SOME THOUGHTS ON SCHOOL MEDICAL INSPECTION,*

BY

J. J. BUTTERWORTH, M.D., D.P.H.,
School Medical Officer, Lancashire County Council.

AT no time in our history has it been more important that the utmost should be done for the young life of the country, and at no time in my experience have the means been so limited. The statutory inspections have gradually come to a standstill, owing to the fact that a large number of the medical inspectors and nurses have joined the naval and military forces.

It should be remembered that the pressure in the direction of economy which is operating at the present time, the increased difficulties due to the decrease in the number of medical men, and the increased amount of medical work, will continue for some considerable time. For years to come there will be a great shortage of medical men. The long and expensive curriculum, the inadequate return for energy and capital expended, will prevent an adequate relative increase in the number of medical men, as also will the depletion of our medical schools, owing to the requirements of the naval and military authorities. It is thus at once apparent that a simpler organization will have to be devised so that the means adopted will be likely to attain the end in view. It will be my object to-day to discuss with you some of the possibilities of such a scheme.

If a careful watch be kept on the partial schemes which are now being adopted by different authorities, and a comparison be made between their working and the working of the more elaborate schemes previously in use, it should be possible to state with a fair degree of accuracy the amount of the losses, if any, which may arise from the adoption of these partial schemes.

We are given an opportunity to reconsider our methods. The opportunity should be taken more frequently, even in times of peace, if the turmoil of hurried and ill-considered legislation could be escaped. It may be that what are thought to be losses will be no losses at all; they will be merely the shedding of official vanities. The thought may pass through our minds, "Why should we be so economical over the things that really matter,

and so extravagant over the things that do not?"

In place of the statutory inspections in my area, it is purposed to bring into operation something like the following scheme.

The area of the Local Education Authority has been divided into a number of smaller areas, which have been assigned to the inspectors and nurses remaining on the staff. Each school in the smaller areas is visited by a nurse who examines every child for verminous conditions, ringworm, inadequate clothing, malnutrition, etc.

In recent years the standard of cleanliness, both of the body and clothing, and the repair of the clothing, has become much higher. Perhaps we have reached as high a standard as is possible until a corresponding improvement in the means of cleanliness at the homes of the children has been brought about. We shall endeavour to maintain these improvements.

In carrying out the above examination, the nurse also makes a list of the obviously ailing children, and of the children having defects. These lists are sent to the central office. The lists are then forwarded to the medical inspectors in charge of the schools, and he adds the names of the children presented for special examination by the teachers, school attendance officers, district clerks, school managers, and others, and he examines the cases and recommends suitable treatment.

On the list forms there is sufficient space for the medical inspector to make brief notes against the name of each child. In cases where the children have serious defects or in cases of special interest, full notes are taken on a blank schedule of foolscap size, and at each subsequent re-examination further notes are added. A continuous medical history of the child is thus prepared.

There is great advantage in having the results of special enquiries recorded on blank sheets, and not on stereotyped forms, a wide discretion being permitted to medical inspectors both as to the cases which are made the subject of special reports and as to the notes made. It requires more careful thought to make reports on blank sheets than on the stereotyped forms, and the true aspect of the case is more easily grasped at subsequent reference. These records are kept in files and can be easily referred to by me. It would be quite impossible for me to personally supervise all the cards filled up in a large area like the

*Presidential Address, delivered before the North-Western Branch, on October 22nd, 1915.

County of Lancashire. Under a scheme of this kind it will be impossible to arrange for an interchange of schedules because there will be no separate schedule for each child. The value of the interchange of schedules has never been great, and causes many difficulties in its administration.

What is left of the original scheme is the thorough examination of special cases, including blind, deaf and dumb, mentally defective, and epileptic children.

It is becoming more difficult to obtain treatment for the children owing to the depletion of the hospital staffs and the increased amount of work being done by general practitioners.

Those of you who have done any examination of recruits will have been struck by the number of defects, particularly dental, which ought to have been treated or prevented during childhood. Much of the medical and surgical work being done now ought to have been done years ago.

It is unnecessary for me to insist here on the value of school medical work. If anyone happens to be sceptical, let him do something at the medical examination of recruits or some school medical inspection work.

STANDARDISATION OF DEFECTS.—No one can go very far in the work of the medical inspection of school children without coming face to face with the difficulty of the standardisation of defects. What is a defective child? What is a normal child? There is no such thing as a perfect human being, *i.e.*, a human being perfect in all its parts, built upon some mathematical plan. There is no such thing as a perfect eye, *i.e.*, an eye which is a perfect physical instrument in all its parts. The "normal" varies between wide limits, and is to be thought of more in the light of function than in the light of anatomical perfection.

This perhaps may be best illustrated by a reference to the hypermetropia (long-sighted) eye. A certain degree of long-sightedness which may be no disadvantage to a boy who is going to be a sailor and will require to see things at great distances, may be a positive disadvantage to a boy who is going to be a clerk, a weaver, or a compositor, who will require to see things at comparatively short distances. In the former case, the hypermetropia cannot be regarded as a defect. In the latter case it is. Again, the long-sightedness, which is usual in the child of five, is not a defect at that age, but the same degree of long-sightedness at twenty years of age might

be a defect giving rise to considerable eye-strain.

Enquiries into the eyesight of school children are among the most important that can be made by a school doctor, not only from the point of view as to whether the child is suffering from defects which require treatment, but also as to whether the defects are caused by conditions operative in the environment, particularly in school.

As a test of vision, Snellen's types have come into general use, and in their use regard should be had to the following:—

- (a) The test is subjective and depends to some extent on the intelligence of the individual who is being tested.
- (b) The visual acuteness of the child may vary from day to day, and during the same day.
- (c) A certain amount of shyness on the part of the child, frequently has to be overcome, before an approximately accurate result can be obtained.
- (d) The letters are formed on a mathematical plan and are therefore not the same shape as the letters to which the children are accustomed. This introduces an element of confusion.
- (e) The children are unaccustomed to using the eyes singly.
- (f) Malingering, too, is possible, that is, the child may, for some reason, state that it cannot see the letters, although that is not really the case. This is, however, very rare.
- (g) Children may have a visual acuteness of $\frac{6}{6}$ or $\frac{6}{9}$, and yet may have an error of refraction that requires treatment.
- (h) Children taught under the phonetic system of reading do not appear to recognise the letters as easily as children taught under the old-fashioned method.

In hypermetropia the degree of the error of refraction (refractive error) does not bear anything like a constant relationship either to acuteness of vision or to the symptoms of eye-strain produced. A high degree of hypermetropia is often found compatible with standard visual acuteness ($\frac{6}{6}$ or $\frac{6}{9}$), and an absence of eye-strain.

Before a child is recommended for treatment or treated with spectacles, regard should be had to both the condition of the vision and to the symptoms such as are found in eye-strain.

It will be seen that if anything like accurate results are to be obtained from the use of Snellen's types, very great care must be taken, and a great deal of time spent. Unless they are done with great care, the classification $\frac{6}{6}$, $\frac{6}{9}$, $\frac{6}{12}$, etc., may be misleading. It will

not be possible to omit, but it is unnecessary, to carry out our vision-testing with such a degree of accuracy as heretofore. The omission of tables based upon Snellen's types would be a great saving of the time of the medical inspector. The main use of vision tests is to form a basis for an ophthalmoscopic examination.

I hope that we shall hear no more statements made as to the influence of sewing, lighting, and school work, on the production of defective vision based on the results obtained from the use of Snellen's types alone. No recommendation for treatment should be made except on the results of an ophthalmoscopic examination of the eyes.

Several members of my staff have conducted very careful experiments on the various methods of testing hearing, and especially the whisper test.

The following is a general summary of the conclusions arrived at:—

1. That a routine examination by a whisper test of the children inspected is either impossible or extremely difficult to carry out under the conditions existing in many schools.
2. That in the best class of school the whisper test gives reasonably accurate results.
3. That in schools in which the acoustic conditions, though not good, are not so bad as to prevent the application of the test discrepant results are obtained.

It follows from a consideration of the foregoing that the employment of the whisper test in the routine examination of all school children, classifying the number of children who can hear the tests at certain prescribed distances in the endeavour to institute comparisons between area and area, can but lead to fallacious results.

The hearing can be very conveniently tested, for all practical purposes, at the same time that the child is having its vision tested, by raising and lowering the voice while speaking with the child, in the ordinary course of the examination. As a result of experience, the inspectors find that the majority of deaf children are presented for examination as special cases. The adoption of this method of examination would lead to a great saving of time and of clerical work.

Tonsillar and adenoid tissue is present in every throat, but it is only when it is enlarged sufficiently to interfere with function, *e.g.*, nasal breathing, or interference with hearing, that they can be regarded as defects. The term "enlarged tonsil," therefore, signifies

not a tonsil which has been measured or which could be measured, but a tonsil which is giving rise to symptoms of one kind or another, and causing interference with some necessary function. Markedly enlarged tonsils have frequently been found, on subsequent examination, to have decreased in size, and in the interval to have caused no apparent symptoms. The question arises whether in some cases the enlargement could be physiological. On the other hand, some tonsils which are not much enlarged, but in which the crypts had become infected, possibly complicated by glandular enlargement, require treatment. Other cases show such considerable enlargement that they cause symptoms of obstruction to respiration and need treatment. Many cases of tonsils and adenoids require a re-examination before treatment can be recommended, and in the recommendations, symptoms and physical signs, other than those of mere enlargement, need to be carefully considered.

It will be seen that any classification based on the degree of enlargement will give a false view, and will lead to an erroneous attitude of mind on the part of the medical inspector. "Diseased tonsils" would be a much better term than "enlarged tonsils."

Why should inefficiency, need of repair, and uncleanness of clothing, be recorded as good, average or bad? What is meant by nutrition, good, normal, below normal, or bad? What is meant by cleanliness, somewhat dirty, dirty, and why judge for head and body separately?

If the methods of reasoning employed are valid, it follows that there will be no loss in the disappearance of many of the elaborate classifications that have recently become fashionable. The desire for classification and definition is one of the weaknesses of the human mind. I suppose that there is some idea as to the possibility of comparing area with area; for example, if one Local Education Authority has a percentage of adenoids of 3%, and another Local Education Authority has a percentage of 28%, a further investigation into the environment and heredity of those children would be undertaken, until by the process of exclusion the cause of adenoids is found. Such lines of investigation are futile.

If the simplification of the records, in the way I indicate, be adopted, it will mean the disappearance of large tables of defect and a very great reduction in clerical work and consequently of clerical staff. If the percentage

of various defects be required, the complete examination of a smaller number of children will surely give us all that we need.

We may now consider some of the subsidiary agencies of school work.

PARENTS.—It is very difficult to arrange for the attendance of all parents at the actual examination of the children. Many parents live at considerable distances from the schools, even in the urban areas. In a large and increasing number of instances, both parents are at work. Their attendance at school, even if they could obtain permission to absent themselves from work, would mean loss of wages.

As far as possible, the medical inspectors and nurses interview the parents of those children who have defects which require treatment, either at school or in the home. Owing to shortage of staff, home visiting by nurses will have to be considerably curtailed. This is much to be regretted. In this connection, we should remember that the majority of people are busy trying to make a living, and they could hardly be expected to remain at home on the off-chance of being sent for to school, or on the off-chance that they may require to be home visited.

Some school doctors profess to do much good by having one or both parents present when they are actually inspecting the child. The advantage appears to be mutual; on the one hand, the doctor professes to get a good deal of information from the mother about the child, and, on the other, the doctor is able to impart to the mother much useful information on the upbringing of the child.

This work does not appear to interfere with the school doctors in question inspecting from six to eight children per hour, nor does it appear to interfere with the working of the school. I have never cared to try and see what effect this interchange of family gossip and hygienic sweet-nothings could achieve. Does anybody believe that any serious impression can be made on parents in the short time allocated to the inspection? It would appear to me that the best plan of dealing with parents is to send for the parents of those children who require medical treatment, and in my experience, they invariably come to school when requested by the medical inspectors. The small number of parents that the medical inspector thus has to deal with, will enable him to concentrate his energies, and should be a great improvement on the

diffuse scheme of having parents present at the actual inspection of the children. Much time will thus be saved. If the parents are at work, resource will be had to home-visiting either by the nurses, teachers, or school attendance officers.

TEACHERS.—The plan of having the head teacher present at the actual inspection, so far as the work of the school permits, has been continued. A number of head teachers have taken for themselves at the time of the examination simple notes in non-technical language, and have from time to time, since the inspection, made notes as to whether treatment has been obtained, and as to the subsequent progress of the child. The value of notes of this kind, if carefully taken, can scarcely be over-estimated, for it must be remembered that the teacher is usually the only person with a trained observation who is brought into daily contact with the child. In the notes given to teachers, special attention is paid to the defects which are likely to interfere with the education of the child, or which necessitate supervision during school hours. The form which the notes should take is best left to the teacher's discretion. It is important that the information contained in the notes should be available to the assistant teachers where their own pupils are concerned.

The more experience the medical staff has gained in the work of school hygiene, the more convinced do they become that much of its ultimate success will depend in large measure upon the interest taken by the teachers. With this in view, the work has been so arranged that no part of the actual medical inspection and practically none of the clerical work falls upon the teachers. They have thus been left free to assist in the work of interviewing parents, observing the results of recommendations for treatment, and ensuring, where possible, that the full benefit of the treatment is obtained: for example, by insisting on children wearing their spectacles, and by special attention to the breathing exercises in those children who have nasal obstruction, and the teaching of infant care and management. These matters are of the utmost importance, and although they seem quite simple on paper, they are by no means easy of attainment in the crowded day of an elementary school.

In many schools in the county, the head teacher, by reason of the influence he possessed with the parents, was able to ensure that

treatment was obtained in every case recommended.

We had increased, recently, very greatly, our home-visiting by nurses, which had reduced the head teachers' work in following up cases very considerably. We shall now have to ask the teachers to do much more in this direction. I think it would be an excellent thing if teachers did visit the homes of the children. During the recent feeding, many of the facts with regard to income, etc., were obtained by teachers.

I do not see how a teacher can properly educate children unless he is acquainted with, and thoroughly appreciative of, their home conditions. It would appear that, in some schemes of medical inspection, teachers are given a considerable part in the actual inspection.

- (a) Obtaining histories of infectious disease.
- (b) Weighing and measuring children.
- (c) Preliminary examination of the eyesight of children.
- (d) Entering various particulars on cards.
- (e) Informing parents of the date and hour of inspection; obtaining information from parents; persuading them to attend the inspection.
- (f) Selection of special children.
- (g) Transmission of instructions.
- (h) Applying physical exercises to suit defective children; breathing exercises; supervising the position of children.

The delegation of various parts of the inspection to the teacher means, I take it, that the school doctor in question finds parts of the work monotonous, or realizes that it is useless. Instead of having the courage to say so, and omit it from his scheme, he pushes it on to the school attendance officers, teachers, and even clerks.

Teachers should be instructed in simple physiology and hygiene. Those who attend training colleges have to pass through a course of physiology and hygiene, but unfortunately a very large number of teachers have not this opportunity. They may be instructed while they are acting teachers by (a) classes, (b) written descriptions of diseases indicating the signs of ill-health, which they ought to notice, (c) by conversation with the medical inspectors, either during the medical inspection or afterwards.

It is not necessary for teachers to make diagnoses. They should notice deviations from the normal, and draw the attention of the medical inspector or the nurses to these, or

when these are not available, request the parents to take the child to a medical practitioner.

INFANT CARE AND MANAGEMENT AND PERSONAL HYGIENE.—The methods of teaching personal hygiene and infant care and management must necessarily vary and should vary. There should be no aiming at uniformity. Circumstances vary, and teachers vary, both as regards matters taught and the amount of time spent.

The aim should be, at least, to bring home to the children, at convenient opportunities, simple facts with respect to cleanliness, food, hours of sleep, etc. This is frequently done in many schools quite effectively, by the headmaster giving short talks to the children. The medical inspector and nurses should also give lessons to the children, especially to the older girls, both individually and collectively. My staff frequently give talks to the older children on personal hygiene, and the aims and objects of medical inspection.

In many schools there is a carefully-prepared syllabus, both of personal hygiene and of infant care and management. I have heard much discussion as to whether it is worth while to carry on the teaching of infant care and management to the extent indicated in many syllabuses. The curriculum, it is alleged, is already over-full.

In the second place, few girls of elementary school age have their deeper feelings and instincts sufficiently matured to cause them to take an interest in the subject. Furthermore, in the majority of children, it is stated, the probability is that what has been learned at school will be entirely forgotten before the girls are old enough to put into practice what they have been taught. Other teachers, however, are keenly interested in the subject, and there is much evidence, too, that the children are keenly interested, and it is difficult to believe that where so much enthusiasm is shown, that the instruction is entirely wasted.

If the school-leaving age were raised to 14 years, it would be possible to do much more in this direction. We should be able to train children in such a way that they would have decent habits, and sufficient self-respect to desire decent habits, an admirable basis for continuative work on leaving school.

I cannot see how much can be looked for when women at the child-bearing age are allowed to work in mills for ten hours a day, and are then expected to attend to their

household and maternal duties. It is too much to expect any one to follow two professions.

It will be interesting to see what effect the great increase of female labour will have on the birth-rate and the infantile death-rate.

Our present method of teaching infant care and management to teachers is as follows:—

We have very small classes, not more than 18 students in each. They are conducted by a doctor, assisted by two nurses.

They are held in cookery schools, where the necessary apparatus, such as stoves, etc., is available.

After a short talk and demonstration given by the doctor, the class is sub-divided into three smaller classes, each having six students, of which the doctor and the two nurses each take one. The various processes, preparation of milk, dressing of dolls, etc., are practised individually by the members of the class, under strict supervision. A great point is, that they are practical classes, the students are made to do things; they do not merely listen to lectures.

The nurses, too, get thoroughly conversant with the various methods, and are, therefore, able to give help to the teachers in those schools where infant care and management is taught, and in the initiation of new schemes. Some of the nurses have given lessons to the lady teachers of single schools after the usual school hours.

NURSES.—The value of the generally well-educated and technically well-trained nurse is very great. The association of the medical man and the nurse, as in school work, is of the greatest value to the latter, and it will become necessary to determine exactly, both on grounds of economy and efficiency, the full extent to which the services of nurses can be utilised. Besides conducting that part of the inspection which refers to verminous conditions, assisting generally in the inspection, interviewing parents, instructing children and parents, both at school and at home, in personal hygiene, etc., the main responsibility for the selection of obviously ailing children will fall to the nurses.

SCHOOL ATTENDANCE OFFICERS.—School attendance officers give us very great assistance. Children to whom sickness has been alleged as the cause of irregularity of attendance, have been submitted by them to the medical inspectors for examination. They are notified each week, of the schools at which the medical

inspectors are likely to be working during the ensuing week, so that they may see the medical inspector and make arrangements with him for the examination of any special cases, including mentally defective, epileptics, etc., which they desire to submit. They also keep me informed, weekly, of all new cases of infectious diseases occurring amongst children in their areas. The school attendance officers have also visited the homes of children who require treatment. I have frequently met school attendance officers, individually and also collectively, at conferences. The result has been, I think, a fuller understanding on their part of the prejudicial effect of a regular school attendance on delicate children.

It is always difficult to argue against the perfect scheme, the comprehensive scheme, the paper scheme. If carefully examined, however, under the actual conditions of practice, the perfection and the comprehensiveness frequently turn out to be illusory. For example, what happens under the prevailing system of examinations of "entrants," "leavers," and a third age period? If the child is examined at four, it is not again the statutory duty of the Education Authority to examine it until it is eight. What about the four years' interval? If anything is done for that child during that four years, it is done because, side by side with the statutory inspection, there is running just such another inspection as I have been speaking about.

If you are to detect diseases in their beginnings, how many systematic inspections of school children are required? If all the children in my area were examined once annually, we should require a staff of at least thirty medical men for inspection alone, and this staff would be limited entirely to inspection. They could not undertake any extra inspectorial duties, such as re-visiting, following-up, enquiries re infectious diseases, supervision of infant care and management, supervision of drill, sanitary works, etc.

After all, what obtains in common life is, that some non-medical person observes that a child is sick, or that someone is sick. We do not carry out a systematic medical inspection of every individual in a country before he sets out to work each morning, or each year. Such a thing is impracticable. What can be done is to see that the observers, nurses, teachers, school attendance officers, are more adequately educated and more fitted to follow out, to their

logical conclusions, the results of their observations. It may be objected that cases will be missed in a scheme based upon selection by nurses. I am prepared to admit this, but the constant attention during the actual inspection to a large number of details, mostly irrelevant, greatly interferes with the clinical examination of the child and leads to mechanical and unintelligent work with serious fatigue. Even under a mechanical and unintelligent system mistakes will be made. We have no evidence as yet under which system the mistakes will be fewer.

In conclusion, with well-trained nurses teachers, and school attendance officers, and a relatively small staff of more mobile medical men, visiting schools more frequently than under the more elaborate schemes, initiating a more strict and frequent medical supervision, and, above all, better paid, I can foresee such a scheme as I have described to you working efficiently.

I may have said some things, this afternoon, with which some of you may not agree, but we conclude in unanimity that unless official medical men are better paid, efficient public medical services cannot be looked for in the future.

RURAL HOUSING IN CROFTING DISTRICTS.

RURAL housing in crofting districts is an economic question. Existing laws are not adequate to deal with it, but some remedy is urgently required. A large sum of money is expended annually in the administrative treatment of tuberculosis, in the provision and maintenance of sanatoria, tuberculosis hospitals, etc., but this does not go deep down to the root of the evil. Unless the old houses are cleared away and new sanitary dwellings erected, all our attempts to diminish the incidence of disease, and especially tuberculosis, will be to a large extent ineffective. Before ever there were such institutions, phthisis was diminishing, due solely to improved sanitation and enlightened ideas regarding the disease. To eradicate tuberculosis it must be attacked in its breeding grounds. The rational line of procedure is first to isolate and treat all actual cases of the disease, and then to place all contacts in such an environment that those who may have become infected will be in a position to resist successfully the invasion of the disease. This can only be done by removing them from their present houses to more sanitary dwellings. Small holders as a class cannot do this unaided.

—*Rural Housing in the County of Sutherland.* By Alexander Bremner, M.B., Ch.B., D.P.H., County M.O.H.

A FEW OBSERVATIONS ON THE PRESENT STATE AND POSSIBLE FUTURE DEVELOPMENT OF THE PUBLIC HEALTH SERVICE,*

BY

H. LAUDER HAMILTON, M.B., Ch.B., D.P.H.,
Assistant Medical Officer of Health, Southampton.

I WISH to express my very great appreciation of the honour done me by the Southern Branch of the Society of Medical Officers of Health, in electing me to the presidency for the ensuing twelve months. It is the first time, I believe, in the history of the Southern Branch, that an assistant medical officer of health has been thus distinguished, and I look upon it as a compliment not only to myself but to those of my colleagues who hold similar positions. The only one other occasion, I believe, when anything in the nature of a precedent was established was when Dr. Mussen, the deputy medical officer of Liverpool, was elected President of the North Western Branch for the year 1914.

I think the appointment of an assistant medical officer of health to the presidency of a branch marks an important development in the administrative policy of the Society, and shows that the senior officials are anxious that the younger men should be recognised, and that opportunities should be given them of obtaining an insight into the working of the Society at headquarters in London.

The Branch this year enters upon a new, unprecedented, and somewhat experimental phase of its existence, inasmuch as for the convenience of the members who live at either extreme, by mutual arrangement it has been decided to hold the meetings in duplicate. This is entirely due to extensive area covered by the Branch. The two extremes are so far apart as to render it almost impossible, and certainly extremely inconvenient, for, say the members living in the extreme West to attend a meeting held at Brighton, or *vice versa*. However, we all hope that the new arrangement will afford the members from each extreme an opportunity of attending the meetings without undue inconvenience. Owing to the war, it is hardly to be expected that the Branch meetings will be as fully attended as under normal conditions—some of our members are serving their country abroad, and others, I daresay, may at home

* Presidential Address delivered before the Southern Branch on 1st October, 1915.