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PUBLIC HEALTH DEPARTMENT,  
GUILDHALL, CAMBRIDGE.

*February 22nd, 1932.*

*To the Chairman and Members of the Local Education  
Authority.*

MR. CHAIRMAN, LADIES AND GENTLEMEN,

I have the honour to present for your consideration the 24th Annual Report upon the medical inspection of the elementary school children in Cambridge.

The year shows continued progress in a number of important directions, viz. :—

1. The beginning of new school premises to serve the new building estates together with improvements to several of the existing school premises.
2. A great extension in the scheme for the provision of milk of guaranteed purity in the schools.
3. Continuation of the diphtheria immunisation clinic; and
4. The beginning of treatment of selected children at the Open Air School by means of artificial sunlight.

Both the medical and dental work suffered some slight check during the year owing to disturbances in the staff, but I think not to such an extent as materially to affect the children's welfare.

I am,

Your obedient Servant,

ANDREW J. LAIRD,

*School Medical Officer.*

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# Report of the School Medical Officer

FOR THE YEAR 1931.

Population of the Borough (estimated 1931) ...	67000
Area of the Borough... ..	5457 acres
Number of Elementary Schools ... ..	19
Number of Departments ... ..	33
Average number of Children on the Registers ...	6858
Average Attendance ... ..	6256

It is interesting to note that the year 1931 shows the first check in the steady decline in the average number of children on the school registers.

	1923	1924	1925	1926	1927	1928	1929	1930	1931
Average number of children on registers...	7412	7241	7232	7126	7060	6924	6823	6805	6858
Average number of children in attendance	6672	6509	6260	6388	6273	6266	6065	6170	6256

## Staff.—

The only changes during the year were occasioned by the resignation of the Assistant School Medical Officer (Dr. Gurney) in February, and of one of the Dental Attendants (Miss Lockhart) on April 30th.

The vacancies were filled by the appointment of Dr. Evelyn B. G. Ewen, M.B., Ch.B., D.P.H., and Miss Allensby.

In the interval between the resignation of Dr. Gurney and the appointment of a successor, the work of school medical inspection was carried out by Dr. Parsons and Dr. Ezard.

School Medical Officer... ..	Andw. J. LAIRD, M.D., C.M., D.P.H.
Assistant School Medical Officer	A. Mabel GURNEY, M.B., Ch.B., D.P.H. (resigned Feb. 1931) Evelyn B. G. EWEN, M.B., Ch.B., D.P.H. (from June 1st 1931)
Public Dental Officer ... ..	W. Baird GRANDISON, L.D.S., R.C.S.
Assistant Public Dental Officer	D. B. CRUICKSHANK, L.R.C.P.S., L.D.S.
Bacteriologist ... ..	W. H. HARVEY, M.D. (Part time)
School Nurses ... ..	Miss M. M. W. STEVENS Miss F. A. NICHOLLS Miss I. I. FOX
Dental Attendants ... ..	Miss D. MALLETT Miss E. IMPEY Miss J. LOCKHART (resigned April 1931) Miss ALLENSBY (commenced Sept. 1931)
Clerk ... ..	Miss G. A. M. WALLIS

together with the part-time services of the Chief Clerk in the Public Health Department.



The following Table shows the number of routine inspections carried out at the various schools :—

	Entrants.		Intermediates		Leavers.	
	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.
Barnwell Abbey ...	15	11	—	—	—	—
Brunswick Council ...	32	34	61	40	43	44
Central ...	—	—	—	—	82	86
Milton Road ...	34	23	50	41	17	13
Morley Memorial ...	28	22	32	26	11	12
Newnham Croft ...	4	13	8	8	—	—
New Street ...	9	18	19	16	—	—
Park Street ...	16	7	5	13	—	—
Richmond Road ...	10	9	6	6	—	—
Romsey Council ...	—	—	35	28	21	11
St. Andrew's ...	19	25	22	29	—	—
St. Barnabas ...	20	15	8	20	—	—
St. George's ...	11	12	—	—	30	27
St. Giles' ...	6	6	—	—	—	—
St. Luke's ...	18	11	30	31	20	20
St. Matthew's... ..	15	11	29	33	—	—
St. Paul's ...	15	17	23	13	—	—
St. Philip's ...	62	48	48	41	21	18
Union Road R.C. ...	1	5	8	4	7	7
	315	287	384	349	252	238
	602		733		490	

The interest taken by Parents in the inspection of their children has been well maintained, the proportion present at inspection being naturally much higher in the Infant departments. The proportion was 76.1 per cent., being slightly less than the previous year, and varied from 41 per cent. at St. Luke's Girls' School to 95 per cent. at Park Street School.

#### REVIEW OF THE FACTS DISCLOSED BY INSPECTION.

The defects noted at both "routine" and "special" inspections will be found in Table IIA, page 15.

The total number of defects "requiring treatment" was 1228, and the total number "requiring to be kept under observation" was 736.

The number of individual children found at "routine inspection" to require treatment will be found in Table IIB, and was 252 or 13.7 per cent. of the children examined in the three routine groups.

Among the "entrants" the proportion was 9.8 per cent., and among the "intermediates" and "leavers," 14.3 and 17.5 per cent.

The average height and weight of the children are set out below, and show practically no departure from the previous year.

## Boys.

Age in Years.	No. Examined in 1931.	Average Height in Inches.				Average Weight in Pounds.			
		1911	1912	1930	1931	1911	1912	1930	1931
5	180	40.6	40.5	42.38	42.39	38.2	38.2	41.18	41.23
8	384	46.9	46.4	49.19	49.23	50.4	47.6	56.67	56.31
12	229	55.1	54.9	56.28	56.37	73.6	72.9	80.22	79.37

## GIRLS.

Age in Years.	No. Examined in 1931.	Average Height in Inches.				Average Weight in Pounds.			
		1911	1912	1930	1931	1911	1912	1930	1931
5	157	39.6	40.5	42.32	42.34	36.2	37.6	40.08	39.32
8	349	46.4	46.0	48.62	48.95	48.7	49.7	54.16	54.55
12	228	55.9	55.3	57.10	57.29	76.6	71.3	81.58	83.76

*Cleanliness and Clothing.*—There is a high standard of cleanliness among the elementary school children of Cambridge.

The total number of individual children found unclean at school by the School Nurses during the visits they have made specially for this purpose during 1931, was 834, as compared with 800 in 1930.

The proportion found with pediculi in their heads was 2.8 per cent. In 1930 the proportion was 2.9 per cent.

No proceedings were taken under Section 122 of the Children Act, 1908, but proceedings in Court were taken under the School Attendance Bye-Laws in 41 cases, and fines from 2/6 to 10/- were inflicted in 23 of these. 10 were dismissed with a caution, 5 convicted without a penalty, and 3 withdrawn.

With regard to clothing and footwear, although there were a few with insufficient or unclean clothing and a few with unsuitable or excessive clothing, the vast majority were well clothed, and had a tidy and well cared for appearance.

*Ringworm.*—Here also the very satisfactory condition recorded in previous Annual Reports has been maintained in 1931. Only 12 new cases occurred, 2 of the body and 10 of the scalp. Of these 6 were treated at Addenbrooke's Hospital, 3 at the Clinic, and 3 privately. There was 1 case still under treatment at the end of the year.

The new cases discovered each year from 1918 were as follows:—

1918	'19	'20	'21	'22	'23	'24	'25	'26	'27	'28	'29	'30	'31
33	58	44	39	37	24	26	15	11	14	16	2	9	12

*Eye Clinic.*—121 refractions were carried out at the Eye Clinic during 1931. Lenses were prescribed in 31 cases of hypermetropic astigmatism, 21 cases of mixed conditions, 20 cases of hypermetropia, 16 cases of myopia, and 4 cases of myopic astigmatism.

Of the eye cases refracted and prescribed for at the Clinic, 27 per cent. were for revision of lenses on account of deterioration of visual acuity or symptoms, or broken or lost lenses; 27 per cent. defective vision in both eyes to the extent of 6/12 or worse; 17 per cent. symptoms of eye-strain with normal vision by Snellen's test; and the remainder were defects varying from 6/12 to 6/60 in one eye.

In 9 cases spectacles were found to be of no benefit, and were not prescribed.

8 cases were examined twice during the year and 7 cases were postponed for re-examination before prescribing, 5 cases are still awaiting subjective testing owing to absence, holidays, etc. 10 cases in which lenses did not give normal vision were referred to Addenbrooke's Hospital for fuller investigation.

During the year 70 children received spectacles under the Authority's scheme. 64 per cent. of the errors of refraction dealt with during the year were dealt with at the Eye Clinic, 24 per cent. privately, and 12 per cent. at Addenbrooke's Hospital under the Authority's Scheme.

*External Eye Disease.*—The conditions found were Conjunctivitis 19, Blepharitis 37, Squint 14, and various other conditions 22, making a total of 92. The total number of similar conditions in 1930 was 59, and 1929, 72.

The apparent increase in cases of Blepharitis is due to sending even slight cases noted in the course of routine inspection, to the Clinic for treatment. Not a single case of severe Blepharitis was found.

The smaller number of cases of Squint observed in schools may be due to the earlier attention given to this condition through the agency of Child Welfare Clinics.

*Defective Vision.*—The number of children found at routine inspection to have defective eyesight (6/12 or worse) was 146 or 11.0 per cent. of those tested, or 0.3 per cent. more than last year.

In addition 100 "specials" were examined, 79 at routine inspection, and 21 at the Clinic.

Included in the above were 106 children who were already wearing spectacles.

All cases of normal vision, or better than normal vision, in which there was any symptom or sign of eye-strain, *e.g.*, headaches, mistiness, grittiness, puffiness of eyelids, persistent blepharitis, persistent conjunctivitis, were refracted, and in practically every case spectacles were found to be advantageous, and were prescribed. All children already wearing spectacles who complained at school examination of any symptoms, or whose blepharitis or conjunctivitis had not cleared up, and all whose vision was less acute by Snellen's test than when their spectacles were last prescribed, were submitted to refraction, and their spectacles were brought up to date.

*Tonsils and Adenoids.*—All cases of enlarged tonsils, however slight, have been noted for reference at future routine examinations, and advantage has been taken of the new arrangements with Addenbrooke's Hospital to refer all cases of considerably enlarged or unhealthy looking tonsils to the Ear and Throat Department for advice, and if necessary treatment, whether they appear at first sight to be causing symptoms or not.

The number of children recommended for treatment of tonsils and adenoids was 109, as compared with 57 in 1930.

157 children (8.6 per cent.) had considerably enlarged tonsils, and 297 (16.3 per cent.) had slightly enlarged tonsils. 13 also suffered from adenoids.

*Ear Disease and Deafness.*—The number of children found with defective hearing was 35, or 1.9 per cent. of those inspected. Seven had a purulent ear discharge (0.4 per cent.). The percentages for several years are given for comparison.

	1924	1925	1926	1927	1928	1929	1930	1923
Otorrhoea	0.6	0.7	0.2	0.9	0.7	0.7	0.6	0.4
Deafness	3.1	1.9	2.0	3.4	3.4	3.0	1.8	1.9

*Heart Disease.*—One hundred and forty-three children were found with some irregularity of the heart's action. The reason for this condition is by no means clear, but it is thought that it may, in most cases, be due to insufficient sleep. The opportunity was taken of impressing upon the parents and the children themselves, the necessity for regular hours and sufficient number of hours of sleep.

*Defects in Speech.*—Eleven stammerers were found.

*Diseases of the Nervous System.*—One case of Chorea (St. Vitus' Dance) was found. In addition, indications of an unstable nervous system were detected in 38 other children.

*Cripples and Deformities.*—These include the children with slight after-effects of infantile paralysis; rickets 12; spinal curvature 11; and 26 other forms including flat feet 6; depressed sternum 3; wryneck 1; round shoulders 2; hallux valgus 1; defective chest expansion 1; pot belly 1; bowed tibiae 1; asymmetrical chest 3; rachitic chest 1; deformed toe 1; genu valgus 2; bad posture 1; pigeon breast 1. The new arrangements with Addenbrooke's Hospital have made it possible for every departure from the normal, to have specialist advice.

Indications of early bone disease (rickets) are occasionally found, but, generally speaking, there is very little evidence of this disease to be found among the children attending the elementary schools in the Borough.

*Other Defects.*—Under this heading are children suffering from general debility and anaemia. The number with anaemia, shows a decrease from 59 in 1930 to 56 in 1931.

*Vaccination.*—The proportion of children found with vaccination marks in 1931 was 27.7 per cent., this being 1.4 per cent. more than the previous year.

*Inspection Clinic.*—The Clinic is open every weekday, including Saturdays, from 9.30 a.m. until 1 p.m. The Assistant Medical Officer, three School Nurses, and a Clerk are in attendance.

The total number of children inspected at the School Clinic during 1931 was 2,866, including 606 children who attended for the first time.

The attendances in 1931 numbered 6,043, an increase of 206 as compared with 1930.

The average daily attendance during 1931 was 25. In 1930 it was 24.

#### INFECTIOUS DISEASES AMONG ELEMENTARY SCHOOL CHILDREN.

The figures given in the following table show a very substantial drop in the number of cases notified from the schools. The decline in Diphtheria is particularly gratifying.

	1923	1924	1925	1926	1927	1928	1929	1930	1931
Scarlet Fever ...	45	64	30	51	92	127	56	106	52
Diphtheria ...	48	28	24	66	51	79	162	49	23
Influenza ...	4	3	7	3	17	—	1	—	—
Measles ...	322	473	677	303	113	726	316	453	110
German Measles ...	1	8	5	607	10	24	4	5	1
Whooping Cough ...	42	15	283	101	246	46	126	242	82
Chicken Pox ...	54	260	332	259	297	121	195	244	213
Mumps ...	4	91	141	720	195	21	20	9	218
Ringworm ...	4	15	10	7	3	8	2	6	—
Scabies ...	—	—	—	1	1	—	1	—	—
Skin Diseases ...	2	1	4	14	15	16	7	13	1
Others ...	64	122	63	121	63	78	102	74	25
Totals ...	590	1080	1576	2253	1103	1246	992	1201	725

The following table shows the number of cases of Scarlet Fever and Diphtheria in the elementary schools during the year.

Name of School.	Diphtheria. No. of Cases.	Scarlet Fever. No. of Cases.	Total No. of Cases.
Abbey Infants ... ..	—	—	0
Brunswick Boys ... ..	—	3	3
"    Girls ... ..	—	3	3
"    Infants ... ..	—	4	4
Central Boys ... ..	—	3	3
"    Girls ... ..	—	5	5
Milton Road Mixed ... ..	2	—	2
"    Infants ... ..	—	1	1
Morley Memorial Mixed ... ..	—	1	1
"    Infants ... ..	1	—	1
Newnham Croft ... ..	—	6	6
New Street ... ..	4	3	7
Park Street ... ..	—	2	2
Richmond Road ... ..	—	—	0
Romsey ... ..	1	1	2
St. Andrew's Mixed ... ..	1	—	1
"    Infants ... ..	—	—	0
St. Barnabas ... ..	—	2	2
St. George's Boys ... ..	—	2	2
"    Girls ... ..	—	—	0
St. Giles' Infants ... ..	—	2	2
St. Luke's Boys ... ..	—	—	0
"    Girls ... ..	1	1	2
"    Infants ... ..	—	—	0
St. Matthew's Boys ... ..	1	4	5
"    Girls ... ..	—	1	1
"    Infants ... ..	1	1	2
St. Paul's Mixed ... ..	1	—	1
"    Infants ... ..	—	—	0
St. Philip's Boys ... ..	3	—	3
"    Girls ... ..	2	3	5
"    Infants ... ..	3	4	7
Union Road R.C. ... ..	1	—	1
Open Air ... ..	1	—	1
	—	—	—
	23	52	75
	—	—	—

*Deaths of Elementary School Children.*—The total number of deaths in Cambridge of children 5—14 years of age during 1931 was 12.

The causes of these deaths were :—Diphtheria, 2 ; Appendicitis, 2 ; Scarlet Fever, 1 ; Tuberculous Mesenteric Glands, 1 ; Rheumatic Fever, 1 ; Pneumonia, 1 ; Nephritis, 1 ; Sarcoma of Scapula, 1 ; Hæmorrhagic Purpura, 1 ; Septicæmia, 1.

In 1930 the deaths of 4 children were recorded as being due to accidents.

During 1931 there were no deaths from this cause, owing probably to the action taken by the Police in regulating traffic during the time when the schools are dispersing.

*Diphtheria Immunisation.*—Although fewer families are coming forward for immunisation than in the earliest days of the campaign, no opportunity is lost of bringing the benefit of immunisation to the notice of parents. Quite a number of children entering school have already been immunised through the agency of the Infant Welfare Centres.

Ninety-six school children were Schick tested during the year. 91 of these gave positive reactions, and all of them received inoculations. In addition 195 children were re-tested, 141 being found to be negative. The 54 positive cases received further inoculations. 53 were retested for the second time. 1 refused, 11 were found to be still positive, 10 received further inoculations and 1 child was retested for the third time and found to be negative.

*School Closure.*—Two departments had attendances below 60 per cent., and for these certificates were given in accordance with Circular 1337 of the Board of Education.

Owing to an outbreak of Measles at Milton Road Infants' School the Christmas holiday was begun two days earlier, *i.e.*, December 21st, instead of December 23rd.

#### TREATMENT OF DEFECTS.

*Treatment of Defects.*—The total number of children treated for minor ailments was 638, being 174 more than the previous year. In addition treatment was given to 190 for defective vision, 116 for diseases of the throat and nose, and 3,623 for dental disease, making a total of 4,567 cases treated in 1931, as compared with 4,734 in 1930.

1. *Hospital Treatment.*—Two hundred and thirty-three school children received treatment at Addenbrooke's Hospital, the conditions requiring treatment being :—Disease of the ears, 21; eyes, 28; ringworm, 5, tonsils and adenoids, 56; skin disease, 21; minor injuries, 36, chorea, 1; various other conditions, 79; making a total of 247 defects in 233 children.

The system of letters of recommendation came to an end in the autumn, and from the beginning of October a new system of payment came into operation.

Under the new arrangement in-patients are admitted at the rate of 8/6 per day per patient.

Out-patients, 2/- first attendance, and 1/6 for each subsequent attendance.

In the case of operation for tonsils and adenoids an operation fee of 5/- is charged.

2. *Treatment at the School Clinic.*—There has been an increase in the number of children requiring treatment at the Clinic, from 253 in 1930 to 292 in 1931. The attendances have increased from 2,921 in 1930 to 3,469 in 1931.

## WORK OF THE SCHOOL NURSES.

The total number of visits made to schools in the year was 651, of which 133 were in connection with the routine medical inspections, 355 for the cleanliness survey, 9 in connection with infectious diseases, and the remainder for various other purposes.

Seven visits were paid to the schools in connection with the occurrence of Diphtheria among the scholars, and "swabbings" for bacteriological examination were taken from the throats and noses of 279 children. Two, or 0.7 per cent., gave positive results.

The "home" visits numbered 3,169 in the year; 1,091 for the purpose of following-up cases of defects found at routine inspections, 1,520 in connection with infectious disease, and 558 visits of enquiry as to the cause of absence of children notified as ill by Head Teachers and School Attendance Officers.

The figures in 1930 were:—Total home visits 2,133, following-up 910, infectious diseases 862, absentees 361.

## OPEN AIR SCHOOL.

*Delicate and Physically Defective Children.*—The number on the register of the Open Air School in Milton Road at the beginning of the year was 122. During the year 61 children left and 62 were admitted, the figures for 1930 being 59 left and 63 admitted. Of the 61 children who left school during the year, 57 returned to their ordinary schools, 1 was sent to a Sanatorium, 1 left the town, 1 had reached school leaving age, and 1 was transferred to the Observation Class.

The conditions, for which treatment at the Open Air School was recommended, were general debility, 68 children; enlargement of glands of the neck, 7; lungs, 7; axilla, 1; quiescent lung conditions, 4; asthma and bronchitis, 8; St. Vitus' Dance, 3; rheumatism, 3; "contacts" of tuberculosis, 17; bone and joint disease, 4.

*Treatment by Artificial Sunlight.*—

A Mercury Vapour Lamp was installed and treatment was commenced early in 1931, covering two periods—(1) January 27th to June 3rd, when 27 children were dealt with, 13 boys and 14 girls; (2) the second period was commenced on November 23rd, including 12 boys and 2 girls, and is still being continued during the current year.

The principal conditions treated have been enlargement of glands (cervical, axillary and intrathoracic), asthma and general debility.

In the first batch which completed treatment the results were considered by the Tuberculosis Officer to be extremely satisfactory, the average gain in weight during treatment being 1 lb. 12 ozs.

*Observation Class.*—The number in this class at the beginning of 1931 was 41. Nine left and 2 were admitted, leaving 34 children in attendance at the end of 1931. Of the 9 who left, 5 had reached the age of 14, 1 returned to ordinary school, 1 went to a special Residential School, 1 left the town, and 1 who was notified to the Local Authority during 1930.

*Supervision by the Tuberculosis Officer.*—The total number of reports upon children received from the Tuberculosis Officer during the year was 58. These related to 48 children. Twenty-five were definitely excluded from attendance at any school for varying periods, and 25 were recommended for the Open Air School. One was recommended for sanatorium treatment.

*Tuberculosis in School Children.*—The number of children of school age notified to be suffering from tuberculosis each year from 1925 is shown in the following statement :—

NOTIFICATIONS RECEIVED AT AGES 5-14 YEARS DURING THE  
YEARS 1925 TO 1931.

	Pulmonary Tuberculosis.		Non-Pulmonary Tuberculosis.	
	Boys.	Girls.	Boys.	Girls.
1925 ...	15	13	9	5
1926 ...	10	6	6	8
1927 ...	25	13	10	6
1928 ...	9	9	3	1
1929 ...	6	6	3	6
1930 ...	3	1	2	4
1931 ...	2	2	1	2

*Voluntary Agencies.*—Every year a number of delicate children are sent for a change of air to the seaside by members of the Invalid Children's Aid and Preventive Aid Societies. 46 were sent away during 1931, and all had been examined and passed as suitable by the Assistant School Medical Officer.

Other voluntary associations which carry on work among school children, and which give most valuable help, include the Care Committee, the Central Aid Society, and the Voluntary Association for Mental Welfare. The work which they do has been mentioned in previous Annual Reports, to which reference may be made.

The Inspector of the National Society for the Prevention of Cruelty to Children gave assistance in several cases during the year.

*Milk and Cod Liver Oil.*—The number of children having cod liver oil and malt in school during 1931 was 720, just half what it was two years ago. The reason for the drop is the great extension of the arrangements for giving milk in school. In 1930, 800 children had one-third of a pint of milk daily (guaranteed free from tubercle). In 1931 the number had risen to 2,396.

*Institutional Care.*—The number of defective children maintained in Institutions by the Education Committee during 1931 was : 2 blind, 6 deaf and dumb, 2 mentally defective, 2 epileptic, 2 crippled, and 3 "heart" cases.

No children were notified to the Local Control Authority during 1931.

## EMPLOYMENT OF SCHOOL CHILDREN.

The number of children examined and certified under the Bye-Laws regulating the employment of school children was 65.

There were no applications for medical certificates for street trading or public entertainments.

TABLE I.—RETURN OF MEDICAL INSPECTIONS.

## A. ROUTINE MEDICAL INSPECTIONS.

Number of Code Group Inspections.

Entrants ...	...	...	...	602
Intermediates	...	...	...	733
Leavers ...	...	...	...	490
			Total	<u>1825</u>
Number of other Routine Inspections	...	...	...	Nil.

## B. OTHER INSPECTIONS.

Number of Special Inspections	...	...	...	1432
Number of Re-Inspections	...	...	...	1219
			Total	<u>2651</u>

TABLE II.—A. Return of Defects found by Medical Inspection in the year ended December 31st, 1931.

Defect or Disease.	Routine Inspections.		Special Inspections.		
	No. of Defects		No. of Defects		
	Requiring treatment.	Requiring to be kept under observation but not requiring treatment.	Requiring treatment.	Requiring to be kept under observation but not requiring treatment.	
Malnutrition ... ..	1	19	1	2	
Uncleanliness (see Table IV., Group V.)	—	—	—	—	
Skin	Ringworm : Scalp	—	2	—	
	Body	—	10	—	
	Scabies ... ..	—	6	—	
	Impetigo ... ..	1	76	—	
Other Diseases (Non-Tuberculous)	3	2	69	1	
Eye	Blepharitis ... ..	28	3	20	
	Conjunctivitis ... ..	4	8	51	
	Keratitis ... ..	—	—	—	
	Corneal Opacities ... ..	—	1	2	
	Defective Vision (excluding Squint) ...	56	33	100	10
Squint ... ..	1	2	6	—	
Other Conditions ... ..	6	7	18	1	
Ear	Defective Hearing ... ..	7	14	12	4
	Otitis Media ... ..	2	3	10	—
	Other Ear Diseases ... ..	2	1	4	—
Nose and Throat	Enlarged Tonsils only ... ..	35	119	59	15
	Adenoids only ... ..	2	12	4	4
	Enlarged Tonsils and Adenoids ... ..	5	13	4	1
	Other Conditions ... ..	33	14	11	4
Enlarged Cervical Glands (Non-Tuberculous)	—	46	3	1	
Submaxillary Glands ... ..	1	55	5	5	
Defective Speech ... ..	—	1	1	—	
Teeth—Dental Diseases (see Table IV., Group IV.)	—	—	—	—	
Heart and Circulation	Heart Disease :	—	—	—	
	Organic ... ..	—	3	—	
	Functional ... ..	—	134	1	13
Anaemia ... ..	28	6	12	1	
Lungs	Bronchitis ... ..	—	—	4	—
	Other Non-Tuberculous Diseases	—	20	1	2

TABLE II.—(continued.)

Defect or Disease.	Routine Inspections.		Special Inspections.						
	No. of Defects		No. of Defects						
	Requiring treatment.	Requiring to be kept under observation but not requiring treatment.	Requiring treatment.	Requiring to be kept under observation but not requiring treatment.					
Tuber- culosis	Pulmonary :								
	Definite...	...	...	...	—	—	1	—	
	Suspected	...	...	...	—	1	—	—	
	Non-Pulmonary :								
	Glands	...	...	...	—	—	3	—	
	Spine	...	...	...	—	—	—	—	
	Hip	...	...	...	—	—	—	—	
	Other Bones and Joints				...	—	—	—	
	Skin				...	—	—	—	
	Other Forms				...	—	—	—	
Nervous System	Epilepsy				...	—	1	—	
	Chorea				...	1	—	6	2
	Other Conditions...				...	4	22	5	—
Deform- ities	Rickets				...	12	5	2	1
	Spinal Curvature				...	11	10	4	—
	Other Forms				...	25	37	8	2
Other Defects and Diseases				...	16	57	423	17	

B. Number of Individual Children found at Routine Medical Inspection to require Treatment (excluding Uncleanliness and Dental Diseases).

Group.	Number of Children.		Percentage of Children found to require Treatment
	Inspected	Found to require Treatment.	
Code Groups :			
Entrants	602	59	9·8
Intermediates	733	105	14·3
Leavers	490	86	17·5
Total (Code Groups)	1825	250	13·7
Other Routine Inspections	Nil	Nil	Nil

TABLE III. Return of all Exceptional Children in the Area.

			Boys	Girls	Total
Children suffering from the following types of Multiple Defect, <i>i.e.</i> , any combination of Total Blindness, Total Deafness, Mental Defect, Epilepsy, Active Tuberculosis, Crippling (as defined in penultimate category of the Table), or Heart Disease ... ..			1	—	1
Blind (including partially blind).	(i.) Suitable for training in a School for the totally blind.	At Certified Schools for the Blind ... ..	1	1	2
		At Public Elementary Schools	—	—	—
		At other Institutions...	—	—	—
		At no School or Institution ...	—	—	—
	(ii.) Suitable for training in a School for the partially blind.	At Certified Schools for the Blind or Partially Blind ...	—	—	—
		At Public Elementary Schools	1	—	1
		At other Institutions...	—	—	—
		At no School or Institution ...	—	—	—
Deaf (including deaf and dumb & partially deaf).	(i.) Suitable for training in a School for the totally deaf or deaf and dumb.	At Certified Schools for the Deaf... ..	3	3	6
		At Public Elementary Schools	—	1	1
		At other Institutions...	—	—	—
		At no School or Institution ...	—	—	—
	(ii.) Suitable for training in a School for the partially deaf.	At Certified Schools for the Deaf or Partially Deaf ...	—	—	—
		At Public Elementary Schools	3	—	3
		At other Institutions...	—	—	—
		At no School or Institution ...	—	—	—
Mentally Defective.	Feebleminded.	At Certified Schools for Mentally Defective Children ...	—	1	1
		At Public Elementary Schools	26	8	34
		At other Institutions...	—	—	—
		At no School or Institution ...	—	—	—
	Notified to the Local Mental Deficiency Authority during the year.		—	—	—
Epileptics.	Suffering from severe epilepsy.	At Certified Schools for Epileptics ... ..	—	1	1
		At Certified Residential Open Air Schools ... ..	—	—	—
		At Certified Day Open Air Schools ... ..	—	—	—
		At Public Elementary Schools	—	—	—
		At other Institutions...	—	—	—
		At no School or Institution ...	—	—	—
	Suffering from epilepsy which is not severe.	At Public Elementary Schools	1	2	3
		At no School or Institution ...	—	—	—

TABLE III.—(continued).

			Boys	Girls	Total
Physically Defective.	Active pulmonary tuberculosis (including pleura and intrathoracic glands).	At Sanatoria or Sanatorium Schools approved by the Ministry of Health or the Board ... ..	8	3	11
		At Certified Residential Open Air Schools ... ..	—	—	—
		At Certified Day Open Air Schools ... ..	—	—	—
		At Public Elementary Schools	—	—	—
		At other Institutions... ..	—	—	—
	At no School or Institution ...	—	—	—	
Physically Defective.	Quiescent or arrested pulmonary tuberculosis (including pleura and intrathoracic glands).	At Sanatoria or Sanatorium Schools approved by the Ministry of Health or the Board ... ..	—	—	—
		At Certified Residential Open Air Schools ... ..	—	—	—
		At Certified Day Open Air Schools ... ..	10	5	15
		At Public Elementary Schools	31	26	57
		At other Institutions... ..	—	—	—
	At no School or Institution ...	—	—	—	
Physically Defective.	Tuberculosis of the peripheral glands.	At Sanatoria or Sanatorium Schools approved by the Ministry of Health or the Board ... ..	—	—	—
		At Certified Residential Open Air Schools ... ..	—	—	—
		At Certified Day Open Air Schools ... ..	4	2	6
		At Public Elementary Schools	37	27	64
		At other Institutions... ..	—	—	—
	At no School or Institution ...	—	—	—	
Physically Defective.	Abdominal tuberculosis.	At Sanatoria or Sanatorium Schools approved by the Ministry of Health or the Board ... ..	—	—	—
		At Certified Residential Open Air Schools ... ..	—	—	—
		At Certified Day Open Air Schools ... ..	—	—	—
		At Public Elementary Schools	1	—	1
		At other Institutions... ..	—	—	—
	At no School or Institution ...	—	—	—	
Physically Defective.	Tuberculosis of bones and joints (not including deformities due to old tuberculosis).	At Sanatoria or Hospital Schools approved by the Ministry of Health or the Board ... ..	2	—	2
		At Public Elementary Schools	—	—	—
		At other Institutions... ..	1	2	3
		At no School or Institution ...	—	—	—

TABLE III.—(continued)

			Boys	Girls	Total
Physically Defective. (continued).	Tuberculosis of other organs (skin, etc.).	At Sanatoria or Hospital Schools approved by the Ministry of Health or the Board ... ..	—	—	—
		At Public Elementary Schools ... ..	—	—	—
		At other Institutions... ..	—	—	—
		At no School or Institution ... ..	—	—	—
	Delicate Children, <i>i.e.</i> , all children (except those included in other groups) whose general health renders it desirable that they should be specially selected for admission to an Open Air School.	At Certified Residential Cripple Schools ... ..	—	—	—
		At Certified Day Cripple Schools ... ..	—	—	—
		At Certified Residential Open Air Schools ... ..	—	—	—
		At Certified Day Open Air Schools ... ..	49	50	99
		At Public Elementary Schools ... ..	13	11	24
		At other Institutions... ..	—	—	—
	Crippled Children (other than those with active tuberculous disease) who are suffering from a degree of crippling sufficiently severe to interfere materially with a child's normal mode of life.	At Certified Hospital Schools ... ..	—	—	—
		At Certified Residential Cripple Schools ... ..	—	—	—
At Certified Day Cripple Schools ... ..		—	—	—	
At Certified Residential Open Air Schools ... ..		—	—	—	
At Certified Day Open Air Schools ... ..		1	1	2	
At Public Elementary Schools ... ..		10	7	17(6)*	
Children with heart disease, <i>i.e.</i> , children whose defect is so severe as to necessitate the provision of educational facilities other than those of the public elementary school.	At Certified Hospital Schools ... ..	1	1	2	
	At Certified Residential Cripple Schools ... ..	—	—	—	
	At Certified Day Cripple Schools ... ..	—	—	—	
	At Certified Residential Open Air Schools ... ..	—	—	—	
	At Certified Day Open Air Schools ... ..	—	—	—	
	At Public Elementary Schools ... ..	1	—	1	
	At other Institutions... ..	—	—	—	
At no School or Institution ... ..	—	—	—		

\* The figure in brackets indicates the number of these children who should be receiving Special School Education.

TABLE IV. Return of Defects Treated during the year ended 31st December, 1931.

TREATMENT TABLE.

Group I. Minor Ailments (excluding Uncleanliness, for which see Group V.)

Disease or Defect.	No. of Defects treated or under treatment during the year.		
	Under the Authority's Scheme.	Otherwise	Total.
Skin			
Ringworm—Scalp ... ..	1	1	2
"  Body ... ..	7	3	10
Scabies ... ..	3	1	4
Impetigo ... ..	66	12	78
Other Skin Disease ... ..	71	14	85
Minor Eye Defects ... ..	57	10	67
(External and other, but excluding cases falling in Group II.)			
Minor Ear Defects ... ..	—	6	6
Miscellaneous ... ..	332	54	386
(e.g., minor injuries, bruises, sores, chilblains, etc.)			
Total ... ..	537	101	638

Group II. Defective Vision and Squint (excluding Minor Eye Defects treated as Minor Ailments—Group I.)

Defect or Disease.	No. of Defects dealt with.			
	Under the Authority's Scheme.	Submitted to refraction by private practitioner or at hospital apart from the Authority's Scheme.	Other-wise.	Total.
Errors of Refraction (including squint)	144	41	4	189
Other Defect or Disease of the Eyes (excluding those recorded in Group I.)	—	1	—	1
Total ... ..	144	42	4	190

Total number of children for whom spectacles were prescribed

(a) Under the Authority's Scheme	...	...	112
(b) Otherwise	...	...	40

Total number of children who obtained or received spectacles

(a) Under the Authority's Scheme	...	...	70
(b) Otherwise	...	...	54

Group III. Treatment of Defects of Nose and Throat.  
Number of Defects.

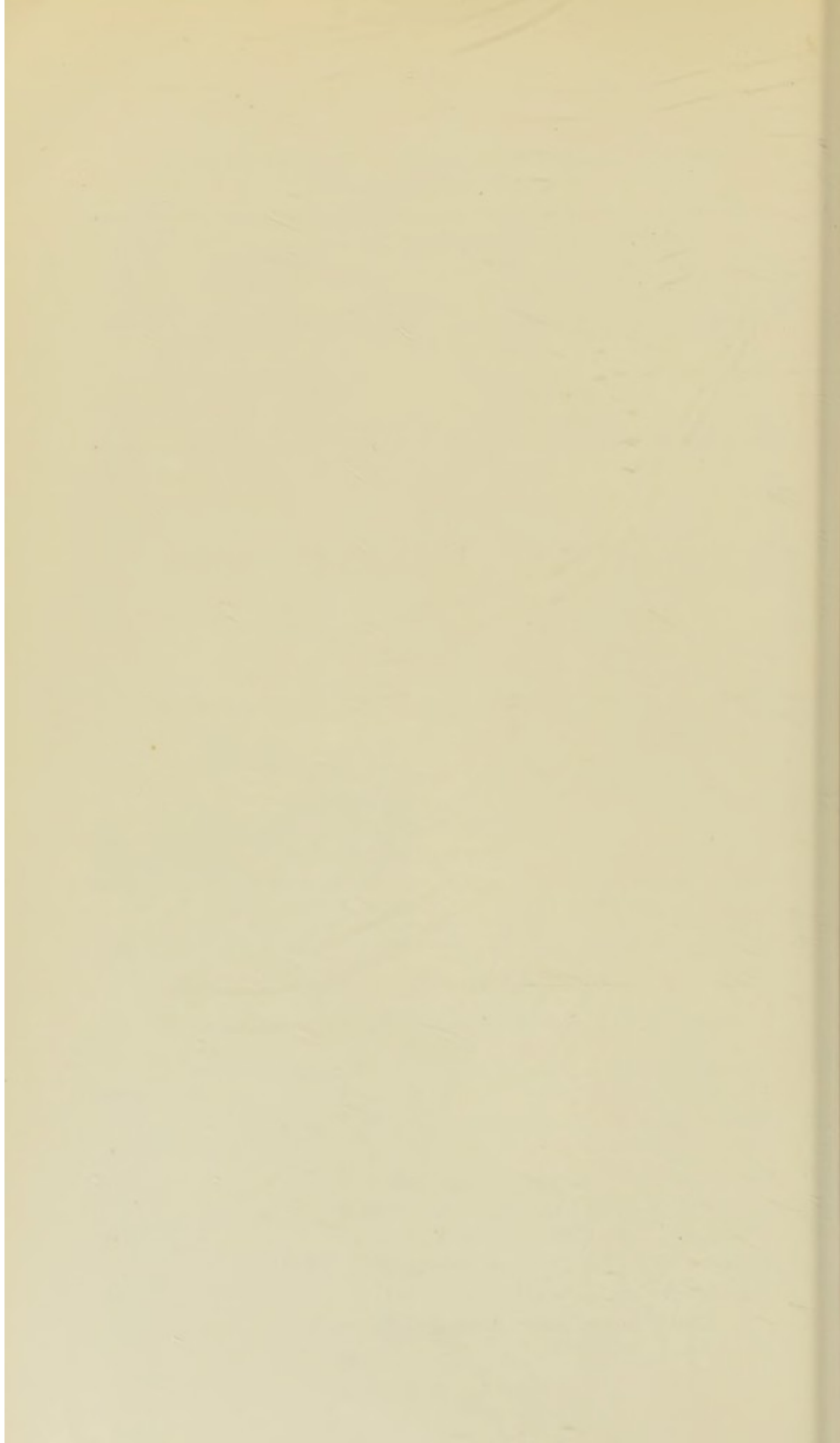
Received Operative Treatment.			Received other forms of Treatment.	Total number treated.
Under the Authority's Scheme, in Clinic or Hospital.	By Private Practitioner or Hospital, apart from the Authority's Scheme.	Total.		
30	51	81	35	116

Group IV. Dental Defects.

(1) Number of Children who were :—	(2) Half-days devoted to :—
(a) Inspected by the Dentist :	Inspection ... 17
Aged :	Treatment ... 390
5 497	Administration
6 325	(including teaching) ... 52
7 365	Total 459
8 381	(3) Attendances made by Children for treatment ... 3923
Routine Age Groups { 9 355 } Total 3507	(4) Fillings :—
10 434	Permanent Teeth 7929
11 385	Temporary Teeth 3730 } Total 11659
12 246	(5) Extractions :—
13 274	Permanent Teeth 242
14 245	Temporary Teeth 2678 } Total 2920
Specials ... 1266	(6) Administrations of general anaesthetics for extractions ... 84
Grand Total ... 4773	(7) Other operations :—
(b) Found to require treatment 3773	Permanent Teeth 111
(c) Actually treated ... 3623	Temporary Teeth 505 } Total 616
(d) Re-Treated during the year 1841	

Group V. Uncleanliness and Verminous Conditions.

(i) Average number of visits per school made during the year by the School Nurses ... ..	10
(ii) Total number of Examinations of children in the Schools by School Nurses ... ..	18,560
(iii) Number of individual children found unclean ... ..	834
(iv) Number of children cleansed under arrangements made by the Local Education Authority ... ..	Nil
(v) Number of cases in which legal proceedings were taken :	
(a) Under the Education Act, 1921 ... ..	Nil
(b) Under School Attendance Bye-Laws ... ..	41



**REPORT**  
ON  
**DENTAL INSPECTION**  
AND  
**TREATMENT OF SCHOOL CHILDREN**  
FOR THE YEAR 1931

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BY  
**W. BAIRD GRANDISON, L.D.S., R.C.S., Edin.**  
PUBLIC DENTAL OFFICER

THE DENTAL INSTITUTE,  
35 PARK SIDE,  
CAMBRIDGE.

*December 31st, 1931.*

*To the Chairman and Members of the Local Education  
Committee.*

LADIES AND GENTLEMEN,

I have the honour to submit the Twenty-fourth Annual Report on the working of the Dental Institute, covering a period from January 1st, 1931, to December 31st, 1931.

It is with regret that I find it necessary once more to inform you that certain schools have not been visited this year, but, although our routine work has been considerably interrupted, the results of the year's work are not without interest, particularly in the enormous decrease in the numbers refusing treatment, and in the character of the work carried out by the dental attendants under my personal supervision.

I would like to thank my assistant, the dental attendants, and all those who have co-operated with me in the working of the Dental Institute for the year 1931.

I am,

Ladies and Gentlemen,

Your obedient Servant,

W. BAIRD GRANDISON.

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# Report on the Dental Inspection and Treatment of Elementary School Children

FOR THE YEAR 1931.

In a normal year, one that is to say, when the staff is available for dental work all the year, all the children attending the elementary schools in the Borough of Cambridge have the opportunity, once annually, of dental inspection, and, when necessary, treatment. In the year under review, 3507 children were submitted for routine inspection. Of this number 1000 were found to have dentitions absolutely free from caries, 2507 required treatment, and 2357 received treatment. In addition 1266 children attended without appointment and received treatment, making a total number of 4773 children inspected and 3623 treated.

All inspections of children, except those referred by the School Medical Officer and the Dental Attendants, are conducted at the schools, and the condition of the teeth duly noted on charts specially prepared for the purpose. There were 17 half-days devoted to inspection during the year 1931, the average number inspected at each session being approximately 200, a high average made possible by the nature of the inspection, together with the able and thoroughly organized method employed by all head teachers.

The treatment of the children is conducted, usually, partly at the Central Clinic, and partly at the schools, by two whole-time dental officers, assisted by three whole-time dental attendants. Treatment is essentially of a conservative character, and the temporary dentition shares equally with the permanent dentition in this definite process of teeth preservation. 390 treatment sessions were held during the year 1931, and 52 devoted to work of an organizing and administrative character, including the sessions occupied in the teaching of dental hygiene in the schools. Attendances are more frequent, and treatment simplified considerably, by the introduction, chiefly, of what is known as "Block Anaesthesia."

## CONDITION OF THE TEETH AT INSPECTION.

3507 elementary school children were inspected during the year 1931. Of this number 437 children were new patients, that is, patients who had never been subjected to routine dental inspection before in Cambridge, 419 children were sound previously, that is, patients who had been previously inspected, but the teeth were such that no treatment was required; the remainder, 2651 children had been inspected and had received treatment in previous years.

The condition of the teeth of 3507 children, divided into their respective age groups, follows :—

Age.	Number of Children Examined	Number of Temporary Teeth			Number of Permanent Teeth		
		Sound	Decayed Saveable	Decayed Un-saveable	Sound	Decayed Saveable	Decayed Un-saveable
5 Years	497	7555	1656	277	363	67	4
6 "	325	4270	812	277	1232	307	1
7 "	365	3718	459	328	2803	529	2
8 "	381	3014	228	313	3821	650	8
9 "	355	2117	137	199	4553	582	26
10 "	434	1863	62	176	6737	73	11
11 "	385	988	13	126	6974	710	26
12 "	240	315	—	60	5084	624	18
13 "	274	120	—	29	6148	797	25
14 "	245	43	—	8	5812	713	15
Total ...	3507	24003	3367	1793	43527	5752	136

For every 100 elementary school children in Cambridge, therefore, there are 684 sound temporary teeth, 96 saveable temporary teeth, 51 unsaveable temporary teeth, 1241 sound permanent teeth, 164 saveable permanent teeth, and 3 unsaveable permanent teeth.

Of recent years these figures have not deviated to any marked extent and this year is no exception, accordingly the condition of the teeth of our school children at inspection is satisfactory.

#### CONDITION OF THE TEETH AFTER TREATMENT.

2357 elementary school children received routine dental treatment during the year 1931, and the effect of treatment can best be appreciated by arranging a comparative table, giving the results of dental inspection, together with the rearrangements which naturally follows as a result of treatment.

	No. of Children Inspected.	Temporary Teeth.			Permanent Teeth.		
		Sound.	Decayed Saveable.	Decayed Un-saveable.	Sound.	Decayed Saveable.	Decayed Unsaveable
Condition of teeth at Inspection ...	3507	24003	3367	1793	43527	5752	136
Condition of teeth after Treatment...	3507	27117	253	168	48930	349	6

This comparative table indicates that in the mouths of 3507 children there are, after treatment, only 1 per cent. of teeth (Temporary and Permanent) which show any active caries at all, and the percentage of decayed unsaveable teeth (Temporary and Permanent) amounts to .2 per cent., representing only 174 teeth.

#### ROUTINE DENTAL WORK.

The nature and quantity of the work necessary to satisfactorily treat 2319 elementary school children is as follows:—

	A.	Amalgam or Synthetic	...	...	...	4233
	B.	{ Amalgam (Lined) or Synthetic (Lined)	...	...	...	2357
FILLINGS...	C.	{ Amalgam or Synthetic with Pulp Preservation Amalgam or Synthetic with Root Canal treatment ...	...	...	...	960 59
				Total	...	7609
	D.	Teeth treated with Silver Nitrate (Howe's Method)	...	...	...	2955
EXTRACTIONS	E.*	{ Temporary Teeth Permanent Teeth	...	...	...	1625 130
				Total operations	...	12319

\*With the exception of very loose temporary teeth, anaesthetics, either local or general, are always used for the removal of teeth.

#### CASUALS.

In addition to the work recorded above, work was performed on certain children who visited the dental institute without an appointment. The object of the visit was either to seek relief from pain, or to obtain the routine treatment found necessary at inspection, though unable to accept the treatment when offered, owing to illness, inconvenience and the like.

1266 children visited the institute casually, and treatment was either complete or incomplete, being dependant upon the nature of the trouble which prompted the visit. Work done under this heading was as follows:

FILLINGS...	{	A.	In Permanent Teeth	...	...	276
		B.	In Temporary Teeth	...	...	46
		C.	Of Permanent Teeth	...	...	112
EXTRACTIONS	{	D.	Of Temporary Teeth	...	...	1053
		E.	Teeth treated with Nitrate of Silver (Howe's Method) ...	...	...	753
				Total operations	...	2240

#### SCHOOL CHILDREN WHO WERE UNTREATED

The number of children who received routine dental inspection but were not treated was 150, being 6 per cent. of the number requiring treatment, and 4.2 per cent. of the total number inspected. These

percentages cannot fail to give complete satisfaction, indicating as they do, the remarkable response of the parents to the calls made upon them for the maintenance of, or improvements in the standard of health required or desired in this, one of the most important developments of the health services. In the year 1930 the percentage of refusals was 17 per cent. of the number requiring treatment and this was stated to be a record, but the corresponding percentage in the year 1931 is 6 per cent., so that, not only has the record been broken, but a percentage has been obtained which is much more in accordance with our wishes and emblematic, surely, of an intelligent and enlightened community. "What are some of the factors which have contributed to the attainment of 94 per cent. acceptance of treatment?" Firstly, I consider the inauguration of a scheme of cleaning and polishing the teeth by the dental attendants, acting under supervision to comply with the demands made in Section 1, 3 C of the Dental Act, 1921, to be helpful. These additional duties have not only created in the dental attendants an added interest in the working of the dental institute, but, by their enthusiastic persuasion, large numbers attend specifically for the purpose of cleaning. The dental attendants not only satisfy the child's request in this direction, but encourage the child to keep the teeth clean, impress the child with the value and importance of sound teeth, and very frequently obtain a promise to accept the necessary treatment from children who hitherto have endeavoured to evade treatment. When acceptances of treatment are not possible by this means the dental attendants, anxious that the child shall acquire the maximum benefit, visit the parents at their homes, and receive from them a written acceptance, after which the necessary dental treatment is completed. This procedure has been so productively successful that to continue the practice is imperative. Secondly—The teaching of dental hygiene to school children in the various elementary schools contributes in no small measure to the high rate of acceptances. Thirdly—To the teachers in our elementary schools, we are indebted for their genuine co-operation and never failing interest and assistance. The teachers have always given every help they could, but this year it would appear that many of them have redoubled their energy and given much time to make the dental inspection and treatment available to every child in their respective departments. Finally—The school Medical Officer has referred many children during the year, and this has been useful also, in as much as parents, who would refuse dental treatment for their children, hesitate to do so on medical advice. There are therefore, numerous factors available and essential for the proper conduct of our work on the teeth of school children, and if, as I believe will be the case, similar efforts are repeated, then the number of children who would not receive dental treatment must be few indeed.

And now two tables which I have always considered to be of very special interest, indicating in the one, the percentage of caries-free children, temporary and permanent teeth combined, before treatment, and in the other, the number and percentage of sound permanent teeth at inspection, the number and percentage of teeth made sound by artificial means (treatment) and the number and percentage of children who had saveable or unsaveable permanent teeth, but were not treated.

Age.	Number of Children Examined.	No Decay including Both Dentitions.		Remarks.
		Number of Children.	Percentage.	
5 Years ...	497	115	23.1	A. Children with no decay present number 1000.  B. This number, together with the percentage is proportionately less than usual. (See Page 31).
6 " ...	325	48	14.7	
7 " ...	365	96	26.2	
8 " ...	381	126	33.0	
9 " ...	355	124	34.9	
10 " ...	434	146	33.6	
11 " ...	385	140	36.3	
12 " ...	246	73	29.6	
13 " ...	274	75	27.3	
14 " ...	245	57	23.2	
Total ...	3507	1000	28.5	

Age.	Number with Permanent Teeth.	Number of Children whose Permanent Teeth were						Unsaveable but Untreated
		Sound.		Made Artificially Sound.		Saveable but Untreated.		
		Approx. %		Approx. %		Approx. %		
5 Years...	122	90	74	30	25	2	1	—
6 " ...	271	153	56	111	41	7	3	—
7 " ...	362	178	49	167	46	17	5	1
8 " ...	381	165	43	195	51	21	6	—
9 " ...	355	161	45	169	48	25	7	—
10 " ...	434	178	41	236	54	20	5	—
11 " ...	385	159	41	212	55	14	4	1
12 " ...	246	81	33	157	64	7	3	1
13 " ...	274	82	30	188	69	4	1	1
14 " ...	245	57	23	186	70	2	1	—
Total ...	3075	1304	42	1651	54	119	4	4

It will be noticed, firstly—that the number of children with no decay present including both dentitions was 1000 or 28.5 per cent., and secondly, the number of children with sound permanent teeth was 1304 or 42 per cent. In consideration of the fact that these percentages are considerably reduced (one should expect similar or improved percentages) an explanation is advisable, and, for this purpose, I submit a small table giving the percentages of children with no decay, including both dentitions, and children with sound permanent teeth, for the last four years.

Percentage of children with no decay present, including both Dentitions.			Percentage of children with sound permanent Teeth.		
Year 1928	...	34.2 per cent.	Year 1928	...	56 per cent.
„ 1929	...	35.1 per cent.	„ 1929	...	55.3 per cent.
„ 1930	...	37.9 per cent.	„ 1930	...	52.0 per cent.
„ 1931	...	28.5 per cent.	„ 1931	...	42.0 per cent.

It was realized early in the year 1931, that our usual custom of inspecting every school child in the Borough, and offering treatment to those who required it, was not possible, owing to the absence, through illness, of the assistant dental officer for approximately two months. Accordingly, in order that the public dental officer should remain at the central clinic as often as possible, a number of schools were not visited, chiefly those called "Summer Schools"; educational departments, that is to say, where the dental work is carried out in the school premises. Routine inspection was, therefore, deliberately curtailed and treatment restricted in consequence, with the above apparently distressing, but very interesting percentages. Much of our organization this year was of an experimental character, justified by circumstances and, I hope to prove, justified in some measure, at least, by the results. Reduction in the number of inspection sessions allowed more time for concentrated effort in directions suited to the changed conditions.

In another page of this report emphasis has been laid on the value of cleaning operations by the dental attendants, a procedure which, properly conducted, undoubtedly encourages the child to maintain a high standard of oral cleanliness, and as attendances for the purpose were numerous, the dental attendants visualizing certain apparent defects in the teeth of children, some of whom were previously tabulated as sound, sought corroboration of their unprofessional opinion before dismissing the child and, in many cases, this action necessitated the removal of the child's chart from the sound column to those requiring treatment, hence reducing the number of children with sound dentitions or with sound permanent teeth. This is worthy of mention inasmuch as a dental attendant, who has received certain training, can materially assist the dental officer in his endeavours to control dental disease. A dental attendant cannot diagnose the condition, nor can a dental attendant indicate the treatment required, but obvious defects can be detected, indeed, many cases are referred for a professional opinion when no

treatment is called for. (Minor irregularities, arrested caries, hypoplastic teeth, etc.) a fact which still further proves reluctance to dismiss any child who may require treatment in one form or another.

Dental statistics covering a period of twelve months must contain certain inaccuracies, greater, perhaps, than one might anticipate. Children with sound teeth in March may require treatment in September of the same year, yet, in the absence of a second inspection, such children are tabulated as sound in the annual report, indeed one annual routine inspection is inadequate, and when Sir George Newman in his annual report for the year 1929, states "A school dentist would be able to undertake the care of 2300 children only in a complete school dental service," he was familiar no doubt with the incomplete nature of the school dental service generally.

In further explanation of the drop in these important percentages, I would point out that cases referred by the School Medical Officer, and numerous casual cases had, in pursuance of our experiments, all the necessary treatment completed, and as casual cases (many of whom were refusals previously) in particular, frequently visit the clinic for the relief of pain, sound dentitions or a full complement of sound permanent teeth could not be presented on inspection.

Finally, the number of children with sound teeth in this report is less, chiefly, I maintain, due to the changed procedure, and, even if this statement should be incorrect, I am in no way perturbed, on the contrary, I have considerable satisfaction from the knowledge that many of our elementary school children have had defects in the teeth remedied at the earliest possible moment, defects, which have been slight in comparison, and necessitating a much more simplified form of operative procedure.

In our teaching we urge frequent visits to the dentist, a strict observance of cleanliness as

"Clean teeth do not decay,"

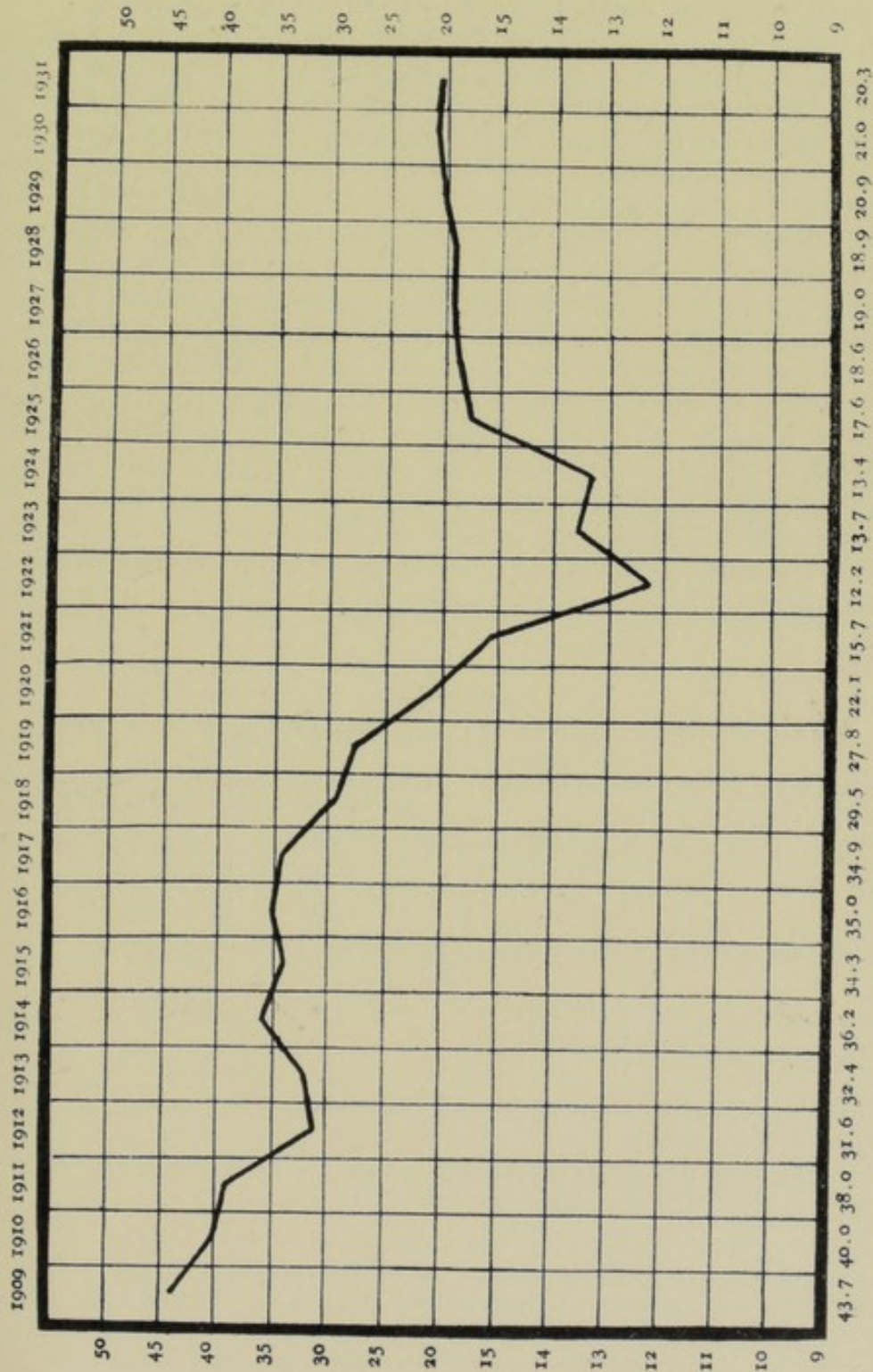
and the importance of a self-cleansing food to end every meal. There is every indication that these simple rules are receiving the attention they merit, and the dental health of the elementary school children of Cambridge is, and will remain, satisfactory.

The unsaveable permanent teeth, which numbered 136 in the mouths of 3507 children at inspection, were distributed thus :—

72	children	had	1	unsaveable	tooth	each.
19	"	"	2	"	teeth	"
2	"	"	3	"	"	"
5	"	"	4	"	"	"
98	children	had	136	unsaveable	permanent	teeth.

It should be noted that all saveable or sound permanent teeth removed for orthodontic purposes, are charted as unsaveable, and are included in the above table.

Diagram.—Showing the percentage of decay in the temporary teeth of the five year old group of children from 1909 to 1931 (inclusive).



The percentage of decay in the temporary teeth of the five year group of children in the year 1931, is 20.3 which is slightly less than the corresponding percentage in the year 1930. It will be observed that children born in the year 1917, had temporary teeth at the age of five years, considerably less effected with dental caries (12.2 per cent.), than those born at any other period that this scheme has been in existence. Fluctuations in the percentage of decay in the five year old group of children is not readily understood, but it is assumed that the diet of the individual is either deficient in essentials necessary for the production of teeth with normal enamel, or excessive in carbohydrates, stated to be conducive to fermentation as a prelude to the establishment of acid forming bacteria, so harmful to the teeth. If this is true, it is obvious that the teeth of children born in the year 1917, benefited to no mean extent by the rationing process, and now, in the year 1931, with the removal of all such food restrictions, it would be advisable to utilize the knowledge we possess, to neutralize, or overcome, the apparently evil effects of an abundance of soft, sticky and starchy foods. It is well in this connection to recognize agreeably the value of a tubercle-free milk supply to a large and ever increasing number of school children, a procedure rendered possible by the deliberations of the Hygiene Sub-Committee, and, a recommendation to augment the supply of milk with the addition of cod liver oil, for example, would depend very largely on the economic position, together with a favourable report from those employed by the Medical Research Council, on the effects of certain substances, notably cod liver oil, on the teeth.

#### THE DENTAL TREATMENT OF THE PRE-SCHOOL CHILD.

Children under five years of age receive treatment at the central clinic on Tuesdays after 3.30 p.m., on Thursdays from 2 p.m., and on Saturday mornings; and the number attending at regular intervals is considerable, though an improvement in this direction is hoped for.

The attendance of children under school age is obtained :—

- (1) By recommendation from the various Maternity and Child Welfare Centres.
- (2) By recommendation of Parents and others.
- (3) By a request on the various appointment forms in use for the treatment of school children.

The treatment, needless to say, is remedial in character, and the popularity of this scheme is due in particular, to the methods employed. Briefly these methods can be described as follows :—“ Any very small cavity in any situation is cleaned out, the cavity is not extended, and silver amalgam inserted. Cavities which are too large to permit of fillings are stoned down to avoid overhanging edges and treated with Howe's ammonical silver nitrate and formalin solutions.

The latter procedure necessitates frequent visits, generally at least three visits; and I would wish to express my appreciation and gratitude to parents who travel long distances to the clinic at frequent intervals for this purpose, and who are obviously pleased and interested in the progressive effect of this form of treatment.

#### TEACHING OF DENTAL HYGIENE.

Five years ago the Hygiene Committee of the Borough of Cambridge authorized the public dental officer to institute an experimental course of dental hygiene to children of school leaving age in one of the senior girls schools. Now, thanks to the interest displayed by the head teachers, and to their co-operation all, or nearly all, children of school leaving age in Cambridge receive instruction in this subject as part of the routine work of the schools concerned. This course, which is directed by the dental officers themselves, aims at providing certain information relative to the teeth and associated parts in a simple and concise form. To accomplish our object, 10 lessons of 40 minutes each are required, and the course includes :—

- (1) The care of the mouth in infancy : (a) Development.  
(b) Enamel Formation.  
(c) Habits, etc.
  - (2) Temporary and permanent teeth, description, names, eruption, etc.
  - (3) Tooth, derivation, structure, etc.
  - (4) First permanent molars. (Special reference.)
  - (5) Causes of dental disease.
  - (6) Progress of dental disease.
  - (7) Prevention of dental disease
  - (8) Control of dental disease
- } Diet, cleanliness, metabolism,  
etc.

I am grateful to the teachers for their voluntary assistance in this most important institution, as it is well known that dental ill-health is prevalent, simply because the community as a whole is inclined to regard teeth as separate units, dissociated from the remainder of the body and, when diseased, easily and quickly removable without detriment to the general health of the individual. These grossly mistaken ideas must be permanently removed from our minds, and replaced by others which will render the eruption and maintenance of sound teeth imperative. It is my considered opinion that the best means of approach is to teach children, provided dental officers can convey to them accurate information in such a manner as to be readily appreciated and understood. Sufficient would be retained to foster the belief that in the future more attention would be paid to the teeth in the homes, and professional advice much more eagerly, regularly and frequently sought.

## EXAMINATION IN ITEMS OF DENTAL INTEREST (1931)

Time allowed 45 minutes.

## QUESTIONS.

Only two questions to be attempted.

- (1) (a) What is the six year old Molar ?  
 (b) Why is it such an important tooth ?  
 (c) How may it become displaced ?  
 (d) What effect has such displacement on the other second teeth ?
- (2) (a) What is the importance of cleaning the teeth ?  
 (b) Where do cavities (holes) usually form in (a) front teeth  
 (b) back teeth ? Why should there be this difference ?  
 (c) What foods tend to make the teeth decay ?  
 (d) What foods help to keep the teeth in good condition ?
- (3) (a) Make a sketch of the inside of a tooth, and name the various parts.  
 (h) What is enamel, and what is its importance ?  
 (c) How does a hole form through the enamel ?  
 (d) Why should your teeth be regularly examined ?
- (4) Tell what you know about the mouth and its contents.

## RESULTS OF THE EXAMINATION (1931).

(1) Number sitting	...	...	423
(2) First-class Certificates	...	...	119
	65 per cent. or more.		
(3) Second-class Certificates	...	...	85
	50 per cent. to 64 per cent.		

The certificates, not easily obtained by any means, are signed by Dr. J. H. C. Dalton, Chairman of the Hygiene Committee; T. F. Foreman, Secretary for Education; and W. Baird Grandison, Public Dental Officer. I understand certain employers of labour have valued these First-class Certificates, and I trust this practice will be continued.

During the present emergency any appreciable increase in the administration or organization of the social services cannot be expected, but consideration must be given as soon as possible to the provision of dental inspection and treatment to children after leaving school, and before the insurance age. There is, unfortunately, ample proof that much of the school dental officers' efforts, and the expressed intentions of the children themselves, have been frustrated by the absence of any scheme, public or private, to provide a continuance of treatment within economic limits, and, although a difficult problem is presented, a solution should be found, such, for example, as "school dental inspection and treatment being available up to and including the sixteen year old age group, and thereafter an insurance scheme whereby Private Practitioners could continue the work in selected cases on a capitation basis." Continued failure to solve this serious problem impairs the value of the school dental service generally in so much as the control of dental disease is withdrawn at the most critical period (dentally) of life.

## APPENDIX.

## OTHER OPERATIONS, 1931.

Orthodontic Cases ... ..	77
Jaw Injury ... ..	Nil
Crowns or Inlays (Resulting from injury to anterior teeth) ... ..	27

## CHILDREN.

Cleaning of Teeth (performed by Dental Attendants under supervision) ...	2149
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## GROUP IV. DENTAL DEFECTS.

(1) Number of children who were :—

(a) Inspected by the Dentist :

	Aged	5	...	497	
	"	6	...	325	
	"	7	...	365	
	"	8	...	381	
Routine Age Groups.	"	9	...	355	Total 3507
	"	10	...	434	
	"	11	...	385	
	"	12	...	246	
	"	13	...	274	
	"	14	...	245	
Specials ... ..					1266
				Grand Total ...	4773

(b) Found to require treatment ... .. 3773

(c) Actually treated ... .. 3623

(d) Re-treated during the year as the result of periodical examination ... .. 1841

(2) Half-days devoted to :—

Inspection ... .. 17

Treatment ... .. 390

Administration (Including Teaching) ... .. 52

(3) Attendances made by children for treatment ... .. 3923

(4) Fillings :—

Permanent teeth ... .. 7929

Temporary teeth ... .. 3730 } 11659

(5) Extractions :—

Permanent teeth ... .. 242

Temporary teeth ... .. 2678 } 2920

(6) Administration of general anaesthetics for extraction ... .. 84

(7) Other Operations :—

Permanent teeth ... .. 111

Temporary teeth ... .. 505 } 616

