Medical Officers of Schools Association.

SCHOOL ATHLETICS AND BOYS' RACES.

BY

WILLIAM COLLIER,

M.D., F.R.C.P.

Physician to the Radcliffe Infirmary and County Hospital.

ISSUED BY

THE MEDICAL OFFICERS OF SCHOOLS ASSOCIATION

LONDON

J. & A. CHURCHILL

7 GREAT MARLBOROUGH STREET

1909

Entered at [*Stationers' Hall*

PRICE ONE SHILLING (NET)

Medical Officers of Schools Association.

SCHOOL ATHLETICS

AND

BOYS' RACES.

BY

WILLIAM COLLIER,

M.D. Cantab., F.R.C.P. Lond.

Physician to the Radcliffe Infirmary and County Hospital.

ISSUED BY

THE MEDICAL OFFICERS OF SCHOOLS ASSOCIATION

LONDON

J. & A. CHURCHILL

7 GREAT MARLBOROUGH STREET

1909

Entered at] [*Stationers' Hall*

SCHOOL ATHLETICS AND BOYS' RACES.

A Report of a Meeting held on March 10, 1909, to Discuss the Question of School Athletics.

PREFACE.

The discussion was opened by Dr. William Collier (Oxford), and continued by Sir Lauder Brunton, Dr. James (Malvern), Dr. Goodhart, Professor Clifford Allbutt, Rev. Canon Lyttelton, Mr. Farmer, Dr. Armstrong, Dr. McClure and Dr. Michell.

To the report of the meeting are added two appendices.

Appendix A.—An analysis of a series of questions sent to the medical officers of schools in order to obtain information as to the conditions under which races are run, and evidence as to any injury resulting therefrom.

Appendix B.—A series of resolutions proposed at the meeting and formulated as rules to be observed in the supervision of school athletics.

In issuing this report of the Meeting of the Medical Officers of Schools Association, held on March 10, 1909, it may be useful to attempt briefly to gather up the threads of a discussion which was, unavoidably, somewhat discursive.

Public interest has been aroused in connection with school athletics in regard to three main questions :—

(1) What is the existing practice in our public schools ?

(2) What are the dangers, if any, which attend it ?

(3) What are the precautions necessary in connection with this form of sport ; and to what extent are they observed?

The first query is very fairly covered by certain of the replies given to the series of questions issued by the Council, and summarised in Appendix A. These answers represent the only direct and statistical evidence at present available. Evidence dealing with the second question is afforded by replies furnished by a large number of school medical officers, whose experience extends over a number of years, and have

been gathered from observation on the spot. (*Vide* Appendix A. and Mr. Armstrong's speech.) Other observers—Sir Lauder Brunton, the Rev. D. James, Dr. McClure, the Rev. the Hon. Canon Lyttelton, Dr. Goodhart and Mr. Farmer—contributed to the discussion.

The consideration as to what evidence of physical damage resulting from school athletics is to be found amongst boys who have just left school was considered by Sir T. Clifford Allbutt, Dr. Collier, and Dr. Robert Michell.

In regard to Question 3, it is notable that all the speakers, including those who most severely criticised "long" races, agreed in believing that the sound and healthy boy was not liable to suffer damage if he competed with those approximately his equals in age and physical capacity under conditions of proper supervision and training. Thus, Sir Lauder Brunton, while objecting to boys who are not fitted for them being compelled to run in long races, showed that the healthy immature animal, whether horse or man, could safely compete with his fellows in very strenuous exertion, if properly fed, trained, and tended. Sir Clifford Allbutt concluded that the healthy boy could not injure his heart by any muscular effort which he was able to exert in competition with his fellows. And even Mr. Farmer stated that there was at least one public school at which efficient medical supervision ensured every conceivable precaution against undue and unnecessary strain. (Replies bearing on both parts of this question will also be found in Appendix A).

The series of resolutions (*vide* Appendix B) submitted to and approved by the meeting practically codifies (with one important exception) the practice more or less generally followed in public schools at the present time. The Council believes (and the Association has endorsed this belief) that the general adoption of these Resolutions in their entirety by all schools would reduce the risk of school sports to within that minimum which cannot be eliminated from any form of strenuous exercise.

The exception alluded to concerns the provision of an ample interval between a full meal and the active exercise which is subsequently undertaken. This rule is regarded as being of the very greatest importance. Its disregard is fraught with very serious risk.

W. Attlee.
F. E. Batten.
C. J. Thomas.
} *Hon. Secretaries, M.O.S.A.*

REPORT OF THE MEETING.

The PRESIDENT (Dr. C. E. Shelly) said those present were aware that the meeting originated in a letter* which appeared in the daily Press, dealing with one aspect of school athletics, and which was followed by comments and statements in amplification of it. That letter, by what it did not say but seemed to imply, as well as by what it did say, had caused some perturbation in the minds of parents, schoolmasters, and medical officers of schools who had an intimate knowledge of the athletic side of school life and its effects. With regard to the comments and the statements which appeared in connection with it, even in this country we had to recognise in the newspaper reporter a quality of creative genius, and it might be that Mr. Farmer was not willing to accept as his legitimate offspring everything which had been fathered upon him. If the description of what took place in public schools —practically universally—and its effects, which had been attributed to him was in any degree accurate, he might rest assured that there was no body of men more deeply concerned or more profoundly interested in rectifying evils of that description than the Medical Officers of Schools Association. Speaking with an intimate knowledge of the work of the Association since its formation 25 years ago, he could say that almost every aspect of school life had come before it from time to time. Excluding lesser occasions, the question of school athletics in its various branches, the amount of exertion they entailed on those taking part in them, and the effects observed, had been frequently considered.

---

*The letter referred to was published in the *Times*, February 8, 1909, and is as follows :—

January 26, 1909.

DEAR MR. FARMER,—In reply to your inquiry we have no hesitation in saying that we consider that school and cross-country races exceeding one mile in distance are wholly unsuitable for boys under the age of nineteen, as the continued strain involved is apt to cause permanent injury to the heart and other organs.—Yours faithfully (Signed)—

LAUDER BRUNTON. W. HALE WHITE.
THOMAS BARLOW. ALFRED FRIPP.
JAMES F. GOODHART.

He referred more especially to an admirable paper by Dr. Fletcher on "Athletics in Public Schools," read in 1886, remarkable for its sound common-sense and breadth of view. There was another by Mr. Armstrong, Medical Officer of Wellington College, in 1893, on "Compulsory Games and the Responsibilities of Medical Officers of Schools in Respect to Them"; and a paper by Dr. William Collier, of Oxford, on "The Effects of Severe Muscular Exertion, Sudden and Prolonged, upon Adolescents," in 1900. To-day they were met to consider these questions in another aspect, and he invited visitors to join in the discussion. They all recognised the importance and value of school games—moral, physical, and intellectual—and that there should be a sense of proportion in considering these matters. He sometimes wondered whether the aggregate illness which resulted from boys standing about in all weathers watching games was not at least equal to the mischief entailed on those who took part in them. He believed that the training of a sound nervous system, in constantaneous action with a well-developed muscular system, was not only of great value to the boy himself, but that it imported into the labour and exercise of adult life a measure of attractiveness and health and safety which could not be otherwise attained. The Council of the Association, anxious to obtain the most recent facts with regard to what did occur in schools, had issued a series of questions to a large number of schools dealing with those points, and the replies received were in the hands of those present. Those replies furnished an effective answer to many of the questions which had been raised. But the Council had gone further. Hundreds of undergraduates entered our great universities every year, and most of them came from some school. If serious results followed school exercises to any great extent, a certain proportion of those freshmen would give indications of that fact; many of them, at some time, came under the observation of the medical men practising at Oxford and Cambridge. Therefore, to the medical men practising in those towns, a similar circular was issued asking for their experience; and their replies had been noted by Dr. Collier in the paper which he would read. The Association was fortunate in having Dr. Collier to open the discussion, as he was a distinguished Cambridge athlete, as well as an eminent physician in Oxford.

He was anxious not to import any bias into the discussion of the matter before them; they were there not to air mere

theories or preconceived ideas, but to deal with facts, to ascertain their relative value, and to deduce from them, if possible, such conclusions as would be of real and permanent use to all. But one thing he might state impartially, because it was so obvious that it stared them in the face. The Association had been fortunate during the 25 years of its existence in numbering amongst its presidents physicians and surgeons of eminent abilities and renown; among them were two names of special prominence in connection with the subject now before them, those of Sir Thomas Barlow, whose presidency terminated only in May last, and Dr. Goodhart. He thought it quite safe to assume that if the practices which had been described as universal in public schools did exist to the extent alleged, they could hardly have escaped the cognisance of those gentlemen, who must have become tolerably familiar with the results said to accrue from them; and that they, with their practical interest in the work of the Association, and their whole-hearted sympathy with its aims, would have taken the earliest opportunity of bringing so important a subject under its consideration—if only because the unanimous opinion of such a body, voiced under such leadership and brought to bear directly upon the schools themselves, could hardly have been without effect in securing a rectification of such evils, and that without undue panic or publicity.

Dr. William Collier (Oxford) then opened the discussion on "Ought School Boys to be Allowed to Compete in Flat and Cross-country Races of more than One Mile in Length?"

The question we have to try and decide this afternoon is whether or not many schoolboys are injured by school races of over a mile in length.

I shall ask you to consider:—

(1) What changes and what injuries may follow great muscular exertion, and what are the symptoms and signs by which we may recognise them?

(2) I shall then ask you to decide what importance you are inclined to give to the opinions of a large body of medical practitioners who have the opportunity of examining very many of these boys, within a few months of their leaving school. I refer to the doctors at Oxford and Cambridge. I shall give you very briefly their summarised opinions.

(3) I shall close with a few general remarks on the letter

which recently appeared in the daily press directing attention to this subject.

Those of us who have had an opportunity of examining a number of young athletic men, would agree that one of the most marked changes was an hypertrophy of the left ventricle, shown by displacement downwards, and to the left of the apex-beat, and an emphysematous condition of the lungs, shown by obliteration of the superficial area of cardiac dulness. This hypertrophy and emphysema are so frequent that we regard them as physiological and not pathological. We argue that just as the blacksmith's biceps become markedly enlarged by frequent use, so the heart muscle becomes enlarged by the extra work it does in the case of the athlete. So, too, the lung sacs become more than usually dilated by the frequent efforts of deep inspiration and expiration. It is easy to conceive that while under ordinary conditions this hyperthrophy is harmless, if the efforts are too frequently repeated, the hypertrophied ventricle by pumping the blood with great force into the aorta, may, in course of time, produce a dilatation of its first portion which may eventually lead to aortic regurgitation. Now, some years ago, when athletic sports were much more in vogue than they are at present, and when long distance bicycle racing was extremely popular, I read a paper on the subject before the Medical Society, and in that paper I urged that the athlete's career should not extend over many years, and he should be cautioned not to repeat his efforts too frequently. I think the caution is very much needed in the present day, when Marathon rares are becoming popular. However, I must admit that the schoolboy is not in the least likely to suffer from dilatation of the aorta as a result of his efforts, so I will not pursue the subject further.

At Oxford it is true that we do sometimes see, but not very often, the heart damaged by athletic efforts, and I think we should all agree that the damage almost invariably takes the form of some dilatation greater or less of the right ventricle.

The symptoms we associate with this trouble are : more than usual breathlessness on exertion, palpitation, occasionally some giddiness. Sometimes pain not of an acute character over the precordial region, never of an anginal character. The physical signs—duskiness on exertion, more than ordinary epigastric pulsation and, not uncommonly the production of a systolic murmur along the left border of the sternum after exertion, due to the dilated conus arteriosus pressing against

the sternum and so producing an eddy in the current as the blood is forced out of the right ventricle.

With any combination of these symptoms we advise the athlete to give up severe forms of muscular exertion at any rate for a time. We also advise the athlete to discontinue his training if he collapses badly either during or after his race, even if one or all of these symptoms are absent. Had we time it would be very interesting to consider whether a man ever gets back to his former level once his right heart has been dilated, however slightly. After a severe and acute dilation I feel pretty certain that it never does; although, with rest, all bad symptoms quickly subside. Whenever anything like a big strain is thrown on the ventricle afterwards, the old symptoms appear.

I have only once seen a case of what I believed to be rupture of a valve, and that was brought about in the football field.

Before concluding this part of my subject, I would like to emphasise the fact that in youth athletic struggles, however desperate, practically never have a tragic termination. After fifty, it is not a very uncommon thing for a man, in making some unusual muscular effort, such as running to catch a train, to drop and die. At Oxford, an athlete occasionally drops, but he practically never dies. In the last twenty-five years we have had only two deaths on the field. One was the case of a man who had been warned not to play football, as he had a dangerous valvular disease of the heart; he ignored the warning and paid the penalty, for he died during a game. The other was the case of a high jumper who had gone to the ground for the purpose of practising the high jump. He started for a short run to warm his muscles, was seen to stagger, fall, and die.

The letter mentions other organs which are apt to be permanently injured. I suppose the other organs indicated are the lungs and the kidneys. With regard to the lungs, I can say that I have not yet come across a case in which I have had reason to believe that the emphysema could be described as pathological. I have never seen a case of what I considered to be injury to the lungs from athletic strain. We pass on then to the kidneys. In years past I have advised many a man to give up all competitions, because, although I regarded his heart and lungs as sound, I found a considerable cloud of albumen in his urine after exercise, although not before. Three years ago, with the help of a friend, I arranged to examine the urine of the various college crews who were train-

ing for the Torpids. One of us examined with the cold nitric acid test, the other a specimen of the same urine with heat and acetic acid. Of 156 specimens examined, 130 showed albumen in greater or less quantity ; 89 showed its presence in a very definite amount. At the same time, Dr. Whittingdale of Sherborne, Dr. Cronk of Repton, and the late Dr. Ferguson of Cheltenham, were kind enough to examine the urines of schoolboys after racing. Of 38 specimens examined 37 were reported to show traces of albumen. Since then I have never stopped a man from either rowing or running on account of albumen, provided I find that his urine is free from albumen when at rest. I believe the albumen in these cases is due to acute passive congestion of the kidneys, but this is not the occasion to argue the point.

I will not ignore the arteries. I believe the average blood pressure among athletes has been found to be low, and that the effect of athletic effort tends on the whole to produce low rather than high pressure.

I will now ask you to consider what value you will attach to the opinions of my colleagues at Oxford and Cambridge. I would point out that each year we have entering the two universities at least 1,800 men, the large majority of whom come directly from the public schools, and that a very large number pass through our hands in their first year of residence. Now if these school races of over a mile were such a terrible danger to youngsters as some would have us believe, one would have thought that we at Oxford and Cambridge who are quite familiar with the signs and symptoms of athletic strain, would frequently come across traces of the damage. Yet we almost unanimously declare that we do not. We say that cases of injury to the heart which can be directly traced to school athletes are extremely rare.

The question put to us was : " In reference to lads who have left school, what cases have you observed of damage to heart and lungs caused by over-exertion in school races or other forms of school athletic exercises ? " Out of twenty replies, nineteen declare that cases of injury are extremely rare.

While we acknowledge that we do see at Oxford cases of heart strain, we agree that they are manufactured at Oxford and not at school, and the reason is not far to seek. At school, boys are in training for a few weeks, and they race but once a year. At Oxford, a prominent runner will be in more or less training all through the winter season, and may run in half a dozen strangers' races during the season. The schoolboy's record in this respect is quite different.

In the case of the rowing man it is clear that the real strain is due to the fact that the racing is carried over six nights, with only the Sunday interval of rest. At Oxford in both the Easter and May races a considerable number of men find themselves in a boat a few days before the races commence, and quite insufficiently trained. But probably the most serious cause of danger is that the men are under no sort of medical supervision. Many of them suffer from some slight indisposition just before, or even while they are in training; they perhaps have a mild attack of influenza; they go to a chemist and get a bottle of medicine, and in a few days are in full work again. One has learnt by experience that a slight attack of influenza may have a most baneful effect on the heart muscle, and I am sure that some of the cases of heart strain we see are directly due to this cause, rowing or running too soon after an attack of influenza or other illness.

The schoolboy, on the other hand, is to a very large extent under much stricter medical supervision, and is prevented from exposing himself to this risk.

Smoking, too, especially the smoking of a large number of cigarettes just before the commencement of training, is another factor, for I am sure that tobacco in excess has a bad influence on the heart muscle. The schoolboy escapes this risk.

I may say at once I greatly regret that the letter which initiated this discussion was ever written. I regret it because it is likely to weaken the confidence parents should have in the medical officers of our public schools. I regret it because I cannot help feeling that our old leaders, the leaders whom we hold in so much respect, have altogether led us astray in this matter. I think it would be extremely difficult for them to prove that there is any sufficient reason to make any change in the length of races at our public schools. But in any case, it seems to me they have landed themselves on the horns of an awkward dilemma. Let us suppose they can come forward and prove from their case books that the long-distance races at our public schools are a real source of danger, then one asks, "Why did they wait for a prominent football player to get this information out of them?"

Sir Lauder Brunton but a year and a half ago was president of the International Congress on School Hygiene. What an opportunity he had in his presidential address of calling attention to the danger! At that congress almost every conceivable subject connected with the health of the schoolboy was discussed, with the exception of school

athletics. Why ? I suppose because it was generally agreed that the last word had been said on the subject. Sir Thomas Barlow and Dr. Goodhart signed the letter. Both these gentlemen have been presidents of this Association, an association which was established for the express purpose of discussing everything connected with the health of the schoolboy. Surely they might have suggested the subject for discussion if they had been so much impressed with the dangers of long-distance running.

In 1901 I had the honour of contributing a paper on the "Effects of Severe Muscular Exertion, Sudden and Prolonged, in Young Adolescents," in which paper I dealt with the very points we are to discuss this afternoon. In that paper, after dwelling on the dangers, I said : After all, the danger of athletic strain is not very great at our public schools, where boys are well looked after, and have not the chance of doing too much.

It was just 42 years ago that Mr. Skey, a well-known London surgeon, raised an outcry by a letter to the *Times*, against the Inter-University Boat Race. He asserted that many a constitution was ruined by that race ; he appealed to his own experience and that of his professional brethren. Many letters were written both for and against his contention. A year or two later, Mr. Morgan, of Manchester, carried out an exhaustive inquiry into the after-health of the competitors, and that inquiry most clearly proved that the number of men injured by their struggle in the Inter-'Varsity Boat Race was very small instead of very large. I believe, so far as our schoolboys are concerned, we shall be able to prove that a very, very small percentage indeed are injured.

I have not touched on many questions of great interest, but have left them to others to discuss, such as the relative strain of the quarter-mile as compared with the longer distances, the effect on the development of the physique of avoiding long distance running, the effect on character of long distance running. We shall expect to hear from various school doctors the precautions taken to avoid injury.

I will conclude by saying quite definitely that I feel assured that so keenly interested in the welfare of the boys under their charge are the medical officers of the public schools, that if it can be proved that these long-distance races are injurious, they will not hesitate to acknowledge the mistakes they have made in the past, and will be the first to advocate their discontinuance. Until this proof is forthcoming, I would advise them to make no alteration.

Sir LAUDER BRUNTON,—The point to be discussed to-day is, whether or not school-boys ought to be allowed to compete in flat and cross country races of more than one mile in length; but this is only one sub-division of a much larger subject. I hope, indeed, that this is only the beginning of a complete consideration of the best methods of physical training for school-boys—methods by which the best results may be obtained for all and injury inflicted on none.

My objection to long races, and especially to competition in long races, is that boys have to run in them who are not fitted for them, and who are injured by the exertion. Although I have raised an objection only to mile races for boys below nineteen, I do not consider that these are the only forms of exertion which may be hurtful. All boys do not possess the same powers either physical or mental, and some of them certainly suffer injury by having to undertake exercises which are beyond their powers. The exercises should be adapted to each boy, and no boys should be made to go through exercises which, even if they suit a majority, are unsuitable for them.

The only way in which this can be done is by thorough medical inspection of the boys, so that their deficiencies can be ascertained and their exercises adapted to their needs. The majority of boys about the same age will be nearly the same size and strength, but there will be exceptions, some being stronger and some being weaker than the average. For their sakes it seems to me that there ought to be classified exercises and sports. Boys, to a certain extent, sort themselves in games, so that in cricket we have a first eleven and a second eleven, and so on. But this is not all that is needed.

The plan that I should like to see carried out in all schools is that which is now in practice in the University of Pennsylvania, under the directorship of Professor Tait Mackenzie. Every undergraduate when he comes to the University is examined medically, his deficiencies ascertained, and the kind of exercise prescribed for him that will bring him up to the mark. If the man is thoroughly developed all round, no special directions are needed, and the same is the case with boys. But even with healthy men and boys the physique is not always developed to its best by games only. I have been struck sometimes by the weak development of the upper part of the body in some cricketers, while the arms

and thorax in boating men were, if anything, over-developed, in comparison with their legs.

Professor Hueppe of Prague, who is not only a great athlete himself, but has given much study to physical training, gives it as his opinion that, on the Continent too much attention is given to systematic exercises and too little to games, whilst in England too much attention is paid to games and too little to systematic exercises. The ideal plan would be a combination of both.

How to obtain this ideal is a question which is not easy to solve, but it seems to me that the best way of doing so would be by means of Colonel Malcolm's Fox's proposal, that there should be a Games Master, a man with a University degree, so as to have equal rank with the other masters, and be respected by the boys.

I perfectly recognise that physical exercise of one kind or another is absolutely necessary for boys, in order to ensure their proper development, and that boys must be so occupied as to prevent them becoming loafers. Exercise within bounds tends to increase the power of the muscles, of the lungs, of the heart, and of the nervous system. The discipline of games is of the highest utility in training boys to obedience, self-sacrifice, bravery, alertness, and decision, and teaches them how to acquire command over themselves first and then over others. I do not think that anyone can be more fully convinced than I am of the utility of exercises and games, and I am anxious not to prevent, but to regulate them.

The question of physical training has been very carefully worked out in the case of race-horses, and the dictum of a trainer puts the whole case in a nutshell: "The great thing is not to call upon them for more than they can do."

If called upon to make exertions which are too much for them, without previous training, even perfectly healthly boys may suffer, although with training they could make these exertions with ease. The lessons to be learned from the ancient story of Milo, the wrestler of Crotona, and from the modern trainer apply to school-boys as well as to professional athletes and race horses.

Dr. JAMES (Headmaster, Malvern College) thanked both Dr. Collier and Sir Lauder Brunton for their contributions. He agreed that negative evidence was of no value. To say that long-distance races had not hurt one person did not prove that they had not hurt somebody else. No distinction seemed to be made between long-distance races and

long-distance runs, and, as he said in a letter to the "Times" some time ago, he feared the two things were confused in people's minds. In every Easter term especially, they at the school had a great problem before them, as they had to provide exercises for the boys, and they wanted to provide those which should be wholesome and not disagreeable. He believed the ideal form of exercise at Easter time was only to be had at one place, Eton; there they had the Beagles, and for the non-runner they had the ideal "Fives." In less favoured places they had to be content with what they could get. In his opinion the non-competitive run, graduated according to the strength of the boys, was as good as could be got. He admitted all the boys did not like it, and some did their utmost to get off it, even to going to their family doctor and getting a letter or certificate. But with medical examination at the time of the boy's entry at the schools, and at subsequent intervals during his time there, and with the runs graduated according to the strength of the lads, he did not see that much harm could accrue. In competitive long-distance runs, the matter was much more complicated, and it was not clear whether at all schools the boys were sufficiently guarded against injury from such runs. Given proper medical testing, both by the home doctor and by the school doctor, he did not see any reason for abolishing those long-distance runs at all; he believed they did nothing but good to those who were physically fit to compete in them. But he would be most anxious to exclude not only the unfit for such, but also those about whom there was any doubt. He desired to raise his voice on behalf of moderate competitive runs within proper safeguards, and thought if statistics could be furnished by school doctors they must be of considerable value, especially to the generations yet to come. He believed in that systematic organisation which was to test the physical capacity of all boys, not only from the point of view of athletics, but in view of the life of the nation at large.

Dr. GOODHART said he came into the room prepared to modify his opinions somewhat in favour of long races, and he agreed that it had not been sufficiently emphasised that there was a difference between races and non-competitive runs. But having heard what Dr. Collier said, his feeling was somewhat against races. Certainly long races must be conducted under very careful observation. Emphysema of the lungs, dilated right hearts, albuminuria, and other conditions had been mentioned as having been

known to occur. They might not occur in any large proportion of young men, but even if there were only three or four deaths from those causes, those deaths should have been prevented. With regard to school boys "playing themselves out," he did not see boys at their activities much, but he had never forgotten what he saw years ago, a boy racing at school, who was so absolutely played out that he thought he must be dead, though it was true he recovered himself fairly soon. Even if such long runs did no permanent harm, they might put an inordinate strain on those taking part in them. He had himself been going to enforce the point that negative evidence was of no value, and he did not think the remark of Dr. Collier that a young man passed from the hands of one medical man to those of another, neither of whom knew of any disease in the young man, was of any value. A point which seemed to have been missed was the nervous effects which such races had upon the boys, which might not come under the notice of the medical man, and might occur when he was not present, and pass off before he saw the boy. He could mention an illustration of that, not in a boy, but it came to much the same thing. Some years ago a young undergraduate was brought to him on account of having strained his heart as the result of rowing. He examined him carefully shortly afterwards, but could find nothing the matter with the heart; he was a fairly well-built man, and he said he might row. He did so, and he (Dr. Goodhart) heard sometime after that the same thing happened again, he completely collapsed. He did not again consult him after that, but went to see Sir William Broadbent, and obtained one or two other excellent opinions, and he was put out of work for a year. A little time after that he had an opportunity of examining him again, and again his heart seemed absolutely sound; there seemed to have been no dilation. He believed that in that case, as a result of the nervous tension and excitement during the race, he was, as athletes said, "played out," and for a time he was in a serious condition. If Dr. Collier had examined that young man three weeks afterwards he would have found nothing wrong, yet such a condition of heart might cut a man out of work for months, which was a serious matter. If a man had some emphysema and a dilated right heart, did he really recover from it? Dr. Collier thought the prognosis was good, but how did one know that the result would not be that such a man would die at 50 instead of at 60 or 70? Dr. Collier had said he regretted very much that the letter was written,

but he (Dr. Goodhart) was very glad it had been published, though he was not sure (he did not say this as a past president of the Society), that it was not a matter which should have been relegated to the Society to pronounce judgment upon. Yet he was really glad, because he wanted that Association to take its proper position ; it was at present a very modest society, and he doubted whether the public, or any considerable proportion of it, knew of its existence. He hoped, therefore, that whatever resolutions might be passed, and decisions come to, they would be published broadcast in the daily press. It would show the public that a society had existed for 25 years in which parents and guardians could repose confidence concerning their boys.

Sir CLIFFORD ALLBUTT, F.R.S., remarked that, as Dr. Collier had said, his first paper on the subject was written in 1870, and since then he had been over his records with great care. He expected that the discussion would be confined within a somewhat narrower circle, and it was not easy to take up all the points which had been raised. Sir Lauder Brunton said a good deal about boys who were really tired. They lived a strenuous life at school, and it was quite likely they became tired at the end of the term ; but the discussion was surely as to whether they derived any particular physical injury from the races. When he was at school, the form of exercise was the paper-chase, and he thought that was better than an actual race, because the former allowed rests and slowings-down occasionally. It was of no use for anyone to quote single cases, nor yet to go in for vague generalities. He had hoped to hear someone say he had had 40 cases which he had examined, and found such and such definite results. He thought the fact was that there were not such cases of injury. For 35 years he had been watching—a great part of the time at one of the universities—for cases of injury to the heart done by boys simply and solely by over-exertion at some game. He did not say he had not seen any harm at the university, but it was strange that when he had so many medical friends all over England who had sent their boys up saying they wished him to look them over, he had never seen an instance in which he had reason to suppose that any particular harm had been done by exercises. In that discussion they had nothing to do with chronic disease, nor with anybody of 30 or 40 years of age who got atheromatous conditions through continuing athletics too long. They were merely considering acute lesions due to exercise. The difficulty was very great, because the physical signs, which

had been so exaggerated by a certain school of physicians, were very fallacious; and he would differ from some of the remarks which had been made based upon the physical signs, which he regarded as fallacious. With regard to the Rontgen-ray screen, it was curious that nobody could verify Dr. Schott's observations. There was much false diagnosis based upon such statements. Schoolmasters well knew what an important period in a boy's life was the age of 17 to 19; the mind, the passions, and all the functions were developing; and it was then that he began to smoke, so that he was liable to get an irritable heart. At this period the young man was likely to get into somebody's hands who might send him to Nauheim, and he might get into touch with valetudinarians afterwards. Careful examination at this stage would generally show whether a case was a functional one, or whether there was latent disease. When undergraduates got overstrain of their hearts through exercise, there was nearly always a previous infection. Recently, it was said that during the height of the influenza epidemic there was a great deal of heart-strain. That was true, and he thought that if a boy had any kind of infectious disease—influenza or other—he was very liable to incur heart-strain; possibly that organ would be rather seriously thrown out, and for a year or two he might be unable to follow serious work. Therefore, it was very important that schoolmasters should observe boys who even had only "bad colds," under whatever guise it might be, and prevent their undergoing any strain. "Heart-strain" was a term often used, but he did not think it had been made clear what was meant by it. An ordinary steel spring could be bent up to a certain degree and its resiliency took it back to its exact form again. But when that limit was exceeded it did not go back on the force being withdrawn, and the latter was known as a strain; and a parallel case was seen in the human heart. Ordinary stress did not bring about any molecular alteration, but greater stress caused a permanent abnormal "set." It was extraordinary how much the ordinary boy's heart would stand. If on climbing a mountain, one put one's hand on one's pulse, one found that arteries of a certain size were smaller than usual. On proceeding, and getting one's "second wind," one found the arteries at once spring open. That meant that the whole of the resistance offered to the heart's action was removed. He did not think any damage accrued to the left side of the heart from that, if the organ was healthy. But it threw an enormous quantity of blood into the right side

of the heart, and there was high resistance in the lungs, because in an untrained boy there was not an adequate concert of the different mechanisms, and the lungs were not thrown open at the same rate as the blood came through to them from the muscles. The muscles were open, the peripheral resistance was lowered, the heart's action lowered, and the blood accumulated on the right side. The boy could deal with it if he were properly trained, and he should learn to use many muscles all over the body with the greatest economy, also to expand the lungs and allow the waiting blood to get through. He had known boys run, become faint, lie on the ground, and get up and run again without being any the worse. One boy was brought to him after a run, and his heart was right over the sternum, but he did not think the boy was any the worse. The young and healthy heart was so resilient that it was, he believed, impossible for any harm to be done to it by any effort which the boy's own muscles were able to entail upon it. He did not see any permanent harm in those cases where school races were indulged in, unless the boys were untrained, or there had been some previous infection.

The Rev. Canon LYTTELTON (Eton) said he had noticed the suggestion that the Association should take a more decided line in directing schoolmasters, and the public in regard to the matter being discussed: but the more one listened to the interesting speeches made, the more clear it became that there was much knowledge still to be acquired before any pronouncement on such a complex matter could be given. He believed that the kind of investigation which was required had not yet been set on foot with sufficient thoroughness, and embracing a sufficient number of cases. At the same time he felt that schoolmasters were in want of guidance, and he would mention one or two matters in particular. Not much mention had been made as to the difference between the two kinds of races, both of which had recently been run at Eton: the race for the schools steeplechase by the oldest boys in the school, about 18 or 19, and the junior one, which was a mile shorter, and partaken in by boys under 16. He wanted to know whether the medical members of the Association had yet arrived at a clear opinion about the damage done to boys under 16 as compared to that done to boys of 18 and over. Sir Clifford Allbutt had said that 19 was a ticklish age, and if a boy was using that period for learning how to smoke, no doubt it was. But was not 15 really a more delicate age than 19? And

were they in a position to say what training was ? Did it only mean gradually increased exertion, i.e., running over the course of several miles before the race itself ? Or did it mean certain kinds of diet ? When he was a youngster there were ideas with regard to training, which he thought were now exploded. His predecessor at Eton had a historical theory as to why people were brought up to believe that raw meat was good to train on. 100 years ago prize-fighting was taken up and patronised by rich men, who gave the fighters enough money to feed themselves on. But the prize-fighters' wives did not know how to cook, and so raw meat came to be known as the means of getting strong. It was the fashion at Eton in the 70's to go in for raw beef steaks, and he remembered one boy who did not reach any eminence, mental, physical, or spiritual, but who learned to steeplechase, and he would consume nine raw eggs at a sitting. He thought boys did nothing in the way of dieting, but practised by gradual exertion over the course itself. An opinion was wanted on that point. Again, he supposed the harm from athletics would be greatly more than it is if it were not for the boys' natural indolence. How far could the selection of boys for long races he left to their own indolence ? Some boys laughed up their sleeves at the exertions put forth by others, taking good care they did not do likewise. Was it known that that inclination was a good guide ? He believed that, on the whole, it was not at all a bad indication. It was said that the "over-strung" boy was the most likely to over-exert himself, He had known cases where such boys had done too much, and they generally seemed eager to do too much. He doubted whether the medical profession had yet arrived at a clear and definite opinion on those points But what he was inclined to take away from the afternoon's interesting talk was, that there could be no harm in making a rule that every boy who went in for a race should be examined medically beforehand. Should that examination be made before the training ? If so, how long before ? Or should it be on the morning of the race, so as to see whether the excitement had begun to tell upon him ? And should such races be run at the time of puberty, or not ? Sir Morel Mackenzie used to hold, in regard to the human larynx, that it was a mistake to say there should be no exercise of the voice during the time that it was "breaking," because the boy did not cease from running at puberty, and therefore why cease from singing then ?—supposing the neighbours did not object. The boy could sing at that age, but the number of notes at

that age would be restricted. From analogy the same could be said of running : the boy could race at puberty, but the length of the run should be curtailed. He believed that sufficient precautions were not yet taken. His suggestion to the Association would be that on the few points on which unanimity had been arrived at, the Association should make itself heard with greater emphasis than it had yet shown.

Mr. T. Herbert Farmer said that his critics carefully avoided or carelessly missed the point of the medical opinion to which he was privileged to give publicity. Five most eminent medical authorities emphatically condemned, in their letter to him, races exceeding one mile in distance for the average healthy schoolboy, under the age of 19. Yet schoolmasters and others argue that because they themselves have not known cases of injury through long-distance racing, such cases do not occur, whilst some persons evidently have failed to realise the essential difference between (a) a long-distance race for a prize in which the competitors will gamely struggle along till they drop in their anxiety to win the cup ; and (b) road or cross country runs, which are taken merely for the purpose of exercise, and in which the boys can and do enjoy frequent restful "breathers," whenever they begin to feel the warnings of exhaustion. The opinion quoted was a general statement intended to warn parents and schoolmasters, and to provoke discussion amongst those really qualified by their knowledge of cases to express an opinion on what is a national question, so that an ideal system of physical training may be adopted by those to whose care our sons are committed. That it is high time such a warning went forth to stimulate thought and discussion, and put a stop to some of the present practices, will, he believed, be widely admitted when I say that in one public school already this term six boys out of a house of 34 have been relegated to the sick room through physical strain ; and that in another public school the medical officer writes of some boys being picked up "dead beat" and helped home, and of others vomiting during the race and throughout the evening. The number of appreciative letters received from parents and others show that at any rate his object had been attained, though doubtless at the expense of upsetting existing habits and beliefs ! Athletics keep the moral atmosphere pure and manly, and their effects for good are seen in every department of life. Kindness, brotherliness, and the absence of mean jealousy mark the true sportsman, though when the attractiveness of sport

is too dependent upon the winning of a cup, its true spirit has a tendency to flit. An ideal sportsman stands for much that is physically and morally sound, whilst a lowered physique and a crippled moral nature are associated with the idler. In the constant struggle for survival, which is part and parcel of Nature's method of improving the world's stock, the physical fitness of the individual should receive more scientific attention than heretofore, and, as the future of England depends on the physical and mental condition of her schoolboys of to-day, it is fortunate that, in the absence of a Ministry of Public Health, there are men willing and able to busy themselves with the physical needs of her sons, the raw material of the nation. If all schools had the benefit of the very efficient medical supervision that obtains at certain schools, parents could at least feel that, while they may object in principle to long-distance races, at any rate every conceivable precaution is taken to guard against the often non-detectable, but yet ever present and natural, weakness of a growing boy being unduly and unnecessarily strained. This point may be illustrated by saying that some people have bathed every day for many years in the open air, breaking the ice if necessary, but it does not follow that it would be well for everyone to have such an exposure forced upon him. The characters and physique of our healthy boys can be sufficiently and magnificently developed in exercise runs, football, cricket, fives, gymnastics, swimming and boxing, without practically any risk of any injury whatever to the heart and other organs, for the dangerous long-sustained effort without a moment's respite is conspicuously absent from such sports. Parents and others should be very grateful to those who have sounded the alarm, and to the Press for giving publicity to their solemn warning, that there is need for thorough discussion, and overhaul and systematising of the conditions under which, at some schools, at any rate, the question of what strain a particular boy is fit for, is left to the judgment of the uninformed master and the pride of the boy, without any recourse to a doctor's advice.

Dr. ARMSTRONG (Wellington College) said he thought the discussion had taken a rather unexpected line. Many probably attended, hoping to get a clear idea as to the proper way of conducting school sports, and some information as to the benefit or the injury which such sports entailed. Dr. Goodhart and Sir Lauder Brunton had expressed their pleasure that the letter had been published. But he (Dr.

Armstrong) regretted that before it was written some attempt had not been made to ascertain how the public schools conducted their athletic sports. He thought it would have been found that care and every safeguard was taken to prevent undue running by boys who were not fit for it. During the 25 years he had been at Wellington, 3,000 boys had passed through his hands, and nothing but good had come out of the sports, properly regulated. He wondered whether Dr. Goodhart and Sir Lauder Brunton were prepared to agree that the cases of heart disease and dropsy which they saw in later life were probably due to the lack of exercise and sports. He believed that if the suggestions in the letter were to be followed out, there would be much more injury to the heart than now existed. Would they allow young men to go to the Universities from the public schools and take part in the 'Varsity athletics without having gone in for the schools sports ? It had been said that there were no definite statements or statistics available. He had looked up the names of the boys who had taken a prominent part in the long-distance running in the first 20 years he was at Wellington College, and through the Old Wellingtonian Society he had had a circular letter sent to such as were within reach, and over 50 replies had been received, stating that no harm, and nothing but good, had come from their having taken part in cross-country races. Those races at Wellington were rather severe, but the boys taking part in them were carefully selected and safeguarded. They had a "big-side" paper chase, in which no one was allowed to compete until he had won distinction in the "little-side." There were three qualifying "little-sides" every winter. Before taking part, he (Dr. Armstrong) certified each boy as medically fit. Moreover, every "big-side" runner was submitted to him on the morning of the race, and any boy who might be deteriorated from influenza or a severe cold he struck out of the race. Fifteen boys of the College were running in a long race that day, and every one of them had been carefully examined, their blood-pressures taken, &c., and he felt he knew as much about those boys as could be known. But of course there was no physical means of ensuring that no boy would break down. The great point was that of the boy's showing that he was capable of sustaining the strain. One clause in the Resolutions submitted, which he supposed was to be issued, he disagreed with, namely, that part which said it must be part of the curriculum that every boy must be medically examined by the school doctor on his entering the school. It

was all very well with a voluntary system, but if it were compulsory it would make the school governors responsible for the omission to detect any particular lesion or reason for failure in any boy. He did not believe school governors would agree to that at all : they would insist on a contracting-out clause or its equivalent. Moreover, who was going to pay for such examinations ?

Mr. T. D. McClure (Head Master, Mill Hill School) said it is impossible for a head master to accept the responsibility which the abolition of the medical examination of boys at entrance would involve. Great as the responsibility of the governors may be if the medical officer examines boys at entrance, the moral responsibility which the head master would incur if that examination were dispensed with is even greater and quite intolerable. He referred to a case which occurred at the beginning of his head mastership, in which a boy who was suffering from a badly diseased heart was playing football and other vigorous games. Neither the parents nor the school authorities had the least idea of the boy's condition, which was only revealed by a medical examination deemed necessary by the boy's exhaustion after a football match. This incident led to the establishment by the Governors of a compulsory medical examination by the school medical officer of every boy entering the school. This examination was paid for by a special additional salary. The examination had revealed on several occasions physical defects, of which parents had no knowledge, and had enabled the school authorities to arrange exercises for such boys, and thereby probably to prevent the occurrence of "regrettable incidents." Head masters reposed implicit confidence in the Association, to whom they looked at all times for guidance in such matters as those under discussion, but, in the interests alike of medical officers and head masters, he begged that no steps might be taken which would dispense with the medical examination to which reference had been made.

Dr. Robert Micheil (Cambridge) said that as far as his experience went it was a very rare occurrence for a healthy athletic man to do himself any harm while training for, or taking part in, an athletic contest. This opinion is based on the facts obtained from a comparatively large number of undergraduates of the University of Cambridge, who have courteously allowed me to overhaul them, when healthy as well as when ill. During the past 12 years each man

examined was asked the name of the school he came from, what exercise he took there, and whether he had heard of any school mate who had been injured by strenuous exercise. The speaker was surprised by the small number who had even heard of anyone being damaged at school, because there are a number of men who have said that they have been told they were injured, or would be, by taking part in athletic contests. The explanation which was most often given, was that they had been taken to see a "specialist" after leaving school, and before coming up to the University, who had warned them off. The "specialist" has always been a man who had gained his experience in treating injury or disease who could have had at least but a very limited first-hand knowledge of all that the healthy human organism can and does do in the way of adapting itself to particular circumstances. His prophetic warning was not based on facts. The speaker believed that this process of adaptation to change of circumstances can be watched in the schoolboy, as it can in the undergraduate, with ease and profit. His reasons for this belief were as follows :—A comparison of the freshmen who are seen in answer to their request to tell them whether they are "fit" had shown him that he who has taken a prominent part in athletics at school differs in his physical conditions from him who has not taken a like part. Also, that when the non-athletic freshman changes his mode of life and begins to take part in athletics, he soon begins to show a similar change of physical conditions, which becomes more and more marked as long as he continues to be healthy and to go in for contests. This change may go on, go back, or come to a standstill. What is necessary to the collection of positive knowledge of the schoolboy's prospect of becoming an athlete, is close attention to this change of conditions. It would be necessary to examine the boy at the beginning of every term, and after any unusual effort, and to keep notes of his physical conditions. In this way comparison between the states found at different times would be made easy, and any boy who developed along the wrong lines could be warned, and made to rest for a time. The medical officers of the schools will have the facts and be the authorities on the subject—no one else can be. If this plan is adopted, fewer young men of virile character will be doomed to spend part of their best years in restlessness and discontent. The rescued ones will be trained into useful struggles for a clean, happy, and successful life.

Dr. COLLIER, in reply to Dr. Goodhart, pointed out that the letter spoke of permanent injury to the heart and other organs; he (Dr. Collier) thought that if the heart were permanently injured, a competent medical man ought to be able to detect traces of such injury. Dr. Goodhart had expressed a wish to strengthen the position of this Association; it seemed to Dr. Collier that to publish a letter in the lay press, which must tend to shake the confidence of parents in individual members of the Association, was a strange way to accomplish this end.

Sir Lauder Brunton had praised the wisdom of trainers of race-horses, and hinted that we might take a lesson from them. Did Sir Lauder realise that, for purposes of economy, race-horses were run as mere babies? Many, if not most, of the races were limited to two and three year old horses. Dr. Collier would conclude by reminding Mr. Farmer, who had originated this discussion, that the dangers of the football field were greater than the dangers of the running path. Dr. Collier could recall several cases of rupture of the kidney, the result of football accidents, in which cases the lives of the injured were for a time in the greatest jeopardy. No doubt Mr. Farmer would say that, in spite of the danger, the good far outweighed the harm so far as football was concerned. Dr. Collier would also contend that so far as long distance running at our schools was concerned, the benefits derived far outweighed the injuries that might occur in a very small number of cases.

Appendix A.

Report on School Races and Runs based on an Analysis of Returns from Thirty-eight Schools.

In order to obtain information as to the conditions under which races were run at school, and evidence as to any injury resulting therefrom, the Medical Officers of Schools Association sent out a series of questions to their members and to some other medical officers of schools not represented in the Association, and to medical men at the Universities.

Ninety-one replies were received. Of these 42 came from medical officers of residential schools, and include observations extending over a considerable number of years. The remainder were from medical men in practice at the Universities, from officers of elementary schools, from associate members (non-medical), and from others stating they had no experience on which to answer the question. The 42 replies above mentioned represent 38 schools, and for this digest have been considered as 38 reports, and have been analysed as such. The replies from medical men at the Universities are dealt with elsewhere. Without mentioning by name schools included in the list, it may be said that they are truly representative.

Question 1.—"Do boys run in any *race* exceeding 1 mile in distance? If so, state (*a*) distance; (*b*) lowest and highest age entrants; (*c*) *any* ill-effects observed."

I.—In the answers to this question there is some confusion, owing to the inclusion of paperchases and cross-country runs with a "run in" as "races." Apart from these, 5 miles appears to be the maximum distance of any race, and 2, 3, and 3½ miles of fairly common occurrence. The usual practice is to have an age limit for the competitors entering. Out of 16 schools giving returns, 2 note ill-effects in certain instances. Twenty-one schools out of 38 have no race over 1 mile in distance.

Question 2.—"What measures are taken to ensure that competitors in races or other forms of exercise are fit to undertake them?"

II.—In all the schools giving returns (except 1) some sort of medical examination for boys would seem to be common. In 14 schools it does not appear to be very syste-

matic. Boys are only examined if "the parents wish it," if they "appear delicate," or "at the discretion of the medical officer." Eleven examine the boys on entry to the school, and of these eleven, five examine them periodically as well. *Twelve* examine them only on entry to the competitions or sports, *four* on entry to school and on entry to competition, and *two* on entry to school, on entry to competition and periodically.

Question 3.—"Are boys graded for athletic exercises by age *only*, or by physical capacity?"

III.—In 12 schools boys are graded by age; in 10 schools they are graded by physical capacity; in 14 schools they are graded by both.

Question 4.—"Do you know of any cases in which permanent damage has accrued from any School Athletics?"

IV.—Twenty-nine of the medical officers do not know of any cases of permanent after-damage; nine mention instances in which they believe harm has resulted from house runs, rowing, gymnastics, or where boys have been allowed to take part in the above without previous medical examination.

Question 5.—"What is the maximum distance of your cross-country runs or paperchases?"

V.—The longest-mentioned run is 13 miles. In seven others it is between 10 to 12 miles; in two, it is 8 miles; in five, 7 miles; in five, 6 miles; in eight, 5 miles; and in four, under 4 miles.

Question 6.—"How often are they held?"

VI.—Big runs are held once a year, and no doubt entail training by shorter runs once or twice a week. Spring term is the usual time for paperchases and "runs." In some schools they take place once or twice a week; in others they are much less frequent, and in some only resorted to when other games are impossible.

Question 7.—"Any ill effects noted?"

VII.—Out of 33 returns six medical officers have known ill-effects of these runs; boys come in very exhausted and suffering from heart strain distress due to over-exhaustion after a 5-mile race, over-exhaustion due to loss of way, or when a boy has not been previously examined and was unfit to run.

One officer thinks the boys are inclined to be fagged in the running term.

Question 8.—Do you know of any "school where they train boys for a mile race by running them constantly and continuously from day to day over a distance of a mile—no more and no less?"

VIII.—The answer to this question is entirely in the negative. Certain medical officers suggest that it is possible that a boy might endeavour to train *himself* in this manner.

Question 9.—"In reference to lads who have left school, what cases have you observed of damage to heart or lungs caused by over-exertion in school races or other forms of athletic exercise?"

IX.—With regard to cases observed of damage to heart and lungs caused by over-exertion in school runs or other forms of athletics in lads who have left school, 31 medical officers reply that they have observed none, while 7 report some cases. These include some which took place many years ago before medical supervision was instituted; later ones also due to this cause; whilst others are attributed to over-exertion by rowing, &c., after the boy has left school.

Question 10.—"Does the $\frac{1}{4}$-mile race entail *more* or *less* strain than the race of (*a*) 1 mile; (*b*) 2 miles; (*c*) 3 miles?"

X.—In reply to this question there is a general agreement that the $\frac{1}{4}$-mile race is a greater strain than the 1, 2, or 3-mile race.

Remarks.

The added "remarks" are as follows, and give some indication as to the views of medical officers generally:—

"Runs not in any way detrimental to boys' health; mischief occurs after school life." "Does not approve of too much minute examination." "Approves of runs under medical supervision." "Disapproves of long-distance runs for *young* boys." "Personal experience in favour of benefit of long runs." "No damage under suitable medical supervision." "Only damage after illness." "Wholly in favour under supervision." "Thinks there is a tendency to 'over-coddle.'" "For suitable boys no ill-effect." "House runs produce heart-strain and do more harm than good." "Importance of training." "Long distances bad for young boys."

Appendix B.

Resolutions Submitted to and Approved by the Meeting.

The Medical Officers of Schools Association has had under consideration the discussion which has lately appeared in the public press upon races in our public schools.

As a body, the Association may claim an intimate familiarity with the details of every form of exercise practised in different schools, and exceptional opportunities of ascertaining the physical effects produced by them.

From the time of its foundation, now twenty-five years ago, this Association has constantly studied, and has frequently had under practical consideration, the various aspects of School Athletics—particularly in regard to the safeguards which they severally call for in the interests of those taking part in them ; and it deems it desirable at the present juncture to restate its opinion on the more important points involved, as follows :—

I.—A boy's fitness for physical exertion depends upon his physical and constitutional ability, and is not to be gauged merely by his age, which—taken by itself—is often a misleading criterion of strength and endurance.

II.—Every boy should be subjected to a thorough medical examination when he first enters the school. This may reveal obvious defects or disabilities in some instances ; and in others cases may show the need for special observation during, at any rate, the earlier years of school life.

III.—Careful observation of the behaviour of the new and younger boys during their ordinary games, &c., and of the physical effects thus produced upon them individually, affords a valuable means of estimating the fitness of each for subsequently undertaking more strenuous exertion.

IV.—It is *most important* that there should be an ample interval (one hour at least) between the time of the previous meal and the beginning of active exercise.

There is clear evidence that the neglect of this elementary rule is responsible for a very large proportion of the evils which have been attributed to over-exertion alone. (*All food should be eaten slowly, and thoroughly masticated.*)

V.—SPECIAL CAUTION is required in permitting a resumption of active exercise to convalescents—particularly after diphtheria, influenza (including "Influenzal Catarrhs"), rheumatism and measles, *and* during a period of rapid growth.

VI.—As regards Races :—

(*a*) Very rarely or never does a runner excel over both long *and* short distances. His efforts should be restricted to the class of race which observation shows to suit hi n best.

(*b*) The quarter-mile race, run at top speed from start to finish, involves *special* strain and risk of serious exhaustion. The entrants for this race should be most carefully selected, and its effects on them carefully observed by the master and the medical officer.

(*c*) Only a few of the stronger and older boys are allowed to compete for the longer distances.

Races for a distance of more than one mile are not very commonly held in large schools, and the number of boys involved is small.

The Association has obtained a considerable amount of evidence from a great many schools upon the results of long-distance races, and it does not find that they entail serious risk, provided that the competitors are selected, and watched during practice, with the care and precautions already indicated.

VII.—Paper-chases, School, and House Runs, should be distinguished from Flat Races ; but so far as they include the element of competition—and therefore, to some extent, the strain of racing—boys should be selected and grouped for a specified distance in accordance with their physical capacity.

The plan of running *all* boys—the young and the older, the strong and the less vigorous—together, over the same distance, is not to be recommended.

Whenever, for any reason, such a plan is adopted, special measures must be taken to endure that the smaller and weaker boys are not called upon for excessive or too prolonged exertion.

VIII.—Medical examination and skilled supervision is also needed in regard to rowing, boxing, and swimming. Competitions in long-distance diving and in long-distance swimming are dangerous for young adolescents.

IX.—In selecting suitable exercise for "delicate" subjects, it should be remembered that hockey is more exhausting than football.

X.—Periodical medical examination, and careful individual supervision are equally important in the case of girls engaging in active exercises, especially so in relation to hockey.

XI.—The so-called "Marathon Races" are wholly inappropriate for adolescents.

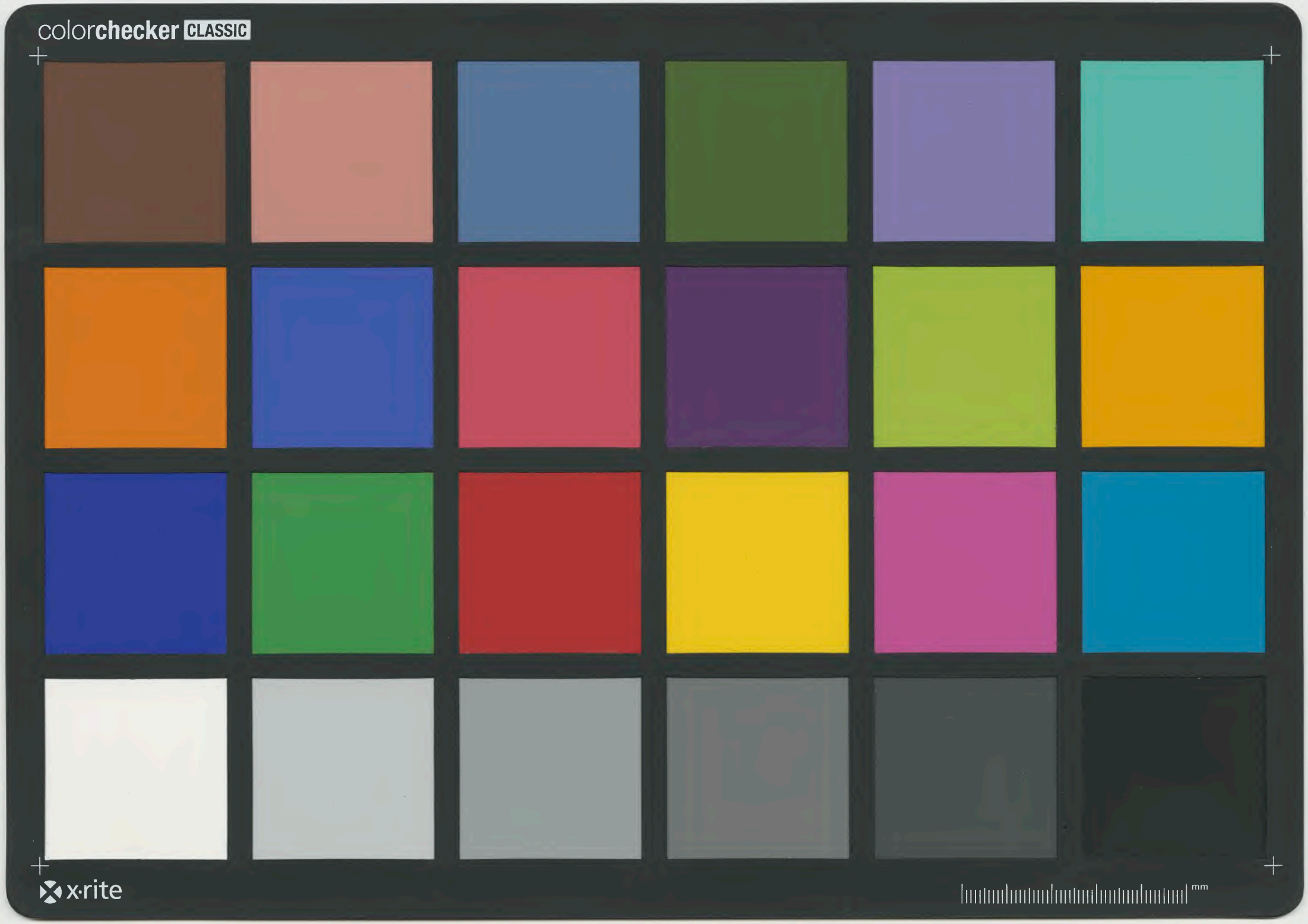
Finally, the Association believes that the application of intelligent supervision and individual observation by masters and medical officers, such as is now carried out in one way or another at our public schools, in relation to most forms of active exercise, is most necessary as a recognised routine; and that, so practised, it reduces the risk of strenuous sport to an insignificant minimum.

Signed on behalf of the Council of the Association.

C. E. SHELLY,
President.

March, 1909.

Unwin Brothers, Ltd., Printers, 27, Pilgrim Street, London, E.C.


colorchecker CLASSIC
x-rite
mm