[Report 1911] / School Medical Officer of Health, Staffordshire County Council.

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STAFFORDSHIRE COUNTY COUNCIL.

ANNUAL REPORT

OF THE

SCHOOL MEDICAL OFFICER,

INCLUDING

REPORT OF THE SENIOR SCHOOL MEDICAL INSPECTOR

For the Year 1911.

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J. & C. Mort, Ltd., Printers, 39, Greengate Street.
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Medical Inspecting Staff.

School Medical Officer:

George Reid, M.D., D.P.H.,
County Medical Officer.

Senior School Medical Inspector:

John Priestley, M.R.C.S.

Assistant School Medical Inspectors:

Lila S. Greig, M.B., D.P.H.
Myra Mackenzie, M.B.
Alice W. Maclean, M.B.
Elizabeth J. Moffett, M.D., B.Sc.

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STAFFORDSHIRE COUNTY COUNCIL.

EDUCATION COMMITTEE.

MEDICAL INSPECTION.

REPORT FOR THE YEAR 1911.

PREFACE BY SCHOOL MEDICAL OFFICER.

This report, which is the fourth submitted to the Education Committee since the institution of medical inspection, has, like the previous ones—with the exception of the section dealing with the sanitary condition of schools, for which I am responsible—been prepared by Mr. Priestley, the Senior Medical Inspector. The report is framed on the lines of the first one, the statistical figures being introduced in their appropriate places in the text instead of in appendices.

Under the respective headings of the report the data set forth are commented upon, and many interesting points are noted bearing upon child life from a hygienic point of view. There is no need for me, therefore, to occupy space in covering the same ground, but there are certain matters of importance which call for special mention. Moreover, I am again indebted to the assistant medical inspectors for interesting memoranda they have been good enough to prepare as the outcome of their observations throughout the year, and from those data, as well as from useful monthly conferences which it is now the custom to hold, I am able in the following remarks to embody the general opinion of the medical staff on certain questions.

As regards verminous conditions, it is disappointing to find that practically no improvement can be recorded—rather

the reverse as regards numbers. The medical inspectors, however, are of opinion that while the cases have not diminished, the intensity of the bad cases has lessened. It is the general opinion that the present machinery is quite inadequate for dealing with this matter, and all are agreed that until nurses are available, little material impression will be made in the present unsatisfactory state of things. So far as the teachers' share in this work is concerned, those teachers who do concern themselves with it pay regard almost exclusively to the worst cases, and it is believed that to do more than this would be difficult without sacrifice as regards their other duties.

It is much to be regretted that the experimental scheme for dealing with the question of verminous children, which was approved by the Education Committee, was ultimately thrown out by the County Council. It was the intention by means of that scheme to carry on a complete preventive system in a special area, in co-operation with the local sanitary authority. Whether such scheme would have proved to be effective or not remained to be seen, but had it proved effective the Committee would then have been in a position to approach the central authorities, the Local Government Board and the Board of Education, with a view to their bringing pressure to bear upon all sanitary authorities to co-operate in a similar way.

The Committee are now engaged in considering some alternative measures.

As regards ringworm, it will be seen under this heading in the Report that the scheme referred to in my introduction to the last report has been launched, that is, the system of providing caps to be worn by children suffering from ringworm in schools where the affection is not epidemic but only occurs as isolated cases and little groups of two and three. To what extent this will get over the difficulty of dealing with such cases remains to be seen.

As regards "following up," the adoption of a system which enables the medical inspectors to visit schools more frequently is admitted by all of them, not only to add to the interest of their work very greatly, but also to render the work more efficient, because the inspectors are now

in a position to follow up cases personally, to watch their progress, and to bring additional pressure to bear upon parents. This does not at present apply to the very small schools, but it embraces about four-fifths of the school population. Already as the outcome of this more efficient inspection it is thought that considerable improvement has taken place in the numbers obtaining treatment.

With reference to the supply of spectacles to children suffering from defective vision, it is to be regretted that a good many have to go without such assistance by reason of poverty, partly because of the high charge made for the spectacles and partly because of the inaccessibility in some areas of hospitals and other institutions and the consequent excessive travelling expenses. It would seem to be a comparatively simple matter to make a general arrangement for the supply of spectacles by approved opticians at a certain price. The charge at present made varies considerably, and in some cases is as high as from 7s. 6d. to 10s. 6d., while there is no reason why they should not be obtained at from 2s. 6d. to 3s. 6d., allowing a reasonable margin for profit. It is much to be desired that some arrangement of this sort should be made.

The comments in the Report under "Eye Defects" deserve careful attention, especially as regards the "not quite blind" cases referred to by the Senior Inspector.

As regards the co-ordination of the work of the School Medical Officer and medical officers of health, further experience demonstrates the value of the linking up of the two services secured by the appointment of the County Medical Officer as the School Medical Officer. Apart from the question of dealing with infectious cases among school children, the linking up of the two services has other public health advantages. The medical inspectors in the course of their work not infrequently find it necessary to call attention to faults which can only be corrected by action on the part of the local health authority, and, being in touch with the various medical officers of health as well as the school medical inspectors, I am in a position to act at once in such cases. For example, by this means it frequently happens that I am able to call the attention of the medical officer of health to

serious cases of overcrowding which otherwise might not come to his knowledge, and it will be seen from the text of the report that this was done in 38 cases during the year.

GEORGE REID,
School Medical Officer.

March, 1912.

REPORT

OF THE

SENIOR SCHOOL MEDICAL INSPECTOR.

REPORT.

This report refers to the calendar year 1911. It deals with 374 schools, of which about half are schools with an average attendance of less than 150, about one-third have an average attendance between 150 and 450, and the rest are large schools. The number of schools at the end of the previous year 1910 was 369.

The average number on the roll for the year 1911 was 83,324.

The average attendance was as follows :—

Children over 5.		Children under 5.		Total.
73,295	..	3,208	..	76,503

According to the census of 1901 the children in the County of Stafford (including the County Boroughs) who were turned 5 but were not 15 at the time of the census constituted between one-fifth and one-quarter of the total population, viz., 226 per 1,000.

The acreage of the administrative area is 646,542.

SANITARY CONDITION OF SCHOOLS.

In the administrative area there are 112 Council and 262 Voluntary Schools; total, 374.

As regards the former, for which the Education Committee are wholly responsible, further progress has been made in radically improving the conditions, as will be seen from the following figures, which cover the period since medical inspection of schools and scholars came into operation :—

	1903-8.		1909.		1910.		1911.	
	No.	Accommodation.	No.	Accommodation.	No.	Accommodation.	No.	Accommodation.
1. New Council Schools:								
(*a*) Additional	2	930	—	—	—	—	—	—
(*b*) To replace others ..	10	3448	9	3784	8	2148	5	1686
2. Council Schools re-constructed or considerably enlarged or improved	12	4215	10	3736	1	194	2	1240
3. Council Schools improved as regards ventilation, warming, closet and lavatory accommodation, drainage and sewage disposal, cloakroom accommodation, paving of playgrounds, &c.	56	26861	20	9658	11	5785	13	7084

With reference to these figures, it may be mentioned that as regards 1 and 2 they record the work actually accomplished during the years in question, that is, there is no duplication, and the work now in progress or not completed during the year 1911 is not included. For example, in January, 1912, another new school was opened, and at the present time four are in course of erection, none of which are recorded in the foregoing table. As regards the figures in the third line of the table, in the case of two of the schools other improvements were effected in 1910 and are included in the column for that year.

As regards voluntary schools, a new school was opened during the year which replaced an old one which had been condemned; also, another new building was completed, forming an addition to an existing school. Six other voluntary schools have been enlarged, and various structural improvements have been effected in a number of others.

The question of improved methods of school cleaning has engaged the attention of the Education Committee and, as the outcome of a report by a Sub-Committee specially appointed to consider the question, new and more stringent rules for observance by caretakers and cleaners have been framed which, it is hoped, will lead to improved conditions in this respect.

It is the practice of the medical inspectors on visiting schools to pay regard to general sanitary conditions and to report any irregularities or defects met with to the School Medical Officer. Hitherto these reports have been specially framed, but in order to simplify the work and economise time we have lately adopted a card system of reporting under specified headings.

In the course of their routine work the medical inspectors frequently meet with cases where they have reason to suppose that overcrowding exists in the homes of the scholars. All such cases are reported to the School Medical Officer in order that he may call the attention of the local medical officers of health to the alleged overcrowding and let them take such steps as they may think fit in the matter. During the year covered by this Report 38 reported cases of overcrowding have been so dealt with.

METHODS OF MEDICAL INSPECTION.

No change has taken place in the general methods of medical inspection as set forth in the previous annual reports, or in the methods of correlation of the school medical service and the public health service. What differences of opinion have arisen between the local medical officers of health and the school medical inspectors with reference to questions of closure and exclusion have been readily adjusted through

the School Medical Officer, who is also the County Medical Officer of Health. Differences have more often arisen on the question of exclusion,—mainly in cases of ringworm,—between the school medical inspectors and general practitioners; and in these cases also efforts have been made, by private correspondence with the doctor when necessary, to prevent misunderstanding and to explain the School Medical Officer's point of view.

I have to report a slight re-arrangement of the areas of work of the various inspectors. Hitherto, the Senior Inspector has taken schools here and there. But now that so many schools are visited three times a year, according to the new plan of following up cases mentioned in the last annual report, it seemed desirable that each assistant inspector should keep in hand her own work. The Mid Division of the administrative area, therefore, has been divided into two unequal parts, East and West, and the Senior Inspector will in future be himself responsible for the smaller western portion.

The exact distribution of the School Attendance Areas is shown in the following table. The figures indicate the school population (number in average attendance) of each area :—

	No. in Average Attendance.	
NORTH (DR. MACKENZIE).		
Audley	1622	
Talke	998	
Biddulph	1241	
Caverswall	1049	
Cheadle, North	909	
Kidsgrove	2174	
Leek Urban	2651	
„ Rural No. 1	382	
„ „ „ 2	408	
„ „ „ 3	382	
Milton	724	
Stoke Rural and Bucknall	1032	
Smallthorne	2395	
	——	15967
MID EAST (DR. MOFFETT).		
Cheadle South	2580	
Mayfield	582	
Uttoxeter	2016	
Tutbury	1350	
Rugeley	1334	
Lichfield Rural	1911	
Lichfield City	1223	
Stafford No. 1	3870	
„ No. 2	1363	
	——	16229

MID WEST (MR. PRIESTLEY).		
Newcastle Rural	968	
Blore Heath	362	
Stone No. 1	2201	
,, No. 2	560	
Gnosall	773	
Cannock Rural	2351	
Cheslyn Hay	1249	
Norton Cannock (Cliff)	2722	
	——	11186
SOUTH EAST (DR. MACLEAN).		
Burntwood	1568	
Norton Cannock (Clarke)	1218	
Walsall Rural	1900	
Perry Barr	451	
Tamworth No. 1	1142	
,, No. 2	758	
Willenhall	4744	
Kingswinford (Allden)	4671	
	——	16452
SOUTH WEST (DR. GREIG).		
Wednesfield	3259	
Darlaston	3371	
Kingswinford (Blackshaw)	3480	
Sedgley	3190	
Seisdon	2450	
Kinver	295	
	——	16045
		75879*

* Average for the month of November, 1911.

The weighing and measuring are done by the school attendance officers, who carry about from school to school a steel-yard and measuring rod.

As to precision, these operations are no doubt as accurate as the weighing and measuring of our meat and groceries, but they would be suspected if judged by a scientific laboratory standard. Accuracy in these matters is largely due to practice, and a school attendance officer who is engaged day after day for three or four weeks in weighing the children of his area is more likely to be accurate than anyone who had to weigh a batch of children in one school once a year.

For convenience of reference, a copy of the schedule we use is here given. Only one change has been made in it. Head teachers are now expected whenever they have fairly authentic information to enter the illnesses which the child has had and not to wait for the medical inspector to do so. So few parents come to the inspection that in practice this column has had to be filled up from the statements of the head teacher, and it saves valuable time at the medical inspection to have the particulars already filled in.

FORM 3 (M.I.)

(STRICTLY PRIVATE AND CONFIDENTIAL).

The Head Teacher, except where otherwise directed, should fill in the Items down to C5 (thick line).

STAFFORDSHIRE EDUCATION COMMITTEE.

SCHEDULE OF MEDICAL INSPECTION.

BOY

A.—General Facts:

Name..... Date of Birth.....
(Surname first).

Address .....

School ..... Date of Admission.....

Occupation of Parents: Father..... Mother.....

No. of Rooms in House.....

General Observation (For use of Med. Inspector).....

B.—Personal History:

(a) ILLNESSES:	*(Year).*		*(Year).*	*(b)* Fam. Med. History (For use of Med. Inspector).
Measles	.....	Diphtheria	.....	.....
Whooping Cough.....	.....	Mumps	.....	.....
Chicken Pox.....	.....	Other	.....	.....
Scarlet Fever	.....	.....	.....	.....

C.—Special Examination:

		1st Inspection.	2nd Inspection.	3rd Inspection.	4th Inspection.
1 Age at date of Med. Inspection (e.g. $5\frac{7}{12}$)					
2 Standard and Attendance					
3 Height (ft. and in).					
4 Weight (lb. and oz).					
5 Clothing Note if usually insufficient, or unclean, or in disrepair					
Footgear Note if usually insufficient or in disrepair					
6 Skin	HEAD				
	BODY				
7 Vision (Snellen)	R.				
	L.				
Eyes					

OVER.

(Confidential.)	1st Inspection.	2nd Inspection.	3rd Inspection.	4th Inspection.
8 Hearing R.				
L.				
Ears				
9 Teeth				
10 Nose and Throat				
11 Speech Stammering; lisping; idioglossia; indistinctness				
12 Mental Condition GENERAL—Bright; fair; dull; backward. Mentally defective. Imbecile SPECIAL—Attention; irritability				
13 Heart, etc.				
14 Lungs, etc.				
15 Kidneys, etc. Only test in special cases				
16 Nervous System				
17 Anæmia				
18 Tuberculosis				
19 Rickets				
20 Rheumatism				
21 Deformities				
22 Other Diseases				
23 Present Infections				
24 Nutrition Good; normal; sub-normal; bad				
25 Inspector's Initials and Date				
Ref. No.				OVER.

Assistance rendered by Managers, Teachers, and Nurses.—Managers continue to show us the greatest goodwill. Head teachers organise the inspection for us with success. I do not think that nurses could do it better; they might dress and undress the children more quickly, but they would not have the same control of the children or knowledge of the resources of the particular school. Moreover, we want to keep the teachers keenly interested.

Although I think it would be a waste of time to have nurses waiting upon us at medical inspection, the importance of associating nurses with us in the attempt to cope with the personal uncleanliness and vermin prevalent amongst school children will be apparent. They could assist in combating ringworm also, and by doing routine inspection of heads they would save the time of the medical inspectors.

We have had the assistance of many of the district nurses who are affiliated to the Staffordshire County Nursing Association. When programmes of work are sent out to the medical inspectors the latter are informed of the names of the affiliated nurses in whose districts lie the schools about to be inspected. At the end of the school inspection the medical inspector writes down a list of the children suffering from uncleanness or from nits or vermin on a form at the head of which is the following letter:—

.....

To Nurse.....

The following is a list of children discovered at medical inspection to be suffering from uncleanness, or from nits or vermin.

Will you kindly take an opportunity of calling at the homes of the children and endeavour to persuade the parents to allow their child to be properly and thoroughly treated, either doing the treatment yourself or making sure that the mother, or whoever has charge of the child, does it efficiently?

Having seen that a child is once thoroughly cleansed, will you, further, call occasionally at the house to see that there is no relapse?

Yours faithfully,

.....

Medical Inspector.

I have received a statement from the Superintendent of the Staffordshire County Nursing Association to the effect that there has been a considerable increase in the number of school cases attended by the nurses during the last year, but no complete statistics are available.

The Committee will be further interested in the following account of a scheme inaugurated by the Association. The Staffordshire County Nursing Association is making arrangements for attendance on verminous cases. Each case is to be visited as soon as possible after receiving the notification and instructions of the school medical inspec or. Each case will be attended until quite clean, and the necessary instructions given as to the method of cleansing as well as superintendence of the process, but the nurse need not necessarily do the work herself. She will endeavour, in cases where the child's condition is due to uncleanliness of the home, and of other members of the family, to teach, tactfully, simple rules of cleanliness. She will, further, visit the child periodically to prevent lapsing.

In cases where the local nurses are unable to undertake the work for any reason, the County Association will send an emergency nurse to the district.

The scheme is tentative and experimental.

Co-operation of Parents.—Parents are invited to attend at the routine inspection of their children, but not at the supplementary visits, which are usually surprise visits. Taking all schools together, relatively few parents avail themselves of the opportunity—perhaps 10 per cent.

But if parents do not come in great numbers to the inspection, many of them seem willing enough to attempt something in the way of remedy. The ailments we point out have been somewhat of a revelation to most parents, and constitute practically an unworked field of medical activity. We do not notify trifling deviations from the normal which are of little or no practical consequence to the child. Only when the conditions in the opinion of the medical inspector amounts to a serious handicap do we notify it to the parent. And very few of the ailments we indicate are in fact receiving attention.

For two years an attempt was made to find out what parents had done in consequence of our notifications. After inspecting the child and notifying the parent we made inquiries, at regular intervals, through head teachers or school attendance officers. By this means we found that in about 90 per cent. of the cases notified the children had received some sort of attention ; either the child was reported to have been cleansed of its vermin at home, or to have seen the family doctor, or to have gone to a hospital. In about 10 per cent. of cases we could not get the parents to move at all, some pleaded poverty, others the impossibility of getting hospital notes, many were " just going to attend to it," and others were merely obstinate or neglectful.

This, so far as it went, was satisfactory enough. Even if 90 per cent. was clearly too optimistic an estimate it was evident that many parents had spontaneously or with little urging sought advice.

But the matter could not well be left there. What we want to know is how many children have been cured or relieved, and this could only be ascertained by re-examining the ailing children at supplementary visits. In the Report of the year 1910, page 16, it is mentioned that the Education Committee had sanctioned a scheme in which by a re-arrangement of the work the larger schools might be visited two or three times a year by a medical inspector. I have now to report the establishment and successful working of this plan.

It has been found possible to pay supplementary visits to all or nearly all schools with 150 children or more in average attendance. That is to say, we have visited schools which contain 60,763 out of the school population of 76,503 children in average attendance. Thus, in regard to four-fifths of the children under our care we can see for ourselves what has been done for them and with what sort of success.

The method is as follows :—At a stated time a school is inspected and medical notes of ailing children are entered on so-called " special " cards, one for each child. In four months' time the same school is re-visited by the inspector, who takes with her all the " special " cards. The children who were inspected are passed in review ; notes are added

to the cards when necessary ; a parent may again be notified, or the child excluded, etc. If a head teacher has new cases to present or old ones to discuss there is an opportunity of doing so.

Four months later the same school is again re-visited. At the end of the year the special cards are reviewed by the inspector, who puts forward into the card cabinet of the following year the cards of cases still pending. It is calculated that about 60 or 70 per cent. of the special cards will have to go forward each year.

This reviewing of cases does not take on an average more than 3 or 4 minutes a child. In Staffordshire, according to our experience, about 20% of the children examined *seriatim* become special card cases ; thus, a school with 300 scholars in average attendance will always have about 60 or 70 special cases, and if every case were seen every time the reviewing would not take more than a day.

The smaller schools are still " followed up " in the old way by means of reports from head teachers and school attendance officers.

The Committee will readily understand that this supplementary visiting on such a comparatively large scale has only been possible by means of the strictest economy in planning the work, and by reducing the routine inspection of the children to its bare legal limits.

This point of keeping the routine inspection as simple as possible compatible with its aim of sifting out the ailing children is so important that I desire to dwell upon it. By an elaborate system of routine inspection applied to sound looking and delicate looking alike, we could easily spend so much time that we should have none left for the study of special cases. That would be an unpractical course to pursue. The routine inspection should be regarded as a net or sieve, by means of which the ailing among the children can be quickly and certainly detected in order to be kept under observation, and the Committee will understand that when once a scheme of supplementary visiting like ours is established it is a less laborious business to indicate the children who ought to be put in the group of suspects than it would be to prepare a reasoned report on each case, such as would

be necessary if the annual inspection were the only opportunity of studying it. The gain of time is not in making the routine inspection less comprehensive, and still less in making it slipshod, but rather in being free from the necessity of making an immediate diagnosis on perplexing or insufficient evidence, which is always a time-consuming operation. Is the case doubtful? then make it a "special," after which it cannot well be lost sight of.

The observations of the medical inspectors at the supplementary visits have been analysed and the results may now be presented. The points of practical administrative importance seemed to be: (1) Has some reasonable effort been made to get the child cured? (2) has the treatment been adequate, and, if not, why not? (3) what has been the result?

The method of inquiry was begun in January of last year, and hence it is only in regard to the schools whose routine inspection took place early in the year that sufficient time has elapsed for the second supplementary visit to be paid. The following report, therefore, is limited to the schools inspected in January to April, 1911.

The number of children in average attendance at the Schools medically inspected from January to April inclusive was 22,046. One-third approximately of these were examined *seriatim* by the medical inspectors, and out of this number certain children were considered to be urgently in need of medical or other attention. These children, as has been said, did not constitute the whole array of children found to have medical and other defects, but only the really serious and urgent cases. The total numbers of all the conditions, great and small, which we recorded for future reference are much larger, and will be found in the tables under the heading Revelations of Medical Inspection.

In addition to these ailing children discovered by the medical inspectors, managers and head teachers and school attendance officers presented others, nearly all of whom were needing attention. The total number of children thus found to be needing attention was 2,141, or about 10% of the entire number of children in average attendance.

The results of the inquiries may be presented compendiously in a table. In the analysis the cases of ailment are counted and not the children; hence, there is a certain amount of overlapping. Thus a child with verminous conditions might also have defective sight, etc., and so would figure as a case in more than one category.

The following is the table:—

TABLE SHOWING CASES WHICH OBTAINED TREATMENT AFTER MEDICAL INSPECTION.

AILMENTS.	No. of cases.	Proper treatment obtained.			Causes of failure to get adequate treatment.					No. cured.	No. improved.
		Yes.	No.	Unknown	Poverty.	Obstinacy or neglect.	Could not get note.	Other.	Total No. of cases investigated		
Vermin and personal uncleanness	643	334	202	107	6	175	—	2	183	80	244
All other ailments except vermin and personal uncleanness	1827	934	466	427	69	140	29	94	332	475	320
Some special ailments:—											
Defective Sight ..	399	145	170	84	37	40	12	23	112	92	31
Mouth-breathing	247	97	99	51	7	23	10	38	78	45	47
Ear Discharge ..	64	38	13	13	1	8	—	3	12	9	22

Of the 2,141 children followed up, 643 or between one-quarter and one-third, were suffering from vermin or personal uncleanness; in the great majority of cases this was the only reason why their parents were notified; but a few had other ailments as well.

Of the 643 verminous and unclean cases, about one-half received some kind of proper treatment, about one-third almost certainly did not, and of the rest we have no trustworthy account. Only 80, or about one-eighth, appeared to the medical inspectors to have been in any strict sense of the term cured, though 244 (and possibly more) were considerably improved. The cured and improved together

amount to one-half of the total number of verminous and unclean cases. But as a set-off it must be stated that even of the cured cases some 26, or more than one-quarter are reported to have relapsed already within the year of observation.

Of the cases where there was failure to get adequate treatment it was possible to investigate the circumstances of 183. In 175 of them the cause appeared to be gross neglect on the part of parents, or obstinate refusal to see that there was anything "worth fussing over." Poverty seemed the sufficient cause in only 6 cases.

Turning now to the more strictly medical ailments, there were among the 2,141 children ailing enough to have been provided with a "special" card, 1,827 cases of disease as distinct from vermin and personal uncleanliness. Of these, 934, or roughly one-half, received some kind of suitable treatment, though not necessarily the best; about one-quarter to the best belief of the inspectors did not; and of the rest we have no information. As a result, about one-quarter of the total number of cases of medical ailments were reported cured within the year, and about one-fifth relieved or improved. The cured and improved together are thus under one-half of the total number of cases. Perhaps this is not a bad beginning within the short space of twelve months; probably more cases will be reported cured when a little longer time has been given them.

In regard to 332 of the cases who failed to get adequate treatment, the circumstances of the failure were investigated. In 69 poverty appeared to be the sufficient cause, or between one-quarter and one-fifth of the cases investigated; in 140 (that is to say, less than half the cases investigated, but more than a third) the cause was neglect or obstinate refusal to admit that anything was much wrong; in 29 it was impossibility of getting hospital notes; and there were 94 nondescript cases, including a few cases of disagreement of opinion as to need of any treatment between local doctors and our inspectors; but such cases are comparatively few.

The analysis of the cases of certain special diseases tells much the same story. The adequate treatment of defective sight involves in many cases an interview with a specialist

and the procuring of spectacles, and therefore it is not wonderful that there is a smaller proportion recorded as having had some kind of proper treatment than is the case with diseases in general ; the proportion is considerably less than one-half the cases. Nor is it wonderful that a larger proportion of failures are attributed by the inspectors to poverty, and the impossibility of getting hospital notes. The cured and improved in this complaint taken together were not much more than one-quarter of the cases.

In mouth breathing also rather less than half got some kind of proper treatment, and about the same were cured or relieved ; while in ear discharge more than half got some proper treatment, though only one-tenth are reported as cured A third of the cases, however, were improved.

Speaking generally, it may be said that under the existing conditions of medical service in the county,—with existing hospitals and private doctors, and no school clinics,—certainly half and probably rather more than half the ailing school children get proper treatment and are cured or improved.* Of the children who fail to get adequate treatment, about half fail because of poverty or inability to get hospital notes.

It was pointed out in the annual reports of the previous years that the highly favourable accounts sent us by teachers and school attendance officers in those years (namely, 90% of children cleansed or medically attended to as the case might be) would be found to be too optimistic. The extent to which this was the case is now seen. The difference is, of course, not one of accuracy but of critical judgment in sifting statements of parents and children.

In conclusion, I desire to point out to the Committee how large a part of the time at our disposal for the study of the really disabled and medically ailing children has to be given up to children who are merely verminous. About one quarter of the cases we have to deal with hardly need the services of highly trained medical officers.

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* The Chief Medical Officer of the Board of Education in his Annual Report for 1910, p. 114, gives the figures for 12 representative counties, from which the following average percentage may be deduced:—

Total No. of cases recommended for treatment ..	21,318
Total No. of cases treated	10,749

This gives 50 per cent. of the cases treated, which is substantially our percentage in Staffordshire.

Disturbance of School Arrangements.—Medical inspection upsets the regular life of the school and leads to temporary overcrowding and confusion. It may be a question for consideration whether the needs of medical inspection should not be taken into account in the building of new schools. Some enlargement and modification of the usual teachers' room would serve to convert it into a room suitable for medical inspection.

Occasionally it has been found impossible to carry out the inspection on school premises. We have, with the permission of the Board of Education, made use of other rooms and buildings in the case of 15 schools.

Work thrown upon the School Attendance Department.—The School Attendance Department have taken up the work consequent upon medical inspection with great enthusiasm, and their assistance is invaluable.

The school attendance officers have not had to pay so many visits this year as last for the mere sake of asking whether any treatment had been adopted, but they have had to pay more in order to press for treatment or to ascertain the reasons for neglect, etc.

Extent of Medical Inspection during 1911.—The work which the Committee prescribed during 1911 consisted of—(1) the routine inspection of children of certain age-periods and (2) the examination of special cases, viz., children whatever their age or standing the state of whose health appeared to managers or teachers to be hindering their education or in whom educational methods were injurious to health.

The Committee adopted the method of age-periods for the selection of children for routine inspection, and the three age-periods were, 5—6, 8—9, and the years of leaving, viz., 12—13 in rural areas, and 13—14 in urban areas. More specifically, the definition was: All children who on the 1st of January of the year of inspection had turned 5 but were not yet 6; and similarly with the other age-periods. Thus, every child in the County who had arrived at one or other age came up automatically for inspection, and none could be missed.

In addition, the Committee ordered that we should inspect all children younger than five years who might have entered school since the last preceding routine inspection. There were over 3,000 such children.

The above arrangements lead to a certain amount of overlapping, or rather, a child who enters school at four, or four and a half years, and is medically examined, having turned five on the 1st January of the following year, has to be examined again. This repetition of a routine inspection at so short an interval serves no useful purpose, and involves some loss of valuable time. In future it will be better to examine children as "entrants."

The periodical examination of all children at the beginning, middle, and end of their school life promises to be a satisfactory arrangement, and it seems unnecessary to increase still further the number of routine inspections. So long as we encourage teachers to present suspicious cases, and in view of the fact that we visit the major part of our scholars three times a year, there is little risk of cases being missed. After four years' experience of medical inspection, head teachers are becoming familiar with the signs and symptoms which we medical inspectors look on as suspicious.

Number of Children Examined.—The divisions of urban and rural as constituted for Local Government Board purposes have been retained this year as a basis of classification, but it is doubtful whether it is worth while to continue to do so. It complicates the book-keeping, and is practically not very useful. Many so-called rural schools and many so-called urban schools are intermediate in character, and merely serve to water down the figures in comparisons, and a more profitable study of urban and rural conditions would be achieved by selecting typical country and town areas for statistical comparison.

Of the children due for routine inspection in 1911 (that is to say not counting the cases specially presented by managers and teachers or the babies under five)—

75 refused inspection, or 0·35%.
19,948 were inspected, or 95·3%.
915 were unavoidably absent on the day of inspection, or 4·3 %,
Total 20,938

Of the 75 cases set down as having refused inspection, the great majority were definite refusals, verbal or written. In a few cases the children were absent and the teachers strongly suspected that dislike to the inspection was the cause of the absence.

The number of refusals is about twice as many as last year, but is still a negligible quantity.

The following is an analysis of the children inspected in the routine years :—

Area.	URBAN.		RURAL.	
Sex.	Boys.	Girls.	Boys.	Girls.
Ages :—5—6	2449	2436	1852	1754
8—9	2062	2045	1494	1401
12—13 ..	—	—	1208	1259
14—15 ..	994	994	—	—
Total of Boys ..	10059		Total of Urban	10980
,, Girls ..	9889		,, Rural..	8968
	19948			19948

In addition to the above routine cases, there were 2,562 children presented by managers or head teachers as exhibiting some failure of health. Some of these were brought forward on the day of the routine inspection, others at the supplementary visits.

Adding together the totals of routines and specials we get :—

Grand Total of all Children Inspected—

Routine Years .. .	**19,948**
Specially presented	**2,562**
	22,510

Children in respect of whom treatment was urged.—As a result of our examination a large number of ailments were detected of greater or less gravity, some among the children of the routine ages, others among the children specially presented. Most ailments of the latter were of such a nature that the parents of the sufferers had to be notified.

The case of the routine children is different. Speaking generally, deviations from the normal which arrest our attention in our examination of a child, whether they appear at the moment of great importance or not, are recorded on the schedule card, and on these records our statistical statements are based. But only those cases are notified to parents which really need treatment. The number of such cases arising among the children of the routine ages, 5—6, 8—9, and leavers, was 4,294, or 21·5% of the 19,948 children examined.

REVELATIONS OF MEDICAL INSPECTION.

Meaning and value of Statistics.—In the reports of 1909 and 1910 an attempt was made to point out the exact meaning of the figures we accumulate and present each year. We cannot too often remind ourselves of the limited utility of statistics collected as these are, although within their own range they are, of course, a trenchant and infallible weapon. This year I desire to call attention to other inevitable drawbacks.

All those whose duty it has been to study the annual reports presented by the various School Medical Officers must have been struck by the varying proportions in which the same ailment or condition is noted in different areas. I take two reports quite at random. In one it is said that tonsillar enlargement was noted in 0·6% of the cases; in the second it was noted in 5·5%; our own figures are about 20%.

Now, in regard to an ailment like enlarged tonsils, it is improbable that these figures indicate a real difference of existing conditions. As a matter of fact the two reports picked up at random happened to be reports of areas contiguous to our own, where the conditions of life are largely similar. The paralysing discrepancies must be in the main due to different ideas of what is worth noting, and in part to what is called the personal equation.

The same startling inequalities meet us in comparing the reports of colleagues in the same area. I quote from the reports of areas with full-time officers, and areas, I may add, noted for their zeal and success in medical inspection. In

one case the percentages vary with the recorder as follows (our own average percentages are given for comparison) :—

		Staffordshire percentage.
Head uncleanness, from about	4 to 28%	(30%)
Teeth (4 or more carious) ,,	8 ,, 29%	(43%)
Tonsils enlarged ,,	4 ,, 20%	(18%)
Mouth breathers ,,	1 ,, 9%	(13%)
Enlarged neck glands ,,	1 ,, 37%	(22%)
Defective hearing ,,	0·1 ,, 2%	(4·7%)

In another report the percentages vary with the observer as follows :—

Teeth defective, from about	13 to 31%
Nasal obstruction ,,	6 ,, 16%
Cervical glands enlarged	5 ,, 17%

Many more reports could be quoted.

I do not suggest that these differences are in every case illusory and correspond to no real differences in fact ; but I think the figures justify the greatest scepticism and make it imperative to arrive at some idea of the value of the personal equation.

The fact is our power of observation is no mere mechanical power of '' reflecting '' like a mirror the things before us, but is a complex mental process. It we go with a vacant mind into a full field everything strikes us vividly for a brief time, but soon we see only those things a faint image of which we can keep alive at the back of our minds. It is the effort to keep these faint images alive when they are fairly numerous, say, twenty or thirty, which seems to make the work so exhausting. After a short time, unless the spur is constantly applied, the mind goes to sleep as to certain of the items, though not perhaps as to all ; and then it is found that some facts have been altogether passed over. The more the hurry, the greater the leakage, of course.

Accidental circumstances will often make a great difference to the certainty with which particular facts are observed, for example, having some special research on hand for which the particular fact is needed ; but it must be confessed that nothing more certainly contributes to the neglect of other facts.

In addition to this source of weakness in the very machinery itself, there are the inevitable differences of judgment as to what shall be regarded as suitable for this or that category. How many observers are likely to agree, even loosely, as to what constitutes "slight anæmia," or "subnormal nutrition," or even "mouth breathing" in its slighter degrees?

It seemed, therefore, of some interest to determine what degree of inequality may be expected among equally competent and careful, but human, observers, who have agreed to do all they reasonably can to standardise their methods of work.

One or two things must be premised in explanation of the following table, which is based on the observations of the inspectors each in his or her own quarter of the County. In the first place, it is assumed that in the long run, the numbers of the various ailments, at least the medical ailments, actually occurring would probably be fairly equal in the various parts of our area. This, of course, may not be strictly true. In the second place, it must be mentioned that we attempted to standardise effort by discussions together, by fixing attention on definitions, to some extent by working together, and by occasional study of each other's findings. Periodically, at intervals of a few months, a comparative table of the findings of all the inspectors was circulated to each, and the discrepancies were freely discussed.

To make the figures as nearly comparable as possible one age-period—8 to 9—and one type of area—urban—were taken. The children inspected by each consisted of boys and girls in nearly equal proportions for each inspector.

URBAN CHILDREN, 8—9.

Different Medical Inspectors.	A	B	C	D
NOS. EXAMINED.	**930**	**759**	**1251**	**1030**
Notified to Parents	19%	25%	25%	27%
Verminous Heads	18%	37%	46%	29%
Ringworm	0·1%	1·4%	0·1%	0·1%
Defective Sight	55%	31%	34%	31%
Defective Hearing	6%	6·5%	11%	5%
Running Ears	0·8%	0·8%	1·5%	1·2%
Sound Dentures	12%	9%	13%	10%
Enlarged Tonsils	12%	13%	23%	23%
Mouth-breathers	11%	13%	20%	8%
Enlarged Cervical Glands ..	15%	26%	37%	19%
Heart : Functional Diseases ..	1·3%	8·8%	10%	2·6%
Organic Disease ..	0·9%	4%	4·7%	2·1%
Nervous System : Headache ..	1·4%	2·3%	0·5%	0·6%
Functional diseases	1·4%	3%	1%	0·4%
Anæmia : Marked	—	1·3%	2%	3·2%
Slight	9%	3%	27%	10%
Rickets : Marked Cases ..	0·7%	3%	1·7%	0·3%
Hernias	0·3%	—	0·15%	—
Nutrition : Good	5%	3·8%	7·9%	8·4%
Sub-normal ..	27%	41%	13%	20%

I do not want to make too much of these discrepancies. At most, the table hints a doubt, but it is a very important and far reaching one. The table shows that where it is a matter of noting and counting, as in the case of sound dentures, we have reached a high degree of uniformity, but that in almost every case where judgment comes in discrepancies show themselves which can, I think, hardly represent the facts with accuracy. Probably few will dispute this in the case of the records of subnormal nutrition and slight anæmia ; and I confess my own doubts extend to the

records of defective sight, enlarged tonsils, mouth-breathers, enlarged cervical glands, and even verminous heads.

It is to be suspected that in spite of efforts to minimise it the personal equation is, and will probably ever be, a serious factor never to be forgotten when making use of our statistics. It is, at present at least, quite impossible to make use of such figures for comparison of one part of the country with another ; and comparisons of the same area at different periods of time are only trustworthy so long as the staff, and the work undertaken by each member of the staff, remain the same. Especially must we beware of comparisons between parts of an area and other parts, or the whole. For example, having ascertained the percentage number of children having mouth-breathing or anæmia in the whole of an area, it would be of obvious interest to find out whether the children coming from houses of one to three rooms had a larger or smaller percentage. Such a comparison would probably be misleading, unless it were the case that the various inspectors whose findings were clubbed together in the whole were represented in the same proportions in the part. Clearly the only sound basis for such a comparison would be to take the children from the 1—3 roomed houses and compare them with the children from larger houses attending the same schools, in which case the same inspectors will have examined the children in both groups in the same relative proportions.

General Instructions for reading the Tables.

In order that the statistical tables and sectional tables may be utilised it is necessary to bear in mind the following facts :—

Key numbers :	Children in average attendance ..	76,503
	Children actually inspected ..	19,948

When different groups of children, boys and girls, children of different ages, etc., are contrasted, it will be found that the basic numbers on which the percentages are taken are always given in the context.

In dividing children according to age, it was necessary to see that the age divisions included equally urban and rural children. To effect this the leaving ages 12—13 and

13—14 are taken together, since in general the only "leavers" at age 12—13 are rural, and the only "leavers" at age 13—14 are urban.

The headings of the schedule card will now be taken *seriatim*. The facts of the home environment are dealt with on page 86.

Previous illnesses.—An effort is made to record the previous illnesses of the children, especially the usual children's infectious diseases. If the mother is present her statements are accepted. The older children, if unaccompanied by the mother, are questioned, and if their answers seem trustworthy and circumstantial they are recorded. Or, sometimes, the teachers have information. Speaking generally, if any particular in an answer seems uncertain, that particular is omitted from the record.

We have records collected in this manner of approximately 7,500 cases, about 2,000 being children of 5—6, about 3,000 children of 8—9, and about 2,500 leavers whose ages vary from 12—14.

The proportion of inaccurate statements in the record must be very considerable, quite enough to deprive it of value as a record of the absolute number of diseases suffered by the children questioned. But inasmuch as the risk of inaccuracy so far as it depends on lapses of memory would be more or less equally spread over all the diseases, the figures amassed may be not quite useless for the purpose of comparison as to the *relative* incidence of the various diseases.

The relative incidence on the group of children, more or less 7,500 in number, as to whom we have records, is shown in the following table:—

Measles	7,198 cases
Whooping Cough	3,357
Chicken Pox	1,932
Scarlet Fever	1,161
Mumps	1,299
Diphtheria	321

Since the beginning of medical inspection in 1908 the numbers indicating the incidence of different diseases on the group examined each year have shown a considerable

uniformity and a curious approximation to the order of geometrical progression. The figures of the four years are sufficiently striking to be put on record. To make the figures of different years comparable the number of cases of measles each year is taken as a 1,000, and the numbers of the other diseases are set down in proportional figures :—

ALL CHILDREN OF ALL AGES EXAMINED.

	Order of geometrical progression	Order of diseases according to incidence during the years :				Average of all years.
		1908. Over 2,500 children	1909. Over 5,000 children	1910. Over 7,000 children	1911.* Over 7,000 children	
Measles	1000	1000	1000	1000	1000	1000
Whooping Cough	500	468	493	452	466	469
Chicken Pox	250	255	276	252	268	262
Scarlet Fever	125	112	155	173	161	150
Mumps	62	67	90	83	180	105
Diphtheria	31	39	35	44	44	40

* Contains children of 8—9 who were 5—6 in 1908.

It will be seen that in 1911 there is a serious divergence from the type of geometrical progression in the case of Mumps. The whole appearance of uniformity may prove to be chimerical on further investigation.

Family Medical History.—Such statements as come up under this heading are commonly volunteered by parents or teachers. The record is very imperfect. "Phthisis" and "Insanity" are the chief items. At its source our information commonly has the form that so-and-so "had consumption" or "had been in an asylum"; it is of little value for any purpose. Under insanity have been included the few cases of history of feeble-mindedness which came to our knowledge.

There were 175 histories of "Phthisis" and 52 of "Insanity."

Height and Weight.—The children were weighed and measured without shoes, but in ordinary indoor clothes. The figures are read in inches to the nearest quarter, and in pounds to the nearest quarter-pound. The children were of the ages stated (viz., 5 but not yet 6, 8 but not yet 9, etc.) on January 1st, 1911; but the actual day of weighing may have been any school day from January to December. The actual age on the day of weighing, therefore, may have varied —taking, for example, the case of members of the youngest group—from 5 years and a few days to a few days short of seven years. Hence the mean height and weight in our tables must be taken as expressing the means of the upper year of the limit of age (viz., the year 6 in the case of children of 5—6; and so on). In the case of the group of leavers, 13—14, no child can have been more than 14, because on attaining that age the children are entitled to leave school, and generally do leave. With these the mean height and weight in our tables refer to the true mean of the years of the group, viz., 13 and a half.

Our figures, therefore, show the mean height and weight at age 6, at age 9, at age 13, and at age 13 and a half. At age 13 the children were all rural, and at 13 and a half all urban.

Height and Weight.

Age.	5—6				8—9				12—13		13—14	
Sex.	Boys.		Girls.		Boys.		Girls.		Boys.	Girls.	Boys.	Girls.
Area.	U.	R.	U.	R.	U.	R.	U.	R.	Rural only.		Urban only.	
No. Inspected.	**2449**	**1852**	**2436**	**1754**	**2062**	**1494**	**2045**	**1401**	**1208**	**1259**	**994**	**994**
Height:												
English inches ..	41·8	42·5	41·5	42·5	47·5	45·3	47·3	48·3	55·8	56·5	56·3	57·0
Metres	*1·06*	*1·08*	*1·06*	*1·08*	*1·21*	*1·15*	*1·20*	*1·23*	*1·42*	*1·43*	*1·43*	*1·45*
Weight:												
English lbs. ..	40·3	41·7	39·0	40·8	51·8	50·8	50·2	52·4	75·3	77·9	77·5	80·9
Kilogrammes ..	*18·3*	*18·9*	*17·7*	*18·5*	*23·5*	*23·1*	*22·8*	*23·8*	*34·2*	*35·4*	*35·2*	*36·5*

Clothing and Footgear.—The teachers make the entries under these headings, and they are directed to record the usual condition of the children and not their condition on the day of inspection. The medical inspector usually checks the statements by comparison with the child's appearance at the inspection. It is commonly found that the inspectors have a more exacting standard than the teachers, who insensibly come to regard the average of their school as fairly good.

Clothing is notified if insufficient, unclean, or in disrepair, and footgear if insufficient or in disrepair. Some children are overclothed; this is commented upon to the mother or head teacher, but the fact is not entered as a "fault" for our statistical purposes.

Clothing and Footgear.

Age.	5—6								8—9								12—13				13—14				Totals and Means.	
Sex.	Boys.				Girls.				Boys.				Girls.				Boys.		Girls.		Boys.		Girls.			
Area.	Urban.		Rural.		Urban.		Rural.		Urban.		Rural.		Urban.		Rural.		Rural only.				Urban only.					
No. Inspected.	**2449**		**1852**		**2436**		**1754**		**2062**		**1494**		**2045**		**1401**		**1208**		**1259**		**994**		**994**		**19948**	
	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No	p.c.	No.	p.c.	No.	p.c.	p.c.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.
Faulty — Clothing	344	*14·0*	215	*11·6*	216	*8·9*	120	*6·8*	323	*15·6*	132	*8·8*	247	*12·0*	62	*4·4*	105	*8·7*	53	*4·2*	132	*13·3*	122	*12·3*	2071	*10·4*
Faulty — Footgear	181	*7·4*	125	*6·7*	125	*5·1*	68	*3·9*	185	*8·9*	89	*5·9*	146	*7·1*	54	*3·8*	61	*5·0*	36	*2·8*	77	*7.7*	65	*6·5*	1212	*6·1*

As in previous years, it may be deduced from this table—first, that clothing is more often faulty than footgear ; second, that faults are about equally prevalent at all ages ; third, that boys' clothing is more often faulty than girls' (12% as against 8%) ; and, fourth, that urban children are more often faulty in clothing than rural (12%, as against 7%). Speaking generally, about 10% of all children have faulty clothing.

Skin.—The unwashed child in our elementary schools, speaking generally, speedily becomes verminous. I mean the habitually unwashed child.* It seems therefore unnecessary for demographical purposes to distinguish between " verminous " and " unclean " ; both terms indicate a serious neglect of washing or cleansing. But the distinction is made on each child's schedule, and it has been ascertained at trial counts that the unclean but not verminous may amount to about 1 or 2 per cent. of the total examined. In one counting of several hundred successive cases the total percentage of " verminous and unclean " was 67, of which 2 were unclean but not verminous and 65 were verminous.

It is believed that this is a usual proportion.

The figures are as follows :—

* We have occasionally, but rarely, seen an apparently habitually unwashed and uncombed girl free from nits and lice. I have wondered whether some skins repel lice as some unquestionably repel fleas.

Skin Diseases.

Age.	5—6								8—9								12—13				13—14				Totals and Means.	
Sex.	Boys.				Girls.				Boys.				Girls.				Boys.		Girls.		Boys.		Girls.			
Area.	Urban		Rural		Urban		Rural		Urban		Rural		Urban		Rural		Rural		Rural		Urban		Urban			
No. Inspected.	2449		1852		2436		1754		2062		1494		2045		1401		1208		1259		994		994		19948	
HEAD.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No	p.c.	No.	p.c.	No.	p.c.
Verminous and unclean	449	*18·4*	247	*13·3*	1044	*42·9*	760	*43·5*	342	*16·6*	153	*10·1*	1053	*51·0*	697	*49·8*	76	*6·3*	664	*52·4*	74	*7·4*	440	*44·0*	5999	*30·0*
Ringworm	24	*0·9*	20	*1.4*	13	*0·5*	10	*0·6*	11	*0·5*	10	*0·7*	5	*0·2*	9	*0·6*	4	*0·3*	1	*0·1*	3	*0.3*	2	*0·2*	112	*0·5*
Other locally infective ..	38	*1·5*	16	*0·8*	33	*1·4*	8	*0·4*	27	*1·3*	5	*0·4*	16	*0·8*	8	*0·5*	3	*0·2*	..	..	6	*0·6*	6	*0·6*	166	*0·8*
Other	64	*2·6*	54	*2·9*	44	*1·8*	44	*2·5*	44	*2·1*	38	*2·5*	51	*2·5*	36	*2·6*	48	*3·9*	48	*3·8*	35	*3·5*	16	*1·6*	522	*2·6*
Totals	575	*23·5*	337	*18·4*	1134	*46·6*	822	*46·9*	424	*20·5*	206	*13·8*	1125	*54·5*	750	*53·4*	131	*10·8*	713	*56·3*	118	*11·8*	464	*46·4*	6799	*34·0*
BODY.																										
Verminous and unclean	250	*10·1*	164	*8·8*	198	*8·1*	151	*8·6*	288	*14·0*	116	*7·8*	208	*10·1*	114	*8·3*	95	*7·8*	109	*8·7*	100	*10·0*	86	*8·6*	1879	*9·4*
Ringworm	1	..	1	..	..	..	1	..	..	..	..	..	..	..	1	*0·1*	..	..	..	..	..	..	..	..	4	*0·02*
Other locally infective ..	6	*0·2*	10	*0·5*	3	*0·1*	5	*0·3*	6	*0·3*	2	*0·1*	2	*0·1*	3	*0·2*	1	*0·1*	1	*0·1*	2	*0·2*	1	*0·1*	42	*0·2*
Other	31	*1·3*	15	*0·8*	38	*1·6*	18	*1·1*	23	*1·1*	31	*2·1*	18	*0·9*	15	*1·0*	22	*1·8*	21	*1·6*	17	*1·7*	18	*1·8*	267	*1·3*
Totals	288	*11·7*	190	*10·2*	239	*9·8*	175	*10·0*	317	*15·4*	149	*10·0*	228	*11·1*	133	*9·5*	118	*9·8*	131	*10·4*	119	*11·9*	105	*10·5*	2192	*11·0*

Verminous and Unclean Children.—From the data in this table we may compile the usual sectional tables of verminous conditions.

Group.	No. examined.	Verminous and unclean heads.	Verminous and unclean bodies.
Children, 5—6..	8491	29·4%	8·9%
,, 8—9..	7002	32·0%	10·3%
,, 12—14	4455	28·1%	8·7%
Boys	10059	13·3%	10·7%
Girls	9889	47·1%	8·7%
Urban	10980	31·0%	10·3%
Rural	8968	28·9%	8·3%

It will be seen that the figures for verminous conditions are not better but rather worse than in previous years. This does not necessarily mean that the evil is increasing, but rather that we have prosecuted this branch of our work with greater thoroughness. For three years we examined according to a method agreed upon, which was deemed to be sufficiently thorough though not exhaustive, and I do not think our standards altered much from year to year. But this year we have "speeded up." Great interest has been taken in the matter in the county; it has been debated in the County Council and the press; and it has formed a subject of repeated discussions at the meetings of our staff. The effect of this interest and determination to be rid of the evil has shown itself in a more intensive observation. Whereas for three years we recorded a fairly steady percentage of 20 to 23 for verminous heads in boys and girls taken together (boys, 6 to 7%, girls about 40%), in 1911 the percentage was 30 (boys 13%, girls 47%). I do not suppose for a moment that we have even yet indicated the full extent of the evil. It is not pretended that we have this year examined every girl thoroughly by letting down the hair and turning it over carefully. I have no doubt if we had done so we could still further have enlarged the repulsive percentages shown in this year's report.

Signs of improvement.

In spite of these depressing figures there are not wanting signs of a certain improvement though not perhaps in essentials. Some managers and head teachers have assured me that they do not find so many of the very bad cases, the cases "dropping lice." This is also the impression of our medical inspectors. There are, of course, degrees of badness even amongst the thoroughly bad cases. I can well believe that head teachers who, weekly or daily, survey their scholars either from their desk with a view to detect the children who are constantly fingering their heads, or by getting the children to file in front of them with a view to detect those whose heads are bespangled with nits,—both methods are in different cases relied on,—find a smaller proportion of the very gross cases. But this is not an essential improvement. Whether a child has two score lice in its head, or four score, or only half a score, is no doubt of some little consequence; but what does matter very greatly is the number of children affected. The more children affected in any group, the greater the risk for the others. Reduce the number of children affected by one-half and you will reduce the risk to the others not by one-half only, but by a much greater propartion.

Discussion of the figures.

The lesson of these figures will be better enforced if we consider boys and girls separately. Ten per cent. of the boys were verminous or unclean in their bodies. It must not be supposed that this 10% includes slight or transient cases of uncleanness. The cases were practically all those of markedly verminous conditions, or such a state of dirtiness that it would be hard to guess when they were last washed. In nearly all the cases the heads also were verminous, the clothing and underclothing were in keeping with the body, and in very many cases the mothers were known to be slatterns, and the homes filthy. Speaking generally, the children in this 10% group strike one as thoroughly and, many of them, hopelessly dirty and squalid.

That 10% are so bad is a very depressing fact, but it has one good and hopeful implication. It means that the other 90% come from homes where ablutions are practised

to such an extent that there was no great complaint to be made of the state of cleanliness of the bodies of the children. Possibly it may be taken to mean that the children were "tubbed" once every week or two at least; but whatever the frequency of the washing, its general adequacy is to my mind conclusively shown by the fact that, unlike the 10% group, scarcely any of the boys in this 90% group had vermin in the hair. The methods of cleanliness practised had sufficed to keep both heads and bodies clean in the case of the boys.

Let us now take the girls. Once more we have a 10% group and a 90% group. Approximately 10% (literally it is 8·7%) are recorded as verminous or unclean in their bodies amid circumstances of squalor like those of the boys described above. But when we come to the 90% group of the girls we find that, instead of the negligible number observed among the boys, we have about one-third of them with heads verminous and unclean. Now it is not to be supposed that the mothers are less careful about the girls than about the boys. It seems reasonable to infer that in the case of 90% of girls as well as of boys the parents had really an honest desire for and a fair ideal of cleanliness and a practice of it which was only baffled by the extraordinary difficulties presented by the long hair of the girls.

The two problems.

The line of argument leads to the suggestion that there are two separate problems involved in dealing with verminous conditions of school children:—(1) How to deal with the grossly unclean class, and (2) how to deal with the much larger group consisting almost exclusively of girls, and coming from homes where both the ideal and the practice of cleanliness already exist and only want perfecting.

These two problems require totally different methods of treatment, and the first is incomparably the more difficult. An ideal scheme would include both lines of action, and could only be carried out by co-operation between the Education and the Sanitary Authorites of an area, and it is much to be wished that some authority would make trial of such an ideal scheme on an experimental basis.

If the argument has been followed it will be seen that the first of the two problems is essentially a sanitary and sociological one. The crux of it depends on the existence of a residuum of the chronically ailing, the chronically destitute, the "can't works" and the "won't works," the drink-beguiled, the feeble-minded. While the second problem is essentially an educational one in the broad meaning that there is a good and promising faculty of improvement which only wants drawing out.

The relative numbers of children involved in each of these separate problems can be deduced approximately from the percentages. Taking 75,000 in round numbers as the child population, half girls and half boys, the very unclean class amounts to about 10% of this total, viz., about 7,500 children. If we take three children as representing a household it means 2,500 homes to be set in order.

Deducting this 10% from the percentages of boys and girls in the table on page 31, the other and more hopeful class of verminous children consists of about 3% of all the boys and 37% of the girls, that is to say, speaking roughly, over 1,000 boys and nearly 14,000 girls—15,000 children in all.

Thus, there are two of the less serious group of verminous children for every one of the thoroughly bad kind.

What can be done.

Leaving the consideration of the first problem,—the difficult sanitary and sociological problem,—on one side for the time, what can be done for the children of the other group? Here, to use a picturesque phrase, we are out not so much to clean heads as to alter habits. Education is the keynote. We must spread a knowledge of the true nature and proportions of the difficulty. We must show that what is wanted is a more thorough application of forces already existing. The mothers in this group, who are all *ex hypothesi* desirous of cleanliness, must be made to understand why they succeed with their boys and fail with their girls.

As always, we must begin with the children. Lectures and talks must be frequent in the schools. Pictures of these insect pests should be hung up; the simplicity of the whole

business as regards this 90% group must be insisted on. A stir should be made in one district after another by the *ad hoc* inspection of heads, and the exclusion first of marked cases, and afterwards of the less marked. For this purpose a nurse would be very helpful,—in fact, is indispensible unless indeed the medical staff is increased for the purpose. The cases should be followed to their homes by the nurse, not that the nurse should do the cleansing, but that she should demonstrate the best methods and explain the causes of failure.

If this were done efficiently, I have no doubt whatever that the evil could be brought down to close upon that final and difficult 10% which has been so often mentioned. Nor is this a matter of mere optimistic theorising. In Worcestershire, according to the reports of the School Medical Officer, a plan more or less resembling that which I am suggesting has been tried. A group of 50 schools where the verminous trouble among the girls amounted to 35% of cases was vigourously attacked with the result that the evil was reduced to 15%—a figure very near to that 10% which I contend is not amenable to these measures at all.

Life history of the louse.

Many of those who express horror at the thought of this pest have never seen a louse. More people are familiar with the appearance of the nits or egg cases ; but not a few would be puzzled to say how these nits could be distinguished from a powdering of fine scurf which at first glance they resemble. This is not surprising ; for the louse is very clever at keeping out of sight, and slips imperceptibly into the shadows as the hair is turned over swathe by swathe. Only by remembering this can one explain the firm belief held by some that many heads even though they show nits have no lice.

The louse is an insect with a semi-transparent body, and this adds to the difficulty of detection. Close behind the head it has three pairs of jointed legs provided with terminal claws or nippers, suggesting those of a miniature lobster. By means of these legs the louse swarms along the hair like a sailor up a rope. It lives by sucking the blood of its host.

Like all insects, the louse breathes by pores arranged along the side of the body, and by immersing the louse in an adhesive fluid, like very soapy water or paraffin, the pores can be readily stopped up and the louse smothered.

A fertile louse gaining access to a head will in a few hours deposit as many as 50 eggs, which are attached to the hair in characteristic little cases called nits shaped like the bowl of an egg cup. It is almost impossible to shift the nit along the hair ; but by vigorous combing or brushing one can sometimes cause it to snap off.

The nits are made of a hard substance looking like thin horn. When containing a living louse they are smooth and glossy, but when the louse has hatched out the nit looks crumpled and opaque ; it is quite easy with a small lens to say whether a nit is empty or still " vital."

No fluid or application appears to be known that will dissolve these egg cases and destroy the egg, or at least nothing that would not at the same time destroy the hair and skin.

The eggs remain in their cases attached to the hair for about a week and then hatch out, and the louse remains immature for about three weeks, but then becomes fertile and the whole process begins again.

Methods of getting rid of lice.

Only by understanding the essential facts of the life history of the louse can we make any intelligent effort to get rid of the pests. In the first place there is no simple means known of removing the nits except by boldly cutting the hair short off at the roots. Beyond all question this is the shortest way in bad cases. Failing this, we can but wait for the lice to hatch out and deal with them. But inasmuch as a lousy head at any given time contains eggs in all stages, some about to hatch out to-day, others to-morrow, and so on for a week, it is not sufficient to destroy the lice on one occasion ; we must renew the operation daily for seven or eight days, or some lice will escape us.

The killing of the lice is quite simple. I will mention three ways, any one of which will do perfectly well.

1. The thorough application of the fine tooth-comb is probably the oldest, and is certainly a very good, method. The comb, however, must be fine enough and its use must be very thorough, sweeping along the hair from root to tip. This takes time and is troublesome, at least, till elf-locks have been combed straight. The fine tooth-combing should of course, be done over a large plate or tea tray, so that the lice may be put into the fire at once.

2. A good lathering with soft soap and warm water will kill most of the lice present by smothering their breathing pores and suffocating them. The lather must be carefully worked in among the roots of the hair, a proceeding not very easy in the case of long thick hair.

3. If the head is bathed in paraffin the same smothering is more speedily effected, for the paraffin runs naturally into every crevice and corner of the scalp. It is, however, futile merely to dip a nail brush in paraffin and scrub in among the roots of the hair ; the lice must be soaked in it.

The method of paraffin is by no means free from danger of fire, and I always prescribe its use as follows :—Have ready two wash-hand bowls, one filled with warm water, and the other containing about half a pint or even less of paraffin (ordinary lamp oil, which is handy in every cottage). Do not forget to have a towel ready. Let down the child's hair over the bowl of paraffin and tell the child to shut its eyes. Then scoop up the paraffin with a small saucer and pour it on the top of the head. The paraffin instantly runs over every part of the scalp and through the hair into the bowl again. Repeat this several times. Then turn at once to the bowl of warm water and finish off with a good ordinary washing.

By this method the risks of accident from catching fire are almost *nil*. Should this dreadful accident happen, the towel dipped in the water and wrapped round the head would extinguish the flame at once.

The paraffin need not be thrown away after using ; it may be filtered through cloth and used again.

But the fine tooth-combing and the washing are undoubtedly sufficient. I make it a practice to ask every girl

I find at medical inspection who has particularly clean hair, especially if the mother happens to be present, what she does to keep it nice in spite of so many daily risks. The answer almost invariably is: An ordinary good washing once a week and tooth-combing every day.

Ringworm.—The sectional table for ringworm may now be presented, and along with it the figures for "other locally infective skin ailments" (which, for practical purposes, may be said to be nothing but those heavily crusting sores known as impetigo). The grouping of the latter closely resembles that of ringworm. All cases of impetigo, head and body, are included; but the cases of body ringworm which were not accompanied by scalp ringworm were so very few they have been left out of the account for convenience.

Group.	No. examined.	Scalp ringworm.	Impetigo (all cases).
Children, 5—6 ..	8491 ..	0·78% ..	1·4%
,, 8—9 ..	7002 ..	0·49% ..	0·98%
,, 12—14 ..	4455 ..	0·22% ..	0·44%
Boys	10059 ..	0·71% ..	1·2%
Girls	9889 ..	0·4% ..	0·86%
Urban	10980 ..	0·52% ..	1·3%
Rural	8968 ..	0·6% ..	0·69%

In both diseases there is a marked decline in prevalence as the age-group is older, and this has been constantly the case for three years now.

Prevalence of ringworm of the scalp.

For four years attention has been given to the prevalence of ringworm, and on grounds set forth in previous reports it is possible to formulate conclusions as follows:—

1. About 0·5% of the children examined show ringworm on the day of inspection, and probably the children not examined have it approximately in the same proportions.

2. It is probable that the number of cases occurring each year among our 70 or 80,000 children is at least 600 or 700.
3. Ringworm, or the kind common in England, seems to be a disease which luxuriates only in the earlier years of school life, afterwards it tends to be less prevalent until at 14 or 15 years the proportion of cases is negligible.
4. Ringworm seems to occur each year in only a relatively small number of the schools (about one-quarter of them).
5. As a rule it appears in the form of tiny groups of cases, one, two, or three cases in a school, which seem to die out readily without spreading.
6. In a few schools each year it appears in the form of larger groups of cases, in numbers far in excess of the average, and the numbers may tend to increase month by month.

To establish these conclusions on a perfectly firm foundation would require the examination of every school child in the county at frequent intervals—a laborious and not very fruitful undertaking. We must, therefore, accept the above conclusions as a reasonable working hypothesis and test them patiently by means of new facts as they arise. This year it is proposed to do no more than summarise the facts which have been observed.

General method of procedure.

On the day of inspection the medical inspectors themselves examine about one-third of the children of the schools (approximately 20,000), and a certain number of cases of ringworm are detected. The head teacher is then asked to produce any cases of suspicion among the other children (approximately 57,000), and in this manner other cases of ringworm come to light. It is probable that head teachers produce most of the typical, clearly marked, cases, and it is not at all likely that any extensive group of cases escapes them.

The number of cases of ringworm examined on the day of the routine annual inspection was 252; of these, 110 were detected by the medical inspectors and 142 were brought forward by the teachers. Thus, the proportion of cases found by the teachers was considerably less than that found by the medical inspectors, as was to be expected. Does this discrepancy indicate some degree of inequality of distribution as between the age-groups dealt with by the teachers and those dealt with by the medical inspectors? Such an inequality is conceivable, but we have some reason to suppose (Annual Report on 1910, p. 41) that the mean distribution of ringworm at the three age-periods examined by the inspectors approximates to the mean of all the years of school life. If so we must suppose that if the medical inspectors had examined the 57,000 children *seriatim* as they did the 20,000 they would have found at least twice as many cases as the head teachers brought forward.

When a head teacher presents a case of ringworm it is the duty of the medical inspector to examine into the possibility of their being other cases as well, to see any members of the same family who may be attending the school, and generally to rouse the teachers' interest and suspicion. And whenever a case of ringworm is detected at inspection, whether by the medical inspector or by the head teacher, the latter is cautioned to be watchful, and receives a definite instruction to report at once to the central office at Stafford the occurrence of other cases, or suspicious cases. Moreover, when children have been excluded for ringworm head teachers must report to Stafford all cases seeking re-admission on the expiration of the period of exclusion; they send in a detailed account of the appearance of the case, whether there is a doctor's certificate of fitness to return or not; and they do not re-admit until the School Medical Officer has given his consent. Thus attention is constantly kept fixed on the question, and it is expected that teachers will gradually come to notice and report more and more cases.

Distribution of cases of ringworm.

Out of 374 schools ringworm was found to be present in 116, *i.e.*, between one-quarter and one-third of the number,

1	School had	14 cases	(437 children in average attendance).
1	,,	11 ,,	(446 ,, ,,).
1	,,	9 ,,	(630 ,, ,,).
1	,,	8 ,,	(224 ,, ,,).
2	,,	7 each	(190 and 161 ,,).
1	,,	6 cases	(296 ,, ,,).
3	,,	5 each	(61 to 1,080 ,, ,,).
7	,,	4 ,,	(93 to 1,315 ,, ,,).
13	,,	3 ,,	(various averages).
22	,,	2 ,,	(,, ,,).
64	,,	1 ,,	(,, ,,).
116		252 cases.	

Thus it will be seen that in 99 out of the 116 schools ringworm occurred in the form of isolated cases or of tiny groups of two or three.

Ringworm schools of successive years.

If ringworm is a disease very apt to take root in a school when no adequate means are adopted to stop it, we might expect this fact to influence the distribution of ringworm to some extent. If 50 schools have ringworm this year, and if ringworm has a marked tendency to permeate a school when once it appears, we might expect this group of schools to have a pull over the non-ringworm schools in next year's distribution of cases. This does not seem to occur to any marked extent, at least so far as can be judged from the schools having ringworm and those not having ringworm on the one day of medical inspection. In 1910, there were 94 schools which had ringworm on the day of medical inspection; in 1911 there were 116; and, of these latter, 62 were among the schools with ringworm in the preceding year. These 62 schools might surely be expected to have a disproportionate share of the ringworm cases this year. As a matter of fact, these 62 schools had 144 cases in them, that is to say, roughly one-half the total number of ringworm cases (252). But 62 is, roughly, half the total number of schools having ringworm in 1911 (viz., 116). That is, half the number of schools

had half the number of cases, in spite of the fact that one half of the schools started with all the advantages of a known inoculation, which the other half had not.

This argument is not of great weight, but it is suggestive.

Distribution according to age.

The 252 cases classified according to age are shown in the following table :—

Discovered by the Medical Inspectors. Classified according to age on 1st January of year of inspection.			Presented by Head Teachers. Classified according to age last birthday.		
Age on 1st January.	No. of cases.	Per 1,000.	Age last birthday.	No of cases.	Per year group of 8,000 (approximately.)
—	—	—	3	2	64
—	—	—	4	14	
5—6	67	7·8	5	28	28 (and more)
—	—	—	6	12	12 (and more)
—	—	—	7	37	37
8—9	35	4·9	8	15	15 (and more)
—	—	—	9	6	6 (and more)
—	—	—	10	7	7
—	—	—	11	12	12
12—13	3	2·2	12	7	14
13—14	4		13	2	4
14—	1		14	—	—
	*110			142	
	252				

Strictly speaking, the above figures indicating the numbers of cases are useless for comparative purposes, unless they can be made the basis of percentages. This can be done at once so far as the cases are concerned which the medical inspectors examined, and the numbers per 1,000 examined are placed alongside the numbers of cases; but it is unfortunately impossible to do it in regard to the cases presented by head

* This total of 110 is 2 less than the routine cases given in the table on page 30. The latter number includes 2 cases which cleared up so quickly that they were not entered in the ringworm book from which the above data are taken.

teachers, as we do not know exactly for every year the numbers they had to draw from. But inasmuch as the numbers of children attending school at each year period (with certain exceptions) are necessarily about equal, being something over 8,000, or one-ninth of the total number of children in average attendance, it follows that (with the exceptions referred to), the figures relating to children presented by head teachers are in fact directly available for a rough comparison. The exceptions are as follows :—

(1). Taking ages three and four together, the 16 cases of ringworm occurring were drawn from a group of less than 4,000 children. That is to say, at the years 3 and 4 there was not one-fourth part of the average yearly proportion of 8,000 children to draw from. Therefore, to make the number of ringworm cases at ages 3 and 4 taken together comparable with those of later years it should be multiplied by four : instead of 16 we must suppose about 64.

(2). Similarly, at years 5 and 6, and years 8 and 9, the figures should be increased by some unknown amount in order to make them comparable with the other figures ; for at these years the numbers from which head teachers could draw cases were not about 8,000, as at other years, but 8,000, less a certain and, indeed, considerable number of children who had already been examined by the medical inspectors owing to overlapping of the groups.

(3). Owing to the fact that a good many children due to leave last year had in fact left before the date of medical inspection, the numbers of ringworm cases at age 12 and 13 were drawn from year groups containing less than 8,000 each. If the numbers of ringworm cases at these years are supposed doubled the inequality would probably be redressed.

When these rough-and-ready corrections are made it will be seen how strikingly the figures in both columns suggest that ringworm in Staffordshire is especially a disease of very young children. After about age 8 or 9 the cases are relatively insignificant in number.

Method of dealing with ringworm in 1911.

If our experience of ringworm in Staffordshire schools continues to be what it has been it seems probable that we need have no great concern about the ringworm occurring in nine-tenths of our schools. An odd case appears, it has no successors, nothing more is heard of it. This simplifies the administrative problem greatly. All that we have to do is to mark down as early as possible the few schools where ringworm shows a tendency to spread.

Within a day or two after the medical inspection of a school the schedules and medical notes are sent in to the central office, and the ringworm cases are entered in a "ringworm book," designed to show at a glance the state of affairs in each school concerned. Week by week, fresh cases reported by head teachers are added to the record. If the proportion of ringworm cases much exceeds the usual half per cent.; or if, after medical inspection, a dropping fire of fresh cases is reported from a school; the school is put on a "ringworm epidemic list." This year we adopted the following plan. As soon as possible after being put on the list the school was visited by a medical inspector and every child in the school was examined for ringworm. All cases discovered were excluded, and arrangements were made to visit the school once every four weeks, on which occasions all the ringworm children and all fresh cases of suspicion were had up for re-inspection. The interest of the head teacher was strongly enlisted, slight and doubtful cases were exhibited to him, and he was encouraged to be alert and bold in the detection of similar cases himself. It was strictly laid on him to report at once all cases of the slightest suspicion and to await instructions. And, finally, directions were given that on no consideration would any case of ringworm be re-admitted without the sanction of the School Medical Officer, whether returning with a medical certificate or not.

Fourteen schools were so treated, and the facts are summarised in the following table:—

Schools in which ringworm showed a tendency to spread.	On day of inspection.			1911. Month of Medical Inspection **(heavy type)** and the numbers of the cases occurring subsequently. 1912.											
	Cases of ringworm.	Average attendance.	% cases of ringworm.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.
1 Lichfield, St. Joseph's R.C. ..	3	102	3	**Mar.**	—	—	3	1	—	2	—	—	—	1	1
2 Lichfield, Stowe Street ..	2	115	1·7	—	**April**	2	3	4	—	3	—	—	—	3	4
3 Rugeley C.E.	9	630	1·4	—	—	**May**	10	2	—	—	—	—	—	1	—
4 Armitage C.E.	7	190	3·9	—	—	**May**	—	8	—	—	2	—	—	—	—
5 Cheadle Wesleyan	2	232	0·9	—	—	—	—	—	—	**Sept.**	—	3	—	—	—
6 Shareshill Parochial	5	120	4	—	—	—	—	—	—	**Sept.**	—	—	—	4	2
7 Gnosall Parochial	4	178	2·2	—	—	—	—	—	—	—	**Oct.** 4	4	1	3	—
8 Anslow C.	4	93	4	—	—	—	—	—	—	—	**Oct.**	1	—	—	—
9 Leek Parish C.E.	11	446	2·4	—	—	—	—	—	—	—	**Oct.**	8	—	2	—
10 Eccleshall C.E...	8	224	3·5	—	—	—	—	—	—	—	—	**Nov.** 1	4	—	—
11 Stone, Christ Church C.E. ..	14	437	3·2	—	—	—	—	—	—	—	—	**Nov.**	1	—	—
12 Uttoxeter, The Heath C. ..	6	296	2	—	—	—	—	—	—	—	—	—	**Dec.** 3	3	—
13 Hulme and Werrington C. ..	7	161	4·3	—	—	—	—	—	—	—	—	—	**Dec.**	—	—
14 Trentham, Rough Close C.E...	5	61	8	—	—	—	—	—	—	—	—	—	**Dec.**	1	2

It will be noticed that in nearly all the schools the percentage of ringworm cases was greatly in excess of the half per cent. average in the administrative area. This fact alone was sufficient for the placing of these schools on the "epidemic list," and in several cases the step was speedily justified by the occurrence of numerous fresh cases in the school.

It is altogether too early to consider whether the plan adopted has, or to what extent it has, checked the spread of ringworm in these schools. Certainly at Lichfield St. Joseph's, at Rugeley C.E., and at Armitage C.E. the flow of fresh cases after a time became checked; but odd cases are again appearing. Outbreaks have, however, died down spontaneously before. At Lichfield, Stowe Street, the plan has certainly not succeeded. The result is not striking.

One point must be clearly kept in view; it is only infection during school time which this plan can aim at controlling; infection outside school goes on as before.

Next year it is hoped to report on the effect of a scheme suggested in the Annual Report on the year 1910 for dealing with ringworm cases in schools without recourse to universal exclusion. The Education Committee have now sanctioned the scheme.

Eyes.—Children of 5—6 are not tested for acuity of vision. Older children are tested by means of Snellen's type.

"Minor non-infective ailments" includes blepharitis, conjunctivitis, phlyctenular ulcers, etc.

The following are the total figures of defective sight of all degrees whether of one or both eyes, and also of eye diseases:—

Eye Diseases and Defective Sight.

Age.	5—6								8—9								12—13				13—14				Totals and Means.	
Sex.	Boys.				Girls.				Boys.				Girls.				Boys.		Girls.		Boys		Girls.			
Area.	Urban		Rural		Urban		Rural		Urban		Rural		Urban		Rural		Rural.		Rural		Urban		Urban			
No. Inspected.	2449		1852		2436		1754		2062		1494		2045		1401		1208		1259		994		994		19948	
	No.	p.c.	No.	p.c.	No.	p.c.	No	p.c.	No.	p.c.	No.	p.c.	No	p.c.	No.	p.c.	No.	p.c.	No,	p.c.	No.	p.c.	No.	p.c.	No.	p.c.
Minor (non-infective) ailments	76	*3·1*	51	*2·7*	96	*3·9*	56	*3·2*	92	*4·5*	47	*3·1*	88	*4·3*	71	*5·1*	47	*3·9*	65	*5·2*	37	*3·7*	26	*2·6*	752	*3·8*
Infec. opth. ailments	2	*0·1*	4	*0·2*	5	*0·2*	5	*0·3*	2	*0·1*	3	*0·2*	8	*0·4*	3	*0·2*	1	*0.1*	2	*0·2*	2	*0·2*	..	..	37	*0·2*
Opacities	5	*0·2*	3	*0·2*	7	*0·3*	5	*0·3*	12	*0·6*	4	*0·3*	7	*0·3*	2	*0·1*	4	*0·3*	11	*0·9*	4	*0·4*	7	*0·7*	71	*0·4*
Squint	26	*1·1*	19	*1·0*	27	*1·1*	21	*1·2*	34	*1·7*	30	*2·0*	44	*2·1*	27	*1·9*	11	*0·9*	15	*1·2*	4	*0·4*	5	*0·5*	263	*1·3*
Other	20	*0·8*	5	*0·3*	15	*0·6*	2	*0·1*	16	*0·8*	7	*0·5*	11	*0·5*	6	*0·4*	*2*	*0·2*	1	*0·1*	3	*0·3*	2	*0·2*	90	*0·4*
Totals ..	129	*5·3*	82	*4·4*	150	*6·1*	89	*5·1*	156	*7·6*	91	*6·1*	158	*7·7*	109	*7·7*	65	*5·4*	94	*7·5*	50	*5·0*	40	*4·0*	1213	*6·1*
Sight defective, one or both eyes	..	..	..	..	..	..	..	..	744	*36·0*	425	*28·4*	792	*38·6*	440	*31·3*	231	*19·2*	329	*26·0*	293	*29·5*	347	*34·9*	3601	*31·4**

*The number of children examined at ages 8—9 and 12—14 was **11,457.** This figure forms the basis of the percentage.

The figures for eye diseases are similar to those of last year. Roughly about two-thirds are minor non-infective ailments.

As to defects of sight apart from eye diseases, the total of cases is 3,601 out of 11,457 children examined or 31% In 1910 the percentage was 30·9% ; in 1909 it was 28·9%.

The incidence according to age, sex, and locality is as follows :—

Group	No. examined.	Optical defects.
Children, 8—9 ..	7002 ..	34%
,, 12—14 ..	4455 ..	26·9%
Boys	5758 ..	29%
Girls	5699 ..	33%
Urban	6095 ..	35·7%
Rural	5362 ..	26%

This table very closely resembles the tables of previous years. There is a considerable excess in the number of eye defectives recorded at age 8—9 over the numbers recorded at age 12—14. Are optical defects really more numerous at earlier ages ? Or is it that children at 12—14 are cleverer at interpreting blurred retinal impressions ? Both suppositions are possible ; perhaps each contributes to the result.

Girls as a class show a greater number of optical defects than boys. It has been suggested that girls' eyes are more severely strained in school work than boys', as, for example, in sewing. If girls were sewing all day the suggested cause would seem more nearly adequate. I have wondered whether part of the result could be due to the greater indecision in girls, who are, I think, in general more scrupulous than boys in interpreting blurred retinal images ; boys give a guess in a doubtful case and are often right, while girls in the same doubt confess their indecision. But it must be admitted that this explanation does not hold together with the fact that boys at 8—9 and 12—14 always yield a larger proportion of cases of dull and backward children than girls.

Urban children, as a class, seem to have considerably more optical defects than rural, as was the case in previous years.

Of the 3,601 cases of optical eye defect, 1,001 had a defect of $\frac{6}{18}$ or worse in one or both eyes ; some of these, no doubt, would not be susceptible of relief from spectacles, but the great majority would be benefited. As it is, our records show that only 260 were known to be provided with glasses, and many with glasses would be outside the above group of $\frac{6}{18}$ and worse. Whether the glasses were precisely the best our opportunities did not allow us to ascertain.

I desire to call attention to the existence of a group of eye-defectives who are not bad enough to be sent to a blind school, but whom it is dangerous to attempt to teach in ordinary schools even when the eyes are assisted by glasses. Since medical inspection began in 1908 the average of children blind enough for institutional, or blind school, treatment has been four or five each year. This is a small number compared with the number of children known to be suffering from an extreme degree of visual defect. There are large block letters of a certain size which a normal sighted child should read easily at a distance of about 180 feet. There are many children who cannot make out these large letters at 20 feet. If we take the next degree better, namely, the children who can just make out at 20 feet the large letter that the normal sighted should read at 180 feet, the numbers are much greater. Taking these two groups together, there were in 1909, 52 of them, and although it is impossible to say how many are being injured by attempting to read ordinary books and diagrams even though they may be wearing spectacles, it is certain that a considerable number are suffering. And there are, of course, many among the grades of eye-defect slightly better than the above,—children for example with very high degrees of myopia, whom perhaps spectacles have enabled to take a place among normal sighted children,—who are risking their eyes in the effort to adapt themselves to the normal school standards.

The Committee will probably feel that sooner or later the problem of the not quite blind will have to be taken up. The methods of dealing with the difficulty would seem to be either by enlarging the scope and graduating the classes of existing blind schools, or by having special classes in ordinary schools, when their circumstances admit of it, in which children

can have a larger amount of oral instruction, use larger types and diagrams, etc.

Ears.—Defective hearing was discovered by means of the whispered voice at 20 feet distance.

This is undoubtedly a fair practical test, though it is rough and unscientific; it also consumes more time that its unscientific character justifies. To wait until a little child has walked the requisite distance and, after the test, has come back again, may seem a trivial delay, but it easily makes the difference between examining 35 and examining 40 children a day; or, as I prefer to put it, it prevents us giving a little more precious time to the study of special cases. In the coming year we shall experiment on rough and ready tests for hearing which avoid this delay.

The only ear "disease" we can attempt to look for is ear discharge, and even this we have, in general, to be content to record as such owing to the impossibility in country school work of sifting the cases by any satisfactory examination of the ear. When traces of purulent or semi-purulent discharge are to be seen about the meatus there can generally be no mistake; sometimes soft wax in young children is mistaken for "running," especially by mothers, and sometimes ears with a minute discharge give no visible signs of it. In the latter cases the nose is a most sensitive aid to the detection of ear discharge, and a rapid sniff close to the ear should never be omitted.

The figures are as follows:—

Ear Disease and Defective Hearing.

Age.	5—6								8—9								12—13				13—14				Totals and Means.	
Sex.	Boys.				Girls.				Boys.				Girls.				Boys.		Girls.		Boys.		Girls.			
Area.	Urban.		Rural.		Urban.		Rural.		Urban.		Rural.		Urban.		Rural.		Rural.		Rural.		Urban.		Urban.			
No. Inspected.	**2449**		**1852**		**2436**		**1754**		**2062**		**1494**		**2045**		**1401**		**1208**		**1259**		**994**		**994**		**19948**	
	No.	p.c.	No	p.c.	No.	p.c.	No	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No	p.c.	No	p.c.	No	p.c.	No	p.c.	No.	p.c.
Hearing defective	77	*3·1*	39	*2·1*	90	*3·7*	43	*2·4*	174	*8·4*	79	*5·3*	145	*7·1*	56	*4·0*	53	*4·4*	72	*5·7*	61	*6·1*	55	*5·5*	944	*4·7*
One or both ears discharging ..	20	*0·8*	12	*0·6*	28	*1·2*	13	*0·7*	27	*1·3*	9	*0·6*	20	*0·9*	12	*0·9*	11	*0·9*	21	*1·7*	6	*0·6*	14	*1·4*	193	*0·9*

The following sectional table shows the incidence of defective hearing and ear discharge of the various groups into which the children may be thrown according to age, sex, and locality, urban or rural :—

Group.	No. examined.	Ear discharge.	Defective hearing.
Children, 5—6 ..	8491 ..	0·8% ..	2·9%
,, 8—9 ..	7002 ..	0·9% ..	6·4%
,, 12—14 ..	4455 ..	1·1% ..	5·4%
Boys	10059 ..	0·8% ..	4·8%
Girls	9889 ..	1·0% ..	4·6%
Urban	10980 ..	1·0% ..	5·4%
Rural	8968 ..	0·8% ..	3·8%

The figures in this table are similar to those of previous years. The difference between urban and rural is less marked however, though it is in the same sense as in previous years.

A table illustrating the dependence of deafness on mouth breathing will be found on p. 59, where it is introduced for convenience of comparison.

Teeth.—The distribution of dental caries is shown in the following table :—

Dental Caries.

Age.	5—6								8—9								12—13				13—14				Totals and Means.	
Sex.	Boys.				Girls.				Boys.				Girls.				Boys.		Girls.		Boys.		Girls.			
Area.	Urban		Rural		Urban		Rural		Urban		Rural		Urban		Rural		Rural		Rural		Urban		Urban			
No. Inspected.	2449		1852		2436		1754		2062		1494		2045		1401		1208		1259		994		994		19948	
	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.
Dentures sound	502	*20·5*	340	*18·8*	502	*20·6*	337	*19·2*	223	*10·4*	143	*9·6*	251	*12·3*	141	*10·1*	215	*17·8*	260	*20·9*	210	*21·0*	203	*20.3*	3327	*16·6*
Cases with 4 or more teeth carious	1053	*43·0*	870	*48·3*	1025	*42·0*	845	*48·3*	1021	*49·6*	829	*55·2*	957	*46·5*	725	*51·8*	366	*30·1*	354	*28·0*	279	*27·9*	265	*26·5*	8589	*43·0*

The existence of caries is judged of by inspection merely, and indeed a somewhat rapid inspection ; no probe or mirror is used. "Sound denture" means the absence of any tooth showing caries ; it does not mean that every tooth is present. A more minute inspection would, no doubt, reduce the number of cases recorded as having sound dentures. The figures agree substantially with those of previous years.

The sectional table may be prepared according to age, sex, and locality, as follows :—

Group.	No. examined.	Sound dentures.	Four or more teeth carious.
Children, 5—6 ..	8491 ..	19·8% ..	44·6%
,, 8—9 ..	7002 ..	10·8% ..	50·4%
,, 12—14 ..	4455 ..	19·9% ..	28·3%
Boys	10059 ..	16·2% ..	43·9%
Girls	9889 ..	17·1% ..	42·1%
Urban	10980 ..	17·2% ..	41·9%
Rural	8968 ..	16·0% ..	44·5%

These figures are in substantial agreement with those of previous years. The number of cases of highly carious dentures is very great indeed, and, in view of the totally inadequate means of dental treatment in country districts, overwhelming ; and yet clearly something will have to be attempted. It would be difficult to exaggerate the importance of the financial and educational loss entailed by this mass of carious trouble. The sufferings of the children and the enforced absences constitute a grievous handicap, to say nothing of the diminished health and vigour which painful and imperfect mastication are known to cause.

Caries and other Defects.—It must be confessed that there is as yet no very satisfactory explanation of the widely prevalent disorder of caries. Certain conditions, universal in western civilised lands at least, have been suggested as efficient causes, namely, the use of soft pappy foods and the neglect of mouth cleansing. No one who has followed the careful work of the exponents of this school will deny the cogency of many of their arguments. But there are

manifest gaps. It is the exception that "proves" the rule in the sense of putting it to the test. These alleged causes are practically universal whereas caries of teeth is not universal; and although a universal condition may be the cause of an effect which is not universal, but has exceptions, yet the mind cannot rest content until it is satisfied about the exceptions. When we know why so many people have good teeth who regularly eat pappy food and never cleanse the teeth, we shall be better able to judge of the validity of these theories of the causation of caries. In any case, it is a far cry to such a revolution of dietetic and personal habits as would on these theories banish caries. In the meantime, the dentist can and does stop caries, here and now, as the Americans say; and from the School Medical Officer's point of view, that is what is wanted.

During the year Dr. Mackenzie, Dr. Maclean, and myself recorded various conditions of cleanliness, discolouration, etc., of teeth, in addition to the fact of caries. These records are brought into relationship with the records of caries in a table to which a few definitions must be premised.

UNCLEANNESS.—By this term is meant a condition in which particles cling to the teeth in such a manner that they could be rubbed off with a brush or the edge of a glass spatula.

DISCOLOURATION.—Perfectly sound, clean, and healthy-looking teeth fall into three types—(1) The ivory white, (2) the ivory yellow, (3) the nacreous white. These appearances may be marred by discolouration of various sorts, namely, stainings or pigmentations of the teeth, which either cannot be removed at all or not without strong scraping with a sharp edge. In one form of discolouration there is a general darkening or staining of the whole tooth. This is said to indicate death of the tooth pulp. No washing or scrubbing makes any difference; it is not in any sense uncleanness.

Another form of discolouration is where the surface of the teeth show coloured flecks or lines, brown or black. The flecks may coalesce into patches. If the pigmentation takes the form of lines they are often curved and running parallel to the edge of the gum at some distance down the tooth.

Sometimes there is a greenish slimy discolouration of the tooth which is said to be due to bacterial colonies.

These flecks and lines, like the staining above mentioned, should certainly not be taken as evidence of ordinary uncleanness; but they could no doubt be scaled off, and sedulous brushing might prevent their formation.

TARTAR.—Commonly one finds one or two teeth heavily encrusted with tartar, while the neighbouring teeth are entirely free. The whole appearance is very suggestive of some local disorder affecting the particular teeth.

FAULTY ENAMEL.—This means ridged or honeycombed enamel surfaces and crenulated enamel edges.

SUPPURATIVE CONDITIONS.—This includes gumboils, purulent sinuses, suppurating gums, etc.

Age.	5-6	8-9	12-14
No. Examined.	747	374	322
Carious Dentures (one or more carious teeth) ..	86·7%	93·9%	81·7%
Discolouration	37·6%	48·9%	64·3%
Uncleanness	43·9%	52·6%	59·3%
Tartar	2·6%	5·3%	6·8%
Crowded and Irregular ..	2·2%	15·4%	17·0%
Faulty Enamel	0·2%	5·3%	0·9%
Suppurative Condition ..	1·7%	1·8%	1·2%
Gums Bleeding and Spongy	—	—	1·2%

Boys and girls are approximately equally represented.

Whoever cares to compare this table with the similar tables in the reports of the last two years will notice that the numbers examined are smaller and the findings considerably more. We started by trying to make these detailed enumerations universal, but it was finally determined to build up the table on the statistics of fewer schools exhaustively examined. I should hesitate to say even yet that the examination was quite exhaustive within the limits of our conditions of work (no dental mirror or artificial light), but it may be fairly claimed that the figures now closely represent the facts.

The table supports the conclusions drawn in previous years. There is no sort of numerical relationship between the distribution of uncleanness and that of caries, nor any simultaneous variation such as would support the view of a causal interdependence. At all ages the children with unclean teeth are far fewer than the children with carious teeth ; or, in other words, at all ages a large number of children have caries whose dentures are nevertheless clean. And, finally, it may be remarked that uncleanness is least at age 5—6, when surely tooth brushing is most neglected.

The fact would seem to be that uncleanness, discolouration, and perhaps tartar are, like caries itself, but signs of a growing disorder of the mouth.

Mouth Breathing and Caries.—It is commonly supposed that mouth breathing is bad for the teeth. Thus, Mr. Colyer, the well-known dental surgeon, says :—" Mouth breathing arising from nasal obstruction produces a persistent gingivitis of the gum in the front of the mouth, and so predisposes the teeth to caries."‡

Last year a table was prepared showing the relationship of caries and mouth breathing. A group of nearly 700 mouth-breathers of various ages was examined, and the percentage of sound dentures among them was compared with the percentage of all the children in the county. Only children of equal age-periods were compared with one another. The result was to show that the mouth-breathers, at all age-periods examined, had a somewhat smaller percentage of sound dentures than the average. The figures, however, were by no means striking or convincing, and this year the research was varied.

It was considered that the distribution of caries in children of 5—15 years is a complicated matter. We have temporary teeth, nearing the end of their purpose in life, being supplanted by permanent teeth which, at least for the most part, arrive on the scene in good condition. The former decay, perhaps inevitably ; and it is the latter, therefore, which may be

‡ Colyer, J. F. & S. ; "Dental disease in its relation to general medicine" : p. 165. Longmans : London, 1911.

expected to offer a fairer field for observation of the effect of variable conditions of breathing, etc.

On the other hand, it may be contended that the period during which we as school medical officers can observe the permanent teeth, namely, till the fourteenth year of life, is too short to allow of the development of the effects of any particular condition.

Be that as it may, attention has been fixed this year on children of 12—14, in whom, as a rule, most of the temporary teeth have been shed.

Moreover, an effort has been made to avoid the disturbance due to the personal equation of the observer by limiting the comparison to the children in the same schools. Thus all the children compared have been in identical conditions so far as that can be inferred from living in the same neighbourhood, attending the same school, and being inspected by the same inspector; the only difference is that in one case the children are mouth-breathers, in the other they are not. The figures are presented in the following table:—

CHILDREN OF 12—14.

		Sound dentures.	
	No. examined.	No. of cases.	Per cent.
Sound dentures (no caries) among:—			
a. Children who were mouth-breathers	362 ..	69 ..	19·0%
b. Other children attending the same schools as the children in *a.*	2156 ..	463 ..	21·4%

The slight difference in the percentages is quite insufficient to lend support to the view that mouth breathing favours the spread of caries; the statistical evidence was slight enough last year; this year it is negligible.

So much was I prepossessed with the idea that mouth breathing was detrimental to the health of teeth that the above result raised doubts in my mind of the delicacy of this method of comparison. The method was therefore tested

in a matter which previous experience had shown to be susceptible of very striking demonstration, namely, the question of the dependence of deafness on mouth breathing. The schools containing mouth-breathers used in the above comparison were again taken, and deafness among the mouth-breathers was compared with deafness among the other children with the following result, which is introduced here merely for the sake of illustration :—

DEAFNESS AND MOUTH BREATHING.

CHILDREN, 12—14.

		Deafness.	
	No. examined.	No. of cases.	Per cent.
Deafness among :—			
a. Children who were mouth-breathers	362 ..	89 ..	24·5%
b. Other children attending the same schools as the children in *a.*	2156 ..	91 ..	4·2%

The proportion of deaf cases among those who were not mouth-breathers agrees with the general average of the county (see table on p. 51) ; the proportion among the mouth-breathers is about six times as large ; and thus the disastrous influence of mouth breathing on the ear is strikingly demonstrated.

To return to the case of carious teeth. It seems evident that, had mouth breathing promoted the spread of caries to any appreciable extent, this method of comparison must have shown it ; and I can only conclude that the doctrine of the evil effects of mouth breathing on teeth stands in need of re-examination.

Poverty and Caries.—The effect of poverty on caries may be tested by comparing the percentage of sound dentures among children living in 1—3 roomed houses with the percentage of sound dentures among other children in the same neighbourhoods, attending the same schools and examined by the same medical inspectors, but coming from larger houses.

Last year this was done in the case of about 1,000 children at various ages, and it appeared that at all age-periods examined the children living in 1—3 roomed houses had a somewhat larger percentage of sound dentures than their fellow scholars living in larger houses. The advantage was not very striking, but such as it was it seemed to lend statistical support to an impression which I think is rather prevalent, namely, that poor children with a hard upbringing are less liable to caries of the teeth than others.

This year the analysis has been repeated in the case of children of 5—6 and of 12—14. The teeth concerned in the former group are, of course, mainly the milk teeth, those of the latter group the permanent teeth.

The following table illustrates the effect of living in narrow home circumstances on the milk teeth :—

CHILDREN, 5—6.

	No. examined.	Sound dentures. No. of cases.	Sound dentures. Per cent.
Sound dentures (no caries) among :—			
a. Children coming from 1—3 roomed houses ..	747 ..	173 ..	23·1%
b. Other children attending the same schools as the children in *a.*	3398 ..	681 ..	20·0%

The next table presents the children of 12—14 :—

CHILDREN, 12—14.

	No. examined.	Sound dentures. No. of cases.	Sound dentures. per cent.
Sound dentures (no caries) among :—			
a. Children coming from 1—3 roomed houses ..	300 ..	60 ..	20·0%
b. Other children attending the same schools as the children in *a.*	1546 ..	318 ..	20·5%

The slight difference in favour of children coming from 1—3 roomed houses at age 5—6 is well within the limits of casual variation.

These comparisons show that, in these groups of children at least, neither in regard to the milk nor to the permanent teeth did the fact of living in narrow home circumstances make any appreciable difference to the number of carious cases.

Nose and Throat.—It will be well to define the terms used.

ENLARGED TONSILS.—Any distinct prominence of one or both tonsils is recorded as enlarged tonsils.

MOUTH BREATHING.—As it is impossible to practise a routine palpation of the naso-pharynx in school examinations we have discarded the category, adenoids. Our nearest approach to it is mouth breathing. It has been found in certain countings that only one-sixth or one-seventh of the number of mouth-breathers were free from adenoids or tonsils.*

Every child who is seen at medical inspection to be holding the mouth open is assumed to be a mouth-breather. The child with lips perfectly closed is easily distinguished from the child with half-open lips as he sits waiting his turn. The latter children may often be noticed to close the lips for a minute, but very soon the habitual posture is resumed. Among such children there are many degrees of impediment to the free passage of air through the nose. Some can apparently breathe quite well through the nose,—at least when quiet,—if only they are perpetually reminded to keep the mouth shut. Perhaps these children only have real obstruction of the nose during "colds"; but the colds may have been so frequent as to establish the habit of keeping the mouth open. Some children develop marked obstruction of the nose very quickly, apparently from the sudden swelling of the erectile tissue of the septum and turbinate bones. Such a child may breathe quite easily through the nose in one's consulting room, but have marked obstruction immediately afterwards in the cold air outside. In other cases, again,

*YEARSLEY, MACLEOD "Occurrence of Adenoids," etc.—*Brit. Jour., Children's Diseases*, Vol. VII., p. 61, London.

the embarrasment of breathing when the child is told to keep the mouth shut is marked and constant.

Chronic Pharyngitis.—This term is limited to the cases exhibiting the complete syndrome of chronic pharyngitis,—the dry and congested throat, cough, swollen mucous glands, etc.

Enlarged Cervical and Submaxillary Glands.—Not every case of palpable cervical glands is here included. In almost all children, healthy or unhealthy, the cervical glands can be made out by the skilled finger. Not so the submaxillary, however. Only glands which are distintcly enlarged are now counted.

Nose and Throat.

Age.	5--6								8—9								12—13				13—14				Totals and Means.	
Sex.	Boys.				Girls.				Boys.				Girls.				Boys.		Girls.		Boys.		Girls.			
Area.	Urban		Rural.		Urban		Rural		Urban		Rural		Urban		Rural		Rural		Rural		Urban		Urban			
No. Inspected.	**2449**		**1852**		**2436**		**1754**		**2062**		**1494**		**2045**		**1401**		**1208**		**1259**		**994**		**994**		**19948**	
	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.
Mouth-breathing ..	432	*17·6*	322	*17·8*	297	*12·1*	213	*12·1*	331	*16·0*	278	*18·6*	239	*11·6*	168	*12·0*	132	*10·9*	95	*7·5*	79	*7·9*	56	*5·6*	2642	*13·1*
Chronic pharyngitis	27	*1·2*	3	*0·2*	18	*0·7*	6	*0·4*	53	*2·5*	10	*0·7*	39	*1·9*	9	*0.6*	8	*0·7*	15	*1·2*	36	*3·6*	27	*2·7*	251	*1·3*
Tonsils enlarged ..	459	*18·7*	293	*16·3*	454	*18·7*	289	*16·2*	369	*17·9*	281	*18·8*	411	*20·2*	278	*20·0*	205	*17·0*	249	*19·6*	172	*17·2*	200	*20·0*	3660	*18·3*
Cervical glands enlarged	722	*29·5*	439	*24·3*	727	*29·8*	353	*20·0*	494	*24·0*	311	*20·7*	536	*26·1*	276	*19·9*	128	*10·3*	171	*13·6*	123	*12·3*	123	*12·3*	4403	*22·0*
Submax. glands enlarged	5	*0·2*	5	*0·3*	2	*0·1*	2	*0·1*	11	*0·5*	4	*0·3*	6	*0·3*	2	*0·1*	1	*0·1*	..	..	1	*0·1*	1	*0·1*	40	*0·2*
Totals ..	1645	*67·3*	1062	*58·9*	1498	*61·4*	863	*48·9*	1258	*60·9*	884	*59·1*	1231	*60·1*	733	*52·5*	474	*39·1*	530	*41·9*	411	*41·1*	407	*40·7*	10996	*54.9*

Mouth breathing is present in 13% of cases. In the reports on the two previous years the percentage is about 5 or 6. This increase is due to a revision of our standards. In consultation together the medical inspectors agreed that the cases of slight mouth breathing were more numerous than had been imagined, and that our record might be considerably increased.

Chronic pharyngitis figures as 1·3% of the children examined. In previous years it has been as high as 5 and 6 per cent. When we began inspection we agreed to count as chronic pharyngitis all cases of children showing the enlarged mucous glands in the mucous membrane of the throat ; but after a time it became apparent that many healthy children had these enlarged glands without a history of pharyngitis. It was therefore agreed to limit the term chronic pharyngitis to cases which were clinically such.

Enlarged submaxillary glands so rarely come before us, and so irregularly, that it is hardly worth while to give them a place in our large tables.

A sectional table may now be made to illustrate the incidence of the more important of the above conditions according to age, sex, and locality :—

	Group.	No. examined.	Mouth breathing.	Enlarged tonsils.	Enlarged cervical glands.
Children,	5—6	8491	14·8%	17·6%	26·3%
,,	8—9	7002	14·5%	19·1%	23·0%
,,	12—14	4455	8·1%	18·5%	12·2%
Boys	..	10059	15·6%	17·6%	22·0%
Girls	..	9889	10·8%	19·0%	22·1%
Urban	..	10980	13·0%	18·8%	24·8%
Rural	..	8968	14·5%	17·7%	18·7%

Allowing for the increased number of cases of mouth breathing referred to above, this table in the main resembles the corresponding tables of previous years. Mouth breathing and enlarged cervical glands are prevalent at the earlier years of life and become less prevalent at age 12—14. It is not so with enlarged tonsils. There is a rather marked

excess of mouth breathing among boys as compared with girls, a discrepancy which did not appear in previous years. The discrepancy occurs at every age period as may be seen by referring to the large table of page 63. There is also an excess of enlarged cervical gland cases among urban children as compared with the rural, which did not occur in the two previous years.

Heart.—" Functional defects " include hæmic murmurs, irritability, and rapid or irregular pulse without obvious lesions. Dilatation is always put down under " diseased lesions."

" Feeble circulation " is the name given to a condition marked by blueness, or technically cyanosis, of cheeks, ear tips, and extremities generally, which is exhibited by a large number of children. It is commonly set down to feeble circulation, and is so called in our tables for want of a better and equally recognisable term ; but the term is an entire misnomer ; the children who exhibit this sign to perfection are often big sturdy boys and girls with rough coarse hair and skin. The symptom is probably a vaso-motor one, and its pathological analogies are to be looked for in Raynaud's disease. Marked cases not infrequently occur, but slighter degrees of it are very common. Cases of the slightest degree might be mistaken for cases of the effect of cold on the skin ; but, though cold always intensifies the symptom, it is commonly quite possible to distinguish between a cold hand and a cyanosed hand, *i.e.*, one which even in warm weather would exhibit the symptom.

Heart and Circulation.

Age.	5—6								8—9								12—13				13—14				Totals and Means.	
Sex.	Boys				Girls				Boys				Girls				Boys		Girls		Boys		Girls			
Area.	Urban		Rural		Urban		Rural		Urban		Rural		Urban		Rural		Rural		Rural		Urban		Urban			
No. Inspected.	**2449**		**1852**		**2436**		**1754**		**2062**		**1494**		**2045**		**1401**		**1208**		**1259**		**994**		**994**		**19948**	
	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.
Developmental defects	2	*0·1*	..	..	1	..	3	*0·2*	..	..	..	..	2	*0·1*	3	*0:2*	1	*0·1*	1	*0·1*	1	*0·1*	..	..	14	*0·07*
Functional defects ..	124	*5.0*	66	*3·5*	131	*5·5*	77	*4·4*	92	*4·4*	61	*4·1*	157	*7·7*	91	*6·5*	45	*3·7*	80	*6·3*	43	*4·3*	73	*7·3*	1040	*5·2*
Disease lesions ..	33	*1·3*	25	*1·3*	40	*1·6*	21	*1·2*	59	*2·9*	34	*2·3*	66	*3·2*	35	*2·5*	20	*1·6*	23	*1·8*	15	*1·5*	24	*2·4*	395	*1·9*
Feeble circulation ..	49	*2·0*	94	*5·1*	48	*1·9*	73	*4·2*	88	*4·2*	105	*7·0*	117	*5·7*	93	*6·6*	153	*12·6*	216	*17·2*	75	*7·5*	119	*11·9*	1230	*6·2*
Totals ..	208	*8·5*	185	*9·9*	220	*9·1*	174	*10·0*	239	*11·3*	200	*13·4*	342	*16·7*	222	*15·9*	219	*18.0*	320	*25·4*	134	*13·4*	216	*21·6*	2679	*13·3*

The figures of the table are very similar to those of the corresponding table of the previous years, except that more cases of "feeble circulation" have been recorded.

There were 14 *developmental defects* out of 19,948 cases examined. *Disease lesions, i.e.*, all cases with cardiac signs and symptoms thought to indicate present or past organic disease, including all cases of dilatation, were 1·9% of cases. There were 5·2% of *functional disorders*; at and after age 8—9 girls exhibited a greater proportion of these cases than boys, but the total figures are too small to support inferences. The proportionate figures for the so-called *feeble circulation* are much greater in the older groups of children. This, and the great prevalence of the symptom, are illustrated in the following table of a group of 1,727 children which was more exhaustively investigated for this symptom:—

Group.	No. examined.	So-called feeble circulation.
Children, 5—6..	973 ..	24·8%
,, 8—9..	394 ..	41·1%
,, 12—14	360 ..	70·8%
Boys	889 ..	37·6%
Girls	838 ..	38·6%

Lungs.—The lung diseases represented at school inspections are very few, since diseases of the lung for the most part quickly incapacitate children and keep them at home.

Cases of pulmonary phthisis are shown fully in the table of Tuberculosis; in the present table they are included among "other" lung ailments.

Lungs.

Age.	5—6								8—9								12—13				13—14				Totals and Means.	
Sex.	Boys.				Girls.				Boys.				Girls.				Boys.		Girls.		Boys.		Girls.			
Area.	Urban		Rural		Urban		Rural		Urban		Rural		Urban		Rural		Rural		Rural		Urban		Urban			
No. Inspected.	2449		1852		2436		1754		2062		1494		2045		1401		1208		1259		994		994		19948	
	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No	p.c.
Catarrhs	115	*4·7*	44	*2·4*	122	*5·0*	41	*2·3*	64	*3·1*	12	*0·8*	62	*3·0*	15	*1·1*	13	*1·1*	11	*0·9*	14	*1·4*	12	*1·2*	525	*2·6*
Pleural affections ..	..	..	..	..	..	..	..	..	..	..	1	*0·1*	..	..	..	..	..	..	..	..	..	..	..	..	1	..
Asthma	..	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	3	*0·3*	..	..	2	*0·2*	..	..	7	*0·03*
Dulness in patches ..	95	*3·8*	90	*4·9*	110	*4·5*	92	*5·2*	121	*5·8*	123	*8·2*	95	*4·6*	95	*6·8*	106	*8·8*	57	*4·5*	70	*7·0*	41	*4·1*	1095	*5·5*
Other	1	..	1	..	2	*0·1*	1	..	..	..	..	..	3	*0·1*	1	*0·1*	2	*0·2*	1	*0·1*	..	..	..	..	12	*0·06*
Totals ..	211	*8·7*	136	*7·3*	234	*9·6*	134	*7·6*	186	*9·0*	136	*9·1*	160	*7·8*	111	*7·9*	124	*10·3*	69	*5·5*	86	*8·6*	53	*5·3*	1640	*8·2*

Catarrhs were more frequent among the younger children; there were twice as many at age 5—6 as at age 8—9, and four times as many as at age 12—14, roughly speaking.

Kidneys.—If signs of Bright's disease are noticed the urine is examined, and in all cases of suspicion a suitable notice is sent to the parent with an urgent request that the child be at once taken to a doctor. If necessary, we exclude the case until assurance can be had that the child is fit for school life.

Five cases of suspicion were noted in 1911.

Nervous System.—Under "Functional" are included nervousness, nervous frequency of micturition, tremors with no suspicion of organic disease, etc.

Nervous System.

Age.	5–6								8–9								12–13				13–14				Totals and Means.	
Sex.	Boys				Girls				Boys				Girls				Boys		Girls		Boys		Girls			
Area.	Urban		Rural		Urban		Rural		Urban		Rural		Urban		Rural		Rural		Rural		Urban		Urban			
No. Inspected.	2449		1852		2436		1754		2062		1494		2045		1401		1208		1259		994		994		19948	
	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.
Spasmodic affections ..	4	*0·2*	3	*0·2*	1	..	..	..	3	*0·1*	7	*0·5*	4	*0·2*	..	..	1	*0·1*	1	*0·1*	..	..	1	*0.1*	25	*0·1*
Paralysis	11	*0·4*	10	*0·5*	4	*0·2*	3	*0·2*	4	*0·2*	5	*0·4*	4	*0·2*	5	*0·4*	6	*0·5*	2	*0·2*	3	*0·3*	1	*0·1*	58	*0·2*
Epilepsy	2	*0·1*	1	..	1	..	..	..	1	..	1	*0·1*	1	..	2	*0·1*	4	*0·3*	2	*0·2*	3	*0·3*	..	..	18	*0·1*
Chorea	1	..	..	..	..	..	..	..	..	..	1	*0·1*	3	*0·1*	..	..	..	..	1	*0·1*	..	..	2	*0·2*	8	*0·04*
Headache	5	*0·2*	6	*0·3*	9	*0·4*	10	*0·6*	23	*1·1*	59	*3·9*	43	*2·1*	74	*5·3*	80	*6·6*	145	*11·5*	23	*2·3*	66	*6·6*	543	*2·7*
Functional	28	*1·2*	29	*1·6*	37	*1·5*	26	*1·5*	25	*1·2*	25	*1·7*	33	*1·6*	27	*1·9*	20	*1·7*	13	*1·1*	14	*1·4*	10	*1·0*	287	*1·4*
Totals	51	*2·1*	49	*2·7*	52	*2·1*	39	*2·2*	56	*2·7*	98	*6·7*	88	*4·3*	108	*7·7*	111	*9·3*	164	*13·0*	43	*4·3*	80	*8·0*	939	*4·64*

The figures in general closely resemble those of previous years. Cases of *headache* increased in numbers with the increasing age of the group ; taking the children over 8 years old, since at an earlier period it is difficult to be sure of the fact, there were about twice as many cases at age 12—14 as there were among children of 8—9. At these ages also, namely, 12—14 and 8—9, there were about twice as many girls proportionately who complained of headache as boys. The disorders called *functional* were equally divided among the various groups of children. There were 18 cases of *epilepsy*.

Mental Condition.—Only children of 8—9 and 12—14 are tested.

Mental Condition.

Age.	8—9								12—13				13—14				Totals and Means.	
Sex.	Boys.				Girls.				Boys.		Girls.		Boys.		Girls.			
Area.	Urban		Rural		Urban		Rural		Rural		Rural		Urban		Urban			
No. Inspected.	**2062**		**1494**		**2045**		**1401**		**1208**		**1259**		**994**		**994**		**11457**	
	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.
Bright and Fair ..	1786	*86·7*	1289	*86·3*	1837	*89·9*	1288	*92·0*	1065	*88·3*	1156	*91·6*	883	*88·9*	919	*92·5*	10223	*89·3*
Dull and Backward	269	*13·0*	195	*13·0*	199	*9·7*	110	*7·8*	133	*11·0*	102	*8·3*	107	*10·7*	70	*7·0*	1185	*10·3*
Mentally deficient ..	7	*0·3*	10	*0·7*	9	*0·4*	3	*0·2*	8	*0·7*	1	*0·1*	4	*0·4*	5	*0·5*	47	*0·4*
Imbecile	..	..	..	..	..	..	..	..	2	*0.1*	..	..	..	..	..	..	2	*0·02*

The percentages are similar to those of the tables of the previous years. There were 47 *mentally defectives* and 2 *imbeciles* detected among the children who were up for their routine examination (11,457). The percentage of these each year for the last three years has varied very little, viz., from 0·36 to 0·4.

The *dull and backward* are about 10%. In 1909 they were about 5%, and in 1910 about 7%. We are gradually feeling our way to defining this almost indefinable class; I daresay we have not yet reached its true, or practically useful, limits. The children of 8—9 yielded 11% of cases, those of 12—14, 9·2%. As in previous years, boys yielded a larger proportion than girls, 12·2% of boys and 8·4% of girls. This seems to be a constant inequality at these ages, and Dr. Tredgold, one of our greatest authorities on the mental ailments of children, reminds us of a fact which probably explains it. The average weight of the brain of both boys and girls at age 7 is the same, namely, 40 ounces; but by age 14 the male brain has increased to 46 ounces, while the female brain has only gained half an ounce. The more active the growth the greater the risks of failure, and failure might be expected to show itself in impaired mental ability.*

Anaemia.—The following are the figures:—

* Tredgold, A. F.: "Dull and backward children." Brit. Journ. of Children's Diseases. Vol. VIII., Oct., 1911, p. 451. Adlard & Son, London.

Anæmia.

Age.	5—6								8—9								12—13				13—14				Totals and Means.	
Sex.	Boys				Girls				Boys				Girls				Boys		Girls		Boys		Girls			
Area.	Urban		Rural		Urban		Rural		Urban		Rural		Urban		Rural		Rural		Rural		Urban		Urban			
No. Inspected.	**2449**		**1852**		**2436**		**1754**		**2062**		**1494**		**2045**		**1401**		**1208**		**1259**		**994**		**994**		**19948**	
	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.
Marked ..	25	*1·0*	10	*0·5*	45	*1·8*	16	*0·9*	24	*1·1*	6	*0·4*	48	*2·3*	15	*1·1*	6	*0·5*	13	*1·1*	14	*1·4*	19	*1·9*	241	*1·2*
Slight ..	408	*16·6*	292	*15·8*	470	*19·2*	302	*17·3*	276	*13·4*	164	*11·0*	371	*18·1*	207	*14·8*	117	*9·7*	192	*15·2*	82	*8·2*	115	*11·5*	2996	*15·0*
Totals ..	433	*17·7*	302	*16·3*	515	*21·1*	318	*18·2*	300	*14·5*	170	*11·4*	419	*20·4*	222	*15·9*	123	*10·1*	205	*16·3*	96	*9·6*	134	*13·4*	3237	*16·2*

Taking all degrees of anæmia together there were 16·2% of cases in 1911 : in 1909 the percentage was 14·6, and in 1910 it was 12·9.

A sectional table may be prepared showing the incidence of anæmia of all degrees on the various groups of children.

Group.	No. Examined.	All cases of Anæmia.
Children, 5—6..	8491 ..	18·4%
,, 8—9..	7002 ..	15·8%
,, 12—14	4455 ..	12·5%
Boys	10059 ..	14·1%
Girls	9889 ..	18·3%
Urban	10980 ..	17·3%
Rural	8968 ..	14·9%

The relationships shown in this table agree closely with those of previous years ; there is a marked decline of anæmia at age 12—14 ; there is a preponderance of cases among girls as a class, and this is marked at all ages ; and there is a preponderance among urban children.

Speech.—The following are the figures relating to speech :—

Speech.

Age.	5–6								8–9								12–13				13–14				Totals and Means.	
Sex.	Boys.				Girls.				Boys.				Girls.				Boys.		Girls.		Boys.		Girls.			
Area.	Urban		Rural		Urban		Rural		Urban		Rural		Urban		Rural		Rural		Rural		Urban		Urban			
No. Inspected.	2449		1852		2436		1754		2062		1494		2045		1401		1208		1259		994		994		19948	
	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.
Stammering ..	17	*0·7*	10	*0·5*	2	*0·1*	4	*0·2*	10	*0·5*	15	*1·0*	2	*0·1*	2	*0·1*	12	*0·9*	6	*0·5*	7	*0·7*	3	*0·3*	90	*0·4*
Lisping	12	*0·5*	11	*0·6*	17	*0·7*	12	*0·7*	12	*0·6*	8	*0·6*	13	*0·6*	8	*0·6*	6	*0·5*	3	*0.2*	2	*0·2*	1	*0·1*	105	*0·5*
Indistinctness ..	19	*0·8*	16	*0·9*	0	*0·4*	10	*0·6*	17	*0·8*	21	*1·4*	12	*0·6*	7	*0·5*	9	*0·7*	7	*0·6*	5	*0·5*	8	*0·8*	141	*0·7*
Idioglossia ..	22	*0·9*	28	*1·5*	18	*0·7*	13	*0·7*	4	*0·2*	11	*0·8*	2	*0·1*	6	*0·4*	4	*0·3*	..	..	..	..	1	*0·1*	109	*0·5*
Totals ..	70	*2·9*	65	*3·6*	47	*1·9*	39	*2·2*	43	*2·1*	55	*3·7*	29	*1·4*	23	*1·6*	31	*2·5*	16	*1·3*	14	*1·4*	13	*1·3*	445	*2·2*

This table closely resembles those of the two previous years. *Lisping* is rather more prevalent at the earlier years; *indistinctness* is about equal at all ages; *idioglossia* or the persistence of baby language is, of course, much more marked at the earlier ages. *Stammering* is most prevalent at ages 12—14. At all ages boys as a class have more stammerers than girls, which is perhaps to be associated with the fact mentioned when discussing dull and backward children, namely, that the brain of boys at ages from about 7 to 14 is undergoing more rapid changes of growth than the brain of girls.

Boys also have a larger share of total defects of speech than girls.

Tuberculosis.—The diagnosis of tubercular affections is made on clinical evidence only; speaking generally, only the marked and highly probable cases are included, and our figures are, therefore, minimal. The table is as follows:—

Tuberculosis.

Age.	5—6								8—9								12—13				13—14				Totals and Means.	
Sex.	Boys.				Girls.				Boys.				Girls.				Boys.		Girls.		Boys.		Girls.			
Area.	Urban		Rural		Urban		Rural		Urban		Rural		Urban		Rural		Rural.		Rural.		Urban		Urban			
No. Inspected.	2449		1852		2436		1754		2062		1494		2045		1401		1208		1259		994		994		19948	
	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.
Glandular ..	6	*0·2*	2	*0·1*	3	*0·1*	4	*0.2*	6	*0·3*	..	..	7	*0·3*	4	*0·3*	1	*0·1*	5	*0·4*	2	*0·2*	2	*0·2*	42	*0·20*
Osseous	1	..	..	..	1	..	1	..	2	*0·1*	2	*0·1*	3	*0·1*	2	*0·1*	1	*0·1*	1	*0·1*	..	..	1	*0·1*	15	*0·07*
Pulmonary ..	1	..	..	..	1	..	1	..	1	..	..	..	4	*0·2*	1	*0·1*	2	*0·1*	1	*0·1*	1	*0·1*	..	..	13	*0·06*
Abdominal ..	3	*0·1*	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	*0.1*	..	..	..	..	6	*0·03*
Cutaneous.. ..	..	..	..	..	1	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	*0.1*	4	*0·02*
Totals ..	11	*0·4*	3	*0·2*	6	*0·2*	7	*0·4*	9	*0·4*	2	*0·1*	16	*0·7*	7	*0·5*	4	*0·3*	8	*0·7*	3	*0·3*	4	*0·4*	80	*0·40*

There is this year, as it happens, a falling off in the number of cases of pulmonary phthisis. There were 34 cases in 1909 and 33 in 1910; this year we only met with 13 cases. With this exception the percentages are similar to those of the previous years.

Rheumatism.—There were 16 cases in which rheumatism was recorded; 12 were cases of acute rheumatism, 1 of "growing pains" of three months duration, 1 of muscular rheumatism in the legs, and 2 were cases of single joint rheumatism, probably not actue rheumatism.

Rickets.—It is impossible to attempt an exhaustive search for minor signs of rickets at school inspection under our present circumstances; in general, well marked cases of rickety deformity are alone noted, and these form the basis of the table on page 80. One of us (Dr. Moffett) has, however, noted the slighter cases as well, and her figures are included in a subsidiary table on rickets, page 81.

Rickets (Marked cases only).

Age.	5–6				8–9				12–13		13–14		Totals and Means.	
Sex.	Boys		Girls		Boys		Girls		Boys	Girls	Boys	Girls		
Area.	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Rural	Rural	Urban	Urban		
No. Inspected.	**2449**	**1852**	**2436**	**1754**	**2062**	**1494**	**2045**	**1401**	**1208**	**1259**	**994**	**994**	**19948**	
	No. p.c.	No. p.c.	No. p.c.	No. p.c.	No. p.c.	No. p.c.	No. p.c.	No. p.c.	No. p.c.	No. p.c.	No. p.c.	No. p.c.	No. p.c.	
All Inspectors ..	63 *2·6*	49 *2·6*	45 *1·9*	24 *1·4*	35 *1·7*	24 *1·6*	22 *1·1*	17 *1·2*	17 *1·4*	6 *0·5*	14 *1·4*	4 *0·4*	320 *1 6*	

The usual sectional table may be compiled, as follows :—

ALL INSPECTORS.

Group.	No. examined.	Marked cases of rickets.
Children, 5—6..	8491 ..	2·1%
,, 8—9..	7002 ..	1·39%
,, 12—14	4455 ..	0·9%
Boys	10059 ..	2·0%
Girls	9889 ..	1·1%
Urban	10980 ..	1·6%
Rural	8968 ..	1·5%

A similar sectional table has been prepared from Dr. Moffett's more nearly exhaustive figures. As it is not intended to continue the enumeration of the slighter cases of rickets next year, although it may be resumed after an interval, it seems a fitting opportunity to focus the results of Dr. Moffett's observations during the three years. The figures for 1911 are therefore included in the series.

DR. MOFFETT'S CASES OF RICKETS.
(All degrees, marked and slight).

	1909.	1910.	1911.
Children, 5—6 ..	32·0% ..	30·8% ..	26·4%
,, 8—9 ..	23·0% ..	21·9% ..	13·4%
,, 12—14 ..	18·0% ..	13·4% ..	11·2%
Boys	29·4% ..	29·5% ..	23·0%
Girls	20·0% ..	16·2% ..	12·6%
Urban	28·0% ..	29·2% ..	19·8%
Rural	23·0% ..	19·1% ..	16·2%

There is a diminution in the relative numbers of cases of rickets as the age of the children increases which can only mean that the deformities of rickets spontaneously mend as the child grows. Not only is this shown in the table of Dr. Moffett's cases, but also in the table of marked deformities only. That is to say, the tendency to improve affects the severe cases of rickety deformity as well as the slighter cases.

There is also some preponderance of cases among urban children, as is generally stated in the text books. There is, however, a decided preponderance of cases among boys as contrasted with girls, both as to the marked deformities and the more numerous slighter cases. It is, of course, somewhat more easy to miss cases of rickets among girls because of their long hair and more voluminous clothing, but the difference between the sexes seems almost too great to be entirely due to cases so missed.

Deformities.—The same classification has been adopted as in former years and the table presented on p. 83 agrees with the previous tables, except that the percentage of deformities due to pathological causes is smaller. Hitherto, we have included in the list of pathological deformities the host of small rickety defects noted for a special research by Dr. Moffett. This year we have kept them separate, and there are included among pathological deformities only the major or marked deformities of rickets.

Hernias are included among developmental deformities, since hernias before age 15 are due primarily to weakness of body walls and only secondarily to strains. This is illustrated by the fact that hernias decrease in frequency during the earlier years of life, although the opportunity of strains must increase with the growing activity of the child. There were 34 cases of hernia, 23, or 0·27%, among children of 5—6, 9, or 0·12%, among children of 8—9, and only 2, or 0·04%, among children of 12—14. There were 24 cases among the boys and only 10 among the nearly equal number of girls. There were 20 cases among urban children and 14 among rural.

The *thyroid enlargement* referred to in the table is the name given to a slight fullness of the thyroid body, of which many cases are found apparently not pathological, or, at least, not the beginning of true goitre. It increases in prevalence with the age of the group. At age 12—14 there are about 6 times as many relatively, and at age 8—9 about twice as many relatively, as at the lower age of 5—6. At all ages, but especially at age 12—14, there are many more cases among the girls than among the boys.

Deformities.

Age.	5—6								8—9								12—13				13—14				Totals and Means	
Sex.	Boys.				Girls				Boys				Girls				Boys		Girls		Boys		Girls			
Area.	Urban		Rural		Urban		Rural		Urban		Rural		Urban		Rural		Rural		Rural		Urban		Urban			
No Inspected.	2449		1852		2436		1754		2062		1494		2045		1401		1208		1259		994		994		19948	
A. Developmental:	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.
(i) Hernias ..	7	*0·3*	7	*0·4*	7	*0·3*	2	*0·1*	5	*0·2*	3	*0.2*	1	..	..	..	2	*0·2*	..	..	..	..	..	..	34	*0·17*
(ii) Thyroid enlargement*	12	*0·5*	16	*0·8*	23	*0·9*	13	*0·7*	7	*0·3*	24	*1·6*	39	*1·9*	45	*3·2*	28	*2·3*	103	*8·2*	20	*2·0*	56	*5·6*	386	*1·9*
(iii) Other ..	158	*6·4*	116	*6·3*	94	*3·9*	76	*4·3*	125	*6·1*	125	*8·3*	115	*5·7*	69	*4·9*	91	*7·5*	68	*5·4*	70	*7·0*	50	*5·0*	1157	*5·8*
B. Pathological ..	100	*4·1*	130	*7·0*	70	*2·9*	69	*3·9*	68	*3·3*	75	*5·0*	60	*2·9*	56	*4·0*	66	*5·5*	73	*5·8*	40	*4·0*	42	*4·2*	849	*4·2*
C. Traumatic ..	21	*0·8*	11	*0·6*	23	*0·9*	22	*1·3*	28	*1·3*	20	*1·3*	23	*1·1*	10	*0·7*	14	*1·2*	19	*1·5*	19	*1·9*	10	*1·0*	220	*1·1*
Totals ..	298	*12·2*	280	*15·1*	217	*8·9*	182	*10·3*	233	*11·2*	247	*16·5*	238	*11·6*	180	*12·8*	201	*16·6*	263	*20·9*	149	*14·9*	158	*15·8*	2646	*13·2*

*Not true goitre apparently (see text).

Other Diseases.—Out of the 19,948 children examined, there were 233 cases of diseases which could not be classified under any of the former categories. Of these, 71, or 0·35%, were cases of debility or delicacy without any recognisable causative disease. Of these, 37 were boys and 34 girls, 26 were urban and 45 rural.

Nutrition.—The general table of percentages is as follows :—

Age.	5—6				8—9				12—13		13—14		Totals and Means.
Sex.	Boys		Girls		Boys		Girls		Boys	Girls	Boys	Girls	
Area.	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Rural	Rural	Urban	Urban	
No. Inspected.	**2449**	**1852**	**2436**	**1754**	**2062**	**1494**	**2045**	**1401**	**1208**	**1259**	**994**	**994**	**19948**

	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.
Good	172	*7.1*	123	*6·6*	206	*8·4*	144	*8·2*	110	*5·3*	112	*7·5*	166	*8·1*	146	*10·4*	83	*6·8*	171	*13.6*	55	*5.6*	164	*16·5*	1652	*8.2*
Normal ..	1821	*74·3*	1434	*77·5*	1762	*72·4*	1321	*75·3*	1476	*71·6*	1096	*73·4*	1389	*67·9*	963	*68·8*	896	*74·3*	865	*68·6*	769	*77·3*	668	*67·2*	14460	*72·6*
Sub-normal ..	456	*18·6*	295	*15·9*	468	*19·2*	289	*16·5*	476	*23·1*	286	*19·1*	490	*24·0*	292	*20·8*	229	*18·9*	223	*17·8*	170	*17·1*	162	*16·3*	3836	*19·2*

The percentages of the totals in this table are almost the same as those of the previous annual report on the year 1910.

The usual sectional table may be prepared :—

Group.	No. examined.	Nutrition. Good.	Normal.	Sub normal.
Children, 5—6	8491 ..	7·5% ..	74·8% ..	17·7%
,, 8—9	7002 ..	7·6% ..	70·4% ..	22·0%
,, 12—14	4455 ..	10·6% ..	71·9% ..	17·5%
Boys ..	10059 ..	6·5% ..	74·5% ..	19·0%
Girls ..	9889 ..	10·0% ..	70·6% ..	19·4%
Urban ..	10980 ..	7·9% ..	71·9% ..	20·2%
Rural ..	8968 ..	8·6% ..	73·5% ..	17·9%

These figures are similar to those of the year 1910. The same percentage of subnormal cases, approximately, is found in all the groups into which the children were thrown, namely, 18 to 22 per cent. There is, however, a greater percentage of cases of good nutrition at age 12—14, and a decidedly greater percentage among girls than among boys. These differences were present also in the similar tables of 1909 and 1910.

The difference in both instances is caused by a great expansion of the number of " good " cases among girls of 12—14. At age 5—6 there is no practical difference between boys and girls ; at age 8—9 there is a preponderance of " good " cases among girls ; but at age 12—14 there are between two and three times as many " good " cases, relatively, among the girls as among the boys.

This is presumably due to the earlier arrival of adolescence in girls, bringing with it a stimulation of bodily growth and vigour.

HOME CIRCUMSTANCES AND SOCIAL CONDITIONS.

Entries on the schedule cards as to occupation of parents and number of rooms in the houses in which the children live are usually made by head teachers on the best information they can get. Absolute accuracy cannot be guaranteed,

but there is no compulsion on teachers to fill in the entries unless they feel sure of the facts.

Two facts seemed of prime importance, the occupation of the mother when it took her away from home during the day, and the number of rooms in the house. The latter may be taken in general to indicate a poverty line, though there are no doubt exceptions; well-to-do cottagers may live in two or three-roomed houses, not because they cannot afford larger, but because there are no larger to be had, or because, being newly-married or having only one child, they do not need a larger.

We have returns referring to houses inhabited by 17,078 of the children examined. This is a large proportion of the total number, viz., 19,948. It need hardly be said that many of these children were brothers and sisters living in the same house. If three children may be taken to represent the average family, the above figures should be divided by three in order to get at the probable number of separate homes inquired about.

Of the children of whom we have returns, 1,548 came from houses of three or fewer rooms, in other words, 9% of them.

In regard to 825 children out of the total number examined we were informed that the mother was engaged in work which took her away from home during the day, and there may have been others. In other words, at least 4% of the children came from homes lacking the constant supervision of a mother.

These percentages are practically the same as in previous years.

PREVENTION OF THE SPREAD OF INFECTIOUS DISEASES.

Closure of Schools and Exclusion of Scholars.

To secure the detection of infectious diseases at the earliest possible moment it is an instruction to all head teachers within the county administrative area to notify at once suspected cases of infectious disease amongst their scholars to the local Medical Officer of Health. The head teacher is to exclude such scholars temporarily from school in

order that the cases may be investigated. The diseases to which this instruction applies are :—Chicken-pox, diphtheria, measles, mumps, scarlet fever, small-pox, and whooping cough. The absence of several children of one family from school at the same time, no matter what name be given to the complaint that keeps them at home, has also to be notified by the head teacher to the local Medical Officer of Health. School attendance officers are instructed to report suspicious cases that come under their notice to the head teacher of the school which the child or family attends and the head teacher thereupon reports the case to the local Medical Officer of Health. Special forms are supplied to head teachers on which to make these notifications.

After despatching the notification to the local Medical Officer of Health, and until the Medical Officer of Health has issued special instructions to the head teacher, the latter will deal with the suspected case in the manner already laid down in the Regulations to Managers and Teachers issued by the Education Committee of the Staffordshire County Council ; but the directions of the local Medical Officer of Health are in every case to be strictly observed, notwithstanding any such regulations.

On receipt of the above mentioned notifications the Medical Officer of Health may proceed to order the exclusion of individual children or the closure of the whole school, according to circumstances. This he may do under Art. 57 of the Code as the agent of the Sanitary Authority ; or he may transmit his advice or suggestions to the School Medical Officer and have his instructions endorsed by the latter.

In addition to this power of action of the local Medical Officer of Health, the School Medical Officer may, on evidence presented to him and after investigation, in like manner order the closure of a school or the exclusion of particular scholars. For example, under Art. 45 (b) of the Code the facts of an epidemic may be reported to the School Medical Officer by the Education Committee ; or again, under Art. 53 (b) if a medical inspector in the course of the examination of a school is of opinion that a child is in a state likely to spread disease or vermin, or is incapable of receiving proper benefit from school instruction owing to defects of

health or physical or mental fitness, the child is excluded from school and information is sent at once to the School Medical Officer who, if he approves, signs a certificate of exclusion.

Thus the School Medical Officer may authorise the closure of schools or the exclusion of particular children in three sets of circumstances :—

1. When the Education Committee calls his attention to the desirability of these operations.
2. When a medical inspector suggests them.
3. When a local medical officer of health suggests them.

The total number of children excluded on the certificate of the School Medical Officer under Article 53 (b) of the Code was 1044.

CHILDREN DEFECTIVE IN VARIOUS WAYS.

Blind and Deaf Children.—The number admitted into institutions and day schools during the year 1911, who were the offspring of parents residing within our borders, are :—

Blind	..	..	..	7
Deaf	..	..	..	6

In addition one blind child and three deaf children were transferred to our institutions from the institutions of other Authorities ; and three of our blind and two of our deaf children were transferred to the care of other Authorities.

Mentally Defective and Epileptic Children.—There were 47 mentally defective children and two imbeciles detected among the 11,457 children examined *seriatim* with a view to discover these defects. Of the mentally defective children, 29 were boys and 18 girls. The imbeciles were boys. Adding the mentally defective and the imbecile together (49), this gives a percentage of 0·42 of the children examined. Since it is true that, speaking generally, once a mentally defective is always a mentally defective, this percentage may be extended to all the children of the county.

Of epileptics, there were 18 cases found among the 19,948 children examined as to this ailment, or 0·09%.

Relative Numbers of the Blind, Deaf, Epileptic, and Mentally Defective.—It will be of interest to the Committee to know approximately the average number of cases of children grievously afflicted in the above-mentioned ways arising in the administrative area. The averages are based on our own observations since 1909, the first complete year of medical inspection. The number of children examined for these defects was much the same each year.

With regard to those blind enough and deaf enough for institutional treatment, the greatest efforts are made by school attendance officers every year to ransack the area and bring them to light, and it is believed that the numbers discovered are practically the whole number of cases actually existing among the population of school age. In 1909 there were 2 blind and 8 deaf; in 1910, 4 blind and 7 deaf; in 1911, as just said, 7 blind and 6 deaf: totals, 13 blind and 21 deaf.

These figures give a yearly average of production within the area of—

Blind	.. ..	4·3 cases.
Deaf	.. ..	7·0 ,,

Percenting these numbers on the average number on the roll during the same years, viz., 83,650, we get :—

"Institutionally"	Blind	..	0·0051% of all children.
,,	Deaf	..	0·0083% ,,

These figures may now be brought into relationship with the average percentages of the epileptic and mentally defective during the same three years :—

Blind	.. ..	about	5 cases per	100,000.
Deaf	.. ..	,,	8 ,,	,,
Epileptics	.. ..	,,	96 ,,	,,
Mentally defective and imbecile	..	,,	397 ,,	,,

(Average of three years, 1909-11.)

HYGIENE AND PHYSICAL EXERCISES.

The need of promoting hygiene, including temperance and physical exercises, has for some time engaged the attention of the Staffordshire Education Committee. The general principle of action has been to train the teachers and imbue them with just notions and the right spirit, and then to encourage them to put into practice among the children committed to their care the knowledge they have gained. This, rather than formal instruction of the children, has been deemed the more useful course.

The following particulars have been kindly put at my disposal by the department for Higher Education :—

HYGIENE.—Classes limited to teachers in Elementary and Secondary Schools in the administrative county are arranged each year at four centres, and are conducted by Miss Maud Curwen, the County Lecturer in Hygiene. The Centres are varied from year to year in order to give opportunities to attend the classes to teachers in various parts of the county.

The syllabus, which covers a two-years' course, requires practical experimental work on the part of the members of class.

Up to the present time classes, attended by about 273 individuals, have been held at twelve centres.

PHYSICAL EXERCISES.—Classes for instruction in Physical Exercises, for men and women teachers in Elementary Schools in the administrative county, are conducted by Mr. E. G. Atkinson and Miss M. T. Hallett respectively.

In addition to instruction in the exercises included in the Board of Education's syllabus, theoretical instruction and practice in teaching are included in the work of the classes.

Miss Hallett also visits schools in the elementary area of the administrative county in order to advise the teachers and to ensure that the instruction is properly applied in the schools.

Classes have been held at various centres, and have been attended by over 397 teachers. As in the case of hygiene classes, the centres are varied from year to year.

MISCELLANEOUS WORK.

Examination of Pupil Teachers, Exhibitioners and Bursars.

	Boys.	Percentage.	Girls.	Percentage.
Number examined	**88**	—	**158**	—
Limits of age (birth date) ..	[20/8/93-4/3/99]		[15/11/93-3/4/99]	
Number passed without comment	11	*13*	85	*54*
Number passed contingent upon satisfactory treatment	77	*87*	73	*46*
Number rejected	—	—	—	—
ANALYSIS OF DEFECTS, &c.				
Vision more or less defective	24	*27*	38	*24*
Eye diseases	—	—	5	*3*
Hearing more or less defective	4	*5*	4	*3*
Ear diseases	3	*3*	4	*3*
Teeth defective	75	*85*	132	*84*
Nose and throat defective ..	25	*28*	34	*22*
Speech defects (including indistinctness, nasal quality, etc.)	1	*1*	—	—
Heart disorders*	56	*64*	20	*13*
Lung disorders	—	—	4	*3*
Nervous disorders (including periodic headaches) ..	10	*11*	15	*9*
Skin disorders	9	*10*	38	*24*
Enlarged glands	10	*11*	30	*19*
Anæmia	6	*7*	37	*23*
Physical defects	9	*10*	15	*9*
Other defects	4	*5*	4	*3*
Not vaccinated	4	*5*	11	*7*
Vaccinated	84	*95*	147	*93*
Re-vaccinated	—	—	5	*3*
Nutrition below normal ..	—	—	4	*3*

* Includes all cases of "functional" heart troubles, marked or slight.

JOHN PRIESTLEY,
Senior School Medical Inspector.

March, 1912.