missile leaves the hand.

The novice, having mastered these two important points, may now take up his position in the circle, as shown in Fig. 1, and try a throw with the turn.

When comfortably placed in the circle the athlete swings the discus gently to and fro across the body at fullest arms' length, as described in the preliminary

swing, to generate a pull upon the discus, always endeavouring to keep the discus parallel with the ground. The last of the preliminary swings should be long, to bring the throwing arm well behind the body (see Position 3 in the accompanying photographs, in which the athlete is about to commence the turn). As the arm reaches the limit of its swing the athlete lunges forward over the bent left knee and begins to turn (thus increasing the pull upon the discus), pivoting upon the toes of the left foot and springing around to the position shown in Fig. 2, then, without any pause, passing on to Fig. 3, at which point the throwing arm, which until now has been extended loosely at right angles to the body, comes into use, sweeping round with the maximum amount of force of which the athlete is capable to send the missile hurtling upon its flight, the overlapping finger-joints imparting the spin as the discus leaves the hand. (Position 4.)

With so light an implement as the discus the maximum amount of speed can well be attained with one turn, but this turn must be carried out perfectly smoothly and the body must always travel in advance of the throwing arm.

It is a common error to imagine that with so light a missile the arm plays the most important part in the throw, instead of which the rapidity of the turn and steadiness of the pull upon the discus, together with perfect smoothness of movement, form the chief contributing factors; the arm being used for the final sweep only, the fingers playing an important part in imparting the spin.

One point which cannot be too strongly emphasised is that the discus must be made to "scale," for if it flies turning over and over it meets the full resistance of the air and many feet in distance will be lost.

Another detail which must be pointed out is that owing to the lightness of the discus it is exceedingly hard to get resistance, for as I once heard it put by a very noted

hammer thrower, "there doesn't seem to be anything to pull at."

Many throwers in turning cross the circle by an angular path, that is to say, they pass from the back to the side and then across again to the centre of the front of the circle, whereby momentum is lost. The ideal way of crossing the circle is in a perfectly straight line, to all intents and purposes carrying out the steps of the waltz "Reverse."

This sport is so closely allied to hammer throwing that I would strongly recommend the athlete taking up the discus to study the chapter on hammer throwing and to make use of the exercises suggested therein.

Exercises should also be taken to build up the pectoral muscles and those behind the shoulder, as these play a great part in helping the athlete to keep his arm out at right angles to the body when making the turn.

As regards training, the athlete may do a little shot putting to acquire the proper "Reverse" of the feet at the end of the turn. He should also sprint to acquire quickness of movement. Jumping, both high and long, is good in that it builds up the leg muscles which come into play. W. E. B. Henderson, the finest discus thrower we have in this country, was a noted high jumper in his day.

The discus is so light that there is no great strain upon the body such as is experienced in hammer throwing, the athlete may therefore throw as much as he likes; indeed, the more often the better, for it is only by continual throwing that he will acquire the knack. It must always be remembered that discus throwing, like all the other field events, is an exact science, and therefore a considerable amount of thought and careful attention to the carrying out of the movements is just as necessary as bodily work.

Discus throwing is a sport which may be practised almost as successfully by a light man who is quick and

Position 1. W. E. B. Henderson, English Champion 1911, 1912 and 1913. Preparing for preliminary swing.

Photo of Flaxman by N.I.L.

Position 2. A. E. Flaxman, runner-up English championship 1911, 1912 and 1913. End of first preliminary swing.

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DISCUS (Free Style).

Position 3. W. E. B. Henderson. About to commence turning, arm is well back at end of preliminary swings.

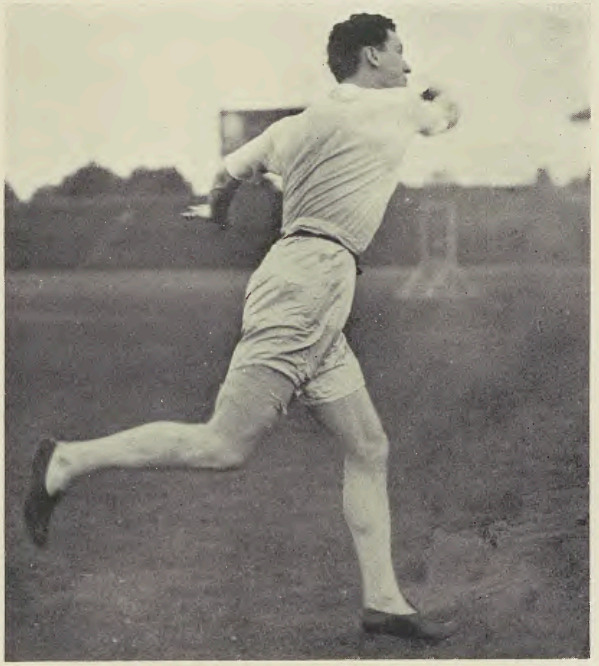

Photo No. 3 by Sport and General.

Position 4. Henderson has completed the turn and sent the discus hurtling on its flight with a sweep round of the right arm.

To face page 39.

DISCUS (Free Style).

has plenty of snap as by his heavier and often slower brethren.

Circle from which Discus is thrown.

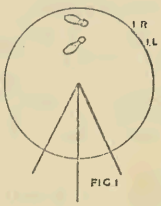

FIG I

FIG. II

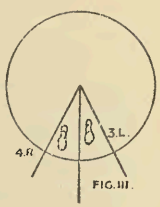

FIG. III.

Results at modern Olympiads as follows:—

ATHENS, 1896.
Garrett (U.S.A.) 95ft. $7\frac{1}{2}$in.

PARIS, 1900.
Bauer (Hungary) 118ft. $2\frac{9}{10}$in.

ST. LOUIS, 1904.
Sheridan (U.S.A.) 128ft. $10\frac{1}{2}$in.

ATHENIAN CELEBRATION, 1906.
Sheridan (U.S.A.) 136ft. $0\frac{1}{3}$in.

LONDON, 1908.
Sheridan (U.S.A.) 134ft. 2in.

STOCKHOLM, 1912.
Taipale (Finland) 148ft. $3\frac{9}{10}$in.

Rules governing discus throwing, free style, are given hereunder.

Olympian Rule.

Throwing the Discus.

(*a*) The discus shall be 2 kilogrammes (4.4lb.) in weight and 22 centimetres (8.7in.) in diameter; thickness in the middle, 45mm. (1.77in.); thickness at the rounded-off edge, 22mm. (0.86in.).

(*b*) The discus shall be thrown from a circle about 2.5 metres (8.2ft.) diameter.

(*c*) All throws, to be valid, must fall within a 90deg. sector marked on the ground.

(*d*) A throw will be measured from the point at which the discus first strikes the ground to the centre of the circle, after which the distance is reckoned from the taking-off limit.

CHAPTER V.

PUTTING THE 16LB. SHOT.

LIKE all the other heavy weight events with which we have been dealing, putting the 16lb. weight is of great antiquity.

The sport is of Celtic origin, and was included at the Tailtin Games of Ireland, but did not figure in the programme at the ancient Olympiads.

The 16lb. shot as used to-day is a comparatively recent production, and is the outcome of the old putting stone of varying size and weight which served the hardy Scot for many generations. Scotland from aforetime has been the nursery of innumerable noted shot putters.

With the invention of cannon the unwieldy boulder began to fall into disuse, the military element among the competitors preferring to use the much more easily handled cannon ball. The weight of the missile was still a very variable quantity. This state of things was most unsatisfactory owing to the impossibility of keeping records or comparing performances. In examining old records the seeker after knowledge frequently comes across the term "putting the weight," without any actual poundage being mentioned. When this is so it may be taken that the 16lb. is meant, as 16lb. in the old table of weights and measures was termed "a weight" in the same way that 14lb. is usually referred to as "a stone."

Finally the authorities of Dublin University took the matter in hand, and in 1860 decided that at all future University competitions an iron shot weighing 16lbs. should be used. In 1866 both the English Universities came into line; the A.A.A. intended doing so, but unfortunately in that year the weight was 18lb. 10 oz., since which time nothing but a 16lb. shot has been allowed at Championship and International meetings.

The world's record in this event has stood to the credit of Ralph Rose, of America, since August 21st, 1909, when he accomplished the extraordinary put of 51ft. at San Francisco. The next in order of merit are P. McDonald, Irish-American A.C., 50ft. 3.9in., and Dennis Horgan, Irish Amateur Athletic Association, 48ft. 2½in.

Shot putting has been included in the American Athletic Union Championship programme since 1876, in which year Buermeyer, of the New York Athletic Club, won with a put of 32ft. 5in. In the same year the English A.A.A. Championship was won by T. Stone, jun., with a put of 38ft. 7½in. Last year the American Championship was won by P. McDonald, of the Irish-American A.C., at 48.51ft.; the English Championship going to Dennis Horgan, of the Irish A.A.A., with a put of 44ft. 10in., from which it would appear that in this one field event at least we have produced a field events man worthy of the Americans' prowess, and have almost held our own.

Dennis Horgan's career has been truly remarkable, and must, I think, constitute a record. He has been champion of England no fewer than thirteen times, of America once, *i.e.*, in 1900, when he reached 46ft. 1¼in., and of Ireland times innumerable. In 1908 he was second in the Olympic Games to Ralph Rose (who did 46ft. 7½in.) with a put of 44ft. 8¼in., and was at one time holder of the world's record of 48ft. 2½in.

The Americans have never been beaten at shot putting in the Olympian games, in the programme of which this sport has always figured, the results being as under:—

ATHENS, 1896.	ST. LOUIS, 1904.
Garrett (U.S.A.) - 36ft. 2ins.	R. Rose (U.S.A.) - 48ft. 7ins.
PARIS, 1900.	LONDON, 1908.
Sheldon (U.S.A.) - 46ft. 3⅛ins.	R. Rose (U.S.A.) - 46ft. 7½ins.

STOCKHOLM. 1912.

P. McDonald (U.S.A.) . . 50ft. 4ins.

Many pages might be written on the merits and demerits of big and small men. Gray, at one time Canadian and American Champion, was not a phenomenally big man, never scaling much more than 190lbs, yet his style was perfect. Ralph Rose, on the other hand, is a veritable giant, standing just on 6ft. 6in., and turning the scale at 280lbs. Our own man, Dennis Horgan, is the happy medium between the two; his style may not be so pretty as that of Gray or W. W. Coe, who is about 5ft. 8in., and weights some 240lbs., as does P. McDonald, but he is a very master of the art, and one of the most consistently good performers we have ever seen.

Although bulk is of great value to the shot putter, neither that nor enormous strength will bring him prominence unless he also has that intimate knowledge of the art which comes of careful study and constant practice, so that it becomes more a matter of physical culture and intelligence than mere brute force. The man who would succeed as a shot putter must also have plenty of "snap" and be quick on his feet. W. W. Coe, for instance, the old Oxford Blue and holder of the inter 'Varsity record of 43ft., needed a lot of catching in a fifty yards sprint.

The whole secret of successful shot putting may be said to be to so time and concert the muscular action from the moment of taking up the position in the circle until the guard-board is reached, that the whole effort will culminate in a tremendous drive of the right arm with the whole force of the body behind it.

Style and speed in action, both in the body movements and in crossing the circle, are of the utmost importance.

The method of holding the shot is the first thing for the novice to learn. To hold it properly and to administer the final "flip" with the fingers as it leaves the hand, strength of wrist is essential.

The accompanying photograph (Position 1) of Dennis Horgan is an excellent illustration of how the shot should be placed on the hand.

The palm of the hand should be a receptacle for the shot to rest in, the weight being borne at the point where the three middle fingers join the hand; the upcurled tips preventing it from slipping back, the thumb and little finger serving to keep it nicely centralised. The arm should be kept close into the body, the elbow centred under the shot, which is thus held near to the collar-bone a little lower than and beside the jaw-bone; the closer the shot is in to the shoulder the greater will be the force in the final drive.

When the athlete has mastered the method of holding the shot, and before he goes into the ring to attempt the put, he must learn the "Reverse," which is one of the most important parts of the game. The following directions, if carefully carried out, should enable him to do this after some practice.

Take a stand with the feet about eighteen inches apart, as shown in Position 1, left arm and leg advanced, the weight of the body being borne by the right leg. In this position the athlete pauses for a moment to get comfortable, then sharply reverses the feet from left to right, pushing the right arm hard out as the right shoulder comes round, throwing the head back and stretching the body up in so doing; the point of importance here is that the arm must be held in reserve for the final drive, and on no account be brought into play until the right shoulder is well round; the athlete should come well up on his toes at the end of the "Reverse." As the shot leaves the hand the body should be right round and well stretched out, with the putting arm at an angle of about 45deg. to the body; this will give the shot the necessary elevation.

Assuming that the novice has now learned to hold the shot and "Reverse," he may mark out a 7ft. circle upon the ground and make a start on the business in earnest. He now places himself at the back of the circle with the feet as shown in Fig. 1, the body, arms and legs as already described in Position 1 and shown by photo-

graph; except that while he is getting comfortable in the ring it is unnecessary to put the strain of holding the weight upon the "putting" hand until the last moment. The shot may therefore rest in the left hand, being passed to the right hand just as the athlete is about to commence the glide across the circle; and here it may be mentioned that the shot should rest comfortably, and should not be "gripped," on account of the contraction of the sinews caused thereby and consequent loss of power in the wrist and forearm.

The athlete, having got a thoroughly comfortable position, pauses a moment to concentrate the mind and muster the nerve forces, which play so important a part; the shot is then passed from the left hand to the right, the left arm is outstretched, the left leg pushed across as shown in Position 2 in the accompanying photograph. All the weight is now on the right leg, which is slightly bent at the knee. The athlete leans forward until he can retain his balance no longer, then commences the glide across the circle, with a good drive off from the right leg (Position 2), which should land him well up to the centre of the ring with the right foot, and the left should be at the further side close up to the guard-board, as shown in Fig 2 (Position 3). The crucial point has now been reached, and without the slightest pause the athlete swings round the body from left to right (Position 4), simultaneously reversing the legs; the right foot now lands on R. 1, Fig. 3, while the left is swung round to L. 2 to help the athlete to retain his balance. The whole mind should be concentrated upon getting all the muscular strength and nervous energy into the twist of the body and final heave. As the right shoulder comes round to the front, the right arm shoots out; the fingers giving a final "flip" to the shot as it leaves the hand. If the movements have been correctly carried out, the athlete should have got the shot away from the hand at a good elevation, which is aided by the final "flip" of the fingers. The

main contributing factors should have been speed in crossing the circle, a powerful leg drive, quick reverse following upon the glide without the slightest break or pause, and finally a mighty heave of the shoulder.

When the novice becomes more or less proficient in the foregoing, he will begin to find that he has still got a tremendous lot to learn both as to "muscle control" and perfect smoothness of accurately timed and concerted movement.

Another important point is to acquire perfect balance both at the back of the circle and also at the toe-board when the "put" is completed.

I have often heard it said that the secret of Dennis Horgan's great success as a shot putter is the extraordinary way in which he is able to lean over the guard-board with arm outstretched and yet retain his balance after the shot has left the hand (see photograph No. 4), thus getting greater length in the final arm drive than almost any other exponent of the art.

It is not at all an unusual thing in America for shot putters to spend many hours practising the balance at the back of the circle on the right leg, shot in hand, left arm upheld, the left leg being raised to the level of the hip or even higher, from which position the body is swayed back, the leg swept across the body and down outside the right leg, as in photograph (Position 2). This is practised until the athlete can be quite sure of his balance. Similarly at the front of the circle he must practise the balance on the right leg, body bent forward, arm outstretched, leaning well over the toe-board, the left leg and arm swinging round to the right rear (Position No. 4).

Exercises which will increase the driving power of the legs and right arm must be persistently practised.

The novice may do well to practise with a 12lb. shot, while this weight should always be used by schoolboys unless almost fully grown.

The rules governing the shot putting are given hereunder.

Diagrams illustrating Putting the 16lb. Shot.

American Rule.

The Shot.

The shot shall be a metal sphere, and the weight for championship contests shall be 16lb. It is optional with the Games Committee of handicap meetings to offer competitions of shots weighing from 12lb. upwards.

The shot shall be "put" with one hand, and in making the attempt it shall be above and not behind the shoulder.

All puts shall be made from a circle 7ft. in diameter. The circle to be a metal or wooden ring, painted or whitewashed, and sunk almost flush with the ground, and it shall be divided into two halves by a line drawn through the centre. In the middle of the circumference of the front half shall be placed a stop-board, 4ft. long, 4in. high, and firmly fastened to the ground. In making his puts the feet of the competitor may rest against but not on top of this board.

A fair put shall be one in which no part of the person of the competitor touches the top of the stop-board, the circle, or the ground outside the circle, and the competitor leaves the circle by its rear half, which shall be the half directly opposite the stop-board. A put shall be foul if any part of the person of the competitor touch the ground outside the front half of the circle before the put is measured.

The measurement of each put shall be taken at the circle from the nearest mark made by the fall of the shot

Photos by Sport and General and Topical.

1. Dennis Horgan, ex English and American Champion. Showing position in circle and method of holding the shot.
2. Commencing the glide across the circle. (W. E. B. Henderson, O.U.A.C.)

PUTTING THE 16lb. SHOT.

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Photos by Sport and General

3. Dennis Horgan. End of first movement and beginning of the reverse.
4. The end of the reverse.

Note. The shot is now put from a 7ft. circle and not from a square as shown in these two pictures.

PUTTING THE 16lb. SHOT.

To face page 47.

to the circumference of the circle on a line from the mark made by the shot to the centre of the circle.

Foul puts and letting go the shot in making an attempt shall be counted as trial puts without result.

A board similar to the one in front may be used at the back of the circle.

The order of competing and number of trials shall be the same as for the running broad jump. Shots shall be furnished by the Games Committee. Any contestant may use his private shot, if correct in weight and shape; in which case the other contestants must also be allowed to use it if they wish.

OLYMPIC RULE.

Putting the Weight.

(*a*) The weight is massive and of iron; its weight shall be 7.25 kilogrammes.

(*b*) The weight shall be put from the shoulder with one hand only, and it must never be brought behind the shoulder.

(*c*) The put shall be made from a circle of 2.13 metres diameter.

(*d*) In all other respects the rules for the discus throwing shall govern where applicable.

PART TWO.

JUMPING.

JUST when jumping first came into vogue it is impossible to say; that it was actually practised in competitions in its two simplest forms in 1829 B.C. can be proved by reference to the Book of Leinster, in which is given the programme of the Tailtin Games of Ireland. We also know that "leaping" was one of the five events that made up the Pentathlon at the ancient Olympian Games, 776 B.C.

There are all sorts of legends as to the wonderful performances done by the heroes of old; notable among these, and incidentally the earliest of the legends in which leaping is mentioned, are the two leaps of Cuchalain, "the Irish Hercules." The first, when he wished to cross the "Bridge of Leaps" to the land of Shadows, takes rather the form of a hop, step, and jump, for if he who wished to cross did not land fairly into the middle of the bridge with his first leap, or paused an instant before making his second spring, the half of the bridge rose up and flung him back to the bank from which he had taken off.

Three times Cuchalain essayed the feat, and each time was hurled back, but at the fourth attempt he landed fairly in the centre, and taking off again immediately, reached the other side in safety. There he stayed for a year learning feats of strength from Skatha. Above all, he learned the "Salmon Leap," a feat in which the athlete, having once risen in the air, projects his body still further with a second spring while in mid-air. Cuchalain's second effort was a very "tall" high jump, by which he won Emer, daughter of Forgall the Wily, for his bride, and incidentally a couple of loads of gold and silver. It happened in this way: Cuchalain, anxious to win Emer, attacked Forgall, her father, but could find no means of entering the castle to come at him. Cuchalain therefore decided to again attempt "the heroes' salmon leap" which Skatha had taught him, and by this means cleared the castle ramparts, gave battle to those within, and won his bride.

There are many such legends to be found throughout the history of the ages, many of them, doubtless, having some foundation of truth, but all grossly exaggerated as time has passed.

Jumping, in its more simple forms, such as the running, high, and long jumps, is a perfectly natural instinct of man, but one to which some secret essence fits some more than others. It is not altogether a

matter of build, as in the weight-throwing events, but rather of a subtle something in the substance of a man which makes him a first-class jumper.

Passing from the old legends to more modern times, I find jumping referred to in "Walker's Manly Exercises," published by T. Hurst, of St. Paul's Churchyard, in 1834. One gathers that in the high jump the sideways run was used, and we find it stated that "a good high leaper will clear 5ft., a first-rate one 5½ft., and an extraordinary one 6ft." For the running long jump it is stated that "20ft. is a first-rate leap, 21ft. is extraordinary, and 22ft. is very rarely accomplished." No mention is made of performances in the standing high jump, but of the standing long jump we are told that "12ft. is a good standing leap, and 14ft. is one of comparatively rare occurrence." Walker seems to be very accurate as to the running jumps, but his statement concerning the standing long jump is truly amazing, when one realises that the recognised world's record in this event is only 11ft. 6in.; but at the same time one is rather tempted to wonder what Mr. Walker would have thought of G. L. Horine's high jump, 6ft. 7in., or J. O'Connor's long jump, 24ft. 11¾in.

The running high and long jumps have figured in the English championship and Inter-University programme since the sports were first held. The pole jump is also an English championship event, although not practised at the Universities. The standing jumps and the hop, step and jump have not, so far, been taken up seriously in this country at all, but are exceedingly popular in Ireland, America, and on the Continent.

For the production of jumpers of every kind the palm is borne by the Americans, who have been practically unbeaten since the modern Olympiads were instituted in 1896, although Great Britain has proved successful once in the running high jump and once in the hop,

step and jump, while a Frenchman won the pole jump at the Athenian celebration in 1906.

From a close study of the records, it would appear that America and Ireland are the most prolific of all the nations in the production of jumpers, but how long this may be so now that the Continental athletes are taking to the sport so keenly, is hard to predict. To see that the Continent can produce some fine jumpers, one has only to study the performances of Passemann and of Leisch, of Germany.

The jumps which up to the present have figured in the Olympian programme, are as follows:—

Running high jump.
Running long jump.
Standing high jump.
Standing long jump.
Pole jump.
Hop, step and jump.

It is believed, however, that the two standing jumps will be deleted from the programme at future Olympiads.

CHAPTER VI.

THE RUNNING HIGH JUMP.

For many years, and especially in the days of the brothers Leahy, the running high jump was known as the "Irishman's event," for there is something in the quick, nervous Celtic temperament that goes to make the Irishman the beau ideal of high jumpers. It has been said that the Americans are better adapted to the sport than other races, but with this I do not agree. The reason that America produces such fine high jumpers is, in the first place, because they have more opportunities for taking part in competitions; and, in the second place, they are more painstakingly thorough

in their methods, and make a careful study of all those little points of detail which are so essential to the first-class performer.

One feature all first-class high jumpers have in common is that all are exceedingly highly strung and nervous to an almost painful degree. As to the build of the ideal high jumper, it is difficult to lay down any hard and fast rule, for there have been first-class jumpers of all shapes, sizes, weights, and dimensions. Byrd Page was quite a little chap, but springy as a tennis ball, yet he cleared 6ft. 4in. C. W. Taylor, who also clears 6ft., is tall and stringy, as is P. Leahy, the best jumper Great Britain has ever produced, and who jumped 6ft. 4⅜in. in 1898. G. L. Horine, who holds the world's record of 6ft. 7in., stands 5ft. 11in. and weighs 162lb. H. F. Porter, winner at the 1908 Olympiad, stands 6ft. 2½in., weighs 185lb., and is beautifully proportioned.

It would, therefore, appear that the high jumper should be tall and not too heavily built if he would attain to prominence, but, quite apart from the question of physical attributes, there must be that subtle "something"—sometimes called "devil," sometimes "nervous energy," but quite beyond one's powers of cultivation; so, if a man has not this strange nerve force which enables him to do "a little bit better than his best" at a pinch, he will never make a really great high jumper. The novice must also have an unflagging store of patience to enable him to persevere in really scientific and methodical study of the art. Only those who have watched the Americans at practice can realise how perfect are their methods, or how carefully each little movement is observed and the reason for it thought out and traced to its origin: if good, the movement is encouraged and developed; if bad, the trainer sees to it that the athlete does nothing each day but practice until the fault is eradicated. In this way the American jumpers learn to have absolute control of the body while

in the air, and the "body control" plays a most important part in jumping.

One thing which has militated most seriously against our British high jumpers is the non-use of the sand-pit in this country, and without which no jumper can ever feel safe enough about landing to give his whole attention to clearing the bar in good style. The sand-pit has been in use in America almost since competition jumping first started. It is also used at Oxford and Cambridge, and one has recently been provided at the London Athletic Club's ground at Stamford Bridge, so that there would seem to be a reasonable hope that all clubs promoting high jumps, or numbering high jumpers among their members, will make use of this really most necessary pit in future. In my opinion, it is to the non-use of the pit that the shortness of our high jumpers' athletic careers is directly traceable.

The need of the sand-pit cannot be too strongly emphasised. In the first place, the novice, jumping with the knowledge that no matter how awkwardly he jumps he will not hurt himself, will be far more inclined to go "all out" than will the man who says to himself before each attempt: "Now, if I make a muck of this I may injure myself seriously." The finished jumper who clears his 6ft. is saved the shock to the system which is imparted by landing on hard turf after a respectable jump; and the legs are saved, when landing in sand, to a very appreciable extent.

As to the outfit for the running high jump, two standards, bored and graduated in inches and half-inches, should be provided, together with a supply of bars, 1in. square and 10ft. to 12ft. long. The standards should be set up some 10ft. to 11ft. apart, immediately at the edge of the sand-pit.

There are many styles in high jumping, but all may be classed under two main headings—the one in which the bar is approached from the side, and the other in which the run is taken directly at the bar from the front.

Except in very exceptional cases, the former is to be condemned, the performer's natural spring being capable of improvement to a very limited degree only. This style is known as the "scissor jump," and is bad in that the body is almost invariably held upright or bent forward. In either case, the whole weight is centralised over the hips, thus forcing the seat down and frequently causing it to remove the bar. Unfortunately a modification of this method is used by one of the best jumpers we have in this country, B. H. Baker, who cleared 6ft. at the Olympian Trials, 1912, in an exhibition jump, after tying with O'Donohue at 5ft. 11in. When he gives it up and adopts the American style of getting the body over straight and the legs over first, then there is no telling what he may accomplish.

Both styles may be again sub-divided into two heads—the one in which the shoulders cross the bar first, as practised by C. W. Taylor, of the Polytechnic Harriers; the other, and more usual style, in which the run is made from the front and the legs cross the bar first, is by far the best, and, incidentally, the one used by the pick of the American jumpers.

In the method in which the shoulders cross the bar first, a lurching run, with the body bent forward and arms swinging, is adopted. As the athlete takes off, the body is leaning towards the bar. When the body is in mid-air and the shoulders over the bar the legs are swung upwards and over by the use of the abdominal muscles, the jumper rolling inwards towards the bar and landing sideways. This style, however, is only suited to a very few athletes.

What may be described as the American style, in which the run is taken from directly in front of the bar and the legs cross first, is undoubtedly the best, and the one capable of improving the jumper's performance to the greatest extent.

This style may be practised in two ways. (1) In

which the jumper, taking off from the right foot, throws the right leg over first, and *vice versa*. This is the method in common use throughout the United States. (2) What may be styled "Porter's method," as I believe H. F. Porter, winner at the 1908 Olympian Games, was the inventor of it, in which the athlete, taking off from the right foot, throws the left leg over first, or *vice versa*.

If we take these styles separately, in (1) the method is as follows, assuming that the athlete takes off from the right foot: The jumper, having measured off his run-up to get his take-off accurately placed, a matter of the utmost importance, approaches the bar directly from the front and breaks his stride sideways to the right to initiate the turning movement as he approaches the spot from which the spring will be made. When the take-off is reached he jabs the right heel hard down, rises into the air, and heaves up the whole of the right side to aid him in getting the right leg over the bar, at the same time flinging the right arm above the head. When the jumping leg is over, the left leg is cut under it and over the bar, and at the same time the jumper throws the left arm out to the left and brings the right arm diagonally across the chest, fully outstretched, and over the left shoulder. This elevates the hams sufficiently for them to clear the bar, and practically completes the turn, so that the jumper lands in the sand-pit facing the bar which he has just cleared. The accompanying photograph of Barker (No. 1) of Harvard University, is a very good illustration of this style. Barker, as can readily be seen, will clear the bar by carrying out the movements as already described. Another way in which Barker might complete the jump would be to drop the right leg over and fling the right arm out to the right, thus rolling the body from left to right, in which case the hips would be hitched up to get the seat over, the head and shoulders being dropped back to further elevate the seat, and the

head being raised again at the last moment to get the shoulders over.

(2) In Porter's method the bar is approached from directly in front, and it can be assumed, for the purpose of description, that the spring is made from the right foot. On reaching the take-off mark the athlete springs straight into the air, the left side being turned to the bar and the left leg a trifle higher than the right, which is almost straight, the legs being fairly well separated and the head bent slightly forward, watching the bar between the legs. As will be seen from the accompanying photographs of H. F. Porter (Nos. 2 and 3), the left foot just crosses the bar instantly the left leg is dropped, the right leg raised as high as possible, the left arm is flung up and the right arm straightened out parallel with the bar; at the same time the hips are raised and the head dropped back. It will be seen that Porter is watching the bar most carefully throughout. In the next movement the left leg is lifted as the right leg is cut quickly down and towards the right hand post (looking at the picture), which causes the body to turn sharply over to the left; at the same time the right hand comes inwards across the body to a point opposite the left shoulder. The shoulders are raised over the bar by flinging across the right arm and lifting the head; the face is turned down over the right shoulder to enable the jumper to still watch the bar. It will be found that the quick twist in mid-air when crossing the bar has turned the athlete, so that he lands in the pit facing the direction from which he has jumped.

To every rule there must be an exception, and so among high jumpers we find such men as Byrd Page and Bellerby, whose styles of jumping are entirely their own. In such a case, where a man has an absolutely natural style peculiarly suited to himself, the trainer will do well not to interfere after he has once satisfied himself that the athlete is not amenable to the more orthodox methods.

There are many men who for one reason or another are unable to jump when making the run from directly in front of the bar, good performances only being possible to them when the bar is approached obliquely; to such men I would recommend the style which I taught to R. M. Bonham-Carter, of the Royal Military Academy, whereby he improved his jump several inches in a few hours absolutely on the eve of the annual competition between the R.M.A. Woolwich and the R.M.C. Sandhurst, and enabling him to tie for first place with A. H. Hornby, also of the R.M.A., at 5ft. 3½in. The accompanying photograph (No. 4) of Bonham-Carter jumping is an excellent illustration of the method employed. The run up has been made from the left side (looking at the picture), the jumper taking off from the left foot. As the athlete rises the right leg is swung over, the body from the hips upwards is turned round to the left, and the left leg raised up under and *behind* the right arm as high as possible, the left side of the seat is jerked up to clear the bar and the left leg swung down inwards and across the front; this turns the jumper still further, raises the left hip a little higher, and clears the body away from the bar. As in the other two styles, the athlete lands facing the bar. The method is good for special cases, but I would not recommend the novice to use it unless he has thoroughly convinced himself that it is absolutely impossible to jump by "Porter's method," as this is by far the most economical method known, or, in other words, the method by which the greatest heights are attained with the energy at the command of the jumper.

There is yet one other form of jumping that is worthy of mention, *i.e.*, that in which the athlete "shoots" over the bar. It may be briefly described as being a style in which the jumper puts all his force into the initial spring, drawing the knees up under the chin as he rises. When the feet are on a level with the bar the legs are shot out straight, and the jumper crosses the bar lying almost flat. It is not an especially good method, but is at all

events better than the old sideways "scissor jump," in which the athlete approaches the bar from the side, holds the body upright, and swings over first the one leg and then the other; the novice must be broken of this style at all costs.

From the foregoing directions, and with considerable practice and thought, the beginner may soon acquire style; further than this, he must learn to get his take off with absolute accuracy. This is best done by jumping several times, and each time getting a fellow jumper to mark the spot at which you take off, and having got it, mark it, then get another mark five, seven, or nine strides back from the take off mark, and see if your jumping foot hits that. Having ascertained these marks, measure them from a point on the ground, centralised under the bar. These measurements should be kept so that marks may be put down on the day of competition. The distance of the take off mark from the jumping standards will vary with the height at which the bar is. All those who have practised high jumping to any extent will know how it flusters one to make a false run or get a bad take off, therefore this should be obviated by the foregoing simple method; also, if the jumper is sure of getting into the air in good style, he can give all his attention to getting over the bar in the proper manner.

One object the athlete should have in view throughout his training is to get the body over the bar in sections. This doubtless sounds absurd, but it is perfectly right, as it means that each part in going over supports only its own weight. This is why a "lay out" or prone position is strongly recommended, for if the athlete in going over the bar gets his body out flat, the legs passing over first, followed by the hips, which are hitched up to clear the obstacle, and finally the shoulders, which are raised up by lifting the head at the right instant, it must follow that the man jumping in this way will have his weight properly disposed throughout, and will therefore clear a much greater height than the man who springs

into the air with body upright or bent forward, and all the weight thus pressing down over the hips and thighs. This management of the disposition of the athlete's weight is body control pure and simple, and must be learned by all who would attain to first class honours.

No athlete should go in for jumping more than five days a week at the most, and should only quite occasionally try and clear the greatest height of which he believes himself to be capable; it is far better to keep the bar at such a moderate height at which he knows himself to be sure of getting over, and to practice at that height to acquire style and method, than to wear himself out by continually trying a height he may clear one time in six. Even when the jumper has acquired perfect form he should still continue to practice at quite a modest height; nothing can be more injurious to the jumping muscles than the strain of jumping "all out" every day.

Sprinting, short brisk walks and skipping are excellent training for the high jumper, but the most important thing to him is to preserve and improve the natural arch of the instep, and this is done by rising on the toes, rolling the legs outwards from the soles of the feet, over on to the outside of the feet, varying this last by rising on to the toes after getting over on to the outside of the feet, then returning the heels to the ground.

Very few athletes realise how all important to them is this arch of the instep, for if it is not preserved all sorts of knee troubles will result.

There are a few hints as to competition which may be of use to the beginner. In the first place, and as field events men are thought very little of in this country and their comfort hardly if ever considered, he may expect to be fetched from his dressing-room some time before the jumping starts, therefore he should be prepared against cold, which is exceedingly bad for a jumper's legs. It is, therefore, as well to slip on a pair of flannel trousers over one's shorts to keep the legs warm. These

can be removed when the jumping commences. A thick woollen "sweater" should also be worn.

As the jumping continues the strain on the legs is very great; anything that will soothe and stimulate the muscles is therefore to be commended. I know of nothing better for this purpose than a pair of good flesh gloves, with which the competitor can gently massage his limbs between his jumps. Above all, while waiting for your turns, lie down; do not stand about. All strain on the legs is to be most carefully avoided. The night before the competition go to bed early and get as much sleep as possible, and on the morning of the sports keep the legs up the whole time if it is possible.

Before the competition starts a good sharp sprint, followed by a very short run, bringing the knees up high, tones the muscles up splendidly and seems to brighten one up, otherwise there is an inclination to feel listless when going out for competition. I remember Oswald Groennings always used to tear about the ground like a madman while we were waiting for a competition to commence; if my memory serves me, he used to call it "limbering up."

As it is of such importance to the jumper that he watch the bar, it is advisable to place a handkerchief on the bar, in the way that is shown in the accompanying photographs of Porter.

Concerning the athlete's costume, there are, of course, the ordinary "gym" vest and shorts; these "shorts" should be exceedingly short and very tight. Passemann, the famous German high jumper, who won the English Championship in 1911 with a leap of 6ft., used to wear a pair of elastic bathing draws outside his shorts to keep the seat from touching the bar. The shoes should fit really close to the feet, and should be made by a specialist, for although they must be tight and remain so, yet they must be very light. The spikes should be long and be kept sharp by filing; there should be two in the heel and seven in the sole, six being parallel, the

seventh being beyond the other six and central at the point of the shoe. The shoes should also have a strap passing across the instep to buckle on the outside. Fairly long socks may be worn to prevent the sand, which gets into the shoes when landing in the pit, from rubbing the feet. If the athlete is inclined to clench the hands and dig the finger nails into the palms, corks may be held in the hands, but it is better to do without them if possible and to spread out the fingers; even such a little thing as this helps to control the balance when in mid-air.

The world's record high jump of 6ft. 7in. is held by G. L. Horine, of Stanford University, California, U.S.A., and was established on May 18th, 1912. The Americans looked to Horine to be their "star" performer at Stockholm, predicting that he would do 6ft. 9in., which, I understand, he actually has done in practice. Unfortunately he did not reproduce his previous form, and was beaten by A. W. Richards, of Utah State, U.S.A., at 6ft. 3.98in., H. Liesche, of Germany, being second, while Horine was third.

Up till March 29th, 1912, when G. L. Horine established a new record of 6ft. $6\frac{1}{8}$in., M. F. Sweeny's record of 6ft. $5\frac{5}{8}$in. had stood since September 21st, 1895. The next best to this is P. Leahy's performance of 6ft. $4\frac{3}{4}$in., accomplished at Mill Street on September 6th, 1898.

In 1866 Little and Roupell tied for the English Championship at 5ft. 9in.; the next year Little tied with Green at 5ft. 8in. The poorest Championship performance was in 1869, when J. G. Hoare became champion with a jump of 5ft. 2in., a jump nowadays well within the powers of any first-class public schoolboy. The best Championship performance was in 1902, when S. S. Jones, of the New York A.C., cleared 6ft. 3in.

In America this event has figured in the A.A.U. programme since 1876, in which year H. E. Ficken, N.Y.A.C., was declared champion at 5ft. 5in. The poorest championship performance in America was H. E. Ficken's jump of 5ft. 4in. in 1877, while the

Photos by Sport and General and Topical.

1. A. D. Barker (U.S.A.) "Rising to the bar." Showing turning movement.
2. H. Porter (U.S.A.) Olympic Champion 1908. Porter having risen to the level of the bar has just thrown the left leg over.

Note in both pictures how the jumper is watching the bar.

THE RUNNING HIGH JUMP.

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Photos by Sport and General.

3. Movement immediately following No. 2. "Dropping back the head and shoulders, allowing left leg to hang while lifting right to elevate the hips.
4. R. M. Bonham Carter (England). Illustrating the most economic style of jumping when the bar is approached from the side.

THE RUNNING HIGH JUMP.

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best (6ft. 3in.) was accomplished last year by J. O. Johnstone, of the Boston A.A.

Nowadays it is rather the exception than the rule for an Englishman to get over six foot, but in America a man must be able to do his six foot, or at any rate somewhere very near it, to be considered anywhere near championship form.

There is no lack of excellent material in Great Britain of which to make first-class high jumpers, as is realised when one remembers such men as P. and Con Leahy, B. H. Baker, T. O'Donohue, Howard Smith and A. C. Bellerby. But our new material must be trained on scientific principles and given plenty of chances for competition, and above all the use of the sand pit all over the country must be insisted upon.

We cannot hope to produce a world's record breaker in one season or even in two, but by dint of careful training over a number of years we may work up some very creditable performers. When one realises the magnitude of Horine's jump of 6ft. 7in., one cannot but feel that it will be many years before even America, that land of record breakers, finds an athlete capable of breaking this record. I quite expect, however, to see the Olympic record of 6ft. 3.98in. go by the board at the next Olympic Games to be held in Berlin in 1916. Let us hope that before this we may have found men who will test the skill of any one the other nations taking part in the Olympian Games may have.

Results at modern Olympiads are as follows:—

ATHENS, 1896.
Clarke (U.S.A.) 5ft. 11¼in.

PARIS, 1900.
Baxter (U.S.A.) 6ft. 2⅝in.

ST. LOUIS, 1904.
Jones (U.S.A.) 5ft. 11in.

ATHENIAN CELEBRATION, 1906.
Leahy (Ireland) 5ft. 9⅞in.

LONDON, 1908.
Porter (U.S.A.) 6ft. 3in.

STOCKHOLM, 1912.
Richards (U.S.A.) 6ft. 3·98in.

High jumping rules are given hereunder:—

(*a*) The judges shall decide the height of the bar, and the bar shall be raised as the judges may decide. Three jumps are allowed at each height, and a failure at the third attempt shall disqualify.

(*b*) A competitor may commence at any height above the minimum height. He must, however, jump at every following height until (according to *a*) he has forfeited his right to compete further.

(*c*) A wooden bar will be used for the cross piece.

(*d*) Neither diving nor somersaulting over the bar shall be permitted.

(*e*) As soon as a competitor has made a spring in order to jump this will be counted as a trial jump. If the competitor passes under the bar without having made an attempt, this will not be counted as a jump, but three runs will be counted as a full trial.

(*f*) All measurements shall be made perpendicularly from the ground to the upper side of the bar where it is lowest.

(*g*) If two or three competitors tie at a jump, their order shall be decided by re-jumping.

(*h*) All employment of weights is forbidden.

CHAPTER VII.

THE RUNNING LONG JUMP.

THE running long jump is another sport to which the Irish people seem peculiarly adapted. The world's record of 24ft. 11¾in. has been held by an Irishman since August 5th, 1901, and yet it is by a very little margin that the record stands, for at the Olympic Games of 1912, held at Stockholm, an American cleared 24ft. 11⅝ in. But whereas the Irish people are naturally adapted to the

sport, the Americans owe their success very largely to specialisation and an intimate knowledge of the pastime derived from much careful study and continual practice. In England competitions are comparatively few; if a jumper has the chance of competing ten times in the year he may consider himself an exceedingly lucky man, but in America there is hardly a meeting held at which the running long jump is not included. They also have the further advantage that every athletic ground has its long jump pit, with cinder path and wooden take off board; but here in England I should think that one could count the grounds, both private and public, which are so equipped, on the fingers of both hands. At many country meetings, and at almost all school sports, the take off is from a line of varying dimensions, according to the Games Committees' notion, whitewashed upon the turf, but the American Athletic Union expressly guard against this state of affairs by stipulating in their rules that a joist, eight inches wide, shall be sunk flush with the ground, the outer edge of such joist forming the scratch line, from which all measurements are taken. In the last chapter the vital importance of the sand-pit to the high jumper was pointed out, so in this chapter too great emphasis cannot be laid on the necessity of the wooden take off board, for there is an amount of spring to be got from it which cannot be obtained from the turf; also it gives a good grip to the spikes.

Long jumpers may be of all builds and weights; all must have a good turn of speed to lend the necessary impetus to the spring. On the whole, I think tall, lightly built men, with well developed thigh and calf muscles, make the best long jumpers.

This particular sport should be of the greatest interest to all British sportsmen, for it is the one sole remaining field event in which Great Britain holds world's record of 24ft. 11¾in., and if it is only by the very narrow margin of less than an inch that we cling to our record, yet we do still retain it, although, I think, the 1916 Games are

almost certain to see it go by the board. Albert Gutterson, of the U.S.A. team, must have been bitterly disappointed at Stockholm last year when he found that his splendid leap of 24ft. 11$\frac{1}{5}$in. fell so little short of record.

Four typical running long jumpers, who will form a very good basis of calculation from which to judge the ideal qualities of the perfect running long jumper, are P. O'Connor, holder of the world's record, who stands well over six feet, and I should think in his best days must have weighed somewhere about 150lb. to 155lb. In addition to being such a magnificent long jumper, O'Connor was also a high jumper of note, winning the English Championship outright in 1903, and sharing the honour equally with Murray and Milne in 1904. O'Connor held the English Championship in the long jump from 1901 to 1906 inclusive, but was unable to represent Great Britain at the Olympic Games held in London, 1908. Gutterson, the winner at Stockholm last year, naturally comes next into one's thoughts. He stands 6ft. 1in.; when he started competing in 1905 he weighed 145lb.; at Stockholm he turned the scale at 181lb. Gutterson is also a most accomplished hurdler. Then there is F. C. Irons, also of the U.S.A., winner at the 1908 Olympiad with a jump of 24ft. 6$\frac{1}{2}$in. Irons is just a fraction of an inch under 5ft. 6in., and has only varied 2lb. in weight since he first came into athletics in 1906 at the age of twenty; his weight to-day is 130lb. The fourth man I have in mind is T. J. Ahearne, a typical Irish athlete, but one who never did himself justice in open competition owing to his extreme nervousness. He was our "hope" in this event at the 1908 Games, but did not get in a single good jump owing to being so frightfully "nervy." In 1909 he won the English long jump Championship at 22ft. 4$\frac{1}{4}$in., and was Irish Champion in the same year at 22ft. 5in., but this does not at all represent his form, for I have myself seen him do over 24ft. He was also a first-class high jumper, hurdler,

and quite *par excellence* at the hop, step and jump. Ahearne stands 5ft. 9in., scales 140lb., and is wonderfully endowed with that fine and nervous energy which goes so far to make the first-class jumper.

From the description of these four really first-class men it will be seen that the long jumper varies from the little chap, standing 5ft. 6in., and weighing about nine stone, to the thirteen stone man standing well over 6ft.

Three things, however, which are necessary to all long jumpers are great pace, tremendous natural spring, and plenty of nervous energy; patience to study method and practice to acquire style are also absolutely essential.

The improvement in jumping since the English Championship was won by R. Fitzherbert in 1866 at 19ft. 8in., to 1912, when P. Kirwan, of the Irish A.A.A., won with a leap of 23ft. 2½in., has been very marked. The smallest jump which has ever won an English Championship was in 1867, when Fitzherbert did 19ft. 4½in. English Championship record of 23ft. 9½in. stands to the credit of P. O'Connor, and was established in 1905.

In America the running long jump was instituted in the A.A.U. Championship programme in 1876, in which year J. Frazier was champion with the very modest jump of 17ft. 4in., the shortest leap to ever take a championship in America.

The best American Championship performance of 23ft. 11in. was accomplished in 1907 by Dan Kelly, an Irish-American, of Oregon University.

Considering the science of long jumping, and admitting that speed in approaching the take off is essential, before the beginner goes to the pit he should learn to acquire a good turn of speed, and for this purpose he must practise sprinting on the cinder path, confining himself to short dashes of twenty or thirty yards, with an occasional burst of fifty yards at top speed; a little hurdling serves to vary the monotony, and is beneficial in building up the jumping muscles. There is

another reason for this preliminary training on the track than the mere acquisition of pace, for it will serve to strengthen and tone up the legs, which is of the utmost importance when it is realised how hard the running long jump is on the jumping muscles, harder even than the high jump.

Having acquired, or rather added to his natural speed, the novice must next learn to hit the take off board with absolute accuracy; nor is it sufficient for him merely to be able to get the take-off by keeping his mind fixed upon this part of the jump all the while, but he must practise until it becomes second nature to him to hit the board each time and he learns to get a good take-off unconsciously, thus allowing him to give his whole attention to getting into the air in good style. One way in which the athlete may ensure getting an accurate take-off is somewhat as described in the last chapter on the running high jump. But a better method is for him to stand upon the take-off board with his back to the pit, and to run back ten paces at full speed, getting someone to mark the spot where the foot strikes on the tenth stride. Now put down a piece of paper on this mark, and go back to the take-off board; repeat the process, but this time run fifteen paces, again getting someone to mark the fifteenth stride, and put down another piece of paper or splash some whitewash on the track; anything that can be seen when travelling at full speed will serve. Now try a run hitting the first piece of paper; that is to say, the piece on the fifteenth pace mark, with the foot from which you do *not* jump, and the ten pace mark with the jumping foot. This should land the jumper well up on to the take-off board, or, at any rate, somewhere very close to it, so that by shifting his "ten" and "fifteen" marks ever so slightly either back or forwards, according to whether his foot has gone over or fallen short of the take-off board, he can get his run absolutely right. The distance of the "ten" and "fifteen" marks should then be measured, and a note

made of these measurements, so that on the day of competition the jumper may take his tape and mark off his distance, thus ensuring that he will get a good take-off by hitting the "fifteen" and "ten" marks, which must be marked plainly enough for him to see as he runs past at full speed.

A very little thought will show of what importance it is to the jumper to get right on to the timber, for a good grip is thus obtained for the spikes, also there is a certain amount of resiliance to the wood, which is not to be got from the path behind the board; also all measurements are taken from the *outside* edge of the taking-off board, therefore every inch that the jumper takes off behind the board will be an inch of distance lost when the jump is measured.

The jumper must remember that once his marks are measured they are approximately the distances, but are liable to slight variations according to the state of the path, the condition the athlete himself is in, and whether he is jumping with the wind, against it, or on an absolutely still day.

When the novice has learned to hit the board accurately, he must then learn how to run up and how to take off. The running up may be done in two ways, either the jumper may run straight through and spring right off the board, running with a perfectly even stride as if he were sprinting, or he may "canter" up to the board, propelling himself by a series of jumps from the taking-off foot. T. J. Ahearne used to swear by this method, but I do not think it is good, and, in my opinion, is only pandering to "board funk." It is certainly a very certain way of getting one's take-off, but must be harmful to the jumping muscles of the "taking-off" leg. I would ask the novice not to try it first, but to persevere in learning to run straight through at top speed, with absolute smoothness and regularity of stride, but letting the last stride be a little short, for a reason which will be explained later on. Above all the beginner must

not ease up as he approaches the board and then rush on for his spring; if he does, the whole purpose of all his sprinting practice is frustrated.

When within a few strides of the take-off, the majority of the Irish jumpers break sideways with the "taking-off" foot, and jump with the arms hanging down in a most peculiar way, as will be seen by the accompanying photograph of P. O'Connor. The reason for this side step I have never been able to fathom, nor have any of the Irishmen been able to explain it to me; therefore I think it is merely temperamental, and would counsel the novice to leave it alone.

The run should be made at top speed, the jumper hitting the "fifteen" and "ten" marks as already described, travelling at full speed until three or four yards from the take-off board, at which point he begins to gather himself together for the spring, letting the last stride be a short one, so that all the weight of the body is got into a terrific downward leg drive, which rises the jumper into the air, giving him the necessary elevation. If this last stride is of the same length as the others, or in any way lengthened, or the athlete omits to gather himself for the effort, the necessary elevation just referred to will not be obtained, and by natural laws of gravity the length of the jump will be very materially shortened. Therefore the rise is of the utmost importance. In the first of the four pictures I have selected, C .D. Bricker, holder of the Canadian Amateur Record, 23ft. 8½in., and second at the Olympic Games, 1912, has taken-off from the right foot, and the camera has caught him before the right leg has come up to the level of the left. When the right leg is so brought up, the body will be bent forward, arms outstretched, and knees drawn up; legs separated as shown in the second picture, which is of F. C. Irons, winner at the Olympic Games, 1908, with a jump of 24ft. 6½in.

At this point it will be as well to demonstrate to the novice the means by which a proper elevation may be

learned. A good tip is to get two uprights and plant them firmly at either side of the pit, with a piece of wool, which is easily broken, tied across at the height at which the novice thinks he can clear it when in the long jumping position, say at 4ft. 6in. The uprights are gradually shifted outwards from the take off board until they have reached that distance which will be the highest point of the body's trajectory, and at this distance from the pit the wool should be lowered a little in making the jump. The jumper will then find that he can attain a still further few inches both in height and distance by "humping" the whole body together, and drawing up the shoulders as the line between the uprights is crossed. The novice will do well at first not to bother too much about distance when jumping over the wool, but to attain the greatest height which is consistent with the long jumping position. This little trick of hunching oneself when at the top of the rise is of the greatest possible value. In the first two pictures (numbered 1 and 2) of Bricker and Irons, the jumper is rising. In No. 3, which is a photograph of P. O'Connor, holder of the world's record of 24ft. 11¾in., the jumper is at the zenith of his flight, and it is at this point that the greatest difficulty is encountered by all but a very few jumpers, for here it is that the really great long jumper gets a sort of second lift. O'Connor had it, as had also Irons and most certainly Ahearne, and yet none of them knew how it was done. Whatever it was it was most successful, and enabled them to get just a little further along before beginning to drop (anyone who has seen a salmon throw itself out of the water will know what I mean by this second jump in mid-air). Ahearne seemed to get it by dropping his heels back a bit and "hunching" the whole body up before shooting out the legs, while with Irons it looked as though he straightened the knees just a little, raised the feet, and jerked the hips violently up. However, these are only my personal impressions after very carefully watching both men when jumping, and

whatever it may be, I feel convinced that the jumper is more likely to acquire the trick by continual practice and experiment than any other way.

From the point at which the upwards rise or its prolongation ceases and the athlete begins to drop, the body is forced forward over the knees, and the arms outstretched. When half-way on the downward drop, he shoots out his legs and throws back the arms, as shown in picture No. 4, which is a photograph of F. C. Irons and demonstrates a perfect style in landing. The novice has a terrible desire to drop his legs directly under him as he approaches the ground, because of his fear of falling back on landing, and thus spoiling his jump, but this fear is quite groundless, for the impetus of the jump should carry the jumper forward on landing.

Many jumpers find a difficulty in seeing the take-off, and for this an ordinary half-sheet of notepaper may be doubled and set up on the board as a guide, but it should not be necessary; the jumper should get his take-off without watching the board.

It is a good tip to put a piece of paper in the sand at or a little over the distance it is hoped to reach. The athlete's eyes should be fixed on this paper as he runs up to the board, but should leave it and the head be inclined upwards as he rises, the eyes coming on to the paper again as the body begins to descend. By this means, if the paper has been put a little beyond his reach, he may still attain another inch or so.

The jumper should take his training very gently at first, but do plenty of sprinting and go in for sprint races, which will bring out his speed. For the actual jumping, three, or at most four, times a week will be sufficient, and even then he must not do more than four or five jumps each day at full speed; indeed, in the early stages he will do better to confine himself to short runs up to the take-off board, and to learning to get into the air in good style with plenty of elevation, and in practising to acquire perfection in taking off.

I have often heard long jumpers say, "I can't understand why my heel gets so deuced sore," and yet the reason is so obvious, and in reality is the index to one of the most important things in long jumping, and that is that in taking off *the heel comes down first, and it is the flicking down of the foot from the ankle that very materially aids the long jumper in getting a good rise.* Dr. T. Pryce Jenkins, the famous Welsh Rugby International, who is a great authority on jumping, has frequently emphasised this fact, and the consequent necessity of building up a special set of muscles for enabling the jumper to sufficiently strengthen his muscles for this final effort, which, if properly carried out, will add appreciably to the distance jumped. Incidentally a soft rubber pad in the heel of the jumping shoe will save many a bruised heel.

As to the exercises, those recommended for the running high jump may be used with good results, and to them must be added the exercise in which the athlete stands upon a low stool, raises the knee as high as he can towards the shoulder while holding the body upright (one hand resting on a chair-back); the leg is then extended straight to the front, and is worked around, bending at the knee, up, out, down, and so on. As all the back and abdominal muscles play a very large part in long jumping, I would recommend the beginner to procure a copy of Lieut. Muller's "My System," and to practise the exercises set forth therein.

These exercises have been designed especially for the muscles of the back and abdomen, and I can recommend them from personal experience as being most excellent.

Summarising briefly the things which are necessary to the good long jumper, it is seen that he must have great speed, but it must be "controlled speed." He must also have plenty of "go" and natural spring, and he must learn to get the take-off with absolute accuracy—rise high into the air, prolong the flight when at the highest point by any trick he may acquire, bend

the body forward with arms outstretched when descending, fling back the arms and shoot out the legs to land and trust to his impetus to carry him forward. Above all, the novice must persevere, think, and practise.

When going out for competition, always put a warm sweater on and wear flannel trousers over the shorts; the legs must be kept warm, or a strain is likely to result. The jumper may work himself up to the actual competition by a few hard sprints of about twenty yards while waiting, but should rest and keep off his feet between the turns. The period of waiting should be filled in by gently massaging the legs with a pair of flesh gloves. Towards the end of the competition, if the jumper is feeling very fatigued, he will find it most invigorating to have the back and abdominal muscles rubbed with the flesh gloves.

As regards his outfit, the only things the long jumper has to be particular about are his shoes. These must fit him closely, and should be made by one of the firms who make a speciality of this class of footwear. The shoes should have a strap across the instep, buckling on the outside, and should have a slight heel, in which are two spikes; the sole has six, placed almost parallel and opposite to each other. The spikes are to be long and kept sharp by filing. The athlete is advised to wear socks, to prevent the sand, which goes into the shoes when landing in the pit, from rubbing the feet. The remarks I made in the last chapter as to the arch of the instep should be carefully read and acted upon, as they are of the utmost importance to all jumpers.

As already stated in this chapter, the world's record of 24ft. 11¾in. is held by P. O'Connor. Next in order of merit come Albert Gutterson, U.S.A., 24ft. 11 1-5in.; M. Prinstein, Pennsylvania University, U.S.A., 24ft. 7½in.; A. C. Kraenzlein, also of Pennsylvania University, and a noted high jumper and hurdler, 24ft. 4½in.; and, finally, W. J. M. Newburn, of the Irish A.A.A., 24ft. 0½in.

Photos by Sport and General

1. C. D. Bricker (Canada). Rising from the board and allowing take-off leg to drag before it is slowly drawn up. Note position of right foot after the ankling movement used in putting heel down first, and getting final rise from toes.
2. F. C. Irons (U.S.A.), Olympic Champion 1908. Almost at the top of the rise, legs drawn up with body and arms forced well forward.

THE RUNNING LONG JUMP.

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Photos by Sport and General.

3. P. J. O'Connor (Ireland) Holder of World's Record. At the top of the rise. Note what a fine elevation O'Connor has attained.
4. Irons shooting out the legs and flinging back the arms preparatory to landing.

THE RUNNING LONG JUMP.

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When this event is included more frequently at athletic meetings in this country, and young athletes are encouraged to practise, then we shall produce just as good men as any other nation, but until then we shall not shine in this event at future Olympiads, or even at our own championships.

ATHENS, 1896.
Clark (U.S.A.) 20ft. 9¾in.

PARIS, 1900.
Kraenzlein (U.S.A.) 23ft. 6⅞in.

ST. LOUIS, 1904.
Prinstein (U.S.A.) 24ft. 1in.

ATHENIAN CELEBRATION, 1906.
Prinstein (U.S.A.) 23ft. 7½in.

LONDON, 1908.
Irons (U.S.A.) 24ft. 6½in.

STOCKHOLM, 1912.
Gutterson (U.S.A.) 24ft. 11⅛in.

The rules governing the running long jump are given hereunder :—

Running Broad Jump.

(*a*) The length of the run is unlimited.

(*b*) Each competitor shall be allowed three jumps, and the three best shall be allowed three more jumps. The farthest jump of these six jumps shall decide the order between the three. Jumps of the same length necessitate further jumping till a result is arrived at. The result of the further jumping determines only the relative position of those who are jumping again.

(*c*) If any competitor swerves aside at the taking-off line, or crosses the taking-off line and touches the ground in front of it with any part of his foot, such jump shall not be measured, but it shall be counted against the competitor as one jump.

(*d*) The jump shall be measured perpendicularly from the outside edge of the taking-off line to the nearest spot where any part of the competitor's body touches the ground.

CHAPTER VIII.

THE POLE JUMP.

SURELY the most thrilling and spectacular of all athletic events is the pole jump, or pole vault, as it is more correctly styled in America, providing breathless excitement to competitor and spectator alike.

How the pastime came to be regarded as a sport, one finds it difficult to tell, but we may be pretty safe in assuming that, in this country at all events, it owes its origin to the Fen district, where for generations past every peasant has carried his pole, wherewith to leap over the dykes. Naturally, at the village fairs, the lads would enter into competition with each other with their accustomed implements, as did the ancient warriors when they tested each other's skill in throwing the javelin, or the more modern soldier who borrowed a 16lb. shot from the armoury to take on his comrades at "weight putting." One can imagine how the sport grew to popularity until we have the pole jump for height, as practised at the Olympian Games, although, in my mind, there is no doubt that originally the jumping was for distance, and the jumper was expected to retain his hold of the pole.

I am of opinion that the sport is of English origin, for we know that it was extensively practised in the reign of Henry VIII. In the old days the pole was of ash and exceedingly heavy; the vaulting, too, was somewhat of an acrobatic performance; the jumpers would get a pole with a large base wherein were planted three or even four spikes well spread out. When the jumper reached the top of his rise he would balance for a second, and go hand over hand a bit higher, and then slip over the bar, with the knees drawn up, and push the pole away from him. This method is not admissible now; the rules governing pole vaulting stipulate that "The competitor must not, in the moment that he makes the

jump, or after leaving the ground, place his lower hand above the upper one, or move the upper hand higher up on the pole." This successfully does away with any attempt to gain an advantage by climbing the pole. It is a curious thing that here is a sport which has its origin in natural utility in this country, and yet we have never been able to produce a pole jumper of anything like outstanding merit. Perhaps one of the best pole jumpers we have ever had in this country was R. D. Dickinson. Dickinson won his first English Championship in 1890 at 11ft.; the following year R. Watson beat him at 11ft. 3in. thereby equalling T. Ray's 1881 Championship record. In 1892 they tied at 11ft. In 1893 Dickinson did his best Championship performance of 11ft. 2in., but fell off slightly after this, doing 10ft. 10in. in 1894, and falling as low as 10ft. in 1895. He thus won the English Championship outright four times, and was joint holder with Watson in 1891. The first English Championship performance was in 1866, when F. Wheeler cleared 10ft.; the jump in 1867 and 1869 was as low as 9ft. 3in., while English Championship record* is held jointly by E. B. Archibald, of Canada (1908), and R. Passemann (1911), of Germany, at 12ft.; the latter's picture accompanies this chapter.

Of late the sport seems to have fallen almost entirely into disuse in this country; indeed, it is only at the professional sports in the Lake District, and occasionally in Cornwall, that one hears of a pole jump competition taking place. It figures in the A.A.A. Championship programme, but during the last ten years Englishmen have been declared champions four times only, and on three out of these four occasions there was only one competitor who became champion by jumping over. This is a most lamentable state of affairs, and one which I attribute wholly to the lack of competition and the non-use of the sand-pit for the competitors to land in. Why so few pole jump competitions are promoted is an absolute

*New Record, 12ft. 1½in., made by C. Gilla (Sweden), 5th July, 1913.

mystery, for there can be no more graceful sight than to watch the real expert make his quick, light dash forward, with pole upheld, until he comes in front of the bar, plants the spiked end firmly, and springing from the ground, swings up his legs until it appears that he must inevitably tumble backwards; then the bar is reached, and he glides gracefully over and comes quietly to earth the other side, executing a clever twist as he descends.

When it is understood that to-day the American and Continental cracks beat our best men with two or even three feet to spare, it will readily be realised that we must find athletes to take up this sport if we hope to hold our own at future Olympiads.

It is amazing how the Americans have taken to this sport, and how persistently they have stuck to it since it was first included in the American Athletic Union's Championship programme in 1877, in which year G. McNichol won with a jump of 9ft. 7in., the smallest Championship performance on record in America, and one which, compared with the jump of 12ft. 6in. at which H. Coyle and S. Belah tied for Championship record, serves to illustrate the wonderful improvement which has taken place in the United States in the last thirty-six years.

The world's record, 13ft. 2¼in., and Olympic record, 12ft. 11½in., in this event are held by American athletes, and at the Olympian Games proper, the Americans have never been beaten, although Gonder, of France, was successful at the Athenian Celebration in 1906 with a jump of 11ft. 6in.

The Olympic records are of interest as showing the improvement that has taken place in this event since the first of the modern Olympiads. They are given hereunder.

ATHENS, 1896.
Hoyt (U.S.A.) - 10ft. 9¾in.

PARIS, 1900.
Baxter (U.S.A.) - 10ft. 9 9/10in.

ST. LOUIS, 1904.
Dvorak (U.S.A.) - 11ft. 6in.

ATHENIAN CELEBRATION, 1906
Gonder (France) - 11ft. 6in.

LONDON, 1908.
Gilbert and Cooke (U.S.A.) tied at 12ft. 2in.

STOCKHOLM, 1912.
H. S. Babcock - 12ft. 11½in.

It really is a beautiful sight to witness the splendid way in which the American pole vaulters manage their bodies in the air, and testifies very strongly to the high average of intelligence they bring to bear on the sport, and the painstaking thoroughness with which they have studied it.

World's record of 13ft. 2¼in. is held by M. S. Wright, of Cambridge, Mass., U.S.A., and was established on June 8th, 1912. Other performances of note are R. A. Gardiner, U.S.A., 13ft. 1in.; H. S. Babcock, U.S.A., 12ft. 11½in.; L. S. Scott, U.S.A., 12ft. 10⅞in.; and A. C. Gilbert, U.S.A., 12ft. 7¾in.

Looking through the last year's records of the various American Inter-Collegiate meetings, one finds nearly all the pole jumps over or just under 12ft., while the American A.U. Championship was as high as 12ft. 6in. in 1911. French Championship in the same year was 11ft. 3¾in. It may be noted that at the English Championship, 1911, Passemann, a German, won at 12ft., with Frenchmen 2nd, 3rd, and 4th; no British competitor succeeding in clearing 10ft. In 1912 A. O. Conquest was the only competitor and jumped over at 9ft. 6½in.

That there must be some good reason for the apparent lack of quality in our British pole jumpers' powers is obvious. The reason I believe to be lack of opportunities for competition, added to the fact that the sand-pit for the jumper to land in is only just beginning to come into use in this country. If it is a serious matter for the high jumper who clears 6ft. to land on the turf, how much more serious must it be for the pole jumper who comes down with considerable force from a height of say ten or twelve feet; indeed, I have no hesitation in saying that the athlete who undertakes the pole jump at any meeting where a proper pit is not provided is risking his limbs every time that he jumps. This will be apparent to anyone who cares to glance at the illustrations which accompany this chapter. Another thing which has been all

against pole jumpers in this country is that until quite recently a heavy pole of ash has been *de rigeur*, whereas the athletes of other nations provide themselves with a light pole of bamboo, bound about with medical strapping. The advantages of the bamboo pole are that it is light and safe, for, although the pole may splinter, it can never break off, leaving a spike, as may the ashen pole, thus endangering the athlete's life by impalement. I once saw an ash pole snap in this manner; the jumper only missed the sharp point where the break had occurred by inches, and I have never ceased to advocate bamboo vaulting poles since.

The novice in this event should not be too ambitious at first, but may start with a ten or twelve foot pole and attempt only comparatively low heights until he has acquired style, when he may replace the original pole with one of greater length, and may essay leaps of greater magnitude. Vaulting poles are bound about the bottom end with iron, and provided with one, two, or three spikes according to choice.

The vaulting standards should be some 14ft. high, bored and graduated in feet, inches, and half inches from about 4ft. up from the ground, in order that they may be used for the standing and running high jumps as well as for the pole jump. The cross bar should be of wood, 1in. square by 13ft. long, about the distance at which the standards should be set apart. They should stand exactly at the edge of the sand pit, which should be some 9ft. wide by 12ft. long.

In this event the beginner has a multitude of things to learn, for he must be possessed of speed, springing power, and a good set of arm and body muscles, for, in this game, the arms play quite a considerable part; also he must acquire absolute accuracy both in getting his take-off and planting the pole.

The speed may be increased by work on the track; the pole jumper should sprint as does the running long jumper, with short dashes of thirty to fifty yards. The take-

off is learned in the way described in the last chapter on long jumping, the athlete substituting the point from which the spring is made for the take-off board.

Competitors are allowed to cut a hole wherein to plant the end of the pole.

What may be described as the preliminary work in this event is somewhat more difficult than that necessitated for the running long jump. The beginner, in addition to getting his take-off accurately, must learn to plant the pole properly as well, moreover, he must practise these two things persistently until he can both take-off and plant the pole accurately but unconsciously, to enable him to give all his attention to rising into the air in good form. Having now described the preliminaries briefly, the attention may be turned to the jump in detail.

First the jumper walks up to the jump, places the pole perpendicularly on the ground, central with his body, taking a grip of it at arms' length a bit above the height of the head with both hands, the right hand being the higher of the two; he then judges with his eye the point on the pole which is level with the cross-bar, steps back, letting the pole fall towards him, catching it a little above the point at which he calculated it was level with the cross-bar; he then walks back to the limit of his run (about thirty or forty yards), holding the pole as follows:—The right or top hand holds the pole with an over-hand grip, the finger nails being towards the body; the left hand, which is eighteen inches to two feet lower down, has an underhand grip, so that the finger nails on this hand are also towards the body, the thumb on either hand being uppermost. Here I would again emphasise the fact that the upper hand must at no time be shifted, nor the lower hand pass above the upper. Having walked to the commencement of the run with the pole properly grasped, the athlete turns about, and takes a swift run forward, holding the pole with point inclined slightly upwards. As the pole is planted the athlete springs into the air with his left side next the pole, and

at once initiates an upward movement of the whole body by throwing up the legs until they become the highest point of the body, also pulling hard with the arms, which further aids the upward movement; at the same time as this upward movement commences, the athlete begins to turn his body to the left to get it facing the bar when it is reached. As the legs reach the highest point of their swing up, the left hand is shifted up the pole until it touches the right. It is now seen that the athlete has got the highest rise possible, and also, that he has got his body around to the bar; it must, however, be remembered that the legs are the highest point of the whole body, while the shoulders are on a level with the hands, as will be seen from the accompanying photograph of B. Söderstrom, winner of the English Pole Jump Championship, 1907 (10ft. 6ins); the legs now pass over the bar, but it still remains to get the rest of the body over. This is done by pressing downwards on the pole to raise the shoulders up. This should get the upper part of the body well above the cross-bar, which the jumper clears by exerting a last effort in pushing the pole away from him and incidentally pushing himself away from the pole and clear of the bar. By referring to the photograph of Passemann, of Germany (winner of English Championship, 1911, 12ft., and holder of the German record), it will be seen how perfectly he has accomplished this feat. To ensure that neither the upper part of the body nor the hands are responsible for removing the bar, the jumper drops his legs and flings his hands above his head; this also helps him to regain his equilibrium. It will be seen that Szathmary, of Hungary (English Champion, 1910, 11ft. 7½in., and holder of the Hungarian Record, 11ft. 7¾ins.), is just beginning to do this. As the jumper drops his legs and throws up his arms, he is facing the bar; should he land in this position he may severely strain his legs, even when landing in sand, for he will come down on the toes with the weight forced down over the instep, on which a severe strain is thus put, and also on the front

muscles of the legs. He should therefore execute a "corkscrew turn" (which Szathmary is obviously just commencing to do in the photograph above referred to), this will enable him to land with his back to the jump he has just cleared, the body will be inclined slightly back from toe to chin; the athlete can then land with the weight on the heels and drop back on to the hands in a sitting position in the pit. In landing, no muscle should be tense, and the knees must be prepared to give the instant the feet touch the sand.

A matter of importance in taking off is not to get the jumping foot too close to the point of the pole, and to get all the weight of the body into a downward leg drive. Therefore, as in the running long jump, the athlete should gather himself together for the effort some ten feet from the take-off, instead of running through at full speed. It must also be borne in mind that the arms do not begin to play their part until the athlete has left the ground.

Skipping and hopping, plenty of sprinting, and an occasional gentle run right round the track are all good for improving the powers of the jumping leg and also the pace for coming up to the take-off. For the sake of the arms the pole jumper should do plenty of work in the gymnasium on the horizontal bar to improve the "pull up," and on the parallel bars to get the "push up" for the final leverage which lifts him over the cross-bar. Rope climbing without using the legs is also an excellent exercise for developing the pulling muscles.

Pole jumping is a highly scientific pastime, therefore the novice must approach it in a sensible and scientific manner, learning to detect his owns faults, and never being above taking a hint from another person; if it is speed that is lacking, let him go to the cinder path and acquire it; if he is deficient in springing powers, the long jump pit is there for his use; if he cannot get his take-off accurately, it can be learned at the same place; should he be unable to manage his body when in the air a course

of high jumping will remedy this; high jumping is, in any case, a splendid thing, as it teaches "body control" without the support of the pole to rely on; if lack of muscular development is the trouble, this can soon be got over by a course in the gymnasium, as I have already suggested.

The "kit" for this event, with the exception of the shoes, is the same as for the running high jump, and the remarks in the same chapter as to keeping warm and resting between the turns apply.

Finally, the beginner must have plenty of pluck and not mind a tumble now and then. He is sure to fall awkwardly at first; he must never despair; it is truly amazing what wonderful results are attained by "sticking to it."

Practice on five days a week with three or four really good jumps (in all) to the best of the athlete's ability will be ample; what he has to attain is form and style.

The Rules governing the pole jump are given hereunder:—

POLE JUMP.

(*a*) The competition shall start at such a height and the bar be elevated as the judges shall decide. Each competitor shall be allowed three jumps at each height, and the competitor who fails at the third attempt shall be disqualified.

(*b*) A competitor may commence at any height above the minimum height. He must, however, jump at every following height until, according to (*a*), he has forfeited his right to compete further.

(*c*) As soon as a competitor has left the ground for the purpose of making a jump, the jump is counted as a trial. If the competitor makes a run without completing the jump, it is not counted as a jump, but three such runs are counted as a full trial jump.

(*d*) The competitors shall be allowed to make use of holes in jumping.

(*e*) A competitor must not in the moment that he makes a jump, or after leaving the ground, place his lower hand above the upper one, or move the upper hand higher up on the pole.

(*f*) The competitors may use their own poles. These may have a binding, but must not have any further support for the hands.

(*g*) In all other respects the rules for the running high jump shall govern, where applicable.

Photos by Sport and General.

1. B. Söderstrom (Hungary). Swinging the legs over, body has risen to face the bar.
2. R Passeman (Germany). The pole has just been pushed violently away, the effort clearing the jumper's shoulders away from the bar.

THE POLE JUMP.

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Photo No. 4 by Sport and General.

3. A. E. Flaxman, Ex-English Champion. In the act of pushing the pole away.
4. B. Söderstrom. "Falling." Commencing the turn to bring the back round to the Jump on landing.

THE POLE JUMP.

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CHAPTER IX.

THE HOP, STEP AND JUMP.

DISTINCTLY another Irish event is the hop, step and jump, world's record being held by an Irish-American, and the sport having its birth in the Emerald Isle.

Never a very popular event in England, it has for many generations flourished in Ireland and America, and has lately become very popular on the Continent. Special interest attaches to it from the British point of view, as it was the only individual field event we were able to win at the Olympic Games of London, 1908, when T. J. Ahearne gave us the victory with a performance of 48ft. 11¼in., which still stands as an Olympic record.

The event first figured in the American Athletic Union championship programme in 1893, when it was won by E. B. Bloss at 48ft. 6in. The event was dropped from 1894 to 1905 inclusive; in 1906 it again came into the programme, and was won by P. J. O'Connell (45ft. 3¾in.), since when it has been retained. The best American Athletic Union championship performance, of 48.16-100ft., was accomplished by D. J. Ahearne, of the Irish-American Athletic Club, in 1911. The same athlete established world's record of 51ft. 2⅞in. at New York on August 14th, 1910.

English (A.F.E.A.) championships have been held in this event twice only: In 1911 M. D. Dineen won at 41ft. 6in., but in 1913 H. Fast, a Swedish member of the South London Harriers, became champion at 43ft. 5in. The only other occasions when the event has been seen in this country were at the Olympic Trials, 1908, when M. D. Dineen won at 44ft. 4½in., the same athlete tying with S. S. Abrahams, the Cambridge long jump Blue, at 43ft. 10in., at the Olympic Trials, 1912.

P. Kirwan, English long jump champion 1910, 1911, and 1912, did an excellent performance of 47ft. 1in. in the Irish A.A.A. hop, step and jump championship last year.

The running hop, step and jump has figured in the Olympian programme since the Games were revived at Athens in 1896, and is also a feature at the Athenian celebrations. The results, which serve to show how the sport has improved, are given hereunder:—

ATHENS, 1896.
Connolly (U.S.A.) - 45ft.

PARIS, 1900.
Prinstein (U.S.A.) - 47ft. 4¼in.

ST. LOUIS, 1904.
Prinstein (U.S.A.) - 47ft.

ATHENIAN CELEBRATION, 1906.
O'Connor (Great Britain) 46ft. 2in.

LONDON, 1908.
Ahearne (Great Britain) 48ft. 11¼in.

STOCKHOLM, 1912.
Lindblom (Sweden) - 48ft. 5½in.

Of all the athletic events, there is not one that puts so great a strain upon the legs as the hop, step and jump, and unless a man is exceptionally strong in the legs, and particularly in the knee joints, he will be most foolish to attempt this sport.

As to the build of the athlete, there are many small men at the game to-day who get quite good results, notably M. D. Dineen, of the Irish A.C., and F. C. Irons, U.S.A., but, generally speaking, 5ft. 9in. to anything just over 6ft. is about the right height, while the best men seem to vary from 140lb. to 180lb. in weight. O'Connor, winner at the Athenian celebrations, 1906, stood well over 6ft. and weighed about 11½st. I give hereunder the weights and heights of probably the five best exponents of the art in the world:—

Platt Adams ...	... 6ft. 1½in.	... 165lb.
D. J. Ahearne...	... 5ft. 10in.	... 160lb.
T. J. Ahearne ...	... 5ft. 9in.	... 140lb.
C. E. Brickley...	... 5ft. 10in.	... 180lb.
F. C. Irons ...	... 5ft. 5⅞in.	... 130lb.

Up to the actual take-off, the instructions given in the chapter dealing with the running long jump apply, and for this reason the novice is advised to study that

chapter most carefully; but this will probably be done in any case, as the athlete taking up the event under discussion almost invariably trains for the long jump as well.

It will be readily realised that one of the chief contributing factors to a good performance is the pace at which the take-off board is approached; therefore the athlete must acquire great speed, but, as in the other event, it must be controlled speed, in which the jumper can gather himself together on approaching the take-off board without materially decreasing his pace in so doing, care being taken to get well up on to the take-off board, or even to overlap it ever so slightly with the toes. As the athlete, in taking off, jabs the heel hard down, as does the high jumper and also the running long jumper, and, moreover, comes down on the same heel with considerable force at the end of the hop and on the other heel after the step, the heels will most certainly get badly bruised unless some precautions are taken; it is, therefore, as well to have rubber pads inside the shoes under the heels: a small rubber sponge answers the purpose very well. This may seem a very small matter, but anyone who has bruised a heel early in the season knows how absolutely and effectually it puts one out of action for months on end. A badly bruised heel is one of the hardest possible things to cure; indeed, a certain amount of tenderness is frequently felt for years after, if any sudden and forcible jar is put upon the heel.

Assuming that the athlete proposing to take up the hop, step and jump has already mastered the intricacies of the running long jump, the battle is half fought, for he comes to the event with a lot of valuable knowledge already acquired.

The run up to the take-off has already been very fully described in the chapter on the running long jump, so it may be taken as read. The take-off is also made in exactly the same way, but with this difference—that,

whereas the long jumper concentrates the whole of his attention on getting as high into the air as is consistent with the proper position, in this event too great height should not be aimed at, for it must be borne in mind that the long jumper has a soft sand-pit to land in, but the hop, step and jump competitor lands on one leg on the turf, from which he must again take off at once. It will therefore be obvious that the higher the athlete rises when making the hop the greater will be the force with which he comes down, and consequently the greater the strain put upon the leg from which he has taken off and on which he lands at the completion of the first movement, *i.e.,* "The Hop." Now, although it is bad to jump too high, yet it is still worse not to put enough energy into the first of the three movements, for it is in this initial spring that the largest amount of propulsion is required. It will, therefore, be readily seen that the man taking up this particular form of athletics must be capable of exercising a nicety of judgment to enable him to get the necessary amount of force into the initial spring, and yet not to rise so high that he will endanger the safety of his limbs.

"The Hop," as its name indicates, is made by landing on the same foot from which the jump has been made. The athlete must manage so to land that he can instantly make the "Step" forward, which is the second movement. Although it is designated as being a step, it is more in the nature of a giant stride; the chief point to be remembered is that it is a stride and not a jump in actuality, for if a great amount of energy be expended in this second or middle movement, the athlete will not have sufficient vigour left for the long jump, which is made from the opposite leg to that used for the hop, and is the culminating point.

Having worked up to the jump by means of the hop and step already described, the jumper must concentrate all his powers upon getting his body into the air in good style and to getting good elevation, for the time

Photos by Sport and General.

1. P. J. O'Connor (Ireland), Olympic Champion, 1906. Rising from the jump and commencing to draw up the take-off leg.
2. T. J. Ahearne (Ireland), Olympic Champion, 1908. Shooting out the legs and flinging back the arms as he is about to land.

THE HOP, STEP AND JUMP.

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Photos by Sport and General and Topical.

1. L. H. G. Stafford, English Champion, 1913. "Taking-off." Note how jumper is just on the point of overbalancing when spring is made.
2. Ray Ewry (U.S.A.), holder of World's Record. Legs after being straightened out as spring is made are flung up to the back before knees are drawn high up to the front.
3. Ewry in the act of landing, shoots out the legs, flings the arms forward and depresses the body to prevent himself from falling back.

THE STANDING LONG JUMP.

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has now come when he must get up as high as possible, "humping" the body together by raising the shoulders when at the top of the rise and prolonging the flight by any means in his power, shooting out the legs and flinging back the arms as the body begins to descend, and finally flinging forward the arms and bending the body over the legs from the waist as the feet touch the sand. In taking off for the final movement, "The Jump," he must remember that the heel comes to earth first, and the final rise is given to the body by the toes as the foot flicks off the ground by an ankling movement. Exactly what is meant can be seen by referring to the photograph of C. D. Bricker, which accompanies the chapter on long jumping. It will be seen that Bricker's right foot is straight down from the ankle, and that the whole right leg is dragging. This also is of the greatest importance, as the jumper, by trailing the leg in this way and bringing it up level with the other at the proper instant, is saved from retarding his spring by jerking the take-off leg up suddenly. On the other hand, the leg from which he does not take off should be brought high up in front directly the body begins to rise into the air.

A matter of great importance is from which foot the initial spring or "hop" should be made. Should it be made from the leg which is used for taking off in the ordinary long jump, or should it be from the other, in order that what we may term the taking-off leg may be free to perform its natural functions in the final effort when the actual jump is made? This is a most debatable point, and one on which it would hardly be right to offer an opinion, but a little practice will soon show the jumper which leg is best suited to his own case.

This event is such a terrific strain not only on the leg, but on the whole system, that the athlete will be well advised not to do the full jump "all out" more than two or three times a week. For the rest of his

training he may practise the hop, and must carefully study the step to ascertain just how long it can be made without using up so much energy that he will not have enough left for the final spring.

Recently there has been much discussion as to the utility of this event, and consequently the advisability of retaining it in the Olympian programme, but it should be remembered that it is a great test both of strength and athletic skill.

In addition to the Olympic rule, which follows, I give the rule as drafted by the American Athletic Union, as being rather more explicit and a better guide to the mode of procedure:—

OLYMPIC RULE.

Hop, Step and Jump.

Only jumps with alternate feet are counted. In all other respects the rules for the running broad jump shall govern.

AMERICAN ATHLETIC UNION RULE.

Hop, Step and Jump.

The competitor shall first land upon the same foot with which he shall have taken off. The reverse foot shall be used for the second landing, and both feet shall be used for the third landing. In all other respects the rules governing the running broad jump shall also govern the running hop, step and jump.

CHAPTER X.

THE STANDING LONG JUMP.

POPULAR in America since the late 'eighties, the standing long jump was little known elsewhere until the Olympic Games held at Paris in 1900; from that

time until the present day it has found favour on the Continent.

From very early days right up to the time of the Stockholm Olympiad the Americans have remained unbeaten, thanks to the exceptional qualities of Ray C. Ewry, of the New York Athletic Club, holder of the world's and Olympic records. At Stockholm, in 1912, Ewry did not compete, the late C. Tsiclitiras, of Greece, proving the winner at 11ft. $0\frac{1}{4}$in., with the brothers Platt and Ben Adams, U.S.A., second and third, at 11ft. $0\frac{2}{5}$in. and 10ft. $9\frac{1}{5}$in. respectively.

The sport has been seen but rarely in this country. In 1908 it was seen at the Olympic Trials, when it was won by an unknown and unattached athlete, L. H. G. Stafford, with a leap of 10ft. 1in.; at the Olympic Games, 1908, when Ray Ewry won at 10ft. 10in., and at the Trials, 1912, T. C. S. Huss, Lynn A.C., 9ft. 6in.

The event has also figured in the programme at various L.A.C. meetings, and this year (1913) the same club included the A.F.E.A. Championship in their programme, L. H. G. Stafford proving the winner at 9ft. $11\frac{3}{4}$in., with T. C. S. Huss, second, 9ft. $7\frac{1}{2}$in., and F. O. Kitching, third, 9ft. $4\frac{3}{4}$in.

In the United States the standing broad jump was first included in the A.A.U. Championship programme in 1893, when A. P. Schwarner, of the New York Athletic Club, won at 10ft. 7in. The event was dropped in 1894, resumed in 1898, dropped in 1899, and resumed in 1906, since when it has been retained, Ewry proving the winner on five occasions.

In both classes of standing jumps Ray Ewry and the late C. Tsiclitiras were undoubtedly the two finest performers the world has yet seen. Ewry retired in 1910 after almost twenty years as an active athlete, during which time he was five times champion of America in the standing broad jump, three times standing high jump champion, holder of world's and Olympic records in both events, and winner of both at each of

the modern Olympiads up to and including 1908. Ewry stood 6ft. 1in., and at his best weighed about 160lb.

C. Tsiclitiras was a native of Pylos, and first came into the game at the early age of seventeen, when he saw Ewry compete at the 1906 Athenian celebration. Modelling his style upon Ewry's methods, he succeeded in running the latter very close at the 1908 Games in both events.

Ewry won the standing broad jump at 10ft. 11¼in., with Tsiclitiras second, 10ft. 7¼in. At the 1912 Games Tsiclitiras was the winner in this event with a leap of 11ft. 0⅝in.; he was a beautifully built athlete, standing 6ft. 3in., and he turned the scale at just over 170lb. All who knew him will greatly regret his death at the early age of twenty-four.

The world's record of 11ft. 6in. stands to the credit of Ewry and the late C. Tsiclitiras. Other performances of note have been 11ft. 0⅖in. by Platt Adams, U.S.A., and 10ft. 9⅕in. by Ben Adams, U.S.A.

The results at modern Olympiads are given hereunder:—

ATHENS, 1896.

No Competition.

PARIS, 1900.

Ewry (U.S.A.) - 10ft. 6⅘in.

ST. LOUIS, 1904.

Ewry (U.S.A.) - 11ft. 4⅞in.

ATHENIAN CELEBRATION, 1906.

Ewry (U.S.A.) - 10ft. 10in.

LONDON, 1908.

Ewry (U.S.A.) - 10ft. 11¼in.

STOCKHOLM, 1912.

Tsiclitiras (Greece) - 11ft. 0¼in.

Now as to the build of the standing long jumper: he must be tall, with long legs, and he must not be heavy. The following figures, concerning the world's best performers, are of interest, as showing how they are built:—

R. C. Ewry (U.S.A.)...	6ft. 1in.	...	162lb.
C. Tsiclitiras (Greece)...	6ft. 3in.	...	172lb.
Platt Adams (U.S.A.)...	6ft. 1½in.	...	173lb.

Little men like T. C. S. Huss have taken up the sport successfully from time to time, but under ordinary conditions the long-legged man will score every time.

The best performer we have yet produced is L. H. G. Stafford, winner of the 1913 Championship. If he can get his legs right, and with good coaching, he should be our hope for the Games at Berlin in 1916.

Concerning the method employed in making the jump, it must be remembered that the spring is made with both legs, and not with one, as in the running long jump.

The athlete takes up his stand on the take-off board with the feet about eight to twelve inches apart. The ball of the foot should rest upon the outside edge of the take-off board, the toes being beyond the edge. This will enable the jumper, when making the spring, to get a good push-off. With the feet in this position the body is stretched up and the arms raised high above the head, the athlete inhaling deeply as the arms come up. When it is felt that the muscles are tautened, the arms are swept down and to the rear. At the same time the body leans forward, and the knees are slightly bent, as in the accompanying photograph of L. H. G. Stafford, in which it will be seen that he is just about to make the spring; indeed, the arms are already swinging forward to aid the upward movement. It should be noted that the toes are well over the edge of the board. As the knees are straightened out in making the spring, the feet are brought into play, the athlete getting a final push-off and lift from the face of the board by straightening down the feet from the ankle with a sort of "flick."

A point of the utmost importance, which must never for a moment be forgotten, is that in the preliminary movement the body must lean as far out over the pit as possible, and that the spring must not be made until it is felt that the balance can no longer be retained. As the spring is made, the arms are flung violently forward and up, and the heels come up at the back. The action is very well illustrated in photograph No. 2, which is of Ray Ewry. To understand what has taken

place, it must be explained that the legs have straightened out after the take-off; the heels have then been flung up at the back, to give the jumper greater scope for the forward swing, which will take place when he is at the top of his rise. When he has reached the highest point in his flight, the arms are flung back and the legs shot out to the front, well separated and as straight as possible. Just as he is about to land, the arms are again flung forward, and the body is depressed as low as possible over the thighs to prevent the jumper falling back into the pit. No. 3 picture (also of Ewry) shows exactly how it should be done.

A careful study and comparison of the No. 2 picture (Ewry in mid-air) and the picture of Bricker, which accompanies the chapter on the running long jump, will show that both jumpers are using the same method, but in different degrees, for, whereas Bricker is trailing the take-off leg before drawing it slowly up, Ewry, having jumped from both legs, has swung the heels up to the rear before bringing the whole of the legs up and to the front. This is of the utmost importance, as by eliminating jerkiness in the wrong places the poise of the body is not disturbed.

The man who lands with the feet well separated and the body bent forward will attain greater distance, and stands a far better chance of not falling back into the pit than the man who elects to land with the feet close together.

For this event the athlete should use all means to build up the back and abdominal muscles, as these play a great part. The calves and thigh muscles should also be well exercised and built up; before and after practice and competition they should be well massaged. Finally, pay careful attention to the arch of the instep, raising it by improving those muscles which control it, as suggested in the chapter on the running high jump. This is most important, for if these muscles are properly developed, it will be found that the final "flick off,"

when the feet leave the board, will be very much greater. No special diet need be taken by the standing long jumper, but he should confine himself to good, wholesome food.

Sprinting practice should be taken to tone up the muscles of the legs and to impart a "snap" to the general movements. But any form of long-distance running should be carefully avoided; it has a deadening effect upon the muscles and renders them sluggish.

As in all jumping, however, it is not a matter altogether of good instruction, or even the acquisition of a first-rate method combined with perfect style. There must be something more than all these, for the man must have in him that indefinable quality—call it "devil," "snap," or what you will. Above all, he must be blessed with a placid nerve, and practise his art painstakingly until he acquires that easy confidence born of conscious superiority and knowledge of one's own ability to do a worthy performance.

Although one may at first be led to regard the standing long jump as a more or less modern innovation, yet it has been practised for longer than is generally known. I have found it mentioned in an early eighteenth-century work, while Walker refers to it in his book on "British Manly Exercises," published in 1834, as follows:—

"THE LONG LEAP.
"*Without a Run.*

"Here the feet are closed; the whole weight rests upon the balls of the toes, and the body is inclined forward. Both arms are then swung forward—backward—and then drawn strongly forward—and at the same instant the limbs, having been bent, are extended with the utmost possible force. On level ground 12ft. is a good standing leap, and 14ft. is one of comparatively rare occurrence."

I must confess that when I read the last paragraph

I was absolutely astounded, for the recognised world's record is 11ft. 6in., and yet Mr. Walker is very accurate concerning heights and distances in the running high and long jumps; therefore I think Mr. Walker's standing long jumpers must have been mythical, or else have made use of weights.

The latter assumption is borne out by referring to the professional records, where it is stated that at the Star Music Hall, Liverpool, on September 19th, 1890, J. Darby jumped 14ft. 9in. with weights, while the same performer, on level ground and without the use of weights, accomplished the marvellous leap of 12ft. 1½in. on May 28th in the same year.

If the novice does not at once succeed, he need not despair. I have it on very good authority that Ray Ewry never cleared 9ft. in his first year.

The standing long jump cannot be said to be so closely allied to the running long jump as is the hop, step and jump, for the first-class standing long jumper is rarely found to be more than mediocre at the running event.

It has recently been prophesied that this event is to be deleted from the programme at future Olympian Games. If this is so, it will be a great pity, for the standing long jump is an event of interest, and also an excellent test of both will and muscular power and also of athletic skill.

Olympic Rule.

Standing Broad Jump.

The feet of the competitor may be placed in any position, but shall leave the ground only once in making an attempt to jump. When the feet are lifted from the ground twice, or two springs are made in making the attempt, it shall count as one trial jump without result. A competitor may rock forward and backward, lifting heels and toes alternately from the ground, but he may not more than once lift either foot clear from the ground,

nor more than once slide it along the ground in any direction.

With these exceptions, the rules are similar to those for the running broad jump.

CHAPTER XI.
THE STANDING HIGH JUMP.

THE history of the standing high jump is very much like that of the sport described in the last chapter, for it was in the 'eighties that the event first began to come into prominence in the United States, although it had been practised in Ireland, and in some parts of England, many years previously.

In England the first standing high jump championship (A.F.E.A.) was held at the South London Harriers' meeting in 1911, when J. E. Boyde, of the Polytechnic Harriers, was declared champion at 4ft. 6in., with F. O. Kitching, L.A.C., second, 4ft. 5in. No championship was held in 1912.

The event was added to the American Athletic Union's championship programme in 1893, was dropped in 1894, resumed in 1898, dropped in 1899, and finally reinstated in 1906, since when it has been retained. Schwarner, winner of the first standing broad jump championship, was also winner of the standing high jump in 1893, when he cleared 4ft. 11in., truly a wonderful performance for a first year's championship. It would appear that there is some close alliance between the two standing jumps, for Ray Ewry was *facile princeps* at both, while Platt Adams has held the standing broad jump championship three times and the standing high jump championship once; he also represented the United States in these two events at the 1908 and 1912 Olympic Games. He was unplaced in 1908, but in 1912 he won

the standing high jump at 5ft. 4 1-5in., and was second in the standing long jump to Tsiclitiras at 11ft. 0 2-5in.

As regards Ray Ewry, it is sufficient to state that he held the world's record in both events. His record for the standing high jump of 5ft. 5¼in.* was established at Buffalo, U.S.A., on September 7th, 1901. Ewry also holds the Olympic record of 5ft. 5in.

The late C. Tsiclitiras came into the game young, and modelled his style on Ewry, whom he first saw compete at Athens in 1906. From that year until 1908 his improvement was very marked, and he did extremely well to tie with Bilber, of the U.S.A. team, for second place at 5ft. 11in. Thereafter he turned all his attention to the standing long jump. At Stockholm last year he was third to the brothers Platt and Ben Adams with the same jump (5ft. 11in.) that he accomplished in 1908.

The best standing jumpers we have yet seen are Ewry, Tsiclitiras, and the brothers Adams, and I would ask the reader to study their weights and heights, which are given in the last chapter, as they demonstrate the fact that the standing high jumper must be tall. Coming nearer home, one has only to observe such men as L. H. G. Stafford, winner at the Olympic Trials, 1908 (4ft. 5½in.), and F. O. Kitching, second, English Championship, 1911 (4ft. 5in.), both of whom are well over 6ft. in height.

The standing high jump was not included at the first of the modern Olympiads, but came in in 1900 at Paris, and has been retained since.

The results of Olympic competitions are given hereunder:—

ATHENS, 1896.	ATHENIAN CELEBRATION, 1906.
No Competition.	Ewry (U.S.A.) - 5ft. 1⅝in.
PARIS, 1900.	LONDON, 1908.
Ewry (U.S.A.) - 5ft. 5in.	Ewry (U.S.A.) - 5ft. 2in.
ST. LOUIS, 1904.	STOCKHOLM, 1912.
Ewry (U.S.A.) - 4ft. 11in.	Platt Adams (U.S.A.) - 5ft. 4⅛in.

*New World's Record, 5ft. 5¾in., Goehring, U.S.A.

Ewry's world's record of 5ft. 5½in. is indeed wonderful, but J. Darby's professional record of 6ft. with his ankles tied, established at Church Cricket Ground on June 11th, 1892, is simply stupendous, and one cannot let the opportunity pass without mentioning the latter performer's leap of 6ft. 5½in. after two standing spring jumps at Wolverhampton on February 5th, 1892.

The methods employed in the very early days are of interest, I therefore give the following extract from Walker's "British Manly Exercises" (1834).

"THE HIGH LEAP.

"*Without a Run.*

"In this, the legs and feet are closed; the knees are bent till the calves nearly touch the thighs; the upper part of the body, kept straight, is inclined a little forward, and the arms are thrown in the direction of the leap, which quickens the impulse, preserves the balance, and may be useful in a fall.

"In descending, the body should be rather inclined forward, and the fall should take place on the fore part of the foot; for the direct descent in this leap, if not thus broken, would send its shock from the heels to the spine and head, and might occasion injury.

"To perpendicularity in this leap should be added lightness, so that scarcely any noise from the leap should be heard.

"This leap without a run may be practised at the height:—

First of the knees.
Secondly, of the middle of the thighs.
Thirdly, of the hips.
Fourthly, of the lower ribs."

From Mr. Walker's schedule, it would appear that they did not do very great leaps in the early 'thirties.

Coming back to the present day, and considering the necessary attributes of the ideal standing high jumper,

it has already been seen that he must be tall, over 6ft. for preference, certainly not more than twelve stone. He must also have plenty of "snap" in his composition, and above all a steady nerve and great determination, even more so in this than in the standing long jump, for the effort of will required before the athlete can force himself to make the spring is tremendous; only those who have competed in this event can realise how overpowering is the desire to put off the spring for just another second.

I once heard a man say, "I don't like the standing jumps, they are such cold-blooded affairs," and he just about hit it, for that is the first and greatest difficulty the novice has to overcome.

The man who hopes to succeed in this event must not only be tall, but must be long and strong in the legs and must have good body muscles, for those of the back and abdomen play no small part in the evolutions gone through. No track work must be undertaken which will tend to destroy the springiness of the leg muscles; plenty of sprinting will, on the other hand, tone them up. Much information of value to the novice in this event will be found in the chapter on High Jumping, which should be carefully studied; indeed, it will be as well for the beginner to take a short course of running high jumping, which will teach him body control when in the air. Above all, it must be borne in mind that this is an event which requires a lot of careful thought, study and practice before any degree of proficiency can be attained. There is no reason why it should not be practised in the gymnasium during the winter months, as this will enable the novice to give his attention to it all the year round.

A matter of some difficulty, but one which must be mastered, is to get the leg high and at the same time perfectly straight. To prove this the novice has only to raise the knee high to the front and attempt to straighten out the leg so that there is no bend at the knee joint whatsoever. He will at once feel as if all the muscles on

the back of the thigh are being horribly stretched, this is because these muscles have been over-developed at the cost of the muscles on the front of the thigh, and are therefore a little shortened; exercises must be used to develop the front of the thighs, for as will be seen from the photograph (No. 1) of Ray Ewry, the straightening out of the leg is of the greatest importance.

Now as to the method employed in making the jump. It may be remembered that in the chapter dealing with the Running High Jump reference was made to the "Scissors Jump"; this method was severely condemned for use by the running high jumper, but is the only one by means of which the standing high jumper can surmount the obstacle.

The athlete, when preparing to make his spring, takes up his position with one side turned to the bar. I have often been asked at what distance from the bar one should take up one's stand; the following rule answers the question fully and should prove of use to the novice. On taking up the position at the side of the bar, place the clenched fist with the knuckles resting on the hip and the back of the hand downwards; in this position the elbow is crooked. The distance at which the body is away from the bar when the elbow just touches, or is under or over it, is the right distance for the jumper to stand from the bar. Having taken up his stand, the jumper must remember that, although he may rock backwards or forwards on the heels and toes, he must not lift either foot, nor must he slide either foot along the ground more than once; therefore, he must gather the nerve force and determination to take off by will power alone, for he has not the exhilaration of the run to work him up to the effort as has the running high jumper.

When the jumper is quite comfortably placed with "elbow room" from the bar, and the feet close together, he draws a deep breath, at the same time drawing the arms strongly above the head. As the lungs are filled, he rises upon the toes, tautening every muscle meanwhile,

leans slightly forward and inward, letting the heels come to ground as the arms are swept down and to the back, bends the knees, and just as it is felt that the body is over-balancing, the arms are flung up and the spring made upwards with a slight inclination towards the bar.

The athlete in making his jump drives off strongly from the ground with an "ankling" action from heels to toes. As the body rises it must not be inclined too much inwards, or the bar will be brought down by the shoulder or hip; he must rather rely upon the proper use of the arms and a sudden hitch up and sideways of the hips to get him over. When the jumper has made his spring, and the body been helped into the air by the violence with which the arms have been upflung, the body should be forced still higher by heaving up the whole side nearest to the bar and throwing up the leg on the same side and throwing it over the bar. As the body becomes centralised over the bar the leg which has just been thrown over is cut smartly down; at the same instant the other leg is thrown high. It will be seen that Ewry has just so thrown up the second leg in photograph No. 1. The body is now allowed to roll over sideways towards the pit, the movement being further aided by cutting away the hand which was nearest the bar when the jump was commenced and flinging the other arm across the chest, at the same time bending the head in the direction in which the body will land. This is the method that Ewry used with such marked success for many years. C. Tsiclitiras and W. E. B. Henderson (O.U.A.C.), who was the only Englishman to clear 4ft. 8in. at the Olympic Games, 1908, both seemed to get a little bit higher when apparently at the top of their rise by hitching the hips up violently and getting a sort of final sideways wriggle.

In an event of this sort, where there is no preliminary run to aid the body in rising into the air, it will be readily seen how all-important a matter body control becomes.

How perfectly Tsiclitiras had acquired this roll and lift, and how flat he managed to get the body will be seen

Photos by Sport and General and Topical.

1. Ray Ewry (U.S.A.), Ex-Olympic and American Champion. Centralized over the bar.
2. C. Tsiclitiras (Greece). Dropping after crossing the bar.

THE STANDING HIGH JUMP.

To face page 100.

Photos by Sport and General.

1. The correct starting position.
2. Cummings (U.S.A.). Passing close to the top of the hurdle with leading leg well straightened.

HIGH HURDLING.

To face page 101.

from photograph No. 2, which was taken at the Olympic Games, London, 1908, when he was second to Ray Ewry, at 5ft. 1in.

The great thing is to make up one's mind to spring at just the crucial second, to learn proper body control, and to use the arms properly when in the air.

Hereunder is given the Olympic rule governing the standing high jump competition.

STANDING HIGH JUMP.

(*a*) The competition shall start with the bar at a height of 130cm.

(*b*) The feet of the competitor may be placed in any position, but shall leave the ground only once in making an attempt to jump. When the feet are lifted from the ground twice, or two springs are made in making the attempt, it shall count as one trial jump without result. A competitor may rock forward and backward, lifting heels and toes alternately from the ground, but he may not more than once lift either foot clear from the ground, nor more than once slide it along the ground in any direction.

(*c*) With these exceptions, the rules are similar to those for the running high jump.

NOTE.—In ordinary competitions the jumping shall start at such height as the competitors may decide.

PART THREE.

CHAPTER XII.

HURDLING.

COMPARED with such sports as javelin, hammer and discus throwing, hurdling is quite a modern innovation.

Donald Walker makes no mention of the pastime in his book "British Manly Exercises," published by T.

Hurst, of St. Paul's Churchyard, in 1834, but the game must have come into vogue very shortly afterwards, for it figured in the programme at the Civil Service Sports in 1864. The 120 yards hurdle race was a feature of the English Championship programme in 1866, in which year T. Milvain was the winner in the excellent time of 17¾sec., considering the fact that the sport was in its infancy. Since then the event has always been popular and the improvement very marked.

Hurdling is divided into two classes, the first at the shorter distance of 120 yards, over 3ft. 6in. hurdles, and the second at all distances beyond 120 yards, over 3ft. hurdles; hurdle racing rarely takes place at greater distances than 440 yards, and may therefore be considered a sprint event.

Treating of the shorter race over the high hurdles, this for many years was the only distance to rank as a championship in England. In 1911 the Newport Athletic Club held a 220 yards Hurdles Championship, under the auspices of the Amateur Field Events Association. The event has been very popular in Wales since then. This year (1913) the 440 yards Hurdles A.F.E.A. English Championship was held in connection with the Civil Service Jubilee Sports, but did not get the support deserved, nor was the winner's time of 63 2-5sec. brilliant, but it is a move in the right direction. Lieut. Greer's style of hurdling is excellent, and with a fast competitor to draw him out he should be capable of greater things.

The 120 yards hurdles has been a Championship event in America since the meetings were instituted in 1876, Hitchcock's performance of 19sec. in that year does not compare very favourably with Milvain's 17¾sec. in 1866, nor did the U.S.A. men really begin to find their form until round about 1890, in which year F. T. Ducharme was credited with 16sec., but what they lacked up to that time they have more than made up for since. From 1890 up to the coming of Kraenzlein, 16 to 16⅕sec. was almost invariably the order of the day, and from Kraenzlein's

day onwards, 15$\frac{1}{5}$ to 15$\frac{4}{5}$sec. has been considered about championship form. The 220 yards hurdle race, over 2ft. 6in. hurdles, was added to the American Athletic Union Championship programme in 1887, and has always remained a popular feature.

It would appear that the 110 metres or 120 yards high hurdle race is popular all over the world, and the 400 metres or 440 yard races are popular in America, the colonies, and on the Continent, but the 220 yards hurdle race is pretty well confined to the United States.

At hurdling the Americans are in a class quite by themselves, no matter what the distance, as will be seen by the table of Olympic victories given hereunder :—

	ATHENS, 1896.		ATHENIAN CELEBRATION, 1906.	
110 Metres Hurdle	Curtis (U.S.A.)	17$\frac{3}{5}$sec.	Leavitt (U.S.A.)	16$\frac{1}{5}$sec.
200 ,, ,,	—		—	
400 ,, ,,	—		—	
	PARIS, 1900.		LONDON, 1908.	
110 Metres Hurdle	Kraenzlein (U.S.A.)	15$\frac{2}{5}$sec.	Smithson (U.S.A.)	15 sec.
200 ,, ,,	,, ,,	25$\frac{2}{5}$,,	—	
400 ,, ,,	Tewkesbury ,,	57$\frac{3}{5}$,,	Bacon ,,	55 ,,
	St. LOUIS, 1904.		STOCKHOLM, 1912.	
100 Metres Hurdle	Schule (U.S.A.)	16 sec.	Kelly (U.S.A.)	15$\frac{1}{10}$sec.
200 ,, ,,	Hillman ,,	24$\frac{3}{5}$,,	—	
100 ,, ,,	,, ,,	53 ,,	—	

In hurdling, as in all other field events, the American's close attention to style has made him supreme the world over; it is, however, only fair to add that he has the incentive of constant competition to induce him to train thoroughly to become really proficient in the art, whereas the English hurdler, no matter how good he may be, must content himself with half a dozen races in the year.

Another thing that makes for fast times being recorded in the United States is that the race is frequently run on a cinder path, whereas in England the competition usually takes place on grass, which is much slower than

cinders. In England the hurdles are always solid all the way up, whereas the novice in America gains confidence from the knowledge that, though he may rap the timber, he is not likely to come a purler, because a very perfect form of hurdle is used. As this hurdle is of considerable advantage it is worthy of description. It is known as "Foster's Patent Safety Hurdle," and is described in Messrs. Spalding's catalogue as follows:—"The frame is 2ft. 6in. in height, with a horizontal rod passing through it 2ft. above the ground. The hurdle is a wooden gate, 2ft. high, joining on this rod at a point 6in. from one of the sides and 18in. from the other. With the short side up it measures 2ft. 6in. from the ground, and with the long side up 3ft.6in." It can thus be fixed at 2ft. 6in., 3ft. or 3ft. 6in., by means of a thumb-screw, which, if not screwed up too tight allows of the bar coming over if the athlete hits it fairly hard in taking his fence. It will be readily seen what a great advantage this type of hurdle is in instructing the beginner, for with the solid type, if the novice is clumsy and does not rise sufficiently, he may come down very heavily, and will be inclined to go too "big" next time.

The more graceful and also the natural style of hurdling is that in which the athlete bends the leading leg at the knee in crossing the hurdle: this mode was in vogue until the coming of Kraenzlein, in 1900. The bent legged style is now entirely dead in America, but survives and thrives lustily in England; nevertheless, we have produced some great men over the timber, and when they learn to take their fences with the leading leg quite straight and the shoulders square to the front, then we shall find that one or two of them may become record breakers.

Arguing upon the merits of the two styles, when the athlete hurdles with the leading leg bent it will be readily seen that at the top of his rise the leading foot must of necessity be the lowest point of the body, and as it is almost impossible for the foot to be drawn up to the level

of the hips the body proper will be several inches higher, and therefore, on account of the height the body has to rise, more energy must be expended in getting over the obstacle. Many hurdlers, to obviate this extra effort, twist the hips sideways when at the top of the rise, but this again is both bad and unnecessary; in the first place it disturbs the poise of the whole body and brings the shoulders away from the true squareness to the front, which in its turn has a bad effect, in that the man who does not keep his shoulders absolutely square will almost invariably land on the side of the foot; this breaks the rhythm of the stride ever so slightly, and puts an unnecessary strain upon the cartilage of the knee, which in time leads to displacement. Again, with the bent leg method, it must be remembered that the leg has to go through extra motions; first it is curled up and in, and then has to be shot out as the athlete comes to ground, besides which there is an appreciable hang in the air when the hurdler is at the top of his rise. Last, but not least, if the hurdler who gracefully curls up the leading leg should hit the top bar, it is a pound to a penny he will come down pretty heavily, or if he is lucky enough to escape a fall his equilibrium will be so upset that for all practical purposes the race will be over so far as he is concerned. The bent leg method savours rather too much of jumping, with its consequent loss of time, to be really a practical method.

Now let us consider the merits of the straight legged method. In the first place, the athlete virtually succeeds in taking the hurdle in his stride, he does not run so great a risk of hitting the top bar, because the leading leg is thrown high, with the sole of the shoe to the front and two or three inches to spare, to allow the seat of the "silks" to just graze the top bar as the body comes over; in the second place, the hurdler is enabled to keep his shoulders absolutely square to the front and so lands well on the ball of the foot, with the rear leg in exactly the right sprinting position for the next stride forward.

As the body of the straight-legger does not have to rise so high in the air as that of the man hurdling bent-legged, it must be obvious that the former gains a bit on the latter at each hurdle, given that each man's powers of sprinting are equal, and even an inch makes all the difference in a hard-fought finish, as most of us know.

Before dealing exhaustively with the straight-leg method for the instruction of the beginner, I should like to speak, briefly, of one or two disciples of the style whose names are household words, and whose approval of the method should be sufficient recommendation to the novice. First, there is the famous old Blue, A. C. M. Croome, a flier indeed, and one who in his day won handicaps in 17 2-5 sec. owing 15 yards. Next we have A. C. Kraenzlein, at one time holder of the world's championship of 15 1-5sec. Kraenzlein was most pronouncedly a "straight legger," but was somewhat "big" in going over his fences, probably on account of his extraordinary long and high jumping qualities. Perhaps the most perfect example of all was F. C. Smithson, of the 1908 U.S.A. Olympic Team, holder of the world's record of 15sec. All three were great hurdlers, and keen advocates of the style under discussion.

As to the build of the ideal hurdler, he should be about 6ft. in height, long in the legs and, of necessity, loose in the hip joints, and weighing somewhere round about 11st., and certainly not more than 11st. 6lb. He must have great pace, without which his time will be wasted, and he had far better turn his attention to some other branch of athletics.

Starting right from the beginning, the novice should first get lissom, and loosen out the hip joints by standing on one foot and bringing the knee up sharply to hit the shoulder. This should be practised morning and evening until it is felt that the legs can be moved really freely. A certain amount of high kicking is also

beneficial. Next he must acquire balance. This he may do by rising on the toes of the foot from which he takes off, and bringing the foot of the other leg directly up to the front, with the toe pointed to the height of a hurdle (3ft. 6in.), and there rested upon some solid object. The body is now forced down over the raised leg; the body may come right down until the shoulder is on the top of the thigh. It will be found necessary to get someone to help support you in this position at first, but the athlete should rely mostly upon his own arms to balance himself. In time he will do without "the helping hand," and this will aid him no end when he comes to the actual hurdling; it will also teach him body control. No hard and fast rule can be laid down as to how the arms should be held—different men will carry them differently, according to how their weight is distributed. For instance, a man who is heavily made in the chest and shoulders will not fling his arms so far forward when rising as will the man who carries a lot of weight below the hips.

One of the very best exercises the hurdler can possibly use is as follows: Rise upon the toes of (say) the left foot, grasping the back of a chair firmly with the left hand; raise the lower half of the right leg by bending the knee until the right heel comes as near the seat as possible, but do not bring the upper half of the leg out of the perpendicular. Next, keeping the knee still bent, raise the whole leg from the hip as high to the front as possible; it will be found possible to get the knee about level with the arm-pit while keeping the body perfectly upright. Now point the toe and shoot the leg out straight, so that the whole leg is level with the hip and parallel to the ground; the right foot is then brought quietly back beside the left, and the movement repeated as often as may be deemed advisable with each leg. Next, the hurdler must turn his attention to building up his body, and I cannot do better than again recommend Müller's book "My System."

These exercises will, of course, be carried out during the period of training, and in connection with the other work. It is inadvisable to keep the beginner too long on preliminary exercises, and away from the hurdles, for it is only natural that he should want to get to the real business in hand as soon as possible, but one thing I would most earnestly ask of all hurdlers, whether it be the novice who comes entirely new to the game, or the old stager of many summers going out to open up the season's work—do, for your own sake, go to the track and get the legs thoroughly hardened up by sprinting before attempting to fly a single hurdle. Concerning the track work, all starts should be made from the crouching position; the start should be practised continually. Not only does a good start make a lot of difference in the ultimate result, but the movements gone through in starting materially help to build up the muscles used in flying the hurdle.

The method of starting is as follows: Go to your mark on the track and place the foot with which you take the first hurdle a few inches behind the scratch-line; then come down with the other knee resting upon the track. Assuming the left foot is in front, the right knee should be about level with the ankle of the left foot. The position of the feet should be marked and holes cut—a shallow one for the leading foot and a good deep one at the back, so that the athlete may have something to shove against in getting off.

On the word from the starter, "On your marks," the competitor takes up the positions just described, with the finger-tips resting on the scratch-line or mark of the start allotted. When the starter says "Get set," the knee of the back leg comes up off the track as the athlete rises on to the toes. The weight now rests on the ball of the leading foot, with the tips of the fingers resting upon the ground as a little additional support. The arms should be wide enough apart to ensure that the muscles of the chest are in no way cramped, and

the rear leg should be far enough to the side of the leading leg to allow of its free passage to the front.

As the pistol is fired the hurdler leaps forward, pushing off strongly with the back foot, and this he must do in such a way that he will at once fall into a perfectly smooth and level stride. Starting should be practised with the pistol as frequently as possible.

The hurdler in training should run at all distances from 25 yards, which will make him "nippy," to 440 yards, which will improve his staying powers, for although the distance of the race is only 120 yards, yet there are those ten flights of hurdles to be negotiated, so that all the staying powers of a first-rate quarter-miler, or at any rate a furlong man, should be brought to bear upon the game.

When the novice has acquired pace, staying and striding powers upon the cinder path, he may be taken to the hurdles. He should have been allowed to watch a first-class man at work over the sticks during the period of his own training on the path, so that he will have a pretty good idea of what is required of him. One hurdle should now be set up; the novice should be started with the pistol, go full pace up to the hurdle, attempt to fly it, and, on landing the other side, run a few steps forward. By this means he will from the very first begin to acquire the habit of getting away again as soon as his leading foot touches the ground the other side of the hurdle. An excellent method of teaching the hurdler to become nippy over the hurdles is to set up three of them, and to let the novice walk up to the first, fly it, and, on landing, take five *walking* steps forward and fly the next, take five more steps and fly the next. Each time in coming down the athlete *must* learn to land on the ball of the foot; the heel must on no account touch the ground. If the athlete finds his legs are not strong enough to allow him to do this, he must build up the leg muscles by rising on the toes, and walking on the

toes with the legs perfectly stiff until he has acquired sufficient strength. Having got so far, it is now time for him to arrange his actual striding and hurdling. On getting down on the mark in the starting position, the foot which will first cross the hurdle must be in advance. As hurdling is so greatly a matter of accurate striding, care must be taken to learn the exact number of strides which will be necessary to reach the take-off for the first hurdle accurately. After this, it becomes a matter of taking three complete strides between each flight. I say "complete" strides advisedly, and because I want to convey clearly to the novice what the "three-stride" method is. Assuming that the left is the leading leg, on crossing the hurdle the left foot comes to the ground. The right leg swings forward (No. 1 stride), the left leg comes forward (No. 2 stride), the right leg comes forward (No. 3 stride), and as the left leg comes forward again the hurdler flies the hurdle. It will therefore be seen that the fourth stride is the one in which the hurdle is crossed; the athlete should land on the ball of the foot, about seven feet the other side. No. 1 stride is fairly long, No. 2 still longer, and No. 3 rather shorter than either of the preceding ones, to allow the athlete to gather himself together for the extra effort entailed in clearing the hurdle. So much for the striding between the hurdles, which must be at the greatest pace of which the athlete is capable. As the last one is cleared he will, of course, make a last supreme effort to get to the tape with a tremendous final burst of speed.

Now as to the actual method of hurdling. The hurdler gets into the starting position and sprints up to the hurdle with the number of strides he has decided are necessary. As he rises to the hurdle the leading leg is thrown straight up to the front, and the body depressed from the waist to meet the leg as it rises. Coming up to the level of the top rail, the knee joint is shot out perfectly straight, and the body still further depressed

for the purpose of bringing the hurdler to ground upon the other side of the obstacle in the least possible space of time; meanwhile the shoulders must be kept absolutely square to the front. Simultaneously with the athlete reaching the top of his rise the back leg is tucked up, level with the hip if possible, the outside of the foot being uppermost. It entails no small expenditure of strength and body control to enable the athlete to get the foot sufficiently high, but is invaluable in that the higher the rear foot is carried the closer will the seat of the silks pass to the top rail of the hurdle; also the rear leg will be in exactly the right sprinting position for the next stride forward if it is brought up sufficiently high. To acquire sufficient lissomness in the hip joint to do this properly, I would advise the athlete to sit on the floor with leading leg straight out to the front, the other leg out at right angles, with the knee bent, and foot brought well back; inside of the leg resting on the floor. In this position the body may be moved up and down over the leading leg, the movement taking place from the waist; this will accustom the novice to the "split" position.

A little lateral movement is allowable to most hurdlers in throwing the leading leg over, for to bring the leading leg up absolutely straight, as did A. C. Kraenzlein and A. C. M. Croome, is quite beyond the powers of any average man.

Throughout the whole of the evolutions the hips form as it were a hub on which all the limbs work, or, putting it another way, a line drawn through the hips is a stationary part of a moving whole. The trunk is all the while kept square to the front; the only movement through which it passes is the forcing down over the leading leg as the hurdler rises, and the straightening up as he comes to ground.

In practice the hurdler should wear two pads—one on the shin and one on the ankle of the rear leg—to allow of his passing close to the top of the hurdle

without fear of a very sharp and painful rap on a prominent bone.

So much depends upon not "hanging" in the air when centralised over the hurdle that one cannot too greatly emphasise how important it is to throw the body forward over the leg to force it to ground on the other side.

Now as to training. When the novice has got over the preliminary work and begins to feel his feet a bit, he will want some sort of a regular schedule to work to. The following suggestion will be found useful, but it must be remembered that it is only a suggestion, and may be varied to meet the athlete's own peculiarities and requirements:—

Monday.—Several short dashes on the flat.
Several short dashes over three hurdles.
One hundred and fifty yards sprint, running full pace last fifty yards.

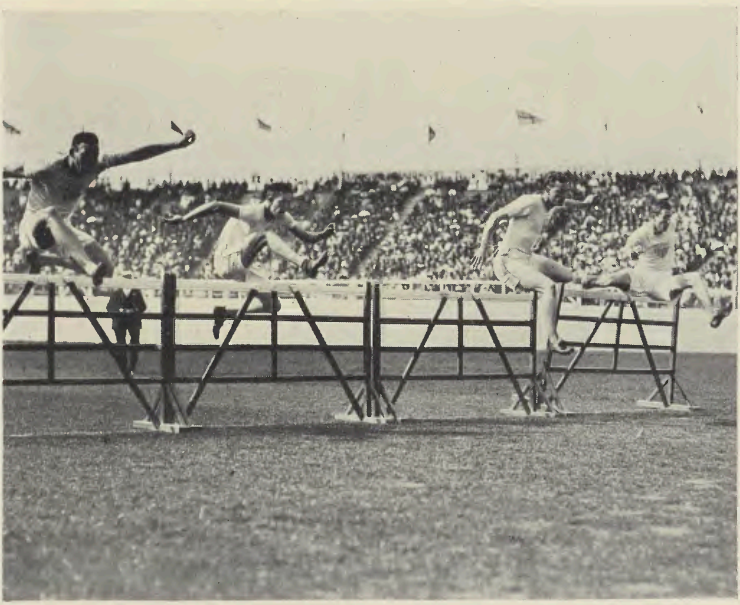
Tuesday.—Plenty of starting practice.
Several short sprints.
Several short sprints over two or three hurdles.
Seventy-five yards burst at full speed.

Wednesday.—Four short sprints.
Several short sprints over two hurdles.
Three hundred yards sprint.

Thursday.—Starting practice.
Several short bursts over two hurdles.
Ten hurdles at medium pace.
Fifty yards sprint.

Friday.—Starting practice.
Several short sprints.
Several sprints over two hurdles.

Saturday.—Full-pace sprint over ten flights as in a race, with proper starting and tape to break at winning-post. If it is possible to enter for a competition, do so.



Photos by Sport and General.

3. A. C. Kraenzlein (U.S.A.), Ex-English and American Champion, inventor of the straight legged method.
4. Final 110 Metres Hurdles Olympic Games, 1908. Won by F. C. Smithson (U.S.A.) (3rd from left in picture) in World's Record Time, 15 seconds.

HIGH HURDLING.

To face page 112.

Photos by Sport and General.

1. Final 400 Metres Hurdles Olympic Games, 1908. Won by C. J. Bacon (U.S.A.) No. 2. R. L. Hillman (U.S.A.), No. 1, second.
2. C. J. Bacon (U.S.A.) shewing good form over the hurdles.

LOW HURDLES.

To face page 113.

The above only deals with outdoor training, in addition to which a certain amount should be done in the gymnasium, to build up the arms and body, which play such an important part, and also to acquire lissomness.

Nothing must be done which is at all likely to impair the elasticity of the muscles.

The whole body should be kept well massaged, particular attention being given to the back of the thighs, on which the strain is particularly great.

It is as well for the hurdler to remember that his legs are highly susceptible to cold, and that if he gets the muscles chilled they will stiffen and be unresponsive when the call is made upon them, and, as strain may easily result, he will therefore be well advised to wear a long coat or dressing gown when going out, or to slip on a pair of flannel trousers over the shorts; a sweater will, of course, be worn.

For the short race over high hurdles we have at least one athlete of outstanding excellence in this country. I refer, of course, to Mr. G. R. L. Anderson, who was so unlucky in coming to grief in his heat at the Olympic Games at Stockholm, 1912; and, further, one has but to remember such men as Garnier, Croome, Healey, and Powell to feel that we really have produced some fliers from time to time, but we cannot yet claim to have given the world a Kraenzlein or a Smithson (who holds the world's record of 15sec. (on grass)) a truly marvellous performance. Other hurdlers of outstanding merit have been V. Duncker (South Africa), A. B. Shaw (U.S.A.), W. A. Edwards (U.S.A.), J. P. Nicholson (U.S.A.), and F. W. Kelly (U.S.A.), all of whom have equalled—15$\frac{1}{5}$sec.

CHAPTER XIII.

THE LOW HURDLES.

REFERRING to the annals of hurdling, one finds records at various distances from 120 yards up to 440 yards as follows:—120 yards hurdles (3ft. 6in.): F. C. Smithson, U.S.A., 15sec.; 220 yards hurdles (2ft. 6in.): A. C. Kraenzlein, U.S.A., 23⅗sec.; 300 yards hurdles (3ft.): Oswald Groenings, England, 36⅘sec.; 300 yards hurdles (2ft. 6in., ten flights): H. L. Hillman, U.S.A., 34⅗sec.; 440 yards hurdles (2ft. 6in.): H. Arnold, U.S.A., 56⅕sec.; 440 yards hurdles (3ft.): G. R. L. Anderson, England, 56⅘sec.; 440 yards hurdles (3ft. 6in.): J. Davis, New South Wales, 57⅕sec.

The 120 yards race over 3ft. 6in. hurdles has already been dealt with in the last chapter. Of the other hurdle races, only the 200 and 400 metres have been included in the Olympian programmes, but all events come into the category of sprint races over low hurdles. It is, therefore, under that heading that I purpose treating them.

Results of races over low hurdles at modern Olympiads are given hereunder:—

	ATHENS, 1896.	ATHENIAN CELEBRATION, 1906.
200 Metres	No Competition	No Competition
400 ,,	,, ,,	,, ,,
	PARIS, 1900.	LONDON, 1908.
200 Metres	Kraenzlein (U.S.A.) 25⅖sec.	No Competition
400 ,,	Tewkesbury (U.S.A.) 57⅗sec.	Bacon (U.S.A.) 55sec.
	ST. LOUIS, 1904.	STOCKHOLM, 1912.
200 Metres	Hillman (U.S.A.) 24⅗sec.	No Competition
400 ,,	,, ,, 53sec.	,, ,,

For perfection among low hurdlers one cannot do better than to instance such men as Kraenzlein, Tewkes-

bury, and Bacon, of America, or Groenings and Densham, of England.

The style to be aimed at in running the low hurdles should be to take them by an elongation of the stride. The accompanying photograph (No. 1) shows that Hillman had this style to perfection, whereas Bacon uses a little lateral movement of the front leg in rising to the hurdle. The picture is of the final of the 400 metres hurdle race at the Olympic Games, 1908. The competitors, reading from left to right, are H. L. Hillman, U.S.A. (second); C. J. Bacon, U.S.A. (first); L. A. Burton, Great Britain (fourth).

It was a great race, and deserves a special word. The American couple ran marvellously, and our men looked to be right out of the picture when half the distance had been covered. None the less, "Jimmy" Tremeer showed a pretty turn of speed, and was not so far away when Hillman and Bacon crossed the last hurdle absolutely together. When Bacon breasted the tape in the British record time of 55sec., two yards ahead of his fellow-countryman, Tremeer was not more than ten yards away. Taking into consideration the fact that Tremeer was then well on the shady side of thirty, his performance was excellent.

Tremeer is an excellent example of a first-class sprinter, who took up hurdling late in life with very creditable results. He had a natural adaptability for the game, and showed a pretty style over the "sticks."

As in high hurdling, the object to be aimed at is to get the leading leg over as rapidly as one can, and in such a way that the body will clear the top rail with as small a margin to spare as possible, and to bring the back leg up high enough and sharply enough to have it in a proper position for the next stride forward. At the same time it must not be brought up so suddenly as to disturb the balance of the body or break the rhythm of the stride in crossing the hurdle, and in landing the shoulders must be kept square to

the front, so that the athlete will not land on the side of the foot; also the leg must be straightened out as the hurdler comes down. The arms are used throughout the movement to control and balance the body. With the low hurdles it is not so important for the hurdler to bring his body down to meet the rising leg, although, of course, it is an aid in bringing the athlete quickly to earth upon the other side to do so.

Excellent form is shown in photograph No. 2, which is of C. J. Bacon, U.S.A., winner at the 1908 Olympian Games.

The athlete in training for the low hurdle events should always remember to train on the track at greater distances than he will be called upon to do in competition, to compensate for the extra energy he will be called upon to expend in taking his hurdles. Another very good plan is to practise at the exact distance, but to only set up the first two or three hurdles, though, of course, the full distance with all the hurdles should be run through once or twice a week.

It will be remembered that in the chapter on high hurdling special stress was laid upon the fact that only three strides must be taken between each flight, so in the 220 yards hurdle race only seven strides must be used in covering the ground between each obstacle. At first the beginner may find the seven strides somewhat beyond his power; then he may use nine, but this should only be a temporary expedient. The seven strides is the proper form, and as such must be acquired. The only reason the alternative nine-stride method is suggested is that until one is really in form the seven strides may degenerate into eight, which is worse than taking nine, for it necessitates the changing of feet and a general shuffling about before the obstacle is cleared, which is, of course, absolutely fatal. In the 440 yards race, with hurdles approximately forty yards apart, thirteen or fifteen strides must be made; in the 300 yards nine or eleven strides.

It is a good thing to chalk the soles of one's shoes and then run over two or three flights of hurdles; the progress and position of the feet may thus be observed. If the hurdler is tall and is running well, it will be found that the last stride before the hurdle is taken will be a short one. This serves a good purpose in allowing the athlete to gather the body a little as he puts forth the effort entailed in flying the hurdle.

Body, arm and leg muscles all play an important part in the game. It is therefore not enough for the hurdler to merely train on the track and over the fences; he must also go in for a course of exercises which will build up the back, loin and abdominal muscles.

The Olympian Rule for the 400 metres hurdle race, and the American Athletic Union Rule for all distances are given hereunder, together with English A.A.A. Recommendations for 300 yards and 440 yards level hurdle races on grass.

Olympian Rule (400 *Metres Hurdles*).

The hurdles shall stand .914 metres (3ft.) from the ground, with straight top bars, and each competitor shall keep his own flight of hurdles throughout.

There shall be ten flights of hurdles.

The first hurdle shall be placed 45 metres (49.213 yards) from the scratch mark and the remaining hurdles shall be 35 metres (38.277 yards) apart, and the distance from the last hurdle to the winning post shall be 40 metres (43.745 yards).

American Athletic Union Rule (*Hurdles*).

Different heights, distances and number of hurdles may be selected for hurdle races.

In the 120 yards hurdle race, 10 hurdles shall be used; each hurdle to be 3ft. 6in. high. They shall be placed 10 yards apart, with the first hurdle 15 yards distant from the starting point, and the last hurdle 15 yards before the finishing line.

In the 220 yards hurdle race, 10 hurdles shall be used; each hurdle to be 2ft. 6in. high [3ft. hurdles are used in England, AUTHOR]. They shall be placed 20 yards apart; with the first hurdle 20 yards distant from the starting mark and the last hurdle 20 yards before the finishing line.

In hurdle races of other distances, and with a different number of hurdles, the hurdles shall be placed at equal intervals, with the same space between the first hurdle and the starting point, and the last hurdle and the finishing line, as between each of the hurdles.

In making a record it shall be necessary for the competitor to jump over every hurdle in its proper position, and no record shall be allowed unless all the hurdles remain standing after the competitor clears them.

A competitor knocking down three or more hurdles or any portion of three or more hurdles in a race, shall be disqualified.

A competitor who trails his leg or foot alongside any hurdle shall be disqualified.

In all championship hurdle races of the A.A.U. or any of its Associations up to and including 300 yards, each competitor shall have separate hurdles and a separate course marked out and measured independently, whether races are run straight away or with turns.

NOTE.—The American Rule should be carefully studied, as it embodies the whole spirit of hurdle racing.

English A.A.A. Recommendations for 300 yards and 440 yards level hurdle races on grass.

In 300 yards races.

(1) No record can be made on any track that does not comply with the following conditions:—

(2) There shall be 10 flights of hurdles in each distance.

(3) Each competitor shall keep his own flight of hurdles throughout. Hurdles to be 3ft. out of the ground, with straight top bars.

(4) Each track of hurdles must be measured the correct and full distance to the winning post.

(5) The first hurdle shall be 45 yards from each competitor's scratch mark, and the remaining hurdles shall be as near as possible 25 yards apart. The distance from the last hurdle to the winning post shall be 30 yards.

In 440 Yards Race.

(6) The first hurdle shall be placed 50 yards from the competitor's scratch mark, and the remaining hurdles shall be as nearly as possible 40 yards apart; and the distance from the last hurdle to the winning post shall be 30 yards.

(7) The last 75 yards, if possible, should be straight.

CHAPTER XIV.

TUG-OF-WAR.

FOR this event, as will be seen by a reference to the end of the chapter, the modes of competition under Olympic and English rules vary somewhat, and in this case I really do think the English provisions are wisest.

In the Olympian rule it is stated that teams may not be captained during the competitions by anyone who is not a member of the team. This absolutely does away with the functions of the "coach" in competitions, and in my opinion deteriorates the pulling. It is further stated that "the front of the body must be facing the opposing team; the rope must be he'd under the arm and turning is not permitted," the reason for this proviso is hard to understand; turning has been allowed since the tug-of-war was first instituted, and plays no small part in the game, as will be explained later on.

The tug-of-war did not figure as an Olympic event

in the first of the modern Olympiads, being excluded from the programmes at Athens, 1896. It was first included at Paris, 1904, in which year the Americans proved the winners through the Milwaukee A.C., who pulled as a team representing America.

Results at Olympian games are as follows :—

ATHENS, 1896.	ATHENIAN CELEBRATION, 1906.
No Competition	Germany
PARIS, 1900.	LONDON, 1908.
United States	City Police A.C. (Great Britain)
ST. LOUIS, 1904.	STOCKHOLM, 1912.
Milwaukee A.C. (U.S.A.)	Sweden

The tug-of-war has never attained to any great degree of popularity in the United States, figuring in the A.A.U. championship programme for teams of four men, limited to a total weight of 650lb. per team, it was first included in 1888, but was dropped in 1890. The individual tug-of-war suffered no better, seven championships having been held at various periods since 1879. The team tug-of-war for four men aside, weight unlimited, had an unbroken run from 1883 to 1890, after having been excluded from 1877 to 1883.

Always a popular event in this country, thanks largely to the military element, we have always been able to hold our own. In 1908 the City Police A.C. showed such magnificent form that it was decided to let the team pull for England as they stood; the wisdom of this policy was amply proved by the ease with which this highly-trained City Police team, under Inspector Duke, pulled over all opposition, never suffering defeat in one single pull the whole way through. The American team, including such magnificent athletes as Ralph Rose, J. J. Flanagan, and W.W. Coe, all totally unused to the sport, figured but poorly against the men who had been under Duke's constant care and tuition for five months.

Before 1912 the City Police had lost the services of Inspector Duke, but had found a worthy successor in Sergeant Muggridge. The team pulled magnificently in the 1912 trials, and some surprise was caused when it was known that the City Police team would not go to Stockholm intact, but would have several men from K Division drafted in, this caused much dissatisfaction, as the men could only get in two practices a week for two months; consequently the team never got really settled down and succumbed to a splendidly trained Swedish team at Stockholm in two straight pulls.

The tug-of-war has, of course, been an English championship event for some time past. To this game a man must come with strength, weight, and determination; perhaps most important of all is a good corset of muscle around the waist, for if a man be not strong in the small of the back he will never be a reliable unit in a tug-of-war team. That weight is of importance will be readily realised when it is stated that the team which went to Stockholm for the 1912 Games averaged 17st. per man. Determination, too, is a large factor, for it requires any amount of sticking power to hang on to the rope towards the end of a gruelling pull.

The team, on coming out for the pull, line up at the side of the rope, and, on being told to show the boots, go down with the weight resting on the hands, legs fully extended, the toes only resting on the ground, in order that the soles of the boots may be inspected. When the boots have been inspected, the team rise and take up their positions, facing the rope four feet apart, with arms outstretched to get the distance.

The rope is then taken up, and, on the command "Get ready," each man should stand upright, with the feet at the position of "Attention," and grip the rope firmly under the arm. In the case of those on the right-hand side of the rope the right hand is in front, and those on the left of the rope have the left hand in front.

On the command "Take the strain," the rope is tightened out, and the competitors' bodies thrown back so as to form an angle of about 45deg. with the ground. Each competitor's stomach should be well up to the rope, or, in other words, the back should be hollowed. Up to this point no holes must have been made for the competitors' heels to get a purchase in.

The feet are now placed as shown in the accompanying diagram; the central line represents the rope. No hard and fast rule can be laid down as to how many men should be on opposite sides of the rope. The formation shown in diagram is that adopted by the City Police team at the Olympic Trials.

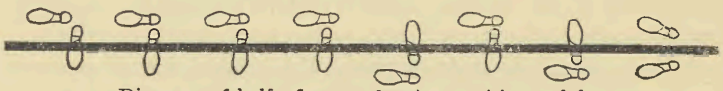


Diagram of half of rope, showing positions of feet.

On the word "Go!" being given, each man jumps up and back, coming down with all his force and driving the heels hard in, thus making marks on which to get leverage in resisting the pulling of the opposing team, at the same time lessening the angle between the body and the ground as much as may be possible without letting any part other than the feet touch the ground; nor must the body be allowed to go so far back that it will be necessary to put down either of the hands to prevent it from overbalancing. Each individual competitor must keep a good firm grip upon the rope all the time, so that his weight be not thrown upon either the man in front of or the man behind him, meanwhile keeping the position already described.

All words of command from the referee have now been given, and the team will watch their captain, taking their orders from him, either by signal or by word of mouth, as may have been previously arranged. After the first heave, the team look to the captain, and, on getting the signal or word from him, heave again in the following manner: The rope is kept in the same

position, but the knees are bent slightly, the stomach still being kept up against the rope, so that the back is hollowed; the heave is made from the knees and shoulders; it is to be remembered that the body must never bend forward under any consideration. The head should be thrown well back, but not so far that it will prevent the competitor from watching the captain for signals.

When the heave just described has been gained, the whole team works back a pace on the heels with a slight jump. This method of gaining ground is used throughout the pulling, except when the turn is made. The turn will be described a little later.

It is of importance to remember that from the moment the strain is taken until the pull is either won or lost, the grip of the hands upon the rope must not be shifted or their position altered, with the exception of when the turn is made.

What is known as "Checking the heave" is resorted to when the opposing team are getting slightly the better of the pulling, and is done in this way: Each man lays back on the rope as near the ground as he can get without actually touching, keeping the heels firmly planted in the marks made at his last jump back; meanwhile, he keeps perfectly quiet, simply laying on the rope and putting forth every effort to prevent the opposing side from getting in a successful heave. The reason that the bodies should form as small an angle with the ground as possible is that when the opposing side attempt to make their heave, a slacking out of the rope must take place for the fraction of a second by reason of the bending of the knees, and if at this instant the team checking the heave lie well back, the lower they are the greater must be the effort put forth by the opposing team to raise those checking the heave near enough to the perpendicular, by reason of the greater angle through which the rising bodies must pass, to enable them (the heaving team) to gain their heave.

Another reason for the laying-back position being adopted is that the nearer the team are to the perpendicular position the greater is the likelihood of the men crumpling up by bending the bodies forward from the waist. From the very beginning the men must be taught to hollow the backs, for the greatest danger a coach has to guard against is that the team will "bend," or, in other words, the men will let the shoulders come forward and the hips go back, thus doubling up the body at the waist. This sometimes happens towards the end of a very strenuous pull, for all the heaviest part of the work falls upon the muscles at the small of the back. If a team does so bend, "it is all over bar the shouting," for they will never be allowed to recover their correct position again.

Therefore, a team should be given the exercises described in Lieut. Muller's book "My System," as the exercises given therein are especially designed for building up the corset of muscle which surrounds the waist.

Now as to "The Turn," which, although not allowed at the 1912 Olympiad held at Stockholm, forms a by no means unimportant part of the art.

It is a very prevalent but quite erroneous idea that the turn is made use of only when a captain is quite satisfied that his team will win and wishes them to turn and walk away with their opponents. This is altogether wrong. The turn comes into use only when the hands and muscles of the team are thoroughly tired, and it is desired to bring an entirely different set of muscles into play. The position of the competitors is also altered, the bodies now leaning forward instead of back. The backs are, however, still kept straight, although the shoulders are a little bowed.

For the purpose of explaining just exactly how the turn is made, we will assume that the man whose movements are described is pulling upon the left side of the rope.

The left hand releases its hold upon the rope, which is meanwhile gripped in the right and under the right arm-pit. As the left arm carries out its movements the right hand releases its hold, and the rope is then gripped under the arm-pit; the clenched fist is close to the body, the arm being crooked at the elbow; the body turns to the left, and the left arm is thrown either under and over—in which case the left hand will be pointing along rope—or over and under, when the rope is gripped at and under both arm-pits, the arms being held in close to the sides, with arms crooked at the elbows and fists clenched.

The team are now looking towards the "anchor" or end man. It will be seen that the men have their backs to the rope, and are pushing instead of pulling it along with the body (to rest the arms and hands). Heaving from the knees, the body, which should be bent well sideways and down to the left in the case of a man pulling on left of rope, is moved along by a series of paces sideways, just in the way that a soldier obeys the command "Right" or "Left close." After the turn has been executed, the feet will be as seen in the following diagram:—

Diagram showing positions of feet after turn has been made.

It would not be fitting to close this chapter without tendering my most sincere thanks to Sergt. Muggridge, of the City Police, for his help in suggesting many valuable and interesting points, which have helped me very materially in the preparation of this chapter dealing with training for the tug-of-war.

Sergt. Muggridge has for many years coached the highly successful Honourable Artillery Company

tug-of-war-team. He has also coached the City of London Police A.C. team since Inspector Duke left the Force some three years ago, and last year Sergt. Muggridge had the honour of coaching the British tug-of-war team for the Olympic Games. His advice and help have therefore been of the utmost value to me in dealing with the event described in this chapter.

English and Olympic rules governing tug-of-war are given hereunder:—

English A.A.A. Tug-of-War Rules.

(*a*) The teams shall consist of equal numbers of competitors. The rope shall be of sufficient length to allow for a "pull" of twelve feet, and for twelve feet slack at each end, together with four feet for each competitor; it shall not be less than four inches in circumference, and shall be without knots or other holdings for the hands. A centre tape shall be affixed to the centre of the rope, and six feet on each side of the centre tape a side tape shall be affixed to the rope. A centre line shall be marked on the ground, and six feet on each side of the centre line a side line parallel thereto. At the start the rope shall be taut, and the centre tape shall be over the centre line, and the competitors shall be outside the side lines. During no part of the pull shall the rope be tied, or in any way crossed by the anchor man, or shall he wilfully place either hand on the ground.

(*b*) In all tug-of-war competitions there shall be one judge and two umpires, who shall be responsible for seeing that this rule is properly carried out. The judge shall start the competition by word of mouth and take charge of the centre and side lines, and give effect to the result of any pull by blowing a whistle. The umpires shall take charge of the teams and see that members of such teams do not wilfully touch the ground with any part of the body other than the feet, and report to the judge any infringement of this rule.

(*c*) It shall be in the discretion of the judge to disqualify offending team and award the pull in question to the opposing side, or he may disqualify the offending team from the competition. A pull shall be won when one team shall have pulled the side tape of the opposing side over their own side line, or any portion of the foot of any competitor of the opposing side go beyond the centre line. In the event of both teams leaving go the rope before either side have pulled the side tape of the opposing side over their own side line, the pull shall be declared no pull, and shall not constitute one of the requisite number of pulls. Turning on the rope shall be allowed. No competitor shall make any hole in the ground with his feet or in any other way before the start.

(*d*) In case of all competitions confined to certain weights two stewards shall be appointed, who shall be responsible to the judge for the correct weighing of the competitors before the start. All heats shall be won by two pulls out of three. All competitors shall wear boots or shoes as per regulation; the heel and sides of shoes—*i.e.*, from the face to the seat—shall be perfectly flush. No prepared boots or shoes, heel plates (sunken or otherwise), projecting nails, tips, sprigs, Blakeys, rubbers, points, hollows or projections of any kind shall be allowed.

(*e*) Each member of a team, including reserves and the captain or coach, must fill up a separate entry form. A copy of the rule shall be printed on all programmes where tug-of-war is an event for competition. The competing teams shall be drawn in pairs, and all byes disposed of in the first round. It is allowable for the captain of a team to accompany his team on the ground, and to act as their coach during the contest, providing the captain himself be also an amateur.

Olympic Rules for Tug-of-War.

(*a*) The rope shall be of sufficient length to allow

for a pull of 3.5 metres and 3.5 metres slack at each end, together with a space of 1.25 metres for each competitor. The rope must not be less than 10cm. in circumference, and shall be without knots or other holdings for the hands. A coloured tape shall be affixed to the centre of the rope, and two other tapes of another colour on each side at a distance of 1.75 metres from each side of the centre tape. A centre peg shall be driven into the ground, and on each side there shall be two other pegs indicating the side lines, which shall be perpendicular to the direction of the pulling, and at a distance of 1.75 metres from the centre peg. At the start the line shall be taut and the centre tape over the centre peg, and all competitors shall be outside the side lines.

(*b*) The start shall be by word of mouth. A pull shall be won by the team which pulls the side tape of the opposing side over their own side, or when the foot of a competitor of the opposing side goes over the centre line. No competitor shall wear boots or shoes with sharp projecting sides or points of any kind whatsoever, nor shall a competitor make any hole in the ground before starting.

(*c*) The front of the body must be facing the opposing team; the rope must be held under the arm, and turning is not permitted. No competitor shall wilfully touch the ground with any part of his body except his feet.

(*d*) During the competition teams may not be captained by anyone who is not a member of the team.

(*e*) All heats shall be won by the best two pulls out of three. In other respects the competitions follow the usual eliminative methods of judging.

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