[Report 1929] / Medical Officer of Health and School Medical Officer of Health, Swindon Borough.

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Borough of Swindon
EDUCATION COMMITTEE.

Annual Report

FOR THE YEAR 1929

OF THE

School Medical Officer,

DUNSTAN BREWER, M.R.C.S., L.R.C.P., D.P.H.

John Drew (Printers) Ltd. 51, Bridge Street, Swindon.

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Assistant School Medical Officers—
F. W. OLDERSHAW, M.R.C.S., L.R.C.P., D.P.H (Resigned 22nd Oct., 1929).
J. S. LOGAN, M.B., Ch.B., D.P.H. (Commenced 19th November, 1929).
VIOLET REDMAN KING, M.B., Ch.B., (Leeds.)

Specialist Ophthalmic Surgeon.
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(Deceased July 1929)
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(Commenced 18th October, 1929).

Dental Surgeons.—W. KENYON BERRIE, L.D.S., R.F.P.S.G.
JOHN HUTTON MITCHELL, L.D.S., R.F.P.S.G.

Head Clerk—S. MANSFIELD DEE.

Assistant Clerks—Miss GLADYS L. NORRIS.
JOHN W. DAY.

School Nurses—

Miss A. M. HOARE.
2 years Certificate of Hospital Training.
Certificate of Central Midwives Board.
Certificate of the Royal Sanitary Institute.

Miss I. D. SAMPSON.
3 years Certificate of Hospital Training.
Certificate for Tuberculosis (Royal Chest Hospital, London).
Queen's Nurse.
Certificate of Central Midwives Board.

Miss E. M. PILCHER.
3 years Certificate of Hospital Training.
School Nurses and Health Visitors and Tuberculosis Certificate
Certificate of the Royal Sanitary Institute.

Miss A. HAWKINS.
4 years Certificate of Hospital Training
Certificate of Central Midwives Board

BOROUGH OF SWINDON.

EDUCATION COMMITTEE.

Area	6021 Acres
Number of Elementary Schools	15
Number of School Departments	33
Recognised Accommodation	10,956
Number of Children on Register	9,465
Average Attendance	8,362

Number of Secondary Schools	3
Number of Scholars on Roll :—	
The College, Secondary School	280
Euclid Street Secondary School	239
The Commonweal Secondary School	284

To the Chairman and Members of the Education Committee of the Borough of Swindon.

LADIES AND GENTLEMEN,

I have pleasure in presenting the report upon the Medical Inspection and Treatment of School Children in the Borough for the year 1929.

The staff of the School Medical Department, at the present time, consists of a school medical officer, who is medical officer of health for the borough and devotes one tenth of his time to the school medical service; a male assistant school medical officer, who is also deputy medical officer of health to the borough and devotes six-elevenths of his time to the school medical service, and a female medical officer, who divides her time between school medicine and maternity and child welfare in the proportion of eight-elevenths to the former and three-elevenths to the latter. These three officers are full time servants of the Local Authority. There are two school dentists who, except that they do a small amount of work for pre-school infants, devote their whole time to the school service. There is one clerk, two assistant clerks, and four nurses, all engaged exclusively in the school medical department. The part time staff consists of an oculist, who devotes one session per week to the school medical department; an aural surgeon, who does the nose, throat and ear operative work and holds a consulting clinic when necessary.

Swindon is included in the Bristol area for the investigation of child rheumatism and a specialist in heart diseases visits Swindon from Bristol as occasion requires. The orthopaedic department, the venereal diseases department and the tuberculosis department of the County Council are also utilised by the school medical department of Swindon when necessary. Ionisation, X-ray treatment of ringworm and X-ray examination for injuries and diseases are carried out by the whole time medical staff. The scheme of medical inspection and treatment in Swindon is therefore fairly complete and the staff, under ordinary conditions, ample for carrying out all requirements. The school medical service is also eased by the arrangements, which have existed in Swindon for the past ten years, for attending to the health of pre-school children.

Unfortunately 1929 was a difficult year for the school medical service. In the beginning of the year, sickness deprived us of the services of one assistant medical officer for three weeks and in October, Dr. Oldershaw resigned and Dr Logan, who was ap-

pointed in his stead, though he came on duty in November, was not able to do the work of the school medical department until the beginning of 1930. Moreover, the epidemic of small-pox and the high pressure at which the public health department had to work, owing to the unusual prevalence of disease during 1929, made it impossible for the medical officer to devote as much of his time to the school medical service as is desirable and also necessitated the deputy medical officer being 'borrowed' when the pressure of work was extreme.

The unsatisfactory health conditions of 1929 did not re-act very materially upon the children of school age, except towards the end of the year,when three of them fell victims to poliomyelitis and a considerable, but at present uncertain, number suffered from acute ear diseases which became extraordinarily prevalent at the end of the year These was no measles in Swindon in 1929, but whooping cough was epidemic in the latter part of the year. Scarlet fever was epidemic throughout the year and small-pox and chicken-pox, both epidemic throughout the year, materially affected the school population in the last quarter.

FINDINGS OF MEDICAL INSPECTION.

The statistics of routine medical inspection show a reduction from those of last year as regards the numbers of elementary school children inspected, but an increase in those of the secondary schools. It is, of course, the routine medical inspections that suffer most in times of high pressure because these can only be done during certain specified and very limited hours. The deficiency of 1929 can, and must, be made good during the present year. There was an increase in the number of special inspections and of re-inspections, so that the total numbers of inspections were only about 500 short of those of 1928. In the conditions found upon routine inspection there was a significant drop in malnutrition; a relative increase in external eye disease ; a diminution of ear disease and defective hearing and generally of throat diseases. There is some significance to be attached to these. Obviously, malnutrition of children in Swindon is declining almost to vanishing point. The increase in external eye disease can be attributed to the dry, dusty summer and the diminution of ear and throat diseases to the favourable conditions as regards infection which ruled in 1928, in which year we had made a general clear up of all outstanding nose and throat conditions. It was not until the end of 1929 that throat and ear cases began again to accumulate. Unfortunately, Mr. Kenneth Lees, our throat surgeon, became seriously ill in June and died in July, and his successor, Mr. Courtenay Mason, did not take up duty until October. This is why, at the end of 1929, throat and ear cases were beginning to accumu-

late. They will be dealt with in the early part of 1930. From Table II B. it would appear that there is an increase of children routine-inspected found to require medical treatment and that this is specially so in the 'entrants' of whom 26% are reported as requiring attention. This table is, however, utterly misleading, as it draws no distinction between conditions which are of little significance and those which are grave. The percentage of children which are referred for treatment depends more upon the facilities available for treatment and upon the standard of efficiency aimed at, than upon the actual conditions present and the urgency for their relief. We shall gain a better insight into the prevalence of disease and defect in school children from the treatment tables, for practically all children who require treatment obtain it either from or through the school medical department. We find from the minor ailment statistics that 1526 children were treated in this department. All of these would be considered as children found to require treatment at routine inspection, but their ailments were, with few exceptions, temporary and trivial. It is indeed extremely difficult to form an idea of the health of the school child without considering the work of the school medical department as a whole. The tables of exceptional children tell us the numbers of those so seriously and permanently crippled as to be practically useless as citizens. The number of these is fortunately not great, though the number of mentally defectives, namely 71, is disquieting and it is certainly an under-estimate.

Another and more formidable difficulty in comparing the health of one child population with another, is the wide variation in the standard adopted by different observers, for the slightest tightening or slackening of standard may cause differences which swamp everything which is real. As extreme examples of this may be given cases of suspected tuberculosis of the lungs, disease of the heart, rickets and rheumatism. To take the first, the writer of this report only suspected tuberculosis of the lungs in six children out of 150,000; whereas another observer in a contiguous district reported over 10% of the children as having doubtful tuberculosis of the lung. Much the same wide differences occur in the other conditions mentioned. As a consequence of this, the change of one school medical inspector may make the returns of one year incomparable with those of another. Differences in fashion also introduce discrepancies. For instance, if certain small nodules which occur about the elbow are looked upon as evidence of rheumatism, the percentage of children with rheumatism is increased twenty-fold, and if certain other signs be considered as evidence of rickets, the proportion of Swindon children with rickets rises immediately from about one in three hundred to fifty per cent! In the present state of our knowledge it is impossible to overcome the difficulties introduced by variations of standard, though where

the standards are fixed, comparison of one group with another is comparatively simple. Differences of standard are not differences of opinion, they affect the figures only, they do not influence treatment.

THYROID DISORDERS.

The special Clinic for the observation and treatment of thyroid disease was continued during 1929. Formerly the proportion of children with thyroid enlargement in Swindon was very great, but there has been a rapid improvement for several years. Towards the end of 1929, however, there was a halt in this improvement and the condition seemed to be gaining ground again. At the end of the drought, several cases of enlargement of the thyroid with cystic and tumour formation were detected. This was a form of the disease which we had seldom seen locally in past years and it was thought that it would be unsuitable for the ordinary forms of treatment. We were agreeably surprised to find that these cases which, at first, were considered to be amendable only to surgery, clear up quickly and completely by a modification of our routine management of thyroid disease. The thyroid clinic has now been in operation for ten years and we have had an opportunity of following some of the older cases through adolescence to adult life. It is hoped at the end of 1930, to give a detailed account of the work of this clinic and of the conclusions to which its working has led us.

CHILD RHEUMATISM.

Child rheumatism is comparatively uncommon in Swindon at any time and during 1929 there was less of it than usual. At the Special clinic held by Dr. Herapath of Bristol 22 new cases and one old case were presented, of which 13 were reported as being cases of rheumatic heart disease and of these 12 were new. One school child died of acute rheumatic heart disease during the year, and one other child died from valvular disease which had its origin in an attack of pneumonia some four years ago.

RINGWORM.

There was a further drop in the number of cases of ring-worm, 60 new cases being discovered against 65 last year. At the end of the year there were only 24 cases still under treatment against 46 at the end of 1928. X-ray treatment of ringworm had to be suspended throughout the year and treatment of thallium acetate was discontinued. As regards the latter it may be said that all the cases which were treated in Swindon recovered rapidly.

PROVISION OF MEALS.

The Education (Provision of meals) Acts of 1906 and 1914, were in force in the Borough throughout the year. The scheme for carrying out this work remains similar to what was in vogue last year. It is extremely simple, easy to administer and very cheap, but efficient for dealing with local needs.

SCHOOL BATHS.

There are no school baths in Swindon, nor indeed are there any public baths. The Great Western Railway Medical Fund Society possesses private baths and swimming baths which, for all practical purposes, are open to the public. The swimming instruction of the scholars is carried out in these baths.

EMPLOYMENT OF CHILDREN AND YOUNG PERSONS.

There is no employment of young children in Swindon. The Juvenile Employment Committee looks after children and young persons and this committee is in constant touch with the school medical department. Since practically all the children in Swindon are known to the school medical department, which possesses life records of them during their childhood, co-operation is comparatively simple.

SPECIAL INQUIRIES.

The special inquiries which are in progress in Swindon naturally had a very poor time during 1929, though all of them were continued, except the treatment of ringworm by thallium acetate. The inquiries at present under way are :—

1. An inquiry into the distribution and causes of thyroid disease.

2. An inquiry into the histories and environment of rheumatic children.

3. An inquiry into the pulse rate and blood pressure during school age.

4. An inquiry into the blood changes of childhood.

As regards 3, this inquiry has been in progress for about ten years and the material collected is now ready for scrutiny. It has been said that the blood pressure and pulse rate in children

are so variable that it is not worth the trouble of investigating them ; and, as regards the cytology of the blood in childhood, that, as this varies in every child at almost every moment of his life, both in health and disease, its investigation can lead to nothing. The author of this report holds that the reasons given for neglecting these observations are precisely those which should urge us to pursue them, though he admits, after having studied the one for ten years and the other for thirty, that the work is not sensational and that valuable results cannot be obtained without prolonged labour.

The cytological examination of the blood in childhood gives most valuable information when once the difficulty of reading the results has been overcome. Pressure of work will not permit at the present time of the tabulation and scrutiny of the records of the blood examinations of children, but since it appears to the author that the evidence obtainable from this is one of the most important elements in the development of preventive medicine, the following tentative suggestions may be published without comment :

The blood is the only organ in the body which we can study in the living condition. It is an organ admittedly of great importance and a minute knowledge of its physics, chemistry, morphology and physiological activities is obviously desirable. The researches into the blood of childhood by the medical officer of health of Swindon are limited to its morphology, not because he considers this to be the most important function, but because it is that for which he is most fitted to investigate by opportunity, experience and inclination. The work originated when studying the histological changes of acute infection in the years 1899 to 1906. It was observed then that enlargement of the lymphatic glands was a concomitant of most infective processes, that this enlargement was due to rapid proliferation of the lymph cells and that this was connected with changes in the corpuscular elements in the blood stream. It was found also by clinical experiment that the ingestion of living yeast had a profound action upon lymphatic enlargement and either by this, or with this, a great change in the cytology of the blood. It was found that children with a high lymph cell count in the blood stood minor operative treatment very badly, particularly if the operative treatment was inseparable from the flooding of the body with toxins from septic foci. It was thought that the deaths which sometimes occur after trivial operations and that the sloughing which frequently follow the opening of suspected abscesses in scarlet fever were thereby capable of explanation and that by proper timing of interference, according to the condition of the blood, the risk of these calamities could be avoided. The experience, particularly of the last ten years, gives strong presumptive evidence of the accuracy of this theory and of the value of living yeast in

the treatment of the acute, and particularly of the sub-acute, infections in childhood. It may be said in passing that the author has found yeast which is dead and extracts of yeast, whether given by the mouth or subdermally, to be inert and, to whatever the benefit of living yeast may be due, it is not due to vitamine B or C.

There are many difficulties in the study of blood corpuscles. To obtain reliable films is easy after a little practice and there is nothing to choose between the various methods in use so long as no pressure and no heat is employed. The staining of the films is of far less consequence than is generally taught, but the fixation is vital for critical work. If fixation is perfect, staining is immaterial. There are only two reliable fixation agents : Hermann's fluid and glacial acetic acid saturated with mercuric chloride. Of course the film must be fixed wet and living. Both fixing agents are very troublesome and Hermann's fluid, which is the better, is the more difficult to use and is moreover very expensive. In a properly fixed film, no white corpuscle is circular, unless it is dead. For rough clinical work, fixing is not required, for all that is generally needed is a differential and numerical count of totally dissimilar bodies, which retain some of their dissimilarity in spite of the drying, squeezing, and mummification to which they are subjected.

Another difficulty is nomenclature, for no two observers use the same. We have dozens of names for what are probably artifacts and none for what matters most, the differences in maturity of the nuclei of the leucocytes.

It is admitted that the morphology of the blood is different in every person, in every age of that person, at every hour of the day, in response to all usual and unusual physiological activity, in every stage of every disease, and that the blood picture may be completely reversed in different stages of the same disease. But the same is true of all else that lives ; to quarrel with it is to quarrel with life itself ; to shirk biological investigations because they are confusing is to surrender science for rule of thumb and quackery in the fight against disease.

The examination of the blood in children tells us the beginning of the leukaemias and anaemias ; it helps us to estimate the probabilities of appendicitis, of tonsillar enlargements ; of awakening activity in tuberculosis ; to appreciate the course, prognosis and indications for treatment of acute and chronic infections and the advisability or otherwise of operative measures not needed urgently to avert death. This sounds much, but it is no more than we should expect, for the blood plays a vital part in all reactions. Blood examination is difficult, but it is most worth while of all clinical investigations.

EXAMINATION OF SECONDARY SCHOOL CHILDREN.

Except that the schedule for medical inspection is somewhat more elaborate, and that instead of three specific inspections, we aim at giving the secondary school children one thorough inspection on admission and a somewhat modified inspection every year, no difference is made in Swindon as regard the services offered to secondary and elementary children. In Swindon they are of the same class, for nearly all the secondary school children start their education in the elementary schools.

In 1929 we were able to carry through the full schedule in relation to the children in the College and the Commonweal schools, but owing to the lamented death of the headmaster of Euclid Street school, the inspection of the boys of that school was put off until the beginning of 1930.

There is no material difference between the findings of the inspections of elementary children and the younger secondary school children; but as secondary education continues right through puberty and to the beginning of adolescence, it introduces a new age group which has its own special liabilities to disease. Tuberculosis of the lungs, appendicitis, early primary anaemia and signs of strain upon the nervous and muscular systems, defects which are not common before puberty, come into prominence towards the end of secondary school life. Spinal curvature and flat foot are two of the commonest conditions amongst secondary school children, particularly amongst girls, and hyperthyroidism which, in Swindon, is not very uncommon in elementary school leavers, is much apt to be troublesome about matriculation time. Whereas in infancy, improper feeding and deficiency are the dominant causes of disease; in early childhood, infection, and in late childhood, errors of growth; the main cause of ill health after puberty, is illbalance. It is at this age that the final changes from infantile to adult conditions become established and these sometimes give rise to difficulties. The development of the body is not regular, but proceeds by a series of somewhat sudden alterations, and during periods of rapid change, errors of function are liable to appear and to call very definitely for management. We have said on several former occasions, that the early stages of such diseases as exophthalmic goitre and the anaemias are to be found at the age immediately succeeding puberty and it is probably true that the very earliest signs of many other diseases of the adult, such as peptic ulcer and mental alienation can be detected at the same age. It is a well known fact, more commonly observed amongst children who have received a secondary as well as a primary education, (though this is probably because they come more under observation), that health is liable to break down some-

what suddenly as soon as education is completed and the serious business of life begins. There can be no question that these breakdowns do not develop suddenly, but that they start gradually and the first warnings of their approach should be detected and the danger averted long before the result becomes obvious.

INFECTIOUS DISEASES.

We have always held that the consideration of infectious disease in connection with schools, apart from general epidemiology, is a mistake. The school has no more and no less to do with the spread of disease than has the omnibus or the picture palace, but schools do present a convenient field for the detection of evidence which is obtainable only with great difficulty elsewhere. The school register gives an excellent idea of the health of the population, and a systematic scrutiny of a school very often supplies links in a chain which are much needed to explain the occurrence of an outbreak of disease. The school itself is rarely a centre from which disease spreads; but it happens occasionally, as it did in one school in Swindon in 1929, that the material required for building up a genealogical tree of an outbreak can be obtained directly and easily from a school scrutiny.

FOLLOWING UP.

The method that has been in practice in Swindon for many years produces an automatic following up of all children from birth until they leave school or otherwise fall out.

OPEN AIR EDUCATION.

We have no Open Air School in Swindon, though for the past ten years we have been agitating for one. There seems at last to be some faint hope that at some future period some commencement may be made towards its realization.

PHYSICAL TRAINING.

There is close association between the school medical service and the physical training given in the schools, and we hope, in the near future, to develop this by utilising the services of the orthopaedic surgeon to survey the physical state of the children and advise the instructors in physical training.

CO-OPERATION.

Co-operation between the school medical department and the parents, teachers, attendance officers, and various agencies which are capable of giving help, is essential for smooth working and a satisfactory scheme. We have long since overcome any

difficulty in obtaining this co-operation. Co-operation with the parents is, of course, the most important point, for this means the satisfactory education of the parents and what is obtained by education is lasting and progressive. All parents are not so enlightened or so sweetly reasonable as might be desired, but to win over an obstructive parent, or to educate an ignorant one, is to produce a lasting benefit, of very different value from the temporary success which can be obtained by force.

NURSERY SCHOOLS.

There are no Nursery Schools in Swindon nor indeed are any called for.

CONTINUATION SCHOOLS.

Continuation schools have past into history and have been forgotten.

SPECIAL SCHOOLS.

There is in Swindon a special school for mentally defectives. This school suffers because originally it was used for imbeciles and low grade defectives who were not capable of education. The process of converting it into a school where education can be given to those who, though educable, are not capable of following the ordinary school curriculum, is very difficult and possibly will never succeed while this school is held on the present premises. Most of the mentally defective children in Swindon are not in the special school, but scattered in the elementary schools, a condition which is not satisfactory, though it has some point in its favour. It is hoped in the near future to review the arrangements that are made locally for the treatment of mentally defectives.

CONCLUSION.

The main object of the school medical service is not the detection nor the treatment of disease, but to help to rear citizens to escape disease. Its great aim is to do what is possible to promote healthy development and the growth of full physiological vigour. What is taught is of greater importance than what is done. It is true that most of the work of the department at present is in the nature of the detection of the abnormal and of seeing to its remedy, but this is because we are not clever enough to recognize departures from physiological limits until they become so marked that they cannot be brought back again without interference. It is in acknowledgement of failure that we have to treat a child who is suffering from ill-nutrition, from established heart disease, or from enlargement of the tonsils requiring their removal. Were our knowledge and practice what we hope it may be, these marked

conditions would never occur nor, in most cases, would they occur if we were sufficiently keen to detect, not what has gone wrong, but what is about to go wrong. Owing to the powers of adaption possessed by organic bodies, there must be a period, and generally a long period, in which adverse factors are straining the powers of the body, but which are temporarily kept in check by the reserve possessed by all organic functions. This reserve is great in the early years of life, but gradually diminishes as life progresses, and health and longevity depend, in great measure, upon its economy. During childhood, life may be maintained in spite of grave adverse factors, by calling upon the reserve powers, but if these are used in childhood they are not available afterwards. We know sufficient to be able to recognise some of the states of strain. We can tell the difference between children who are living easily and those who are living under difficulties, and we can, in many instances, generally by very simply means, convert the latter into the former. School medicine *as it should be practised* is the most difficult and the most highly technical of all departments of medicine, but owing to man's incurable stupidity causing him to care so much more for sensation than for peace, it is generally considered that this work, whose results are in no way sensational and if successful are not obvious, can be prosecuted by those who have the least experience or knowledge of organic life. It is true that of late years many eminent members of the medical profession who have given the best years of their life to successful and sometimes brilliant practice in the cure of the sick, have turned their attention to the possibilities of prevention which are exhibited most obviously by school medicine ; but these authorities are not willing to do the necessary hard labour, nor does their experience in grave disease give them the requisite knowledge to practise preventive medicine.

A knowledge, and a thoroughly sound one, of biology and a more detailed and accurate knowledge of physiology are essential for the satisfactory practice of school medicine. Knowledge of the late stages of disease, of disease in its marked and obvious forms and of that part of medicine which is skill rather than science, are of much less value. The possibilities of school medicine are almost unlimited if we can once fix in our mind that what matters is not so much what is found at present, but what it means for the future. It would be absurd to pretend that by the examination of a child we could ever foretell with complete accuracy what would be the child's life without supervision and how it can be altered by proper nurture, but even at the present day we can achieve a certain amount of success, and every piece of genuine research in the biology of development enables us to do more. The things that matter most in childhood are those which are the least obvious and which often cannot be detected except by special

and sometimes difficult tests. We do not mean that what is obvious is not important, but if the rearing of the child from the start is correct, nothing untoward ever should become obvious, save those few abnormal conditions which are derived from inheritance and which we can never remedy because we cannot go backwards. It is satisfactory to be able to record that amongst 10,000 children we have detected 2,000 requiring medical treatment and that we have supplied that treatment and done what is popularly and professionally miscalled ' cured ' them ; but how far better would it be if we could say that we had supervised 10,000 children and, because of the supervision, we had found nothing calling for active interference.

DUNSTAN BREWER,
School Medical Officer.

March, 1930.

APPENDIX I.

REPORT OF THE SCHOOL DENTAL SURGEON.

To the Chairman and Members of the Education Committee.

LADIES AND GENTLEMEN,

I have pleasure in presenting the Annual Report on Dental Inspection and Treatment for the year 1929.

15 Elementary Schools comprising 33 departments have been dentally inspected. This constitutes a complete inspection of all the elementary schools in the year, and it is found that 75% of the children require treatment. Treatment has been carried out for twelve schools to the end of the year.

82% of the children referred for treatment attended the Clinic.

ELEMENTARY SCHOOLS.

5701 Appointments were made, 5492 or 96% were kept.

3371 Teeth were extracted and 886 were filled.

11055 other operations, including dressings, polishings and scalings were carried out.

6 Regulations were completed by means of Orthodontic appliances.

The increasing amount of irregularities that are seen in the mouths of children, is one of the problems of school dentistry, and if time would permit a great many more cases could be treated by appliances. Judicious extraction helped many, and is a daily operation, but in many cases the application of regulation appliances is the only remedy.

The X-ray apparatus was also frequently used for diagnostic purposes prior to treatment.

The Dental Nurse was present at practically all sessions and her services are greatly appreciated.

Owing to the increasing amount of clerical work which the dental clinic involves, the time has now come when further assistance to the Nurse should be considered.

The practice of seeing all children up to 9 years of age, and following up those who accept treatment is being continued.

Casuals (those having no appointments) are seen each morning between 11 and 12.

INFANT WELFARE.

257 Children were treated from the Infant Welfare Centre and 27 patients were treated or given advice from the Ante-Natal Clinic. In one case an 'Epulis' was removed at the Clinic.

ROUTINE INSPECTIONS.

6239 Children were inspected at the schools.
1529 or 24.5% were found free from caries.
29 or .46% were found to require no treatment.
4682 or 75% were recommended for treatment.
3028 or 82% recommended, attended the Clinic to end of year.
5492 attendances were made.
1910 of these were rendered dentally fit as the result of treatment.

SECONDARY SCHOOLS.

Dental Inspection was carried out at all three secondary schools (The College, Euclid Street, and The Commonweal).

766 pupils were examined.

422 or 55% were referred for treatment.

Treatment has been carried out for the pupils attending The College and treatment is proceeding at present for the pupils attending The Commonweal and Euclid Street Schools.

225 pupils were treated at the Clinic and they made 441 attendances.

137 teeth were extracted and 238 permanent teeth were filled.

218 other operations were carried out (including scalings, dressings and root treatment).

A detailed report of the inspection is appended in the Statistical Tables for Higher Education.

On behalf of the dental staff I again wish to thank the teachers and members of the medical department for the assistance they give us in carrying on our work.

W. KENYON BERRIE, L.D.S., R.F.P.S.G.,
School Dental Surgeon.

January, 1930.

APPENDIX II.

REPORT OF THE OPHTHALMIC SURGEON.

LADIES AND GENTLEMEN,

I have the honour to present my report on the School Eye Clinics for 1929.

The work of the Clinics has been carried on without interruption during the school year.

In the earlier part of the year I had much valuable help from Dr. Oldershaw and since his resignation this assistance has been maintained by his successor Dr. Logan. There have been no important changes in the nature of the work, but some improvements in detail have been achieved both in expediting the treatment at the Clinics and particularly in reducing the length of stay in hospital of children who have undergone operations for strabismus. This has been brought about by the adoption of a newly developed technique; the operation of recession of the internal rectus muscle having replaced the older method of advancement of the external rectus. The cosmetic and functional results of the new operation have proved to be very satisfactory, and since it is no longer necessary to bandage the eyes after the second day, the remaining time in hospital is now usefully spent in training the children in suitable fusion exercises, a process in which they show much interest. The Oxford Eye Hospital has just purchased new apparatus for this purpose and I hope that this important training may be much developed during the coming year.

As in former years I wish to thank the Nursing and Clerical Staffs for their help and co-operation.

O. B. PRATT, M.A., M.B., M.R.C.S., L.R.C.P.
Ophthalmic Surgeon.

March, 1930.

APPENDIX III.

REPORT OF AURAL SPECIALIST.

LADIES AND GENTLEMEN,

The work for the year 1929 was interrupted by the illness of Mr. Kenneth Lees. My acquaintance with the department was limited to the last quarter of the year, and I am therefore not in a position to make more than a brief report on the work done.

Of the four Special Aural Clinics held, three were in the last quarter. The fact that twenty-four cases were examined during the year as compared with twenty-eight for the previous year may be regarded with satisfaction in view of the long period of interruption.

The absence of mastoid operations was striking compared with the necessity of three such operations in 1928.

In the case of the Aural Clinics it is to be especially remembered that preventive treatment is their chief function, and also that surgery plays an important part in this aspect of disease of the ear, nose and throat.

F. COURTENAY MASON,
B.A., M.B., M.S., (London) F.R.C.S., Eng.

March, 1930.

SUMMARY OF CASES SEEN AT SPECIAL AURAL CLINIC, 1929.

Number of Clinics held	4
Number of cases examined	24
Number of consultations	25
Total Number of attendances at Clinic	25

Number of cases recommended for :—	
Operation for removal of Tonsils and Adenoids .... (Number performed 6, Refused 2, Awaiting operation 1)	9
Operation for removal of adenoids only .... (Operation performed)	2
Operation for Nasal Obstruction .... (Not yet performed)	1
Other operation—Antrum washed out under Anaesthetic (Operation performed)	1
Other forms of treatment. (Politzer, douches, etc.) .... (Treatment carried out)	5
No treatment but to be kept under observation	1
Observation :—	
After operation for mastoid	1
? Mastoid	1
Tonsils and Adenoids for operation after special course of treatment for another condition	2
Operation for Reduction of Turbinate .... (Operation performed)	1
TOTAL	24

APPENDIX IV.

ASYMMETRY OF THE FACE.

The most frequent defects found in school children, errors of refraction, defects of speech, nasal obstruction, adenoids, enlarged tonsils, chronic ear disease and carious teeth,are all connected with the special senses, the peripheral organs of which are situated in the face. These defects are either peculiar to the school age or dominant at that period and it would seem just to connect their prevalence with the predominant developmental changes which occur at that period of life It is proposed to produce evidence that the most characteristic change in the body frame-work which occurs during the school period, namely, the growth of the face, often shows evidence of irregular and disturbed growth and that it is a fair hypothesis that this disturbance pays some part in the etiology of the group of defects most prevalent in school children. At birth, the body is very different in its proportions from that of the adult, the cranium and belly are relatively enormous, the limbs are short, the chest is small and the face is relatively insignificant. During early infancy, the chief growth occurs in the cranium and in man this part of his anatomy reaches its full adult size towards the end of the eighth year. The chest grows more slowly and retains its infantile condition until the end of puberty. The face grows very little until the appearance of the first teeth at the age of six months. It continues to grow slowly during the first dentition which is normally completed at the twentieth month. It then remains fairly stationary until the end of the third year, when it takes on a more rapid growth and continues to grow with increasing rapidity until the eruption of the second permanent molar which occurs, usually, in the thirteenth year. At the beginning of school life, the jaws are small, holding the twenty deciduous teeth in a continuous line. The normal growth of the jaws after the age of three causes these teeth to space. By the sixth year, the jaws have grown sufficiently to admit a large first permanent molar behind the temporary series ; and by the thirteenth year the jaws should be of sufficient size to hold comfortably the twenty eight large permanent teeth in a continuous and even series. The growth of the remainder of the face keeps pace with that of the jaws, increasing in size about fourfold during the school life. Compared with this rate of growth, that of the rest of the body is trivial. The defects special to childhood are all admittedly of obscure and complex causation, but that lack of room may be an important factor, admits of no question. The errors of refraction of the eye are partially due to failure of the eye to elongate ; caries of the teeth is much influenced by irregularity from overcrowding; mouth breathing and other forms of nasal obstruction and adenoids are mainly questions of disparity between the size of the organs

and the frame-work in which they are enclosed ; persistent discharge from the ear owes much of its persistency and danger to smallness of the passage not admitting of free drainage.

The face normally develops regularly and symmetrically, but it does not always do so, in which case, it will show its failure by increasing asymmetry of its two sides.

The symmetry of organic beings is not, as is the case with inorganic substances, a fundamental function of their structure. The inorganic crystals are symmetrical along their planes of symmetry, even though the two halves may appear dissimilar from the various causes which interfere with the formation of perfect crystals. But if the crystal be split along one of its planes of symmetry and held against a mirror, the reflected image will complete it. The symmetry of organic beings is not of this nature, it is apparent rather than real and would appear to be mainly the outcome of bilateral similarity of requirements and convenience. It is never perfect. Paired organs are never exactly similar and where convenience is better served by asymmetry, it prevails ; as it does in the difference of the level of the two testicles in man ; in the suppression of one lung of the snake, and of one tusk in the Narwhal. We might expect asymmetry of the human face to result from asymmetry, or delayed, or impaired, development of the important organs which it contains ; but on the other hand it is conceivable that asymmetrical development of the facial bones may cause distortion and injury, or interference with the proper growth of the organs which are housed therein.

The cranium may be asymmetrical ; the ears may be asymmetrical in position, size or formation ; the eyes may be asymmetrical in size, or in the colour of the irides ; but the commonest form of asymmetry is that of the superior maxilla and of the smaller bones which make up the main fabric of the face. Where these grow asymmetrically, one side is generally longer and narrower than the other and it is probable that the long narrow side is less normal than that which is broad and short. We have shown on a former occasion that asymmetry of refraction (anisometropia) is generally connected with asymmetry of the face and that most usually the less perfect eye is housed in that side of the face which is narrower and longer. Moreover, in the abnormalities of the palate, it is the long narrow palate, and not the broad short palate, which is associated with adverse states of dentition and the production of adenoids.

The material for this study was collected in the West Riding of Yorkshire during the years 1909 to 1919 and was culled from the examination of about 100,000 children. Much of the earlier material was eventually discarded as it required some experience

to fix a standard ; some of the material has been lost and some, though it took much time to collect, was tabulated in cipher, the key of which is now lost. But sufficient material remains to establish the frequency and distribution of asymmetry in the West Riding children of the early part of the century. When the author left the West Riding in 1919 and came to Swindon, he took the opportunity of continuing the observations on asymmetry and satisfied himself that what was true for the north held equally true for the south.

The incidence of asymmetry increases steadily throughout school life. At three years old, it is rare ; at five years, it occurs in three per cent. of children ; at twelve, in nearly thirty per cent. This is what we should expect if asymmetry is produced by interference with the growth of the face. Many causes have been assigned to account for asymmetry. It has been presumed to be due to the squeezing of the head during the process of birth. It is quite true that the majority of us come into the world with a lopsided head, but this generally rights itself in a short time. If this moulding of the head were the cause of asymmetry in school children, the latter should decrease with growth, but it increases steadily during the time that the face is growing. This matter is capable of some degree of proof. It may be justly assumed that the heads of infants delivered by forceps would undergo greater moulding than those delivered naturally. One should therefore find a higher proportion of asymmetrical faces in forceps-delivered than in normally-delivered children. We have some evidence that this is not found in children born in 1899 and examined in 1912. Of these children, about twenty-eight per cent. were found to be asymmetrical. The proportion of women in the district delivered by forceps in the closing decade of the 19th Century was ten per cent. Trustworthy evidence of the method of delivery was obtainable in 94 asymmetrical children, of these 88 were delivered naturally and 6 were delivered with instruments. In the first decade of the 20th Century, instrumental delivery became much more frequent, varying in different districts from 20 to 50 per cent. Of 500 children born during this time and found to be asymmetrical when they reached school age, trustworthy evidence of the method of delivery was obtainable in 154. Of these, 119 were delivered naturally and 35 by forceps. We can therefore discard squeezing of the head at birth as the cause of asymmetry in childhood.

Another explanation is that asymmetry of the face results from one-sided disease and injury to the organs lodged in the face such as, marked decay of the teeth of one jaw and not of the other, and disease or gross error of development of one eye-ball. The first of these may be discarded, for though disease and loss of the first teeth is one of the commonest phenomena, it is invariably

bilateral. The second could not account for more than a very small proportion of cases of asymmetry if, indeed, it could account for any, and though it is admitted that asymmetry of refraction accompanies asymmetry of facial development, there is every reason to believe that the latter is the cause and not the result of the former.

A method of causation of asymmetry far more worthy of consideration than the foregoing may be stated in the following quotation from Mr. Wood (B.M.J. 28.10.11) " By far the largest number of deflections (of the nasal septum) are due to faulty development of the upper jaw and bony palate in early childhood, a result of mouth-breathing consequent upon the presence of adenoids in the naso-pharynx." In other words, asymmetry of the face is a symptom to be reckoned with high palate, deflection of the septum and mouth breathing, as resulting from adenoids. This view is more widely held than any other and was the view held by the author for a time, until the recording and tabulating of a long series of observations told him that it cannot be true.

In order to understand this proposition clearly and the reasons for dissenting from it, it will be necessary to discuss the subject at some length.

In the first place as regards adenoids, it must be conceded that a pharyngeal tonsil is the normal inhabitant of the naso-pharynx of every child. By ' adenoids ' all that can ever be meant is that the pharyngeal tonsil occupies more room than it should, and by its relative size presses upon or obstructs certain important structures which gives rise to symptoms that are not normal. It follows therefore that the question as to whether a given child should or should not be regarded as the subject of adenoids is more often one of opinion than of fact and, consequently, different observers differ widely in their figures regarding the prevalence of adenoids. The ten medical inspectors under the West Riding Education Authority recorded percentages varying from 0.90 to 6.89% (figures for 1910). A slight allowance must be made for local distribution, but the discrepancy of the figures is undoubtedly due mainly to the different standards of the individual inspectors. Taking however the highest percentage given 6.89%, this would not account for one fourth of the cases of asymmetry.

The same reasoning may be applied to mouth-breathing, a symptom of which adenoids is only one of many causes. The highest figure given for mouth breathers from all causes (9.58%) is still less than one third the percentage of asymmetry.

The connection between asymmetry of the face and the deviation of the nasal septum is much more close. The percentage of

adults with nasal deviation is variously given from 53% to 96%. Makenzie gives the percentage as 77%. (Wood, B. M. J.) Observations amongst thirteen-year old school children give a percentage of 69%. Whatever figures are taken it appears that deviation of the septum is far more common than any other form of asymmetry of the face.

Just as some cases of asymmetry of the ears or orbits are traceable to injury and disease, so some cases of nasal deviation are due to similar causes, but most cases of nasal deviation are as obscure in their causation as are other forms of asymmetry. Indeed it seems that nasal deviation can only be considered as a variety of facial asymmetry. An anterior cause, perhaps a common anterior cause, must be sought for both conditions.

The author's experience is that nasal deviation is not more common in children who have, or who have had, adenoids than it is in other children. Be this true or false, it is still obvious that adenoids could not be a chief cause of a deformity which occurs in 77% of all skulls.

As it is intended at a future time to discuss the complex subject of the high palate, nothing more need be done here than to call attention to the table showing the connection between asymmetry of the face and abnormal palates. This table shows that asymmetrical children are slightly more prone to have high palates than are symmetrical children and that children with high palates are slightly more prone to be asymmetrical than are children with normal palates, but the excesses in either case are small and point to an anterior cause, again possibly a common anterior cause, for the two phenomena.

The percentage of asymmetrical children with symptoms of adenoids is higher, but very slightly higher, than that of symmetrical children and the slight excess can be ascribed entirely to the slight excess of high palates amongst asymmetrical children. The relationship of the high palate and adenoids is very close, but it need not detain us here.

The study of asymmetry as it occurs in plants and animals in the wild state and under cultivation, helps us to understand the asymmetry of man and perhaps to explain its occurrence. If it does so, it will explain also why the defects of children should be so frequent in civilised communities. It is not proposed to go into this question in any detail, but it may be stated briefly that asymmetry amongst wild plants and animals occurs rarely, except where it is subservient to function and in such cases it is common to all members of the same species. When animals and plants

are domesticated, particularly when they are interbred to produce or exaggerate variation, asymmetry becomes common and is generally confined to those parts or structures for which animals and plants have been specially selected. Asymmetry of colour is very frequent, especially in animals bred for certain markings. Plants tend to bear flowers asymmetrical in colour and in shape when they are selected for their inflorescence. If they are selected for their fruits, such as the strawberry, it is the fruit that is liable to asymmetry. In animals it is the same. Prize poultry are selected for the markings of their face and particularly for their wattles and combs, and these are specially liable to be asymmetrical. Lop-eared rabbits are generally disqualified for asymmetry of their ears. Probably comparable phenomena occur in man. But the selection of man owes less to human influence than that of any other domesticated species and such selection as has occurred, has resulted mainly from the pressure of circumstances, unconsciously fostered. Natural selection acting upon man has tended to produce an increased capacity of his cranium and a diminution of his jaws. It is most probable that the diminution of the jaws is correlated with the increase of the cranium, there is no acceptable evidence that it has occurred as the result of alteration in his diet. On a future occasion, evidence will be shown that the dentition of man is in a state of recession. The reduction of the standard mammalian formula of 44 teeth to 32 occurred early in the primates, so there is no difference between the number of teeth in man and those of the higher old-world monkeys ; but there is evidence of further reduction of the jaws in man for he has lost the diastema. This is present in all living mammals, though as it is absent in many of the primitive eocene mammals, its absence in man is probably a reversion * The state of the teeth of school children moreover, shows abundant and probably conclusive evidence that man is losing the upper lateral incisor and possibly also one of the lower pre-molars. It is also suggested that the third molar is being lost, so that in the course of time the teeth of man may be reduced to 24. At the present time the average human mouth will not accommodate the normal dentition, so that over-crowding is the rule rather than the exception. It is probable that the whole of the face is sharing in the recession of the jaws and that in the future man will have, not only weak jaws, but smaller features. There is some evidence that the middle and inner ear of man is being reduced in size, coincident with its change of function from that of an organ of warning to one to serve the brain for the appreciation of language and musical sound. We may therefore look upon asymmetry of the face as evidence of evolutionary changes and the high prevalence of tooth,

* The diastema is sometimes present in some races of man (Papuans) and, exceptionally, it is seen in English children.

eye, ear and nose diseases in children as the price to be paid for the high specialization of the central nervous system.

The observations that were made into the subject of asymmetry bring forth the following :—

(1) Asymmetry occurs in rather more than a quarter of all children at the age of twelve ; it is rare in infancy and becomes progressively more common as age advances. There is no evidence as to what happens after the full eruption of the twelve year old molar.

(2) Asymmetry of the face varies in frequency in different districts. It is most common in small villages where there has been much interbreeding. In some of the isolated villages of the Yorkshire coalfields, asymmetry was highly prevalent. Its co-relation with certain other functions was worked out with some detail. The co-relation between asymmetry of the face and asymmetry of refraction of the eyes was given in detail in the Annual Report for 1926. The connection between asymmetry and mental capacity is given at the end of this chapter. The connection between asymmetry and deformity of the palate will be referred to at another time. It is not proposed to give the tables in detail at present, for the object with which this short account is written, is merely to call attention to a method of approaching the study of disease through the consideration of biological factors other than environment and symbiosis. We shall therefore be contented by giving one Table only though many others are available.

ASYMMETRY OF THE FACE.

Children Born in 1898 and Examined in 1911.

	Boys		Girls		All	
	No.	%	No.	%	No.	%
No. Examined	908	....	886	....	1794	....
Total Symmetrical	634	69.8	625	70.5	1259	70.1
Total Asymmetrical	274	30.1	261	29.4	535	29.8
Asymmetry Ears only	20	2.2	14	1.5	34	1.8
Asy. Ears and Face	35	3.8	25	2.8	60	3.3
Totals	55	6.0	39	4.4	94	5.2
Asy. R. above L.	146	16.0	120	13.5	266	14.8
Asy. L. above R.	100	11.0	124	13.9	224	12.4
Asy. eyes level	8	0.8	3	0.3	11	.06
Total Asy. of Face	254	27.9	247	27.8	501	27.9
Asy. of Face only	219	24.1	222	25.0	443	24.6
Total Asy. of Face	254	27.9	247	27.8	501	27.9
Total Asymmetry	274	30.1	261	29.4	535	29.8

REMARKS.

These figures very closely resemble those for children born in 1897 and examined in 1910.

Asymmetry was slightly more common this year than last (29.8% against 28.2%). This increase is mainly amongst the Girls (29.8% against 26.8%) Amongst the boys the increase was trivial (30.1% against 29.6%).

Asymmetry of the ears alone was about as common this year as last (1.8% against 1.6%), its greater frequency in boys, though less marked than in last years tables, is still considerable (Boys 2.2, Girls 1.5).

The Asymmetry of the ears combined with Asymmetry of the Face and the Total Asymmetry of the Ears are recorded for the first time this year.

Although local distribution was not recorded in this year's figures, it may be remarked that asymmetry of the ears is limited to one or two small villages, Lee Moor contributing a comparatively enormous proportion. The preference for the Right Outer Canthus to be above the Left in Boys and below the Left in Girls was more marked as regards the Boys and less marked as regards the Girls this year than last.

Asymmetry of the Face with the two Outer Canthi on the same level was nearly as rare this year as last (0.6% against 0.4%)

ASYMMETRY OF THE IRIDES.

The irides are never absolutely symmetrical, but asymmetry which is conspicuous is not common. It occurs in two forms, either marked difference in colour of the two irides, or one iris different from the other in being partly of the same colour and partly of a different colour. In the latter case, so far as has been observed, one and a half irides are blue and one half iris is a bright yellowish-brown. In 1910, 6,880 children were examined and asymmetry of the iris was noted in 14 boys and 18 girls, 32 cases altogether, a percentage of 0.46. 3,186 of these children were under seven years of age. Asymmetry of the iris was noted in 19 or 0.59%. 1,862 were ten years old and seven of these or 0.37% had asymmetrical irides. 1,832 were thirteen years old and six of these had asymmetrical irides or 0.32%. The distribution amongst the sexes is about equal and the above figures suggest that there may be a tendency for the irides to become symmetrical with advancing years.

Every baby is born with dark blue eyes, but this colour is only very rarely retained through life. It has not been clearly established at what age the infantile iris changes to the permanent colour though this must occur generally before the third year.

The Connection between Asymmetry of the Features and the Mental Capacity in Children.

In order to prove whether or not there was any connection between Asymmetry of the Features and the Mental Capacity of Children, two series of observations were made and recorded.

The results of the first series of observations are tabulated in Table A. After the beginning of the new school year on April 1st, 1911, the standard reached by each child who was 12 $^{6}_{12}$—13 years old and who had asymmetrical features was recorded. For comparison a similar number of children aged 12 $^{6}_{12}$—13 years old but who where symmetrical were recorded. In order that the local factors and the personal factor of the schoolmaster should be eliminated, the selection of the symmetrical cases was as follows : After recording an asymmetrical case, the next child in alphabetical order who was symmetrical and of the required age was taken and recorded, so that the number of cases compared, the local factors and the idiosyncrasies of the master, who decides in what standard the children shall be placed and the ages of the children are exactly the same in both classes to be compared.

The results of this comparison are as follows :—

The average standard reached by symmetrical boys is very slightly better than that reached by asymmetrical boys. The average standard reached by symmetrical girls is slightly worse than that reached by asymmetrical girls. The average standard reached by symmetrical children is practically identical with that reached by asymmetrical children.

The percentage of children who reached Standards VI and VII was 4.5% greater amongst the asymmetrical (68%) than amongst the symmetrical (63.5%).

Amongst the boys the symmetrical (68.9) did slightly better than the asymmetrical (67.5).

But the asymmetrical girls (68.6) did much better than the symmetrical girls (57.1)%.

Of the children who failed to reach Standard IV, 6 out of 7 of the boys, 3 out of 5 of the girls and 9 out of 12 of all children were asymmetrical.

From these observations it would therefore appear that the average mental capacity of symmetrical and asymmetrical children is about the same, but that it is more evenly distributed amongst the symmetrical children and that the asymmetrical children are more prone to be either very bright or very dull.

The difference in the sexes is worthy of remark and may throw some light upon this obscure subject.

The Second Table is compiled from the total number of children born in 1898 attending the schools in the Wakefield area. These children were classified by the school medical officer according to their mental capacity. These children were 1,794 in number of ages varying from $12\,{}^{1}/_{365}$ to $13\,{}^{7}/_{12}$. They are classified as being '1' or normal (not necessarily 'bright') mentally; '2' or poor or impaired mentally; '3' or so dull mentally that they are unfit for any but the meanest labour and 'mentally deficient' or so dull as to be useless. It need scarcely be said that these divisions are arbitrary and ill-fixed but they serve well enough for the purpose in hand.

The results show that normal children are less frequently asymmetrical than dull children (29.1% to 35.2%); that the very dull children are less frequently asymmetrical than normal children (23.0% to 29.1%); and that the mentally defective children are most frequently asymmetrical (60.0%).

The number of very dull and defective children is however too small to be seriously considered.

To sum up: asymmetry of the features is met with in a large proportion of children of all grades of mental capacity, but is somewhat more frequent in children who are either much brighter or much duller than the average.

The results here are not significant and would not be worth recording (except to prove that they are not significant) were it not for the fact that in observations upon all the phenomena which are lumped together under the misleading and inaccurate term 'Stigmata of degeneration', it is found that those children exhibiting these phenomena tend to vary from the normal mentally in being either duller or brighter.

There is reason to believe that these so called stigmata are evidence of evolutionary changes and that some of them are evidence of reversion and others of progression.

Connection between Asymmetry of the Face and Abnormal Palate.

This is obscure and indefinite. Where the face is symmetrical, the palate is abnormal in 18.6% of the boys and in 18.4% of the girls. Where the face is asymmetrical, the palate is abnormal in 21.6% of the boys and in 27.4% of the girls. Where the palate is normal 26.6% of the boys and 23.6% of the girls have asymmetrical faces. Where the palate is abnormal 30.0% of the boys and 34.0% of the girls have asymmetrical faces. It was also noted that in districts where asymmetry is common, high palates are also common and vice versa.

A.—The Mental Capacity of Children with Asymmetry of the Face Compared with that of the Normal Children.

The Cases are Children born in 1898 and examined in 1911. Consecutive cases after April 1st, 1911.

Class.	No. Ex'd.	Std. VII		Std. VI		Std. V.		Std. IV		Std. III and II		Aver-age
		No.	%	No.	%	No.	%	No.	%	No.	%	
Symmetrical Boys	145	44	30.34	56	38.62	30	20.67	14	9.66	1	.70	5.88
Asymmetrical Boys	145	44	30.34	54	37.24	27	18.67	14	9.66	6	4.13	5.78
Symmetrical Girls	121	31	25.62	38	31.40	37	30.58	13	10.74	2	1,65	5.68
Asymmetrical Girls ...	121	34	28.10	49	40.49	27	22.31	8	6.61	3	2.47	5.85
Symmetrical Children ...	266	75	28.19	94	35.33	67	25.19	27	10.15	3	1.12	5.79
Asymmetrical Children	266	78	29.32	103	38.72	54	20.25	22	8.27	9	3.38	5.82

B. TABLE TO SHOW THE CONNECTION BETWEEN ASYMMETRY OF THE FACE AND MENTAL CAPACITY.

Children Born 1898 Examined 1911.

Mental	Boys					Girls					Both Sexes.				
	No. ex'd.	Symm. No.	Symm. %	Asymm. No.	Asymm. %	No. ex'd.	Symm. No.	Symm. %	Asymm. No.	Asymm. %	No. ex'd.	Symm. No.	Symm. %	Asymm. No.	Asymm. %
All Cases	908	634	69.8	274	30.1	886	625	70.5	261	29.4	1794	1259	70.1	535	29.8
Normal	780	552	70.7	228	29.2	813	575	70.7	238	29.1	1593	1127	70.7	466	29.1
Poor '2'	104	66	63.4	38	36.5	66	44	66.6	22	33.3	170	110	64.7	60	35.2
Very Poor '3'	20	15	75.0	5	25.0	6	5	83.3	1	16.6	26	20	76.9	6	23.0
Ment. Def.	4	1	25.0	3	75.0	1	1	100	0	0	5	2	40.0	3	60.0

ELEMENTARY EDUCATION.

Statistical Tables.

TABLE I.—RETURN OF MEDICAL INSPECTIONS.

A. ROUTINE MEDICAL INSPECTIONS.

Number of Code Group Inspected.

Entrants	652
Intermediates	847
Leavers	568
TOTAL	2067

Number of other Routine Inspections .. Nil

B. OTHER INSPECTIONS.

Number of Special Inspections ..	2929
Number of Re-inspections ..	5890
TOTAL	8819

TABLE II.—A.—Return of Defects found by Medical Inspection in the Year ended 31st December, 1929.

Defect or Disease.		Routine Inspections		Special Inspections.	
		No. of Defects.		No. of Defects.	
		Requiring treatment.	Requiring to be kept under observation but not requiring treatmenc.	Requiring treatment.	Requiring to be kept under observation but not requiring treatment
(1)		(2)	(3)	(4)	(5)
	Malnutrition	5	1	2	2
	Ringworm :—				
	Scalp	7	....	45	....
	Body	4	....	15	....
kin	Scabies	....	....	14	....
	Impetigo	11	....	187	....
	Other Diseases (non-Tuberculous)	55	2	485	2
	Blepharitis	23	....	40	....
	Conjunctivitis	4	....	39	1
	Keratitis	2	....	....	....
ye	Corneal Opacities	1	....	....	....
	Defective Vision	137	....	13	....
	Squint	20	5	10	....
	Other Conditions	8	....	89	1
	Defective Hearing	39	....	37	11
ar	Otitis Media	....	....	45	16
	Other Ear Diseases	93	9	195	26
	Enlarged Tonsils only	61	99	166	55
ose and	Adenoids only	5	4	9	3
hroat	Enlarged Tonsils and Adenoids	7	11	22	2
	Other Conditions	15	15	86	10
lands	Enlarged Cervical and Sub-max : (non-Tuberculous)	7	12	100	25
	Enlarged Thyroid	21	1	22	2
peech	Defective	....	....	....	....
eeth	Dental Diseases	256	....	13	....
	Heart Disease :—				
eart &	Organic	2	5	....	2
ircula-	Functional	1	17	4	13
ation	Anaemia	10	8	24	8
	Bronchitis	11	10	3	....
ungs	Other Non-Tuberculous Diseases	8	8	38	8
	Pulmonary :—				
	Definite	....	....	....	....
	Suspected	....	2	6	8
uber	Non-Pulmonary :—				
nlosis	Glands	....	....	6	5
	Spine	....	....	1	1
	Hip	1	....	1	....
	Other Bones and Joints	....	....	....	2
	Other Forms	1	2	2	2

TABLE II. A—(Continued).

Defect or Disease. (1)		Routine Inspections. No. of Defects.		Special Inspections. No. of Defects.	
		Requiring treatment (2)	Requiring to be kept under observation but not requiring treatment. (3)	Requiring treatment. (4)	Requiring to be kept under observation but not requiring treatment. (5)
Nervous System	Epilepsy	2	2	3	2
	Chorea	...	2	12	6
	Other Conditions	11	6	32	17
Deformities.	Rickets	6	11	4	....
	Spinal Curvature	3	6	2	....
	Other Forms	6	4	13	4
Other Defects or Diseases		71	39	575	33

B. Number of INDIVIDUAL CHILDREN found at ROUTINE Medical Inspection to Require Treatment (Excluding Uncleanliness and Dental Diseases).

Group. (1)	Number of Children		Percentage of Children found to require treatment. (4)
	Inspected (2)	Found to require treatment (3)	
CODE GROUPS:			
Entrants	652	170	26·0
Intermediates	847	231	27·2
Leavers	568	134	23·5
Total (Code Groups)	2061	535	25·8
Other Routine Inspections	—	—	—

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

			Boys	Girls	Total
Blind (including partially blind).	(i) Suitable for training in a School or Class for the totally blind.	Attending Certified Schools or Classes for the Blind	2	2	4
		Attending Public Elementary Schools	....	....	....
		At other Institutions	....	....	....
		At no School or Institution	1	....	1
	(ii) Suitable for training in a School or Class for the partially blind.	Attending Certified Schools or Classes for the Blind	....	....	....
		Attending Public Elementary Schools.	2	....	2
		At other Institutions	1	1	2
		At no School or Inscitution	1	....	1
Deaf (including deaf and dumb and partially deaf).	(i) Suitable for training in a School or Class for the totally deaf or deaf and dumb.	Attending Certified Schools or Classes for the Deaf.	4	1	5
		Attending Public Elementary Schools.	....	....	....
		At other Institutions	....	....	....
		At no School or Institution	....	....	....
	(ii) Suitable for training in a School or Class for the partially deaf.	Attending Certified Schools or Classes for the Deaf.	....	....	....
		Attending Public Elementary Schools.	3	1	4
		At other Institutions	....	....	....
		At no School or Institution	....	....	....
Mentally Defective.	Feebleminded (cases not notifiable to the Local Control Authority).	Attending Certified Schools for Mentally Defective Children.	3	4	7
		Attending Public Elementary Schools.	19	10	29
		At other Institutions	....	....	....
		At no School or Institution	14	21	35
Epileptics.	Suffering from severe epilepsy	Attending Certified Special Schools for Epileptics	....	....	....
		In Institutions other than Certified Special Schools	....	1	1
		Attending Public Elementary Schools.	....	....	....
		At no School or Institution	1	1	2
	Suffering from epilepsy which is not severe.	Attending Public Elementary Schools.	7	3	10
		At no School or Institution	1	1	2

TABLE III.—(Continued).

			Boys	Girls	Total
Physically Defective.	Infectious pulmonary and glandular tuberculosis.	At Sanatoria or Sanatorium Schools approved by the Ministry of Health or the Board.	1	....	1
		At other Institutions	....	....	....
		At no School or Institution	2	....	2
	Non-infectious but active pulmonary and glandular 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	24	7	31
		At no School or Institution	4	6	10
	Delicate children (e.g., pre-or latent tuberculosis, malnutrition, debility, anaemia, etc.)	At Certified Residential Open Air Schools.	....	....	....
		At Certified Day Open Air Schools.	....	....	....
		At Public Elementary Schools.	40	48	88
		At other Institutions.	....	....	....
		At no School or Institution	....	....	....
	Active non-pulmonary tuberculosis.	At Sanatoria or Hospital Schools approved by the Ministry of Health or the Board.	....	2	2
		At Public Elementary Schools	12	9	21
		At other Institutions	....	....	....
		At no School or Institution	2	2	4
	Cripple Children (other than those with active tuberculous disease),	At Certified Hospital Schools	....	....	....
		At Certified Residential Cripple Schools.	....	2	2
		At Certified Day Cripple Schools.	....	....	....
		At Public Elementary Schools	14	20	34
		At other Institutions.	....	....	....
		At no School or Institution	6	6	12

TABLE IV.—Return of Defects Treated during the Year ended 31st December, 1929.

TREATMENT TABLE.

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

Disease or Defect.	No. of Defects treated under Authority's Scheme.			Number of def'cts cured	No. of defects remaining under treatm't	No. of attendances at Clinic	No. of Consultations.
	From previous Year	New Cases	Total				
Contagious Skin Diseases—							
Impetigo	3	175	178	175	3	968	428
Scabies	....	14	14	14	....	63	55
Other Diseases	....	1	1	1	....	2	2
Non-Contagious Skin Diseases							
Dermatitis	....	4	4	4	....	12	12
Eczema	1	7	8	7	1	164	62
Seborrhoea	....	8	8	8	....	14	11
Alopecia	....	1	1	1	....	1	1
Abscesses	1	16	17	17	....	103	75
Boils	....	19	19	19	....	80	61
Warts	5	33	38	35	3	336	52
Herpes	....	19	19	19	....	96	52
Urticaria	....	7	7	7	....	36	30
Psoriasis	....	4	4	4	....	12	12
Acne	....	4	4	4	....	5	5
Cheiropompholyx	....	1	1	1	....	39	27
Other Diseases	2	55	57	56	1	146	109
Ear, Nose and Throat Diseases							
Glands	1	44	45	45	....	164	121
Rhinitis	....	1	1	1	....	1	1
Tonsillitis	....	39	39	39	....	87	80
Other Diseases	1	50	51	51	....	98	87
Wounds and Injuries—							
Injuries	1	58	59	59	....	319	261
Bites and Stings	....	33	33	33	...	106	84
Burns, Scalds Cuts, &c.	....	98	98	98	....	564	338
Septic Sores	6	230	236	235	1	1502	910
Bruises, and Sprains	....	54	54	54	....	237	187
Others	....	95	95	95	....	392	213
External Eye Diseases—							
Foreign Body	....	10	10	10	....	17	17
Stye	....	14	14	14	....	90	58
Blepharitis	2	39	41	38	3	260	129
Conjunctivitis	....	38	38	38	....	241	174
Corneal Ulcer	1	3	4	4	....	137	74
Strabismus	....	6	6	5	1	6	6
Keratitis	....	....	....	....	....	....	....
Pink Eye	2	14	16	14	2	497	406
Other Diseases	2	42	44	41	1	134	114

Group I.—Minor Ailments—Continued.

Disease or Defect.	No. of Defects treated under Authority's Scheme			Number of def'cts cured	No. of defects remaining under treatm't	No. of attendances at Clinic	No. of Consultations
	From previous Year	New Cases	Total				
Infectious Diseases—							
Measles	....	1	1	1	....	2	2
Chicken Pox	....	13	13	11	2	17	17
Mumps	....	1	1	1	....	2	2
Whooping Cough	....	24	24	22	2	32	31
Diphtheria	....	3	3	3	....	3	3
Scarlet Fever	....	6	6	6	....	7	7
Small Pox	....	4	4	4	....	4	4
Rubella	....	1	1	1	....	2	2
General—							
Ill-health, &c.	1	630	631	628	3	1000	843
TOTALS	29	1919	1948	1925	23	7998	5165

Total Number of Children Treated 1526

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

Defect or Disease	Number of Defects dealt with.					
	Under the Authority's Scheme.			Submitted to refraction by private practitioner or at hospital apart from the Authority's Scheme.	Otherwise.	Total
	Old	New	Total			
(1)		(2)		(3)	(4)	(5)
Errors of Refraction (including Squint)	272	252	524	....	....	524
Other Defects or Diseases of the eyes (excluding those recorded in Group I)	20	24	44	....	....	44
TOTAL	292	276	568	....	....	568

Total number of children for whom spectacles were prescribed :
(a) Under the Authority's Scheme 324
(b) Otherwise ....

Total number of children who obtained or received spectacles :
(a) Under the Authority's Scheme 284
(b) Otherwise 2

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. (1)	By Private Practitioner or Hospital, apart from the Authority's Scheme. (2)	Total. (3)	(4)	(5)
161	....	161	111	272

GROUP IV.—DENTAL DEFECTS.

(1) Number of Children who were :—

(a) Inspected by the Dentist :

Routine Age Groups	Age	3	92	
		4	372	
		5	709	
		6	888	
		7	948	
		8	872	
		9	766	Total 6239
		10	462	
		11	365	
		12	310	
		13	289	
		14	157	
		15	9	
Specials		..	..	.. 133
		GRAND TOTAL		.. 6372

(b) Found to require treatment 4682

(c) Actually treated .. 4650

(d) Re-treated during the year as the result of periodical examination 1840

(2) Half-days devoted to { Inspection 59 / Treatment 399 } Total 458

(3) Attendances made by children for treatment 5492

(4) Fillings { Permanent teeth 838 / Temporary teeth 48 } Total 886

(5) Extractions { Permanent teeth 252 / Temporary teeth 3119 } Total 3371

(6) Administrations of general anaesthetics for extractions —

(7) Other operations { Permanent teeth 473 / Temporary teeth 10284 } Total 10757

GROUP V.—UNCLEANLINESS AND VERMINOUS CONDITIONS.

(i)	Average number of visits per school made during the year by the School Nurses	8
(ii)	Total number of examinations of children in the Schools by School Nurses	30972
(iii)	Number of individual children found unclean (mainly Nits in Hair)	1750
(iv)	Number of children cleansed under arrangements made by the Local Education Authority	806
(v)	Number of cases in which legal proceedings were taken—	
	(a) Under the Education Act, 1921	Nil
	(b) Under School Attendance Bye-laws	Nil

TABLE V(a).—Treatment of Defects of Nose, Throat, and Ear at Special Clinic.

Number of cases referred for treatment.	Number of Consultations	Number of attendanc's for treatment	DEFECTS.										
			Tonsils considerably enlarged	Tonsils enlarged	Tonsils and Adenoids	Adenoids	Tonsillitis.	Inflam'd Turbinates.	Cervical and other Glands	Nasal Obstructions	Nasal Inflamation	Discharging Ears	Myringitis, Diseases & Perforation of Membranes,
363	922	1026	75	65	23	9	14	4	63	11	8	85	26

DEFECTS (CONTINUED).								No. for whom operation for Tonsils and Adenoids was advised	No. who received operative treatment for Tonsils and Adenoids	No. of other operations performed	No. of cases cured	No. of cases remaining under treatment or kept under observation	No. of cases for whom no Report is available
Drums destroyed	Inflamed Membranes	Thickened, Scarred and Opaque Membranes	Indrawn Membranes	Deafness (Slight)	Deafness (Severe)	Wax in Ears	Other conditions						
4	12	34	12	43	1	42	51	162	161	....	257	95	11

TABLE V (b).—ELECTRICAL IONISATION.

Number of cases referred for treatment	Number of consultations.	Number of attendances for treatment	DEFECT.	Number of cases cured.	Number of cases still under treatment or observation.	Number of cases for which no report is available
			Discharging ears			
5	35	35	5	2	3	....

TABLE VI.—Treatment of Ringworm.

Number of cases			Number of Consultations with Doctor	Number of Attendances made by Children at Clinic	Number of Bacteriological Examinations.	Number of cases cured.	Number of cases still under treatment		Number of cases for which no report is available.
Old	New	Total					Attending School	Not attending School	
43	60	103	405	737	177	79	24	....	....

TABLE VII.—Electrical Treatment.

Number of Cases.					Number of Attendances for Treatment.	Disease or Defect.			
Boys		Girls		Total		Infantile Paralysis	Functional Paralysis.	Naevus	
Old	New	Old	New						
....	5	6	4	15	80	9	1	5	

TABLE VIII.—Summary of School Accidents which occurred during the Year 1929.

(Elementary School Children).

Number of Cases			Total Number of Attendances made by children at Clinic.	Number of cases where treatment was completed at Clinic.	Number of X-Ray Exposures.	Number of cases referred to Hospital or Private Practitioner for further treatment.	Number of cases resulting in permanent disability.
Serious	Minor.	Total.					
....	121	121	415	118	20	3	....

NOTE.—Cases of simple fracture not resulting in permanent disability and cuts requiring stitching, however extensive, so long as no permanent injury but a good scar resulted, are included as minor injuries.

TABLE IX (a).—SHOWING NUMBER OF CHILDREN DISCOVERED AT ROUTINE INSPECTION WITH ENLARGEMENT OF THE THYROID GLAND. YEAR 1929.

Group examined.	Number of Children examined.			Number of Children found with enlargement of the Thyroid Gland.		
	Boys	Girls	Total	Boys	Girls	Total
Entrants	347	305	652	—	2	2
Intermediates	460	387	847	6	11	17
Leavers	292	276	568	2	12	14
TOTAL	1099	968	2067	8	25	33

TABLE IX (b).—TREATMENT OF ENLARGED THYROID AT SPECIAL CLINIC.

Number of Cases			Number of attendances for treatment.	Number of Consultations.	Number of cases cured	Number of cases still under observation and treatment
Old	New	Total				
26	22	48	291	284	19	29

TABLE X.—BACTERIOLOGICAL AND OTHER EXAMINATIONS CARRIED OUT DURING THE YEAR 1929.

Number of Bacteriological examinations	215
Number of Blood examinations—Histological	35
Urine—Number of Chemical examinations	18
Number of Microscopic examinations	4
Number of X-Ray examinations.	123

HIGHER EDUCATION.

Statistical Tables.

HIGHER EDUCATION.

TABLE I.—NUMBER OF CHILDREN ATTENDING THE SWINDON SECONDARY SCHOOLS INSPECTED 1st JANUARY, 1929 TO 31st DECEMBER, 1929.

A.—ROUTINE MEDICAL INSPECTIONS.

	AGE GROUPS.									TOTAL
	11	12	13	14	15	16	17	18	19	
BOYS	15	43	73	67	52	62	16	4	2	334
GIRLS	16	39	64	73	45	39	15	10	....	301
TOTALS	31	82	137	140	97	101	31	14	2	635

B.—OTHER INSPECTIONS.

Number of Special Inspections	....	124
Number of Re-inspections.	....	369
	Total	493

TABLE II.—Return of Defects found in the Course of Medical Inspection in 1929.

Defect or Disease. (1)	Routine Inspections. No. of Defects. Requiring Treatment. (2)	Routine Inspections. No. of Defects. Requiring to be kept under observation but not requiring treatment. (3)	Special Inspections. No. of Defects Requiring Treatment. (4)	Special Inspections. No. of Defects Requiring to be kept under observation but not requiring treatment. (5)
Nutrition—Poor	1	....	....	....
Skin—				
Urticaria	....	....	1	....
Impetigo	....	....	1	....
Non-tuberculous Diseases	....	....	10	....
Eyes—				
Defective Vision	78	....	....	....
Squint	2	1	....	....
Other Disease or Defect	2	6	2	....
Ear—				
Otorrhoea	1	....	2	....
Defective Hearing	7	....	2	....
Other Conditions	3	....	8	....
Nose and Throat—				
Enlarged Tonsils	17	4	8	4
Enlarged Tonsils and Adenoids....	....	1	....	....
Adenoids	....	1	1	....
Other Conditions	1	....	7	1
Glands—				
Enlarged Thyroid	14	....	5	....
Enlarged Cervical and Sub-max. Glands	1	1	5	
Teeth— Caries	18	....	1	....
Heart—				
Organic	1	....	....	....
Functional	11	10	1	7
Anaemia	19	4	1	....
Lungs—				
Rales &c.	4	3	....	2
Nervous System—				
Instability and Overstrain	7	3	....	....
Other conditions	3	4	3	1
Deformities—				
Rickets	1	1	1	....
Spinal Curvature	25	7	2	....
Flat feet	18	....	....	....
Other Forms	6	....	....	....
Other Diseases or Defects	22	20	59	4

TABLE III.—CONDITION OF THE TEETH OF SCHOLARS DENTALLY INSPECTED AT THE SECONDARY SCHOOLS DURING THE YEAR 1929.

THE COLLEGE SECONDARY SCHOOL.

BOYS.

Year of Birth.	Number of carious teeth							Number free from caries.	Total number examined.
	1	2	3	4	5	6	8		
1910	1	....	....	....	....	....	....	....	1
1911	2	2	....	....	....	....	....	1	5
1912	1	1	....	....	....	....	....	2	4
1913	7	3	....	2	....	1	....	16	29
1914	12	6	....	2	2	....	....	11	33
1915	7	4	4	1	....	....	....	13	29
1916	13	7	3	1	1	....	....	12	37
1917	5	4	4	2	1	2	1	9	28
1918	1	3	....	....	....	....	....	2	6
TOTALS	49	30	11	8	4	3	1	66	172

GIRLS.

Year of Birth.	Number of carious teeth					Number free from caries.	Total number examined.
	1	2	3	4	5		
1912	3	3	....	....	....	3	9
1913	4	2	....	....	....	3	9
1914	4	1	....	....	1	7	13
1915	5	....	4	1	....	15	25
1916	11	4	....	....	1	8	24
1917	3	2	1	1	....	4	11
1918	1	....	....	1	1	4	7
TOTALS	31	12	5	3	3	44	98

EUCLID STREET SECONDARY SCHOOL.

BOYS.

Year of Birth	Number of carious teeth.									Number free from caries.	Total Number examined.
	1	2	3	4	5	6	7	8	9		
1912	....	1	....	....	....	....	....	....	....	2	3
1913	8	1	1	....	....	1	....	....	....	3	14
1914	8	3	1	....	....	....	....	....	1	18	31
1915	8	3	1	2	....	....	1	....	....	9	24
1916	6	7	1	1	1	....	....	....	....	9	25
1917	7	3	2	....	....	1	....	1	....	15	29
1918	3	1	....	1	....	1	....	....	....	1	7
TOTALS	40	19	6	4	1	3	1	1	1	57	133

EUCLID STREET SECONDARY SCHOOL.

GIRLS.

Year of Birth.	Number of carious teeth.					No. free from caries.	Total number examined
	1	2	3	4	5		
1912	....	....	....	....	....	2	2
1913	2	1	1	....	....	3	7
1914	4	2	1	....	....	8	15
1915	6	4	....	....	....	8	18
1916	7	5	1	1	....	8	22
1917	5	1	2	1	1	8	18
1918	3	1	....	....	....	2	6
TOTALS	97	14	5	2	1	39	166

THE COMMONWEAL SECONDARY SCHOOL

BOYS

Year of Birth	Number of carious teeth.								No. free from caries.	Total number examined
	1	2	3	4	5	6	7	9		
1911	....	2	....	....	....	....	....	....	1	3
1912	....	1	....	....	....	....	....	....	3	4
1913	4	1	1	....	....	....	....	....	18	24
1914	10	7	2	2	....	....	....	1	10	32
1915	8	3	2	....	1	....	1	....	15	30
1916	10	6	....	2	1	1	....	....	27	47
1917	5	3	1	....	....	1	....	....	7	17
1918	....	....	2	1	....	....	....	....	6	9
TOTALS	37	23	8	5	2	2	1	1	87	166

GIRLS

Year of Birth.	Number of carious teeth.				Number free from caries.	Total number examined
	1	2	3	4		
1911	3	....	....	....	2	5
1912	4	1	....	....	3	8
1913	3	2	1	....	8	14
1914	2	3	....	....	12	17
1915	8	....	....	1	7	16
1916	10	4	2	2	9	27
1917	3	1	2	....	8	14
1918	4	1	....	1	2	8
TOTALS	37	12	5	4	51	109

TABLE III (Continued).—SUMMARY OF RESULTS OF DENTAL INSPECTION AT THE SECONDARY SCHOOLS YEAR 1929.

Secondary School	ENTRANTS.		RE-INSPECTIONS		Total number Inspected.	Total number referred for treatment	Number free from caries.
	Number Inspected	Number referred for treatment	Number Inspected	Number referred for treatment			
The College	63	43	207	117	270	160	110
Euclid Street	44	29	177	96	221	125	96
The Commonweal	48	25	227	112	275	137	138
TOTAL	155	97	611	325	766	422	344

Percentage of Entrants requiring treatment 62.6
Percentage of Children Re-inspected requiring treatment. 53.2
Percentage of total number of children inspected requiring treatment. 55

TABLE III.—(Continued).

DENTAL INSPECTION AND TREATMENT.

(1) Number of children who were :—

(a) Inspected by the Dentist :

Age Groups	Aged 11	43	Total	766
	12	117		
	13	182		
	14	142		
	15	141		
	16	97		
	17	30		
	18	13		
	19	1		
Specials				—
GRAND TOTAL				766

(b) Found to require treatment 422

(c) Actually treated 337

(d) Re-treated during the year as the result of periodical examination 112

(2) Half days devoted to : Inspection 9, Treatment 90 — Total 99

(3) Attendances made by children for treatment 441

(4) Fillings — Permanent teeth 238, Temporary teeth — — TOTAL 238

(5) Extractions — Permanent teeth 65, Temporary teeth 72 — TOTAL 13

(6) Administrations of general anaesthetics —

(7) Other operations — Permanent teeth 211, Temporary teeth 7 — TOTAL 218

TABLE IV.

Defective Vision and Squint (excluding Minor Eye Defects treated as Minor Ailments).

Defect or Disease.	Number of Defects dealt with.					
	Under the Authority's Scheme			Submitted to refraction by private practitioner or at hospital apart from the Authority's Scheme.	Otherwise.	Total
	Old	New	Total			
(1)	(2)			(3)	(4)	(5)
Errors of Refraction (including Squint.)	67	29	96	....	....	96
Other Defects or Diseases of the eyes	2	....	2	....	....	2
TOTAL	69	29	98	....	....	98

Total number of children for whom spectacles were prescribed :
(a) Under the Authority's Scheme 53
(b) Otherwise ....

Total number of children who obtained or received spectacles :
(a) Under the Authority's Scheme 51
(b) Otherwise ....

TABLE V.—Summary of Accidents which occurred to Secondary School Children during the year 1929.

Number of Cases.			Total Number of attendances made by children at Clinic.	Number of Cases where treatment was completed at Clinic.	Number of X-Ray Exposures.	Number of Cases referred to Hospital or Private Practitioner for further treatment.	Number of Cases resulting in permanent disability.
Serious	Minor	Total.					
....	43	43	140	43	8	....	....

NOTE.—Cases of simple fracture not resulting in permanent disability and cuts requiring stitching, however extensive, so long as no permanent injury but a good scar resulted, are included as minor injuries.

TABLE VI TREATMENT OF ENLARGED THYROID AT SPECIAL CLINIC.

Number of Cases			Number of attendances for treatment.	Number of Consultations.	Number of cases cured	Number of cases still under observation and treatment.
Old	New	Total				
8	5	13	57	57	4	9

TABLE VII.—Treatment of Defects discovered in Secondary School Children.—Year 1929.

Disease or Defect.	NUMBER OF DEFECTS.					
	Referred for treatment.	Treated.			Not Treated.	For whom no Report was available.
		Under Local Education Authority's Scheme.	Otherwise	Total		
Nutrition	1	....	1	1	....	....
Skin	12	12	....	12	....	....
Vision and Squint	80	29	9	38	42	....
Eye Disease	3	2	1	3	....	....
Ear Disease	14	13	1	14	....	....
Defective Hearing	9	5	4	9	....	....
Nose and Throat	34	19	8	27	7	....
Enlarged Thyroid	19	13	3	16	3	....
Enlarged Glands (Non-Tuberculous)	6	5	1	6	....	....
Heart and Circulation	33	22	11	33	....	....
Lungs Defective	4	....	4	4	....	....
Nervous System	13	10	3	13	....	....
Deformities	53	31	22	53	....	....
General	81	59	19	78	3	....

Total number of X-Ray examinations made during the year 8

Borough of Swindon.

Annual Report

OF THE

Medical Officer of Health

FOR THE YEAR 1929,

AND THE

Isolation Hospital Annual Report

From the 1st April, 1929, to the 31st March, 1930,

BY

DUNSTAN BREWER, M.R.C.S., L.R.C.P., D.P.H.

Report of the Chief Sanitary Inspector

FOR THE YEAR 1929.

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BOROUGH OF SWINDON.

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Vice-Chairman—Councillor MRS. M. GEORGE

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		Miss	I. F. MOORE

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BOROUGH OF SWINDON.

PUBLIC HEALTH DEPARTMENT.

STAFF.

Medical Officer of Health, School Medical Officer and Medical Superintendent of the Isolation Hospital.

DUNSTAN BREWER, M.R.C.S., L.R.C.P., D.P.H.

Deputy Medical Officer of Health.

F. W. OLDERSHAW, M.R.C.S., L.R.C.P., D.P.H.
(Left Swindon in October, 1929)

J. STEVENSON LOGAN, M.B., Ch.B., D.P.H.
(Commenced November 19th, 1929).

Assistant Medical Officer of Health.

VIOLET KING, M.B., Ch.B.

Chief Sanitary Inspector.

F. H. BEAVIS.
Certificate of the Royal Sanitary Institute.
Certificate of the Royal Sanitary Institute for Meat Inspection.
Certificate in Building Construction.

Assistant Sanitary Inspectors.

H. A. BANWELL.
Certificate of the Royal Sanitary Institute.
Certificate of the Royal Sanitary Institute for Meat Inspection.
Certificate of the Worshipful Company of Plumbers and Final Certificate City and Guilds.
Certificate in Hygiene.

D. DAVIES (Left Swindon in April, 1929).
Certificate of the Royal Sanitary Institute.
Certificates of the Royal Sanitary Institute and Liverpool University for Meat Inspection.
Certificates in Sanitary Science and Building Construction.

J. BOWERS, (Left Swindon in April, 1929).
Certificate of the Royal Sanitary Institute.
Certificate of the Royal Sanitary Institute for Meat Inspection.

R. N. HUGHES, (Commenced 3rd June, 1929).
Certificate of the Royal Sanitary Institute and Sanitary Inspectors Examination Joint Board.
Liverpool University Certificate in Meat and Food Inspection.
Liverpool University Certificate in Sanitary Science.

A. T. SELVEY, (Commenced 15th July, 1929).
Certificate of the Royal Sanitary Institute.

PUBLIC HEALTH DEPARTMENT. **STAFF**—*Continued.*

Head Clerk.—ERNEST A. BEASANT.

Assistant Clerks.—H. J. PUGH
W. M. WATTS
W. A. SAWYER

Assistant Clerk and Clinical Assistant—Miss M. E. BUTLER

Matron of the Isolation Hospital.
Miss J. MCKINNON SMITH, A.R.R.C.

Matron of the Maternity Hospital and Training Centre.
Miss F. R. SILLICK

Health Visitors.

Miss M. HANNA
3 years General Training.
State Registered Nurse.
Certificate of the Central Midwives Board.

Miss M. JOHNS.
3 years Certificate of Hospital Training.
Certificate of the Central Midwives Board.
Queen's Nurse.

Miss H. E. HARTLEY
4 years Certificate of Hospital Training.
Brompton Hospital Tuberculosis Certificate.
Certificate of the Central Midwives Board.
Health Visitor's Certificate of the Royal Sanitary Institute.

Disinfector—G. GREENAWAY.

Voluntary Helpers at Maternity Centres—

Mrs. E. SCHMITZ
Mrs. OSMOND
Mrs. WESTON
Mrs. HUMPHRIES
Mrs. HULANCE

To the Chairman and Members of the Health, etc., Committee.

LADIES AND GENTLEMEN,

The dawn of 1929 was unfavourable, not only for Swindon, but throughout the whole western world and in the report for Swindon for 1928 attention was drawn to numerous signs which presaged the beginning of a period unfavourable for public health. As the Winter of 1928-29 progressed, the troubles which these signs had portended broke upon us and upon the rest of the country with some severity, making the first quarter of the year perhaps the most unfavourable and the most anxious of any within living memory. As will appear in due course, Swindon got off comparatively lightly, but it did not escape without great trouble and continued anxiety. The year was continuously unfavourable until the late Autumn, when it made some amends for its behaviour and finished with a December which was exceptionally healthy.

Following a year which was the acme of health which the world has experienced, 1929 appears considerably blacker than, in fact, it was and it has cast a general gloom over public health which facts do not justify. In Swindon, which, as it has been said, escaped more lightly than most towns in the country, the vital rates were unsatisfactory when compared with 1928. The death rate was high, the birth rate was low, the natal mortality rate was very high, the maternal mortality rate was very high. But the total infant mortality rate, the best of all guides to the health of a community, though considerably higher than the record rate of 36 in 1928, was only 47.3, which is the lowest rate recorded in any year with the exceptions of 1928 and 1927.

The epidemic of influenza in the first quarter of the year was undoubtedly the most potent factor in producing the unfavourable record, but it must not be blamed for certain adverse factors of which it is innocent and which are due to a more serious disease of civilization. For the last forty years, and more particularly since the War, there has been a steady and partly-conscious interference with human reproduction which is beginning to react upon our civilization in ways which many—and not without great reason—believe will lead to the destruction of the Western races of Europe and of America. The report of the Special Commission of the Board of Education and Board of Control, which was published in April, tells us that the proportion of mentally defectives in this country has doubled during the last twenty years and that the evidence points to an accelerated rate of increase. The facts upon which this alarming statement is made have withstood all attempts to controvert them, so the conclusion must be accepted as true. The fall in the birth rate, which is great and continuous in most, but not all, classes of the community, is found on analysis

to operate irregularly and that the paucity of new comers into the world is due in greatest measure to the failure of reproduction amongst those classes who, by reason of their superior mentality might, on biological grounds, be expected to produce the best offspring and who, on financial grounds, might be expected to stand most easily the expense of rearing them. The vast increase in the numbers of children who have no brothers and sisters has introduced difficulties in rearing citizens, which were unexpected and are beyond our powers to overcome ; whilst the methods by which a desired, but most disastrous, state of sham familial prosperity is brought about, levies a heavy toll of life and engenders mental and moral unbalance for which even the most optimistic can see no remedy.

The meteorology of 1929 was extraordinary and, though it was much appreciated during holiday time, led to serious inconvenience and, on the whole, was not conducive to health. But it is remarkable that those diseases which we should have expected in a year of deficient rainfall, of prolonged drought followed by flood and of serious shortage of water, namely, the diarrhoeal diseases, were totally absent from Swindon throughout the year.

The work done by the Public Health Department was greater than in any preceding year, notwithstanding that much which we should have liked to have extended had to be curtailed and several functions suspended altogether.

STAFF OF THE PUBLIC HEALTH DEPARTMENT.

There were several changes in the staff during 1929. Dr. F. W. Oldershaw, Deputy Medical Officer of Health, resigned in October on his appointment to the position of Medical Officer of Health to the Borough of Colne and Dr. J. S. Logan succeeded him in November, 1929.

The two junior sanitary inspectors, Mr. D. Davies and Mr. J. Bowers, resigned during the year and were replaced by Mr. R. N. Hughes and Mr. A. T. Selvey.

Mr. W. A. Sawyer was appointed as an additional assistant clerk in January, 1929.

The Matron of the Maternity Hospital, Miss F. M. Garrett, resigned at the end of November, 1928, and Miss F. R. Sillick, appointed in her place, took up duty on the first day of the new year.

Miss H. E. Hartley, whom we had specially trained to obtain the Health Visitor's Certificate, entered upon full duty as additional health visitor in April.

Owing to the pressure upon the salaried staff, the work of the voluntary helpers at the Maternity Centres, Mrs. Schmitz, Mrs. Osmond, Mrs. Weston, Mrs. Humphries and Mrs. Hulance, was greatly increased and the town owes an extra debt of gratitude to these women who serve it without any recompense save that of the satisfaction of doing work that is good and which is appreciated by those for whom it is done.

GENERAL PUBLIC HEALTH AND SANITATION OF THE TOWN.

This being an ordinary report, it is only necessary to mention matters which were either new during the year, or which underwent substantial alteration.

The only matters in connection with the general sanitation of the town which need be mentioned this year are the water shortage occasioned by the drought and the flooding of low-lying parts of the town due to the storms of the late Autumn.

Since the great drought of 1921 there was no shortage of water in Swindon until the late Summer of 1929. The works that had been carried out at Ogbourne have proved sufficient to prevent shortage of water in normal summers, but the strain of 1929 was rather more than the waterworks could carry with comfort and in the latter part of the year restrictions had to be imposed. Though the restrictions that were imposed were not more than the citizens might be expected to bear without anything worse than a little grumbling, we were for many months threatened with having to impose measures which would not have been borne with equanimity. In September the position had become serious and it was decided after very careful consideration to utilize the waters of Coate Water for domestic purposes, should it become imperative to do so. Plant was therefore laid down to filter and purify these waters, but, as a matter of fact, it did not become necessary to use them, save to a very limited extent for a few days. The shortage of water at Ogbourne was probably less due to the dryness of the Summer than to the hard dry Winter which had preceded it. As the well dropped, so did the water deteriorate in appearance and occasionally it was neither inviting to the eye, nor to the palate. This was due to a slight admixture of clay which, though it made the fluid somewhat unacceptable as a beverage, was perfectly harmless. As a matter of fact the water was practically sterile, as the water at Ogbourne almost invariably is under all circumstances.

In past years there had been serious complaints of flooding in the lower parts of the town, but since the new storm water sewer

was laid down in 1925, no flooding of any consequence had occurred in the town until November 1929, and even during that extraordinary period the flooding was limited to a few localities and, with one exception, was not serious. Indeed, those who live in the low part of the town had less to complain of water in their basements than had those of the upper town of slateless roofs and water in their bedrooms. It is some refutation of the criticism that has been made of the construction of the newer houses in the town that during the storms of the Autumn not one was either blown down or washed away.

INSPECTION AND CONTROL OF FOOD STUFFS.

There is nothing special to be said about this department for the year under review, except that the work, particularly the inspection of animals slaughtered for food, continued to be very heavy. The occurrence of caseous lymphadenitis in Argentine sheep, caused a considerable increase in the time required for meat inspection, for Argentine carcases are imported into Swindon in large numbers and each carcase has to be separately and thoroughly examined. 39 tons of meat were seized or surrendered as unfit for food. Two prosecutions were undertaken under the Public Health Acts for the sale or exposition of unsound meat, but neither of the cases presented any special feature.

The bacteriological examination of milk had to be suspended, owing to the pressure of other matters.

HOUSING.

255 new houses were erected in the Borough during the year, of which 59 were erected by the Corporation and 196 by private enterprise.

Since the increase in the population was 910, the number of new houses erected more than satisfied the need for new accommodation and in theory allowed some margin to replace unsatisfactory property and relieve overcrowding. As a fact it did neither, the position as regards overcrowding in the town remaining precisely as it has been for many years past and as it will remain until some more rational method of dealing with it is devised and put into execution. Towards the end of the year a prosecution for overcrowding was lodged. This is the first case of the kind that we have brought to Court since the War. In this case there were seventeen persons belonging to two families living in a tenement of four rooms. The case is not yet finished and so cannot be discussed, but it gives some idea of what exists in the town, to a small extent it is true, but to an extent which does not vary from year to year.

In October, 1928, the Corporation's Housing Estate at Pinehurst came within the Borough and it has been possible to get some idea of this colony and the special troubles which surround it. In past years much difficulty was caused to the Public Health Department by this housing estate, which was essentially, geographically and socially, part of the town, though without its boundary, for we knew that this estate had problems of its own which were neither simple nor easy to remedy.

No reasonable adverse criticism can be made against the lay-out of the estate, nor of the construction and amenities of the dwellings erected upon it, but the Town Council has, from the start, rightly done its best to lease its property to those families which are most in need of the accommodation and this rightful action has indirectly caused some wrongful comment. For it means that the houses have been let to persons with large families and since our civilization rules that those who possess 'olive branches' shall possess nothing else, formidable difficulties arise in connection with reasonable rents for reasonable accommodation for large families. It has been necessary to go into this question entirely from the public health and child welfare point of view, for though the social and political bearings of this matter are not within the province of the Public Health Department, the influence of poverty is of direct bearing. It is obvious that where family income is small, a high rent means poor food and indifferent clothing and the influence of this, particularly upon children and mothers, is of primary importance. The real problem in housing that part of the population which most needs help is that the more accommodation that is required, the less is the income per head available for the payment of rent and rates. The rents charged at present, though much below economic rents and exceedingly low for what is offered for them, are nevertheless beyond the capacity of those to whom housing presents the greatest difficulty. The people in this country who have nothing, or next to nothing, are generally honest and strive to live within their means, so high rents and rates, which are the first call on the purse, result in curtailing of spending for what are the prime necessities of life. One result of this is that it is among the most respectable—and those who should be the most respected—members of the community that we meet with the greatest amount of illnutrition, particularly among children.

From the 1921 census, the standard number of rooms per person is 1.15 ; probably to-day it is more than 1.3. The following table shows the density per room in houses in which cases of infectious disease occurred during the year under review.

	Pneumonia	Scarlet Fever.	Diphtheria	Tuber-culosis.
No. of Cases	145	298	28	70
No. of Rooms	766	1634	155	380
No. of Persons	779	1555	153	356
Rooms per Person	.98	1.05	1.01	1.06

No comment will be made upon this table this year, but in the report for 1930 the meaning of this table (which has been given every year) will be minutely considered.

HOSPITAL ACCOMMODATION.

1929 was a very important and busy year in the history of the hospital accommodation for Swindon, but beyond stating that the new wing of Victoria Hospital was started during the year and that the site for the new maternity hospital was settled and the plans for the new building accepted, it is not advisable at the present moment to discuss the extraordinarily complicated discussions which have taken place with the object of giving Swindon a hospital system in conformity with its needs and ambitions.

HEALTH EDUCATION.

With the exception of the sum of £2 : 7 : 0 paid by the Corporation for the exhibition of posters supplied by the Health and Cleanliness Council, the Corporation spent no money directly for public health propaganda. But a very considerable amount is done in the education of the people, partly by a number of lectures given to various associations and guilds in the town, but chiefly by the circulation of the periodical "Better Health," of which there is a special Swindon edition containing a long letter of advice on various public health matters edited by the local medical officer of health. The demand for this periodical is much greater than we can supply at present, and there is great reason for satisfaction with its influence. In the opinion of the writer, this form of propaganda, or public education, is the most valuable of all; and in the present condition of the town and of the feeling between the citizens and their Public Health Department, it can well be the only method of propaganda and render obsolete all other more expensive and more showy, though far less useful, methods.

NOTIFICATION OF BIRTHS.

During the year an important prosecution was undertaken under the Notification of Births Acts against a midwife for failing to notify births in her practice. The offence was proved and a fine was imposed. The notification of births in the Borough is now complete.

Maternity and Child Welfare.

ANNUAL STATISTICS RELATING TO THE MATERNITY HOSPITAL—1929.

	Borough	County	Total
(1) Number of cases in the home on 1st January, 1929.	7	4	11
(2) Number of cases admitted during 1929.	183	52	235
(3) Number of cases remaining in the home on 1st January 1930	4	—	4
(4) Average duration of stay	13 days	12 days	
(5) No. of cases delivered by—			
(a) Midwives	131	40	171
(b) Doctors	35	5	40
No. of cases in which no delivery took place	17	7	24
(6) No. of cases in which medical assistance was sought by the midwife with reasons for requiring assistance :—			
(a) Ante-natal	7	2	9
(b) During labour	22	1	23
(c) After labour	11	2	13
(state separately No. of ruptured perineums which required suture)	32	5	37
(d) For infant	9	1	10
(7) No. of cases notified as— (a) Puerperal Fever, and (b) Puerperal Pyrexia, (*i.e.*, rise of temperature to 100.4oF. sustained for 24 hours or its recurrence within that period) with result of treatment in each case.	(a) Nil. (b) 20. 6 removed to Isolation Hospital; 1 died subsequently. 5 recovered. 14 treated throughout at the Maternity Hospital; all recovered.		
(8) No. of cases of pemphigus neonatorum.	Nil.		
(9) No. of cases notified as ophthalmia neonatorum, with result of treatment in each case.	Nil.		
(10) No. of cases of " inflammation of the eyes " however slight	8		

(11) No. of Infants not entirely breastfed while in the Institution, with reasons why they were not breastfed.	3 entirely artificially fed :— 1 for acute tuberculosis of mother, 1 for depressed nipples, and 1 for Caesarean section. 3 partially artificially fed, owing to a temporary poor supply of milk.
(12) No. of maternal deaths with causes.	Nil.
(13) No. of foetal deaths— (a) Stillborn, and (b) within 10 days of birth and their causes—and the results of the post mortem examination if obtainable.	(a) 12 Stillbirths :— 4 Macerated : 1 due to eclampsia, 2 to ante-partum haemorrhage, and 1 without a signable cause, Wassermann negative. 8 Fresh : 3 due to eclampsia, 2 to placenta praevia, 2 to complicated breech deliveries and 1 was a monstrosity. (b) 5 deaths under 10 days :— 2 Feeble twins, 38 weeks premature. Lived six and twenty-four hours respectively. 1 Induction, 24 weeks premature. Lived an hour. 1 Difficult delivery. Probably injury to the brain. Lived one day. 1 Collapse of lung. Lived five days.

THE MATERNITY SERVICE.

In December 1928 the Swindon Corporation took over the Training School and Extern Midwifery Service which, previous to that date, had been administered by the Wilts Nursing Association. This was the second step in a system of midwifery for the Borough of Swindon and the neighbourhood which it is hoped to develop during the next two or three years. The temporary Maternity Hospital which was opened in 1922 was the first step in this direction. It has been recognized for some years that this temporary hospital is obsolete and that a new maternity hospital, up to date in equipment and ample in capacity is required for Swindon. It is unnecessary to refer to the difficulties which have impeded our obtaining the hospital that we require, for towards the end of 1929 the matter was settled and a new maternity hospital will be built on the site of Kingshill House in the immediate future. This hospital will be able to give complete service for the Borough of Swindon and the neighbouring parts of the County and to become the centre for the midwifery service in the district, much in the same way that Gorse Hill Hospital has become the centre of epidemiology.

1929 was a year of exceptional difficulty for maternity work. In common with the rest of the country, much sickness and very serious mortality were encountered and problems of the gravest possible public health and social importance connected with the limitation of conception, the falling birth rate—to whatever cause this may be due—and the undoubted and alarming increase in the practice of abortion, came up repeatedly and remain, to a great extent, unsolved.

In considering the very high rates of maternal mortality, puerperal pyrexia, stillbirths and neo-natal deaths, it is as essential not to be led into exaggeration as it is not to fail to grasp their real significance. The high rate of puerperal pyrexia, particularly in connection with the Maternity Hospital, owes a great deal to the practice, which is now insisted upon, of recording the temperature of lying-in women every four hours. Many of the cases notified as puerperal pyrexia in the Maternity Hospital would have escaped notification had the usual practice of taking the temperature but twice in the twenty-four hours been adhered to. Also, in connection with maternal mortality, Swindon keeps to the practice of considering the death of every female between the ages of 15 and 50 as being due to, or connected with ,the reproductive process, unless and until it is proved otherwise. Consequently our maternal deaths are always in excess of those which are accredited to us by the Registrar General and produce a rate which compares unfavourably with other districts where the usual,

but fallacious, method of computing maternal mortality still lingers. It must also be remembered that as both the Maternity Hospital and the Isolation Hospital serve districts outside the Borough of Swindon, the deaths and notifications which are considered by the Swindon Public Health Office contain cases which are in no sense to be accredited to the Borough itself. But when all allowance is made for factors which might exaggerate the rates, there remains evidence of a serious state of affairs regarding reproduction.

Since maternity is the essence of civilization, the investigation of the problems which it presents should take the supreme place in the consideration of those who guard the health of the nation and the continuation of its prosperity. The year 1929 saw a tremendous awakening to the vital nature of the problems of maternity. One important step was the requirement that all maternal deaths should be investigated and reported to the Ministry of Health. This throws considerable work upon local public health departments, and the efficiency with which it is done, or with which it can be done, differs in various localities ; but as regards Swindon, no particular difficulty arises in carrying out the Ministry's requirement, though it cannot be denied that it entails some work, often of an unpleasant character.

Difficulties were encountered in the work of the Maternity Hospital during 1929. There were 20 cases of puerperal pyrexia notified. Though many of these would not have come under the Notification Order had not four-hourly temperature charts been insisted upon, it represents a state of things which is disquieting. In the early part of the year there were several pyrexias traceable to influenza, which at that time was epidemic throughout England, but when influenza died out, cases of pyrexia due to coccal infections became unpleasantly frequent, and in May, a clean case developed acute streptococcal septicaemia, so it was decided, as a precaution, to close the Hospital for a fortnight. The Hospital was accordingly closed from the 11th to the 24th May, the circumstances were reported to the Ministry of Health and on May 28th Dame Janet Campbell, Senior Medical Officer to the Ministry of Health, visited Swindon to explore the position locally. Dame Campbell was satisfied with the methods that had been adopted to deal with the situation and suggested that in future the bookings to the Maternity Hospital should be strictly limited to fifteen per month.

The latter half of the year, though it produced several cases of puerperal pyrexia, mainly connected with grave obstetric diseases, caused less anxiety than the beginning, but at no time in the year were we really quite happy.

From the beginning of the year it became necessary to limit the bookings of the Hospital and after Dame Janet Campbell's visit, this limitation had to be increased. Consequently a large number of women who wished to be delivered in the Hospital had to be refused admission, and the work done fluctuated more violently than in any previous year. On several occasions the number of cases in Hospital sank down to four, and on one occasion to one, whilst at others we had the greatest difficulty to cope with the admissions.

Of the cases who were delivered in the Maternity Hospital one only was delivered by Caesarean Section, whilst in nine labour was induced. This is a more satisfactory record for the treatment of disproportions than had ruled in previous years.

In connection with the district work, 163 deliveries were attended by the staff. This number is higher than those of previous years, due in large measure to the fact that some of the cases had sought admission to Hospital, but had had to be refused.

Eight new probationers were in training during the year, and five obtained the C.M.B. Certificate.

A third important step in the development of the midwifery service was made in 1929 by the appointment of Dr. Sydney Rowlands as Consulting Obstetrician, not only to the Hospital, but for purposes connected with puerperal pyrexia and for any other matters of an obstetric nature for which his services might be required. This appointment was somewhat hurried forward; for though the service of a consulting obstetrician is imperative in every scheme for maternity and child welfare which seeks to be efficient, it would, in Swindon, have been delayed until the general scheme for the midwifery service had been worked out more completely, had not the serious troubles with which we had to contend during the year made it advisable to get this appointment made as quickly as possible and to modify the terms of the appointment at some subsequent date, should such a course be desirable.

The establishment of a complete maternity service for Swindon would be impossible unless a service, similar in kind and in all but insignificant details, were available for the districts surrounding the town.

This means that substantial agreement between the Town Council and the County Council upon each step to be taken must be secured. Cordial working between the Borough and County Medical Officers, with free consultation and the exploration of all possible points of difficulty or uncertainty, is a necessary preliminary to this. During 1929 the great pressure of work on both Borough and County Medical Officers impeded progress, but the outlook is favourable for a complete maternity scheme in the near future.

REPORT ON WORK DONE AT THE ANTE-NATAL CLINIC 1929

(By Dr. VIOLET KING, Assistant Medical Officer of Health).

The attendances at this Clinic during the year have been satisfactory, though the numbers have fallen slightly. Over 15 per cent. had previously attended for confinements in past years.

Four mothers attended the County Clinic for treatment of venereal disease, and continued their visits to within a short time of their confinements. One did not commence treatment soon enough and the foetus died early.

Three cases of contracted pelvis were treated by induction, one of which was later removed to Gorse Hill with puerperal sepsis. Four other mothers also developed sepsis and were removed. There was one death.

Of the three cases of heart disease, one was serious. The patient was carefully watched from the beginning, and spent some time resting in the Maternity Home during the later months. Caesarean section was then performed and the patient sterilized. Both mother and baby did well.

One of the mothers who suffered from enlarged thyroid had treatment for it, and has improved.

The case of tuberculosis was from the County. The patient had had active treatment before marriage and the disease appeared to be latent. It flared up again shortly before confinement. Both mother and baby were visited in the Home by their own doctor, and left there with definite instructions as to general hygiene and feeding.

The number of stillbirths has increased and forms 2.8 per cent. of the total births. Theoretically every one of these infant deaths was preventable, but practically we are, at present, without the knowledge necessary to make them so.

GYNAECOLOGY.

Five patients who visited the Clinic for advice, were referred to the Specialist for further examination and necessary treatment. One case of threatened abortion was admitted into the Maternity Home to be seen by her own doctor. No ovum, however, was found. One patient came to be measured for an abdominal belt, and most of the others were suffering from menstrual disorders. Some of these latter needed to attend only a few times, and, on improvement, were able satisfactorily to carry out general instructions in hygiene. A few are still attending.

V. REDMAN KING,
Asst. Medical Officer of Health.
Public Health Department,
61, Eastcott Hill,
Swindon.

STATISTICS RELATING TO THE ANTE-NATAL CLINIC, 1929.

No. of old cases on the books	53
No. of new cases	342
TOTAL	395
No. of cases still on the books	54
Attendances at Doctor's Clinic	808
Attendances at Matron's Clinic	996
TOTAL	1804
Urine examinations	3347
Wassermann tests	4
Having treatment at V.D. Centre	4
Number of County cases	71
Number of district cases	65
Number booked for Maternity Home	221
Number referred by midwives	76
Number referred by doctors	5
Gynaecological cases	18
Number referred for dental treatment	29
Number of cases of doubtful pregnancy	23

Conditions found at Clinics :—

Albuminuria	10
Contracted pelvis	6
Enlarged thyroid	13
Heart disease	3
Hernia	3
Spinal curvature	1
Prolapse	2
Varicose veins	41
Tuberculosis	1

Known results of Confinements :—

Normal Deliveries	215
Of these : Twins	3
Premature	7
Abnormal Cases :—	
Induction	6
Forceps	25
Caesarean section	2
Breech presentation	8
Eclampsia	1
Still-births	9
Miscarriages	1
Foetal Abnormalities :—	
Hare-lip and cleft-palate	1
Partial hypospadias	2

The following table gives the details of confinements of women who had attended the Ante-natal Department, but in whom the child failed to survive.

No.	Age	Para.	Visits	Comments.	Details of Confinements.
1	33	1	2	A mother apparently quite healthy. Much sickness in first half of pregnancy. Blood pressure 135. Should have attended again, but did not. Sent instead specimen of urine, which was clear. Came in for confinement next day.	Delivered of a macerated foetus in Maternity Home. Blood sent for examination; result negative.
2	27	3	1	Had facial paralysis 1928. Both other confinements normal. Had slight swelling of feet during this pregnancy. Referred to dentist for bad teeth. Due for another visit, but came in a month before.	Patient admitted as an emergency case. Eclampsia. Baby one month premature.
3	23	1	3	Had infantile paralysis at 5 years which affected the right leg. Needed dental treatment, but was not willing to have it. Examined 9-8-29, baby alive. Nothing abnormal noted. Due to be seen again three weeks before term.	Patient delivered at home 13 days later of 7½ months still-born infant. Malpresentation.

No.	Age	Para.	Visits	Comments.	Details of Confinements.
4	34	4	1	Patient three times married and history of ill-treatment by present husband. Had had operations for appendicitis and removal of one tube and ovary. Two miscarriages. Confinements normal. Was under own doctor early in pregnancy for haemorrhage. Seen 23-7-29, baby alive.	Confined at home three weeks later. Delivered of a premature still-born infant. Severe post-partum haemorrhage.
5	26	4	2	A healthy woman. Normal confinements. Attended complaining of haemorrhage. Advised to go home and stay in bed. Seen a week later and note sent to patient's doctor, as she was no better.	Patient delivered five days later of 7 months infant.
6	21	1	2	Chorea at 12 years. Anaemia ; recently under doctor for treatment. Recent severe attack of vomiting. Some headaches and dizziness. Albumin in urine. Referred to own doctor. At second examination 14 days later, heart faintly heard. Had had treatment at home from doctor, and was feeling better.	Baby born at home, eight days later, before arrival of nurse.
7	36	3	2	Operation in 1927 : appendix and one tube removed ; other said to be diseased. Good health since. Instruments used at both confinements. Came to Ante-natal clinic as query pregnancy. No movements or heart sounds either then or at second visit a week later. On the latter occasion membranes had ruptured and liquor was draining away. Admitted straight into Maternity Home for examination by doctor.	Delivered four days later of a premature macerated foetus.

No.	Age	Para.	Visits	Comments.	Details of Confinements.
8	24	1	3	A healthy woman. On examination at the last two visits, it was a question of either twins or a breech presentation. It was arranged that she should come in before term, to be examined by her own doctor. Baby alive at last visit.	Delivered four weeks later, in the Maternity Home, of a still-born infant. A breech presentation.
9	41	10	2	A sickly mother. History of recent kick in abdomen. Bad cough also present. Advised to send immediately for own doctor. Was admitted into Victoria Hospital the same day and had an operation for torn rectus muscle. When seen again four weeks later, had not felt any foetal movements during that time.	Confined three days later. A macerated malformed foetus.

NEO-NATAL DEATHS IN RELATION TO ANTE-NATAL WORK.

No.	Age	Para.	Visits	Mother's History.	Infant's History.
1	41	2	1	Mother always anaemic. First confinement terminated by instruments; baby stillborn. At present severe varicose veins. Labour induced at 38 weeks. Baby alive, 6lbs. 4oz. Mother had puerperal sepsis and was removed to Gorse Hill.	Infant lived 12 hrs. and died from cerebral haemorrhage.
2	20	2	8	Mother had suffered from gastritis and anaemia. First baby born at 8 months, weighing 5 lbs. Poor health during present pregnancy; much vomiting and nausea. Twins suspected from appearance of abdomen. Born ten days after last visit.	The twin boys weighed 4½ and 3¼lbs. respectively. One survived for 6 hours and one for 1 day, both dying from inanition.

PUERPERAL PYREXIA.

There were 36 notifications of puerperal fever and pyrexia during 1929. All were investigated, though in some cases the investigation was not carried very far. 20 cases were notified from the Maternity Hospital, 1 from a private nursing home and 15 occurred in women delivered in their own homes. 6 of the cases from the Maternity Hospital and 6 of those delivered in their own homes were removed to the Isolation Hospital. In addition, 4 cases from the outside district, not included in the above statistics, were treated in the Isolation Hospital. Of these cases, the one which occurred in the nursing home, one of those removed from the Maternity Hospital and two of those removed from their own homes ended fatally.

The 40 cases which came under the notice of the Public Health Department may be analysed as follows :—

Streptococcal septicaemia : 3 cases with 1 death.
Septic infection of the uterus, with retention : 9 cases with no death.
Local sepsis due to injury of the maternal parts : 6 cases with no death.
Scarlet fever occurring in the puerperium : 5 cases with no death.
Eclampsia : 3 cases with 1 death.
Bacillus coli septicaemia : 1 case with 1 death.
Influenza : 4 cases with no death.
Pneumonia : 2 cases with 1 death.
Inflamed breasts : 3 cases with no death.
Rheumatism : 1 case with no death.
Exophthalmic goitre : 1 case with no death.
Nothing discernible : 2 cases with no death.

It is not proposed at the present time to analyse further these cases, but they form a very average collection, with the exception of the five cases of scarlet fever complicating the puerperium. These were all in the practice of one midwife, who was eventually proved to be a carrier of Dick's streptococcus.

MATERNAL DEATHS.

The details of 12 deaths occurring as a result of, or in connection with, reproduction were investigated. Of these, 3 cases did not belong to the Borough of Swindon and the necessary forms were prepared by the County Medical Officer for transmission to the Ministry. In the remaining 9 cases the forms were filled up and sent to the Ministry by the Borough Medical Officer of Health.

The Registrar General accredits Swindon with 6 maternal deaths, so that 3 deaths fell within the definition of maternal deaths used in the Borough of Swindon which did not appear as maternal deaths on the national death register.

It is not proposed to say anything about these maternal deaths, as the Ministry of Health is carrying out an extensive investigation into the causes of maternal mortality and there is no useful information apart from what appears on the actual returns to the Ministry (which returns are confidential documents) which can be furnished at the present moment by the Medical Officer of Health for Swindon. But, speaking generally, the evidence both locally from Swindon and that from practically all parts of the civilized world leads to the conclusion that the practice of interfering with conception is increasing at a rate which is alarming and which more than counterbalances the advances made in the treatment of maternal disease.

OPHTHALMIA NEONATORUM.

The number of cases of this disease notified in the Borough during 1929 was 3. This is the lowest number recorded during the decade. 19 cases of discharging eyes in addition to the above, were reported by midwives and 9 cases were seen at the infant clinics, notified neither by doctors nor midwives.

All cases, both notified and unnotified, were treated throughout by the Public Health Department.

Treatment at The Child Welfare Centre.

3 notified cases, 12 midwives cases and 9 cases which had not been notified either by a practitioner or a midwife, were seen at the Child Welfare Centre. One of the notified cases was admitted to the Fever Hospital as diphtheria, but proved subsequently to be a non-diphtheritic membranous conjunctivitis. The remainder (23) were treated throughout at the Maternity and Child Welfare Centre and discharged cured without any damage to the sight. The case of membranous conjunctivitis recovered with a very faint opacity in the right eye and a more serious opacity in the left eye which was followed by nystagmus and squint. This case was neither diphtheritic nor gonorrheal.

TREATMENT AT THE MATERNITY HOSPITAL.

8 of the midwives cases were notified from the Maternity Hospital. Of these, 7 were treated throughout at the Hospital and one was transferred to the Maternity and Child Welfare Centre. All were discharged cured without any injury to the sight.

TREATMENT AT GORSE HILL V. D. HOSPITAL.

Only one case, a notified case from outside the Borough, was treated at Gorse Hill V. D. Hospital during the year. This was a severe gonorrheal case which developed onyx, but eventually recovered completely without any injury to the sight.

The total number of ophthalmia cases dealt with throughout by the Public Health Department was, therefore, 32.

The bacteriology of these cases is given in the following table:

NOTIFIED CASES :—	
Gonococcus	3
Sterile	1
NON-NOTIFIED CASES :—	
Pneumococcus	3
Streptococcus	1
Sterile	18
Not examined	6

The number of cases of gonorrheal ophthalmia is the lowest recorded in the Borough. In Swindon all midwives are required to notify to the Health Office every case of discharging or sore eyes, however slight, and all these are investigated. These cases are not numerous and, with the exception of those due to the gonococcus, or occasionally to other pathogenic organisms, are due to blocking of the punctum by a pellet of secretion or vernix and require little treatment except the expulsion of this pellet, which can easily be effected by pressing upon the nasal duct with the finger.

OPHTHALMIA NEONATORUM.

Year	No. Notified.	Cases of infantile Ophthalmia due to gonococcus	Where treated.				Result.				Not notified as O. N.
			Home	Gorse Hill	Clinic	Maternity Hospital	Cured	Blind	Injured	Died.	
*1921	7	?	3	....	4	....	7	....	....	....	19
1922	21	?	2	....	19	....	20	....	1	....	16
1923	34	23	5	4	25	....	30	....	2	2	11
1924	15	13	....	3	10	2	15	....	....	....	12
1925	9	4	1	2	5	1	9	....	....	....	11
1926	8	3	....	....	8	....	8	....	....	....	22
1927	11	5	1	3	6	1	11	....	....	....	15
1928	4	4	....	2	2	....	4	....	....	....	30
1929	3	2	....	1	2	....	2	....	1	....	28

* These figures are incomplete.

Table showing the number of cases of Ophthalmia Neonatorum notified, the number treated, the results of treatment, and the number of deaths occurring. 1929.

No. of Cases notified 3	No. of Cases	Vision Unimpaired	Vision impaired	Total blindness	Deaths
Treated at Clinic	2	2	....	....	....
Treated at Gorse Hill Clinic	....	—	....	....	....
Treated at Maternity Hospital	....	....	....	....	....
Treated in Infectious Diseases Hospital	1	....	1	....	....
TOTALS	3	2	1	....	....

INFANT WELFARE CLINICS.

In July 1929 a small subsidiary infant welfare centre was opened on the Hurst Estate for the convenience of those mothers who live in that part, which formerly without the Borough, was taken in under the Extension Order of 1928. With this exception there was no change or addition to the work of the infant centres, though in the near future, when time permits, it will be necessary to work out a scheme which will give to the North of the Borough a fully equipped centre to replace the temporary clinics.

In considering this report of the work of the infant clinics in Swindon, it is necessary, in view of the circular issued in December jointly by the Ministry of Health and the Board of Education, to explain the method by which medical benefits are administered to the children of the Borough. For administration purposes children are divided into four categories ; infants, toddlers, elementary school children and secondary school children. An infant is defined as any person below the age of two on the first day of the year ; a toddler is a child over the age of two, whose name is not upon a school register, so that in Swindon the toddler group is a comparatively small one. There is not, and there never has been, any distinction made in the benefits available for children of any age or in any condition and, as a matter of fact, the largest numbers of cases dealt with and, on the whole, the most important, are infants between the ages of one and three. The whole essence of the scheme in Swindon being to supervise the child from birth until employment, it requires the keeping of continuous records uninterrupted by any artificial breaks. The division of children into groups is, therefore, purely for administrative purposes and is not allowed to interfere with the continuity of the control. The gap between infancy and school age, to which the Government Circular of December 1929 calls attention, has had no existence in Swindon for the past ten years, but it is not suggested that the supervision of the pre-school child has reached a stage of finality. Something is required to complete it and that something is a systematic medical and dental inspection on similar lines to those given to the school entrant, about the beginning of the child's fourth year of life. It is hoped in the course of time to arrange for this very necessary provision.

The figures for 1929 show an increase upon those of any previous year, in some cases a considerable increase and in others only such difference as the variation in births will account for. All this appears to be satisfactory, but it must be admitted that, owing to the constant high pressure upon the Public Health Department during 1929, there were occasions when the infant department did not receive as much attention as it had done in the previous year. The rise in infant mortality and, it may be added, also in infant morbidity, which was experienced in Swindon in 1929 as in all other parts of the Kingdom, is due to some extent to the slight slackening of infant care, which was unavoidable. To obtain the best results that can be obtained—and nothing short of this should satisfy us—the supervision of childhood must receive unremitting attention and immediate action for all cases that call for action at all. It is more especially during the second vear of life that rapidity of action is necessary. The child of this age is liable to become suddenly ill from diseases which are rapidly fatal unless they are tackled at the onset. In these cases, hours rather than days make the difference between life and death; and at no other age is treatment of greater consequence, for recovery is generally complete, without the slightest damage being left behind.

The chief diseases of the infant after weaning are caused by infection, or by illnutrition and, perhaps most generally, by both. In dealing with the states of illnutrition, it is well to bear in mind that though disturbance of the hormonic balance and vitamin deficiency play important parts, they have nothing like the importance which laboratory experiments have led us to believe. Lack of food, *i.e.*, lack of sufficient quantity, is practically non-existent, but insufficient proteid of useful quality, of fat in an assimilable form and of carbohydrate of suitable composition and consistency, and also lack of sufficient water are common and are the chief causes of infantile illnutrition.

Not only the food itself, but the way it is taken is important. To guard the nutrition of the growing infant, attention should be directed mainly to what enters the mouth and what goes on there. If we can be satisfied with what passes behind the tongue into that part of the digestive system which works automatically, it is rare indeed that we need bother about any part of the alimentary canal between the pillars of the fauces and the sigmoid valve. If we can be sure that the right food has been put into the mouth and that the mouth has been rightly used in dealing with it, there is seldom any cause to question the health and function of the alimentary tube.

The food of the infant must be such as conforms to his requirements and the most obvious and most certain guide that we have to his requirements is the condition of the teeth. The teeth at about the eighteenth month of age are generally strong and healthy and if the child at such an age is fed on such food as a mouthful of strong healthy teeth is designed to tackle, not only will the health and strength of the teeth be retained and developed, but the health and strength of the whole digestive system will follow also. It is not, however, quite so simple as it sounds to regulate the diet of the young infant in accordance with the state of its dentition. If one does so, if one follows the principles of biology in feeding infants, one offends all those who have no biological knowledge, and as these represent some ninety-nine per cent. of the human race and include a very large proportion of dietetic specialists and persons who call themselves pediatricians, the fight is a continuous one to demonstrate that what is biologically absurd cannot be correct, whatever authority there may be to support it.

TABLE SHOWING THE NUMBER OF VISITS PAID BY THE HEALTH VISITORS TO MOTHERS AND CHILDREN AND TO CASES OF TUBERCULOSIS.

	1923	1924	1925	1926	1927	1928	1929
No. of first visits paid to mothers and children	1010	923	922	975	815	874	884
No. of revisits	3047	3189	3568	3368	3674	3731	4765
No. of visits paid to expectant mothers	214	262	229	166	168	220	330
No. of visits paid to cases of Deaths and Stillbirths	78	78	67	103	87	89	110
No. of visits to cases of Tuberculosis....	123	123	366	114	170	145	127
No. of visits paid to children aged 1—5 years	2610	3033	3060	2584	3421	4048	5570
	7082	7608	8212	7310	8335	9107	11786

RECORD OF WORK DONE AT THE INFANT WELFARE CENTRES DURING THE YEARS 1923-1929 INCLUSIVE.

	1923	1924	1925	1926	1927	1928	1929
No. of separate Infants who attended the Centre at:—							
Eastcott Hill	1125	1127	1115	1116	1153	1242	1247
Gorse Hill	272	310	259	305	328	316	263
Rodbourne	208	209	236	255	273	260	261
Pinehurst*	—	—	—	—	—	—	66
TOTAL	1605	1646	1610	1676	1754	1818	1837
Number of Attendances—							
Eastcott Hill	5698	5521	5742	6079	6173	6281	6649
Gorse Hill	1319	1474	1399	1736	2473	2185	1917
Rodbourne	1306	1211	1577	1556	2057	2115	2282
Pinehurst	—	—	—	—	—	—	309
TOTAL	8323	8206	8718	9371	10703	10581	11157
Number of cases which received medical advice and treatment	580	625	654	746	787	942	939
Total Consultations	1461	1672	1631	2029	2111	2505	2636

*Opened 15th July, 1929.

SUMMARY OF CONDITIONS SEEN AND TREATED AT THE INFANT WELFARE CLINICS DURING THE YEAR 1929.

	Infants.	Toddlers.	Total.
Disease and Defects due to Ante-Natal Causes—			
Phimosis	151	2	153
Congenital defects of nervous system....	11	13	24
Congenital diseases of the blood	1	—	1
Other congenital deformities & defects	53	3	56
	216	18	234
Specific Infections—			
Congenital syphilis	11	3	14
Gonorrhoea other than O.N.	—	1	1
Ophthalmia neonatorum	24	—	24
Tuberculosis	3	5	8
Diphtheria, scarlet fever, measles, whooping cough	13	7	20
Pneumonia	19	4	23
Rheumatism	—	1	1
Nervous system	10	3	13
Various infections	65	50	115
	145	74	219
Deficiency States—			
Ill-feeding	214	1	215
Scurvy	2	—	2
Rickets	14	6	20
Anaphylaxis	10	5	15
Various	12	4	16
	252	16	268
Injuries	17	8	25
Miscellaneous	126	67	193
	756	183	939
No. of Bacteriological examinations	27	1	28
No. of Haematological examinations	8	4	12
No. of X'Rays examinations	6	—	6
No. of Mental Defectives	2	6	8
No. of Physical Defectives	1	1	2
No. of Blind Children	—	1	1
No. of Deaf Children	—	—	—
No. of Mute Children	—	—	—

TABLE SHOWING THE NUMBER OF INFANTS AND TODDLERS REFERRED TO SPECIAL DEPARTMENTS FOR TREATMENT DURING 1929.

	Infants	Toddlers	Total.
Dental Clinic	13	244	257
Eye Clinic	4	7	11
V.D. Clinic	11	4	15
Orthopaedic Clinic	5	2	7
Throat, Nose and Ear Clinic	1	13	14
Electrical Clinic	7	1	8
Tuberculosis Clinic	1	3	4
Rheumatic Clinic	—	1	1
TOTAL	42	275	317

THE MILK (MOTHERS AND CHILDREN) ORDER.

	1922	1923	1924	1925	1926	1927	1928	1929
No. of applications granted	88	54	61	52	106	77	72	71
Total quantity of Milk issued (Galls.)	900	750	900	900	1750	1497	1186	1572
TOTAL COST £ (Approx.)	100	75	90	90	160	140	100	150

INFANTILE MORTALITY.

The deaths of all persons under the age of 20 which occur in Swindon, and of all Swindon children who die away from the town, are investigated. Some knowledge of the previous history of these children is in the possession of the Health Office, and in an increasing number, the full life histories are available. Since some children die in the institutions of Swindon who do not belong to the town, and certain other children who have regularly attended the Swindon clinics die elsewhere, these investigations become somewhat complicated. In the review which follows, cognizance is only taken of those deaths which the Registrar General accredits to Swindon.

STILLBIRTHS.

46 stillbirths occurred in Swindon during 1929; of these, 2 did not belong to the Borough, so 44 are accredited to Swindon, against 31 for last year. 11 Swindon cases and 1 of the outside cases occurred in the Maternity Hospital, 1 Swindon case and 1 of the outside cases occurred in private nursing homes and 32 in the mothers' own homes. Of the 44 Swindon cases, 20 were males and 24 females. 40 were legitimate and 4 illegitimate. 14 were first pregnancies, 3 second, 5 third, 8 fourth, 3 fifth, 2 sixth, 4 seventh, 1 ninth, 1 tenth, 1 twelfth, 1 fourteenth, and 1 seventeenth. 16 were full term and 28 premature.

The causes of stillbirth were, so far as can be ascertained, as follows :—

FOETAL CAUSES :—	
Spina Bifida	1
Hydramnios	2
"Deformed"	1
NATAL CAUSES :—	
Abnormal presentation	4
MATERNAL CAUSES :—	
Influenza	2
Eclampsia	4
Ante-partum haemorrhage	6
Doubtful syphilis	2
Abdominal disease	4
Injury	3

In the remaining 15 the cause of stillbirth is uncertain. Of these 44 mothers, 15 had received ante-natal attention.

The ages of the mothers at the birth of their first child were as follows :—

18	2
19	2
20	7
21	7
22	3
23	3
24	7
25	1
26	2
27	2
28	1
32	1
33	1
36	1
37	1
Unknown	3

DEATHS BEFORE THE END OF THE FIRST DAY.

9 such cases occurred, against 6 for last year. All were legitimate. 4 were males and 5 females. 4 were first pregnancies and 5 subsequent pregnancies. 1 died from inattention at birth. This infant was drowned in a commode and was the subject of an inquest. 1 was a non-viable induction and 1 was a monstrosity. In the 6 remaining cases no cause of death except prematurity was discovered. 4 were first pregnancies, 2 second, 1 third, 1 fourth and 1 fifth. Only one of these mothers had received ante-natal supervision.

DEATHS BETWEEN THE END OF THE FIRST DAY AND THE END OF THE FIRST WEEK.

5 such deaths occurred, against 3 for last year. 4 were males and 1 female. 1 was a first pregnancy, 2 second, 1 third and 1 fourth. 1 was illegitimate. 1 died from cardiac malformation; 1 from cerebral injury at birth, and 1 from jaundice. In 2 of the cases the cause of death is uncertain. Of the five mothers, one only had received ante-natal supervision.

DEATHS BETWEEN THE END OF THE FIRST WEEK AND THE END OF THE FIRST MONTH.

4 such deaths occurred, against 5 for last year. 3 were males and 1 female. All were legitimate. 1 was a first pregnancy and 3 subsequent pregnancies. 3 were breast fed, and all died from whooping cough, aged 10, 16 and 21 days respectively. 1 was artificially fed and died from inanition. None of these mothers had received ante-natal supervision.

DEATHS BETWEEN THE END OF THE FIRST MONTH AND THE END OF THE FIRST YEAR.

23 such deaths occurred, against 19 in 1928. 12 were males and 11 females. All were legitimate. 17 cases had not attended the clinics and their previous histories were uncertain. 7 of these had been breastfed; 1 died of intussusception, 1 of tuberculous meningitis, 1 of whooping cough, 1 of congenital heart disease, 1 of congenital syphilis and in 2 the cause of death is unknown. 10 had been artificially fed. 6 of these died of whooping cough, 1 of spina bifida, 1 of congenital syphilis, and 2 of illfeeding.

Of the 6 cases who had attended the clinics and whose life histories were known, 4 were breast fed. Of these, 1 was accidentally burned to death, 1 died after an operation for pyloric obstruction, 1 died of acute tuberculosis and 1 of whooping cough. 2 had been artificially fed. 1 of these died of congenital syphilis and 1 of illfeeding.

DEATHS OF CHILDREN BETWEEN THE FIRST AND SECOND YEAR.

There were 14 such deaths, against 10 for last year ; 6 males and 8 females. All were legitimate. 5 had not attended the clinics. 3 were breast fed, all of which died of pneumonia, almost for certain whooping cough. 2 were artificially fed ; 1 died from bronchitis, probably whooping cough, and 1 of bronchitis, ? cause.

Of the 9 cases who had attended the clinics, 4 were breast fed. Of these, 1 died of tuberculous meningitis, 1 of meningitis, probably polio-myelitis, 1 of pneumonia, probably congenital syphilis, and 1 of pneumonia, probably whooping cough. 5 were artificially fed. 2 of these died of whooping cough, 2 of influenza and 1 of pneumonia, probably influenza.

DEATHS OF CHILDREN BETWEEN THE SECOND AND THE FIFTH YEAR.

There were 12 such deaths, against 10 for last year ; 8 males and 4 females. 2 of these had not attended the clinic. Both were breast fed ; 1 died from otitis media and 1 from tuberculous meningitis.

Of the 10 who had attended the clinic, 5 were breast fed. Of these, 1, who was knocked down by a motor car, died of a fractured skull, 1 died under anaesthetic, 1 died of abscess of the mesenteric gland, 1 of chronic bronchitis, probably rickets, and 1 of influenza. 5 were artificially fed. 1 of these died of status epilepticus, probably polio-myelitis, 1 of asthma, probably influenza, 1 of rheumatic fever, 1 of whooping cough and 1 was a hydrocephalic imbecile.

DEATHS OF CHILDREN BETWEEN THE FIFTH AND THE TENTH YEAR.

There were 6 such deaths, against 7 in 1928. All were males and known to the Public Health Department. 1 died from fracture of the skull, due to a fall out of a window, and was the subject of an inquest. This child was a hydrocephalic with a mental ratio of 59. He had never been to school. These facts were not brought out at the inquest. Another child, also the subject of an inquest, was certified as having died from suffocation when asleep due to vomiting after eating raw carrots and apples (there is reason to think that this child was a case of status lymphaticus). Another died of tuberculous meningitis ; another of septic meningitis secondary to ear disease ; another of valvular disease of the heart and acute rheumatism, and the last of pneumonia.

DEATHS OF CHILDREN BETWEEN THE TENTH AND THE SEVENTEENTH YEAR.

There were 7 of these, against 6 for last year ; 5 males and 2 females. The history of all of these children was known to the Public Health Department. 1, who was the subject of an inquest, died from staphylococcal septicaemia implanted upon a vaccination performed eighteen days before he died ; 1 died of meningitis (in all probability this was a death from encephalitis lethargica) : 1 died from cerebral tumour ; 1 was certified as having died from congenital heart disease, but it is known from his history that the heart disease originated and was due to endocarditis and pericarditis in the course of an attack of pneumonia some years before; 1 died of rheumatic heart disease ; 1 of diphtheria and 1 of diabetes.

DEATHS BETWEEN THE SEVENTEENTH AND THE TWENTIETH YEAR

There were 6 of these ; 2 males and 4 females. 2 were not known to the Health Department and died of appendicitis and influenza respectively. Of the 4 who were known to the Public Health Department, 1 died of diabetes, 1 of pulmonary tuberculosis, 1 of pneumonia (this boy was a chronic asthmatic), and 1 died of puerperal sepsis after Caesarean section.

The scrutiny into the deaths of infants, children and young persons which has now been carried out for many years is a most valuable piece of research in public health. The method in vogue in Swindon of keeping a continuous health record of its citizens, which record is available at all times that it may be needed, renders it comparatively easy to trace back the life histories of those citizens who fall out, and to find out the relationship between the beginning and the end of disease.

It will be noticed that the cause of death assigned by the Public Health Department differs frequently and in some cases fundamentally, from that which appears on the death certificate. This is a matter of extreme importance. It has been worked out from very large numbers that complete reliability of death certificates, even in favourable circumstances, is less than forty per cent. By the method of scrutiny, where this is available, it is possible to get a far more accurate death register. It is hoped in the course of time that those who have the care of the sick, particularly in obscure or acute illnesses, will make use of the records which are kept at the Health Office and which are open to the inspection of any medical practitioner who wishes to see them. We can say candidly that if this method can be made administratively possible in the country at large, a great number of cases of obscure illness which are impossible to diagnose at the

time will be made clear, many deaths which at present are unavoidable will be made avoidable and a large amount of interference, particularly abdominal explorations, will be rendered unnecessary.

It is not submitted that at the present moment the scheme that we have in Swindon has reached the stage of perfection, nor anything like it, but we have made a beginning and from that beginning we are perfectly satisfied that by this method it is possible to find out the causes of those diseases which are totally obscure and eventually to make prevention take the place of unavailing attempts to overcome the final effect of disease. We know from our experience that the histories given by patients or their relatives are never in accordance with the facts and in some cases are completely misleading and that particularly in an acute attack of a disease on top of a chronic condition, the material available for the physician to form a diagnosis is not sufficient to save him from error.

The method of public health administration in Swindon is not new and did not originate locally. It actually originated from the teaching of Clifford Allbutt and Charles Mackenzie and is in operation to a limited extent in other parts of the country and on the continent. It requires very little more in the way of examination and clerical work than is required under any circumstances, only that the various work that is done shall be kept together so that it can be considered as a whole. It means that the unit of preventive medicine is made the person and not the disease. It is founded on the famous aphorism of Allbutt : Diseases are not entities, diseased persons are.

The record of child loss for 1929 is unsatisfactory, but it will be noticed that it became less and less unsatisfactory as the patients grew older. The stillbirth rate was the worst and then the infants 0-1 ; whereas after the fifth year the loss from death was about normal. The high natal fatality was, to a great extent, due to influenza. It is noticed in every year when influenza is present that the natal rate is high and that a period of low birth rate follows epidemic prevalence of influenza. There is, however, more than a suggestion that part of the natal death rate is due to deliberate attempts to interfere with pregnancy.

The child death table brings out at once that 1929 was a year in which measles was absent, that whooping cough was severe and that acute infections of the nervous system were unusually prevalent. The three deaths from whooping cough at 10, 16 and 21 days throw light on the incubation period of this very obscure disease. Very careful inquiry was made to ensure accuracy of diagnosis.

TABLE SHOWING THE CAUSES OF DEATHS OF CHILDREN UNDER 20 YEARS OF AGE IN THE BOROUGH OF SWINDON DURING THE YEAR 1929.

CAUSE.	0-1	1-2	2-5	5-10	10-17	17-20	Total
Pathologically Differentiated—							
Congenital Defects	5	....	1	....	....	....	6
Congenital Syphilis	3	1	....	....	....	....	4
Influenza	....	3	2	....	....	1	6
Whooping cough	11	7	1	....	....	....	19
Pneumonia	....	....	....	1	....	1	2
Diphtheria	....	....	....	....	1	....	1
Rheumatic Infection & Sequelae	....	....	1	1	2	....	4
Encephalitis Lethargica	....	....	....	....	1	....	1
Acute Tuberculosis	1	....	....	....	....	....	1
Pulmonary Tuberculosis	....	....	....	....	....	1	1
Tuberculous Meningitis	1	1	1	1	....	....	4
Meningitis following ear disease	....	....	1	1	....	....	2
Diabetes	....	....	....	....	1	1	2
Intussusception	1	....	....	....	....	....	1
Polio Myelitis	....	1	1	....	....	....	2
Abscess of Mesenteric Glands	....	....	1	....	....	....	1
Rickets	....	....	1	....	....	....	1
Status Lymphaticus	....	....	....	1	....	....	1
Staphylococcal Septicaemia	....	....	....	....	1	....	1
Cerebral Tumour	....	....	....	....	1	....	1
Appendicitis	....	....	....	....	....	1	1
Injury	2	....	2	1	....	....	5
Injury at birth	2	....	....	....	....	....	2
Puerperal Sepsis	....	....	....	....	....	1	1
Undifferentiated—							
Prematurity	6	....	....	....	....	....	6
Illfeeding	3	....	....	....	....	....	3
Bronchitis	....	1	....	....	....	....	1
Jaundice	1	....	....	....	....	....	1
Inanition	1	....	....	....	....	....	1
Unknown	4	....	....	....	....	....	4
TOTALS	41	14	12	6	7	6	86

NOTE.—The death of every child under the age of 20 years is made the subject of enquiry, in which all matters connected with the medical history of the child are considered, and from the available evidence the conclusion is drawn as to what was the main factor which destroyed life. In the above table the deaths are given in accordance with these findings. They agree in number, but not in causes of death, with the official records.

INFECTION AND EPIDEMIOLOGY.

EPIDEMIOLOGY.

1929 had an inauspicious dawn. In Swindon, as indeed in all parts of the civilized world, 1928 had been the healthiest year for which we have records, but towards its end there were signs which were very obvious to those who know how to read them, that the good time was coming to an end and that a period of greater anxiety was before us. Locally the Autumn of 1928 had been very difficult, with numerous danger signs increasing rapidly up to the end of the year, so that when the report for 1928 was written, we were as certain as it is possible to be in reading the future, that the report for 1929 would be far less favourable.

At the beginning of the year under review, smallpox was prevalent in the Borough and though there was only one notification for the first two weeks of the year, there were grounds for believing that there was more to be discovered than we were able to bring to light. Scarlet fever was in the height of an epidemic period. The slackening in the incidence of this disease which is normally expected at the beginning of the Winter, was absent, which indicates that continued epidemic prevalence was to be expected for the Winter and Spring. Its type continued to be exceptionally mild and there was no evidence at that time that the disease would either alter its virulence or play any great part in the general health of the community.

In December there had been a small crop of influenzal pneumonia cases. They were not, however, of the dangerous type, but their presence, and other factors, gave evidence that an epidemic of influenza was approaching and the first call of 1929 was to consider what was the position of the town as regards influenza and what was to be expected during the Winter. The conclusion arrived at was that an epidemic would occur before the year had progressed very far, but that this epidemic would not be extensive and would not be virulent. From a consideration of the reports of other parts of England and of foreign countries, it was evident that an epidemic of influenza was on its way, but the behaviour of the disease locally in Swindon during the Autumn of 1928 led us to the conclusion that so far as Swindon was concerned, the visitation would be a mild one. Events proved the accuracy of this forecast, for Swindon was one of the few towns in England which escaped serious damage from this disease.

The death rates for the first three months of the year were 14.34, 15.96 and 16.57, rates not very much in excess of the average and very different from the high rates which were recorded from most of the industrial towns of Britain. There was no measles nor whooping cough at the beginning of the year, but there was

some diphtheria, some septic infections and a little pneumonia which was not easy to explain. January was a month of worry rather than anxiety. It looked as though smallpox had died out, that scarlet fever was diminishing, that influenza was going to do no great harm and that everything else was going to return to the satisfactory state which was ruling at the beginning of the previous year ; but from notes made at the time we see that such favourable issues were not expected. March saw the recrudescence of smallpox, the beginning of an unusual incidence of puerperal pyrexia and an increase in influenza, though of a type which was rarely fatal. The infant mortality had been ruling very high, though at that time it was not easy to find any special factor which was affecting it. During April the prevalence of smallpox continued and the cases of puerperal pyrexia increased considerably. Scarlet fever showed a tendency to become more virulent, but influenza and respiratory diseases were low. During May and June conditions remained fairly stationary and in the latter month the first outbreak of smallpox came to an end. Unfortunately the disease was re-introduced from a totally different source in July and a second outbreak, less in extent and also of a milder type, continued until December. In June we had a note that the conditions of the town and the continued prevalence of smallpox and of chickenpox and some peculiarities of type which the latter, especially, was exhibiting, combined with the meteorological conditions and general considerations, presaged the advent of an outbreak of polio-myelitis and within a week the first case of polio-myelitis was notified.

July was somewhat quieter in all directions, but the fear of polio-myelitis had now become an anxiety. In August and September, polio-myelitis was epidemic in the Borough and in the neighbouring parts of Wiltshire.

Not much out of the ordinary occurred until November, when scarlet fever showed signs of increasing in severity. Polio-myelitis had now reached its height. Whooping cough now put in an appearance and was destined for the rest of the year to be the chief dominating factor in the health of the town. In December everything quietened down except whooping cough.

During the year there had been little diphtheria, though what little there was was severe. On the 31st December the condition of the town was more favourable than it had been on any day of the year. Measles had been totally absent throughout the year, smallpox had apparently come to an end, the puerperal pyrexias that had occurred in the last part of the year were trivial, the respiratory diseases were extraordinarily low and there was

no influenza. On the other hand, what little there was left of scarlet fever was of a much less favourable type than that which had been ruling earlier in the year.

The epidemiology of 1929 was as interesting as it was exasperating. Of the forecasts that were made from time to time, all proved to be more or less correct with one exception—and that one exception is important. The occurrence of some cases of pneumonia of a peculiar type in the month of June, led to a forecast being made of an epidemic of influenza in November. This did not materialize. There was some influenza in November and one or two deaths were certified as being due to this disease, but this was not what had been forecasted and the prophecy was falsified.

The typhoids, dysenteries, food poisonings and other abdominal infections, which are to be expected in a year with a prolonged drought and a hot dry Summer, were totally absent.

DIPHTHERIA.

For the third year in succession, the prevalence of diphtheria was trivial. There were 35 notifications, three of which were withdrawn. All but one were removed to hospital. 15 cases proved not to be diphtheria. Of the 20 genuine cases, six occurred in January, four in April and six in late October and November. Five out of the 20 were cases of laryngeal diphtheria. There were two deaths from the disease.

There are no known carriers of diphtheria within the borough. During the past ten years, although many thousands of throat swabs have been examined, no chronic carrier of virulent organisms has been detected and no case of clinical diphtheria has harboured the germ longer than three months. Throat swabs from actual contacts are occasionally positive. In 1929 out of the large number of contacts swabbed only three were positive. The last extensive outbreak of diphtheria occurred in 1920, since when cases have been few, but the virulence has been high. The immunity of the population must be very low at present and as no artificial immunization (except amongst the staff of the fever hospital) has yet been attempted, the recurrence of the disease in epidemic form is a probability constantly before us. No satisfactory explanation of the absence of carriers locally can be furnished and this local curiosity gives no security (for carriers have little or nothing to do with epidemic prevalence) though it does explain why a population so favourable for the occurrence of diphtheria enjoys so many long periods of freedom.

SCARLET FEVER.

Scarlet fever was epidemic throughout the year until December. The epidemic started in August 1928 and produced altogether about 700 cases without a single fatality and few remainders of any consequence. In 1929, there were 327 notifications and roughly about 100 cases missed. All but 24 of the notified cases were treated in hospital. Amongst the 303 cases treated in hospital, there were 5 return cases, which would indicate that the proportion of carriers amongst cases discharged from hospital is about the same as rules generally in the population. In the home-treated cases, secondary cases were numerous, but no importance can be attached to this, as the reasons for home treatment were generally such as would lead us to expect a high return-case rate. A most interesting group of carrier-spread infections occurred in the practice of a midwife. In February a maternity case attended by this midwife developed scarlet fever in the puerperium. She was isolated at home. Immediately she was released from quarantine she infected her husband. She probably infected the midwife, for this was the first case in this midwife's practice. Subsequent cases occurred in March, June, August and September. Haemolytic streptococci were recovered from the throat of the midwife and she was stood off practice. These five cases are the only cases of the kind which have occurred locally during historic times. They were cases of ordinary scarlet fever of moderate degree of severity without uterine complications.

Towards the end of the epidemic, scarlet fever became more severe, atypical and followed by complications, such as enlarged glands, otorrhoea, nasal discharge and rheumatism, which had not occurred during the height of the epidemic. Indeed the last thirty cases caused more damage than the six hundred which had preceded them. Nor was this all. Cases in which diagnosis was impossible became common and histories of alternate generations of diagnosable scarlet, enlarged glands with abscess, erysipelas and other steptococcal infections became common also. This is the usual history of the decline of extensive epidemics of scarlet fever and is one of the reasons for doubting if scarlet fever is a 'specific' disease or that the streptococcus which causes it has evolved to a fixed type.*

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* It is questionable if any organism which generates solely by division can ever mutate permanently.

PNEUMONIA.

There were 176 notifications of pneumonia, a number below the average, and 28 and 26, respectively, below the figures for the two previous years. This is remarkable in a year of influenza prevalence, but, as has been stated in the introduction, Swindon practically escaped the pandemic of 1929. The absence of measles accounts in great measure for the fewness of pneumonia notifications. 52 cases were treated at the Isolation Hospital. Of the notified pneumonia cases 54 died (mortality 30%) : of the 124 cases treated at home 43 died (mortality 34%) and of the 52 treated in hospital 11 died (mortality 21%). The hospital cases will be dealt with in the report of that institution.

In Swindon, notification of pneumonia is as complete as it is possible to make it. It is considered as the most valuable of all public health measures, for it gives the only reliable information of the approach of epidemics of those diseases which are not themselves notifiable. The three chief epidemic diseases which are not notifiable, influenza, measles and whooping cough are, to-day, infinitely more dangerous than many of those on the notification list and were it not that the first indication of their presence is an increased prevalence of pneumonia, nothing would be known about them until they have well dug themselves in. The comparative freedom from the dangerous forms of influenza which Swindon has enjoyed for the past ten years is partly attributable to notification and segregation of pneumonia, for this allows of determining the types of pneumonia and appreciating what is likely to happen.

THE PNEUMONIAS.

The statistics for pneumonia for the past nine years are as follows:—

Year.	Total No. of cases notified.	Total No. of deaths.	Cases removed to Hospital.			Cases treated at Home.		
			No.	Deaths	Death Rate	No.	Deaths	Death Rate
1921	36	19	....	....	....	36	19	52
1922	156	43	1	0	0	155	43	27
1923	68	28	12	0	0	56	28	50
1924	175	62	31	5	16	144	57	46
1925	204	61	50	10	20	154	51	33
1926	172	52	27	6	22	145	46	32
1927	202	58	63	14	22	139	44	31
1928	204	53	66	16	24	138	37	27
1929	176	54	52	11	21	124	43	34
9 years	1393	430	302	62	20.5	1091	368	33.7

THE INFECTIONS DUE TO PARASITES BELONGING TO THE GENUS BACTERIUM.

These are the abdominal infections; typhoid, paratyphoid, dysentery, food poisoning, etc. They were totally absent from Swindon during 1929, a somewhat remarkable circumstance considering the meteorological conditions of the year and the prolonged restrictions of water.

THE VIRUS DISEASES.

140 cases of smallpox and 111 cases of chickenpox (made notifiable in February) were notified in 1929. These will be considered later in the report. All that need be said of them here is that unless they had any say in the outbreak of the virus disease about to be described, they had no serious influence on the health of the town.

There was one notification (subsequently withdrawn) of encephalitis lethargica and one case of cerebro spinal meningitis, a native of Wroughton, notified from Victoria Hospital and removed to Gorse Hill. He recovered.

There were 9 notifications of polio-myelitis, one of which was withdrawn. One of the genuine cases was infected and developed outside the borough, the remaining seven were part of a somewhat extensive but scattered epidemic which occurred in the West of England in the late summer and autumn. The Swindon cases occurred; one in July, one in August, one in September, one in October and three in November. All the cases were treated by the Health Department. Six received treatment during the acute stage in the Isolation Hospital; the other two were not recognized until late and, being arm cases for which rest in bed was no longer necessary, were treated at the electrical clinic. Of the eight Swindon cases, one will be left totally paralysed in both legs, one with one upper arm palsy, one with left hand palsy, one with right hand palsy, two with insignificant palsy in one leg and two recovered completely.

It sounds unreasonable to speak of seven cases as an epidemic, but we can only recognize the disease with certainty when it affects the nervous system. The disease normally is nothing more formidable than a variety of cold in the head and in only a small proportion of those infected does the virus settle in the nervous system. When it does so, it produces the disastrous condition of infantile paralysis which more often than not leads to life-long crippling.

The neighbouring village of Wroughton furnished the most instructive cases in the outbreak, so the discussion of the epidemiology of the visitation will be incorporated in the report of the Isolation Hospital, where the cases were treated in the acute stages.

There are few of the acute diseases of man which cause more anxiety than polio-myelitis, not because of its fatality, which is generally about 20%, but because of the rarity of complete recovery. It is one of the chief causes of crippling and the crippling is of the most serious kind. Its treatment is long, difficult and exasperating and its recognition in the early stage, in which alone is there any hope of complete cure, a matter of great difficulty. At the time of writing, we are sure that no case resulting in permanent damage is unknown to the Health Department, but it needed a great amount of labour to obtain that assurance, and the treatment of the known cases in Swindon and its neighbourhood will be a serious addition to the work of the orthopaedic and electrical clinics for several years to come.

Evidence of the epidemiological connection between polio myelitis and smallpox is afforded by the following :—

(1) The most severe case of confluent smallpox which occurred in the epidemic and recovered from smallpox, died of polio myelitis a year later. (1930)

(2) Another case of smallpox developed severe polio myelitis six months later and was left with total paralysis of the legs.

(3) Another fatal case of polio myelitis occurred in a boy removed from a household in which smallpox had occurred some months previously. (1930)

These were the only three cases of great severity which occurred du ing the epidemic of polio myelitis. Since the incidence of smallpox was roughly 1 in 500 and that of polio myelitis roughly 1 in 5,000, the connection between them exhibited in these three cases is unlikely to be accidental.

MEASLES AND WHOOPING COUGH.

There was no measles in Swindon during 1929, but whooping cough was present more or less throughout the year and in the autumn became epidemic. Its type was severe and the mortality high. The provision of beds at the Isolation Hospital for complicated cases of measles and whooping cough is an incalculable benefit, for though medical treatment of these two diseases is unsatisfactory and specific treatment still in its infancy, the nursing

of bad cases is of great importance. The pneumonias which complicate measles and whooping cough are amongst the most difficult diseases to manage and have little chance in an average household. Before we provided beds for whooping cough pneumonia nearly every notified case died; in hospital treated cases the mortality is 15%.

Reduction in the mortality from measles and whooping cough is one of the most pressing problems of public health. The way we have neglected to tackle this formidable drain of young life is a disgrace to our civilization. In London during 1928 and 1929, 1550 persons died directly from measles and 1535 directly from whooping cough, whilst nearly as many more died from respiratory diseases caused by these two diseases. During the same years 1561 persons were killed in street accidents. The chance of a child in London dying of measles or whooping cough is about ten times as great as of his being killed in the streets, in Swindon it is more than twenty times as great. We pay great attention to motor car fatalities, and rightly so, but we exaggerate their importance at the expense of other dangers calling for consideration. The deaths from measles and whooping cough occur entirely amongst very young children, who have not had their chance of living. Politicians, Lords, Ladies, City Magnates and other super-humans do not die of these diseases. If they did we should consider these ailments more seriously. Surely the loss of a child, who might be of some value, is a greater loss to mankind than that of a Prime Minister, an Archbishop or other superb person, who has had an innings of over half a century to demonstrate that the world can get along just as well without him !

TUBERCULOSIS.

The position of the town in regard to tuberculosis in 1929 was favourable. Only 57 new cases of pulmonary tuberculosis were registered, which is the smallest number except 56 in 1926 and 51 in 1919. When the increase in population of the Borough is taken into account, however, the figures for 1929 are the most favourable recorded. The deaths were only 23 in number, which is much the lowest figure recorded. This is somewhat remarkable in a year of epidemic influenza.

When the records of tuberculosis are examined in detail, one finds a cause for anxiety which is smothered in the consideration of the numbers in bulk. This is the steady relative increase in the rapidly fatal form of pulmonary tuberculosis of adolescence. In 1929, of the 57 cases, 38 belong to this class, against 38 for 1928, 38 for 1927, 33 for 1926, 39 for 1925 and 47 for 1924. These figures are satisfactory in that they show a reduction in incidence, but

the reduction in incidence is trivial when compared with the reduction in incidence of pulmonary tuberculosis at ages other than 15 to 35. Pulmonary tuberculosis below the age of 16 is now little more than a rarity and new pulmonary tuberculosis after the age of 35 is becoming rare and comparatively unimportant.

The figures for non-pulmonary tuberculosis for 1929 appear to be unfavourable for incidence, with 41 against 32 for last year, but favourable for fatality, with 4 deaths against 9. The increase in numbers for 1929 is accounted for mainly by six cases of tuberculosis of the mesenteric glands notified after abdominal section. In five at least of these cases there is no evidence that the tuberculosis was active, and unless abdominal section had been performed they would probably never have been discovered. There were six cases of tuberculous meningitis, which is the average, for tuberculous meningitis is one form of the disease which does not seem to vary much in its incidence. A distinction should be drawn between tuberculosis of the glands and other forms of tuberculosis, for tuberculosis of every site except glands is a general disease, whereas in the glands it is for long periods, and in most cases for ever, a local disease.

Advance in our knowledge of tuberculosis is chiefly needed in trying to decipher the pathology of the acute pulmonary tuberculosis of adolescence. This disease generally starts in persons whose previous history has been favourable. The history of these cases is generally as follows:—They pass through infancy, childhood and puberty without any evidence of disease. While they have been under the supervision of the Health Department, *i.e.*, until they reach about 15 or so, their records are quite clean. They then disappear, for the scheme of attending to the health of people leaves a gap between leaving school and obtaining employment. They then reappear, generally between the ages of 18 and 30, at the Tuberculosis Department, with evidence of obvious tuberculosis of some standing. They are then got under treatment, usually at a sanatorium, where they remain for some months and apparently get quite well. They remain apparently well for some months after they have come back from the sanatorium and then the disease rapidly forges ahead and quickly ends fatally. It would seem that the only way to minimize these catastrophes is to find some mean of detecting the liability before the signs develop. The so-called pre-tuberculous child does not develop this form of the disease.

No action was taken under the Public Health (Prevention of Tuberculosis) Regulations, 1925, as no cause for action occurred and no action was taken under the Public Health Act, 1925, Section 62.

CANCER.

There were 91 deaths from cancer, against 91 for last year. Taking into account the alteration in population due to the extension of the Borough, this represents a drop in incidence. The cancer death rate has been fairly constant during recent years, with a marked tendency for the age at death to advance and considerable shifting of the sites of election of the disease. Cancer is getting more and more to be a disease of the aged and this is probably of more favourable augury than is the increase, which occurred in the first quarter of the century, a cause for alarm.

No useful purpose would be served by minute analysis of the cancer cases in such a small population as that of Swindon, particularly as the hospitals in Swindon serve the surrounding districts and it is impossible to be certain what cases should, or should not, be accredited to the town population. This difficulty is common to all towns, for cancer cases have a tendency to drift into the towns where treatment is available and to become stationary for a sufficient length of time to gain the right of having their deaths accredited to the town of their adoption.

The chief method at present available for reducing the mortality from cancer is the provision for its early diagnosis in sites where it is common and easily detected. We think that in course of time, as post-natal clinic work increases, it will be possible to take in the stride of this work, the detection of early or doubtful cancer of the breast and womb, the two sites where early diagnosis is of greatest consequence.

Much has been heard, particularly during the last year, of the treatment of cancer by radium and there is a danger of the public being deceived as to the value of this treatment and developing a grievance that this form of treatment is not available locally or easily. Radium has very great possibilities in the treatment of cancer, especially in certain sites, but it is, on the whole, not superior to early operation and in most cases does not and will not supplant surgery. The treatment by radium can only be carried out efficiently in institutions devoted to that purpose. Its exhibition requires a special skill and technique and the element itself is of such rarity and cost that it is only in special institutions that serviceable amounts of it can be available. The League of Nations has a special commission dealing with radium treatment and from their evidence it is clear that the promiscuous distribution of radium in small amounts would do more harm than good and unless the treatment is safeguarded it will degenerate into mere quackery.

There is a possibility that the National Commission for Radium may establish a centre at Bristol. Should this materialize, radium treatment would be available for all the citizens of Swindon who might need it.

DIABETES.

13 deaths occurred from diabetes during 1929, which is the largest number on record. It would appear that diabetes is particularly prevalent in Swindon, but the high incidence is possibly more apparent than real, as the Victoria Hospital has made a special point of dealing with diabetic patients and so many diabetics come into Swindon who should not be accredited to the town. There does, however, appear to be some reason to fear that diabetes amongst young subjects is increasing. For some years the tendency has been for the average age of the incidence of diabetes to shift and for the disease to become more common in females than in males, and there is some reason to think that for the last few years there has been an increased incidence in young females.

SMALLPOX.

During 1929 Swindon suffered from two visitations of smallpox. The first had been imported into the town at the end of July, 1928, and terminated at the end of June, 1929. This epidemic came from Glamorganshire. The second visitation originated from Kent in July, 1929, and came to an end on December 9th, 1929. The first epidemic was of a type generally more severe than that which has been occurring in the country during the past ten years. This epidemic is divisible into three distinct periods, the first lasted from the 2nd August, 1928 to the 28th January, 1929. This part of the epidemic was dealt with in the annual report for last year. The second period started in the middle of February, 1929, and continued until the end of April. The third period started in the beginning of May and ended on the 24th June. There is some overlapping of the second and third phases of the epidemic. The last case of the first phase was recognized on 28/1/29 and there were hopes that that was the end of the visitation. All discoverable contacts with this case, and those that preceded it, had been kept under continuous observation and had developed nothing, so that at the end of February we felt that we were at the end of the trouble, but we were deceived.

On the 7th March, 1929, and on the two succeeding days, some nine notifications of smallpox were received from widely separated districts in the Borough and it looked as though the

disease had been smouldering and had broken out as a widespread epidemic. In the course of visiting these cases and their contacts, we recognized a boy walking in the street with scars on his face which were highly suggestive of recent smallpox. This boy connected the first period of the epidemic with the second. He was an errand boy. Contact with the last case of the first period was established and also contact with all the cases which had arisen suddenly in early March in such an apparently mysterious manner. That he should have been missed as a contact with the last case of the first period is not surprising, for the only contact was that he had been to the house on some errand, an incident which both the patient and the boy himself had forgotten. The second phase of the epidemic supplied the greatest number of cases and the largest number of real severity.

The start of the third phase of the epidemic was somewhat similar to that of the second. In the last few days of April ten cases were notified. These were brought together as having been infected by a boy on a milk round. This boy had never been notified, but he bore very obvious signs of having had recent smallpox and he had been carrying on his milk round right through the course of the disease. We could not discover from what case he had derived his infection, but he had had the opportunity of being infected by several of the last cases of the second phase.

The last case of the third period of the first epidemic occurred on the 24th June and we had reason to think that the Borough was again free. But on the 23rd July a case was discovered which for certain was infected at a seaside resort in Kent and, therefore, had nothing to do with the former epidemic. This gave rise to a new epidemic of 31 cases, the last of which occurred on the 9th December. This second epidemic was of a much milder type, resembling more the type of the disease which was epidemic in Gloucester in 1922-23.

The great majority of the cases in both epidemics can be connected up, as the genealogical table will show. The connection, however, between the second and third phase of the epidemic remains uncertain. There are also four outriders in the second phase of the first epidemic and four in the second epidemic, which cannot be connected. As both these epidemics spread beyond the Borough boundary it is not surprising that there are some missing links. There is, however, one of these batches which cannot be connected; namely, the cases that occurred in the Isolation Hospital, which is of the very greatest importance and which will be referred to later. All the cases, save those which had completely recovered when they were detected and those which occurred in the Isolation Hospital, were removed to the County

Council's Smallpox Hospital at Ogbourne. The clinical notes, therefore, cannot be supplied by Swindon, but will doubtless be available from another source; though the medical officer of health of Swindon saw sufficient of these patients in hospital to obtain all the information he required in regard to their epidemiology.

About the year 1904, in Florida, United States, there started a form of smallpox, differing in the mildness of the symptoms and the absence of fatality from that with which the Western World had been familiar. Smallpox of a similar kind had occurred in Africa and South America and had been given various names, such as 'amaas,' 'kaffir-pox,' and 'alastrim.' From Florida, this type of the disease spread throughout North America and Western Europe, especially England, where, meeting with an unprotected population, it established itself as an endemic disease about ten years ago. Coincident with this mild smallpox which had become endemic, there has occurred, from time to time, small local outbreaks of the more virulent types of the disease, generally imported from the East, where the more virulent form is still predominant. Since the virulent form breeds more or less true and the modified form breeds more or less true, a somewhat violent controversy has arisen as to whether the two forms are the same disease, or, alternately, whether the modified form is a permanent variety which cannot revert or give rise to the more formidable type. That all forms of smallpox are one and the same disease is not now questioned, but there is considerable difference of opinion as to whether the one type can change into the other. There is but one factor—but that is all important—in which the modified smallpox differs from the more virulent form. The one point is fatality and here the difference is remarkable. There was not a single death amongst the cases that occurred in Swindon, yet there were at least a dozen in which, in the old days, death would have been looked upon as a certain termination. What is more, is that in some three or four of these, the condition of the patients was such as to have led us to have expected a fatal issue upon the symptoms alone, quite irrespective of the nature of the disease. This is a matter which is remarkable and which we think to be of fundamental importance in explaining the difference between the types of the disease. One case in particular, in which the eruption was confluent everywhere except on the abdomen, in which bullae developed, accompanied by high secondary fever and delirium, resembled in all clinical particulars the virulent confluent form of the disease which in the early years of the present century was common and invariably fatal. A fatal termination would have been expected from such an eruption, whatever had been its nature, but the patient eventually recovered. This suggests that the difference between the modern form of smallpox

and that which was common in past epidemics, is the lack of some factor which carries the lethal element. If this is so, then the mild smallpox of to-day may, without the least notice, and universally, revert to malignancy. Indeed, had the first epidemic in Swindon shown such a mortality as one might have expected from the severity of the disease, nobody would have questioned that it was identical in all particulars with the epidemic which visited the country in the first years of the twentieth century, for the other factors in which mild smallpox is said to differ from severe smallpox are inconstant, fictitious, or explicable upon the lack of one factor in the present disease which was present in that of the past.

The incubation period of the milder smallpox is more variable than that of the severe form. In the second phase of the first epidemic, when the disease was most serious, the incubation period was generally twelve days, the usual time ; but in the milder cases, and more especially in the second visitation, which was much milder, the incubation period varied from sixteen to twenty-one days. In many cases the incubation period could be fixed with absolute certainty. It struck us that the length of the incubation period was modified, not by the infecter, but by the infectee ; in other words, that the period was shortened for those who were to have a severe attack and was not influenced by the severity of the attack from which it was derived. This also seems to us important. It tallies with the general behaviour of infectious diseases which have long incubation periods.

The reaction of the disease to immunity is of great importance. Of the 149 cases, 133 had never been vaccinated. 16 cases, all adults, had been vaccinated in infancy. No case occurred in anybody who had been revaccinated. Of the vaccinated cases, the ages were :—

21
22
33
35
43
44
49
49
52
59
63
65
66
70

and two doubtfuls, both over 60.

The younger generations in Swindon are practically unvaccinated, but the older members of the community are fairly well protected, as practically all were vaccinated in infancy and many were revaccinated during the War period. The brunt of the epidemic fell upon young adults, particularly young girls. It is noteworthy that at the beginning of the epidemic, vaccination of the girls employed at Wills' Factory was made compulsory and amongst the large number of girls employed by Wills' not a single one had smallpox. On the other hand, the results of vaccination of contacts were extremely disappointing. 449 contacts were vaccinated by the Public Health Office and the number vaccinated by the Public Vaccinator, by the G.W.R. Medical Fund doctors and by private practitioners was very large and cannot be estimated. Of the contacts who refused to be vaccinated, 13 developed smallpox ; but of the contacts who agreed to be vaccinated, 23 developed smallpox. It would therefore appear that the protection afforded by vaccination during the incubation period was slight, nor are we satisfied that the disease was very materially modified by vaccination during the incubation period. This is rather surprising, considering the length of the incubation in so many cases, but it must be remembered that the cases could not be recognized until the eruption had occurred and that though the contacts were generally vaccinated on the same day, or at latest the next day, this would often mean the seventh or ninth day after infection.

Another point is that of the primary vaccinations done at the Health Office, 40 gave no reaction. The explanation of this phenomenon is of great consequence. The vaccinations were done in exactly the same way as the Medical Officer has done them during the past thirty-five years and his experience suggests that 1% of failures in primary vaccinations is high. How, therefore, can we account for nearly 10% of failures? There is one explanation only and that is that these cases that failed, actually had smallpox in a form which could not be recognized. Perhaps the best piece of evidence that can be given to support this contention is the following :—Two children were seen in the same house on the same day ; one suffering from smallpox and removed to Ogbourne, the other suffering from scarlet fever and removed to Gorse Hill Isolation Hospital, where he was isolated and watched. The question of his eruption being a prodromal smallpox was, of course, considered and it need only be said that he went through a perfectly typical attack of scarlet fever. He was watched, as he might have been incubating smallpox. He had been removed on 4/10/29. On 21/10/29, the last possible date upon which smallpox would develop, had he been incubating it, the boy was perfectly well and his temperature normal. It was therefore decided that he was not incubating smallpox and he was vaccinated the next day (22/10/29). Exactly twenty-four hours

after vaccination he developed some spots, and, during the next day or two, several other spots came out (eleven altogether) which would pass muster for smallpox pustules, except that they were very small and their distribution atypical. There was no reaction whatever to his vaccination. The explanation given of this is that he actually had smallpox at the same time as his sister, but without showing any sign of it, and that the spots that he developed twenty-four hours after vaccination were due to stimulation of the latent disease by vaccine; in other words, the phenomenon looked for in other diseases after treatment by vaccine therapy. It was questioned whether these non-reactors, if indeed they were cases of latent smallpox, could give rise to the disease in others and though in one case it seemed as though this might be possible, we think that it can be discarded as a possible explanation of the spread of the disease.

When the epidemic started, we tacitly accepted the view that the disease was infectious until after the last scabs, or seeds in the feet, had come away and we kept the cases in Hospital for a long period. We gradually reduced the stay and at the end of the epidemic we feel inclined to make this statement: that, with one or two rare exceptions, the infectivity of smallpox is limited to part of one day, to the period in which the first spots are appearing. During this period it is intensely infectious, but afterwards its infectivity is slight or negligible and that by the time a case is removed to hospital it has probably ceased. One case was an itinerant wood-seller. He went into some dozen small shops in Swindon to deliver or to take orders for wood. In one shop he infected both persons who were present in the shop at the time; in no other shop did he infect anybody. We hold that he entered this shop, where he infected both people with whom he came in contact, at the one and only time when he was dangerously infectious. Infection through anything except personal contact with a patient suffering from smallpox in the early state of the eruption might be discarded altogether, except for the outbreak that occurred in the Isolation Hospital. This case was admitted into the Swindon Isolation Hospital, suffering from scarlet fever, on 17/2/29. He was out of bed for the first time on 3/3/29 and out of doors on 5/3/29. On 12/3/29 he developed the first symptoms of smallpox, getting his eruption on 19/3/29. He could not have been infected before admission, for this would have given a twenty-four day incubation period. There was no known source in the ward from which he could have been infected. When he was out of doors he might have come in contact with some infected bedding, though this is improbable; but if he had, he could not have developed smallpox on 12/3/29, for this would give an incubation period of only seven days. There had been no visitor to the ward except the Medical Officer of Health, who had not come in contact with a case of smallpox since 23/1/29. The only suggestion that can

be made is that he was infected by bedding removed to the Isolation Hospital for disinfection.

The preliminary symptoms of the cases, present in varying degree in all but two confluent cases who had no preliminary period, resembled influenza and were generally mistaken for that disease, though two were suspected of having appendicitis. Headache, pain in the back and pyrexia varying from 102 to 106 were the general symptoms. Some cases were milder than others, but all but about a dozen were sufficiently ill to have to take to their beds. Unfortunately the majority of the patients got sufficiently well from the preliminary symptoms to leave their beds before the eruption appeared and, still more unfortunately, several of them were sufficiently well to be out and about. There were no prodromal rashes.

The eruption appeared generally in the evening or night and was noticed in the morning, in a few cases as early as the fourth day from the preliminary symptoms, but in most on the fifth, sixth or seventh, and in one case on the eighth. The eruption took a long time to mature, many cases not having their full crop until a week or more after the first spots were noticed. The spots were quite typical in distribution and in maturation and, indeed, in every particular except their slowness of development. It was suggested, generally by people who were not familiar with the disease, that the spots were different from those of the smallpox of the old days, particularly in being much more superficial, but we can candidly say that though the spots varied considerably in depth, as judged by feeling, the belief that the spots are more superficial than they used to be, is a delusion. The amount of permanent scarring was, however, less than would have been expected. However, in the majority of cases, scars were sufficiently obvious six months after an attack for a diagnosis to be made from them alone. The majority of the cases, at all events in the first epidemic, had secondary fever corresponding to the extent and severity of the eruption. Mental disturbance was not uncommon in the severe cases, but, as has been recorded, every one recovered. The only legacies of the condition were one corneal ulcer and about a dozen troublesome boils and abscesses in the lymphatic glands. Some of the cases, particularly in those people who had been vaccinated, but also in a fair number who had not been vaccinated, were of exceeding mildness, so mild that they could only be detected with difficulty and caused a continuous worry throughout the whole year that there might be several of these very mild cases at large and undetected. There is reason to think that there were few, if any, not detected, because of the way in which the cases, as they occurred, could be connected up in the genealogical tree.

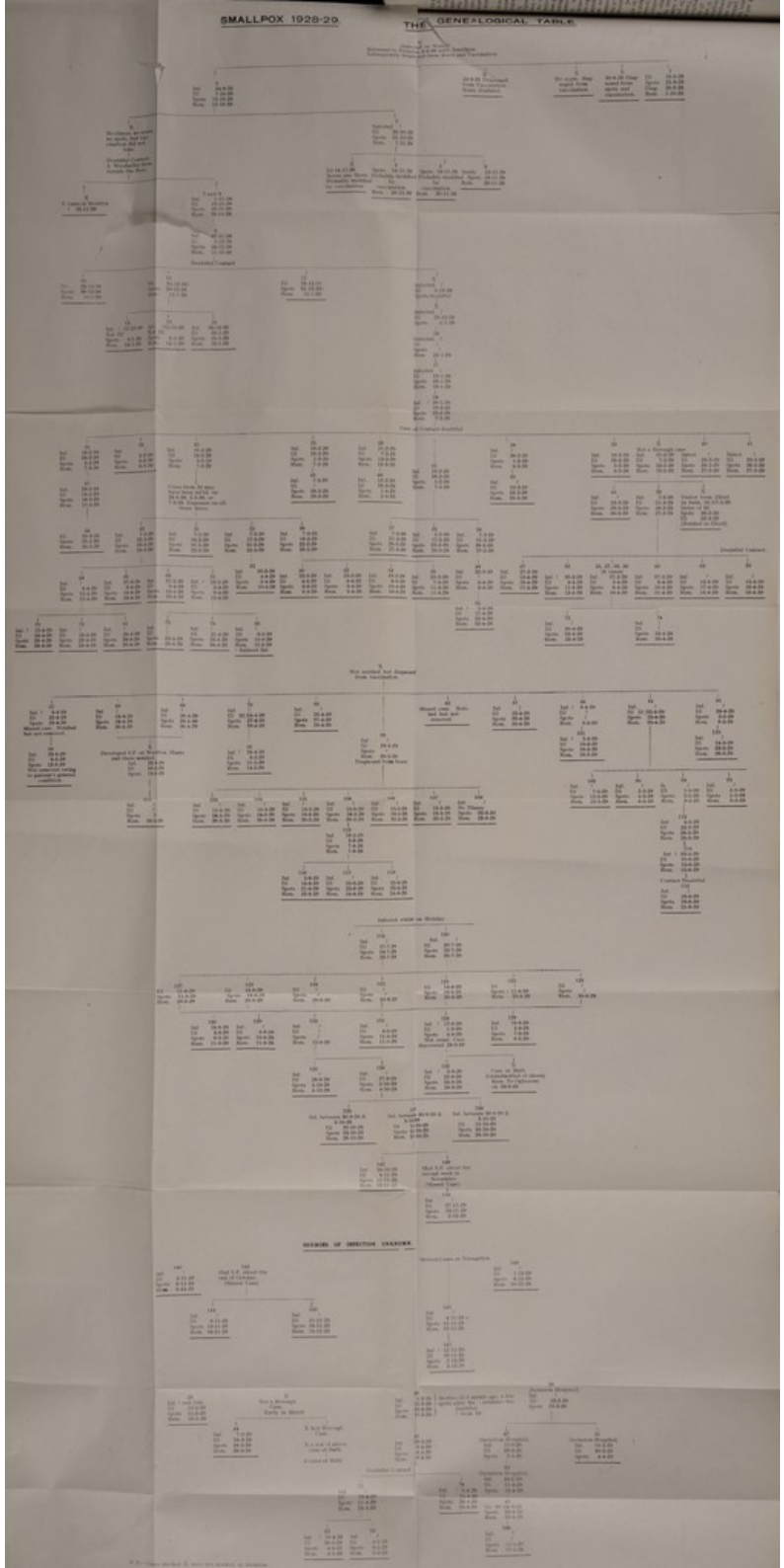
The reason why the epidemic was so long drawn out and so difficult to suppress, was that there is an interval between the preliminary and the second stage of the disease in which the patients are quite well and are often out and about and it is at the end of this period that the highest infectivity occurs. It is comparatively easy to trace all contacts with a patient after the eruption has appeared, or all contacts during the time that he is ill with the preliminary symptoms, but it is impossible to trace all the contacts he may have made during the day before the eruption, when he is about and may have gone to the Pictures, the Theatre or the Market. It is the length of the interval between the preliminary symptoms and the appearance of the rash which makes the control of mild smallpox so vastly more difficult than the control of the severe disease and it is really more a matter of luck than of management whether a given case remains solitary, or starts a widespread epidemic, because he will not be recognized until his chief infective period is over and he may not have kept to his bed during that period ; whereas, in the severe disease, he will for certain be confined to bed during the infective period.

The only way of preventing the spread of smallpox is universal vaccination. There is no other way, and the history, both of this country and of every other country in the World, is proof positive of this statement. Unless we have universal vaccination we must have smallpox. Which of the two is the worse is a matter which will not be discussed here, but the only valid reason for not insisting upon universal vaccination is that, taken on the whole, such a practice is less desirable than endemic smallpox. In Swindon, there was at times much difficulty in obtaining consent to vaccination by contacts. This difficulty varied at different times, and in the latter part of the epidemic, when most were vaccinated by the Public Health Department, the objections declined. In the mid-epidemic period, a boy who had been vaccinated (he was not a contact) died eighteen days afterwards from a staphylococcal septicaemia and this, for a time, not unnaturally, interfered very materially with the vaccination of contacts. No case vaccinated developed any cerebral disease, though the Medical Officer of Health was asked to see some two or three cases in which the onset of encephalitis was suspected. These had no symptoms of that disease.

The work entailed by the visitation of smallpox was tremendous. The contacts ran into thousands and the amount of vaccination thrown upon the Public Health staff was, owing to local circumstances, somewhat severe. The work entailed by vaccination done by the Public Health Department is vastly greater than that which is required from a Public Vaccinator, for the Public Health Department is most particularly interested in vaccination from the point of view of its immunity and in order to get a grasp of this it is necessary to visit vaccinated cases every day to see if the reaction is pursuing its normal course and time.

SMALLPOX 1928-29.

THE GENEALOGICAL TABLE.



GENERAL CASE SHEET

SMALLPOX

(Cases)

Scars only/Vaccination.

CHICKENPOX.

Chickenpox was made notifiable in February. Between February and the end of the year, 111 cases were notified. When smallpox died out on December 9th, chickenpox increased very rapidly and during the early Winter of 1930 was present in somewhat severe epidemic form. In the beginning of the first epidemic of smallpox, *i.e.*, in the last quarter of 1928, there was no chickenpox in Swindon; but at the end of the first period, *i.e.*, in the spring of 1929, chickenpox began to get common and the curve of chickenpox bore some resemblance to that of smallpox, with a lag of about three months. In the early part of 1929 there were two separate epidemics of chickenpox running at the same time, in different parts of the town. One of these epidemics, centred in the New Town, was of an extremely mild and very ordinary type; the other, limited to Old Town, was of unusual severity. In the beginning of 1930, chickenpox was present in epidemic form, of a very severe type, again almost limited to Old Town. Several of the cases of chickenpox, particularly in adults, were severe, producing an eruption quite as abundant as that of the moderately severe cases of smallpox. One case, an adult of 40, had a semi-confluent eruption with a very high pyrexia and delirium. This case was seen by Dr. Wilkinson of the Ministry of Health.

With the exception of about four cases, the differential diagnosis between chickenpox and smallpox presented no difficulty, although it is curious that chickenpox showed a kind of mockery of smallpox in the distribution of the rash, which, though very interesting, was not really deceptive. Eruption in the scalp is, on the whole, more marked in chickenpox than in smallpox, that on the fauces is about equal in the two diseases and that on the palms and soles much more marked in smallpox, though it does occur in chickenpox. But the tendencies for the chickenpox eruption to run horizontally, to come out in crops and to occur in blisters, are never absent and these form a striking contrast to the eruption of smallpox, which tends towards a vertical distribution with a regular spacing between the pocks. The course of chickenpox is different from that of smallpox. A preliminary rise of temperature does occur in chickenpox the day preceding the beginning of the eruption, and a temperature, sometimes high, is not uncommon during the course of the eruption, but only in the most severe cases are there any general symptoms of disturbance. In some of the cases with severe general eruption, it was remarkable that the patients felt perfectly well in themselves.

A case was reported to me from Wroughton, of very particular interest. A child was reported as having chickenpox.

Fifteen days later his father developed herpes zoster and fiftee days after that another child developed smallpox. There wer several cases of chickenpox alternating with herpes zoster in th same family, but no other case of alternation of the three diseases nor in Swindon did any case occur of chickenpox and smallpo alternating in the same family ; nor any case of chickenpox an smallpox running concurrently in the same individual. The latte point is of some interest, for during the second epidemic, in on limited part of the town, both smallpox and chickenpox wer highly prevalent at the same time. The second epidemic of smal pox was, to a large extent, school-spread, which is not commo in smallpox, and after the smallpox epidemic was over the sam school was troubled with an extensive outbreak of school-sprea chickenpox.

VITAL STATISTICS.

The population figure supplied by the Registrar General f the middle of 1929 is 62,020, an increase of 910 upon the figure f 1928. It is a curious coincidence that the increase is exactly t same as the number of births which were accredited to the tow for 1928.

There were 867 births accredited to the town for 1929, a fa of 43 from the number for the preceding year, giving a birth ra of 13.98, which is considerably lower than any previously registere in the Borough. There were 680 deaths, an increase of 102 on la year's figure, giving a death rate of 10.96, which is about the avera for the post-war years. The natural increase in the populati was, therefore, only 187. The infant mortality rate of 47.29 is t highest of the past three years, but slightly below that of 1926.

The number of inhabited houses increased from 15,151 15,436 so there were 285 additional houses to accommoda 910 new citizens.

ISOLATION HOSPITAL, GORSE HILL.

ANNUAL REPORT

From 1st April, 1929, to 31st March, 1930.

ISOLATION HOSPITAL.

The Isolation Hospital year runs from the 1st April to the 31st March, and it is advisable to keep to this year, because, as the Hospital caters for a large area outside the Borough boundary, its report could not be made to fit in entirely with the report for the Borough, whereas, by carrying on the Hospital year three months beyond the end of the calendar year, it is possible to get a better retrospective view of the epidemiology of the last quarter, and a break at the end of March is least disturbing to the history of epidemiology.

The year 1929-1930 was one of considerable difficulty. The number of new admissions during that period was 419, against 529 for the previous year and an average of about 300 for former years, so that, for numbers, the work was not excessive; nor, on the whole, were the cases admitted of unusual severity. But there was a considerable amount of complication and mixed and cross infection, which though introducing but little danger to the patients, added greatly to the difficulties of management and kept the staff of the Hospital in a constant state of attention and anxiety.

On April 1st, 1929, there remained 30 cases in Hospital, and 419 new cases were admitted, so that there were 449 cases under treatment during the year. Of these :—

396 were discharged cured so far as acute disease was concerned.
2 were discharged to other institutions.
1 was sent home on the parent's request.
18 died and
32 remained in Hospital on 31-3-30.

The new admissions were received under the following notifications :—

Scarlet Fever	280
Diphtheria	47
Pneumonia	44
Puerperal Pyrexia	14
Babies with Mothers	11
Encephalitis Lethargica	1
Cerebro-spinal Meningitis	1
Polio-myelitis	15
Erysipelas	6

The 449 cases arranged according to their final diagnosis were :

Scarlet Fever	288
Diphtheria	29
Pneumonia	47
Puerperal Pyrexia	16
Babies with Mothers	13
Tonsillitis	19
Polio-myelitis	10
Cerebro-spinal Meningitis	1
Tuberculous Meningitis	1
Enteric Fever	1
Erysipelas	6
Rubella	2
Pleurisy	1
Urticaria	1
Acute Tuberculosis	1
Chronic Bronchitis	1
Diphtheria and Whooping Cough	2
Diphtheria and Pneumonia	1
Diphtheria and Scarlet Fever	1
Mastoid Disease	1
Abscess of Neck	1
Chronic Myocarditis	1
Injury to Tonsils	1
No obvious disease	4

DIPHTHERIA.

There were only 29 cases of pure diphtheria, 2 of mixed diphtheria and whooping cough, 1 of diphtheria and pneumonia, and 1 of diphtheria and scarlet fever, or 33 cases altogether, which is the lowest number under treatment in any year during the present century. 2 of the cases died, both of which were brought in moribund, one living two hours and the other fifteen. There were 6 laryngeal cases, 2 requiring tracheotomy ; 4 cases developed anti-toxin rashes, 1 case developed otorrhœa, and 1 adult, who was the subject of ex-ophthalmic goitre, developed pneumonia. One of the tracheotomy cases developed mediastinitis and the other tracheotomy case developed general paralysis, but both recovered completely. 2 cases were merely bacteriologically positive. 3 of the cases had tonsils and adenoids removed before leaving the Hospital. 2 cases developed scarlet fever in Hospital ; they were infected from the case that was admitted with both diseases running concurrently. In no case were virulent bacilli recoverable from the throat when the patients were ready for discharge.

There is nothing much to be said about diphtheria this year, except to call attention again to the unexplained absence of carriers of diphtheria in Swindon. It is now many years since we have had a case of clinical diphtheria in which virulent organisms remained in the nose or throat after the clinical history was finished. The throats of all children admitted with scarlet fever were swabbed and examined and never was the Klebs-Löffler bacillus demonstrated. At the end of 1929 we discontinued swabbing scarlet fever throats, except in septic cases, as by that time we had done 1,500 consecutive cases and had never once found virulent diphtheria bacillus in any case which came from the Borough of Swindon. The object of this swabbing was three-fold ; first, as a convenient method of discovering the proportion of diptheria carriers amongst the school children of the Borough ; secondly, to decide whether the Klebs-Löffler bacillus had any say in the sore throat of septic scarlet fever, and thirdly, whether outbreaks of diphtheria in a scarlet fever ward are traceable to carriers inadvertently admitted. Our conclusions are as follows :—(1) There are no diphtheria carriers amongst Swindon school children. (2) The Corynebacterium of Klebs-Löffler plays no part in the pathology of scarlet fever. (3) Whether outbreaks of diphtheria in scarlet fever wards are due to missed carriers we have no evidence. During the past ten years only two cases admitted with scarlet fever have developed diphtheria in Hospital and in both cases the source of the cross infection could be determined.

THE PNEUMONIAS.

Pneumonia was very low in prevalence in Swindon and the district during the last Hospital year. 8 cases of pneumonia remained in Hospital from the preceding year and 44 cases were admitted under the notification of pneumonia. Altogether, 47 cases only were accepted as being pneumonia, against 92 for the previous year. The 47 cases can be worked out as follows :—

Variety.	Cured	Died	Total.
Croupous type	16	....	16
Influenzal type	4	1	5
Pleuro-pneumonic type	2	1	3
Whooping cough pneumonia	14	5	19
Broncho pneumonia, ? Brucella	1	....	1
Broncho pneumonia of uncertain type	2	....	2
Empyema	1	....	1
TOTALS	40	7	47

There were 19 cases of whooping cough pneumonia, of which 5 died. One of these deaths was due to post pharyngeal abscess; two were moribund on admission. One of the cases which recovered developed herpes, a point of singular interest, and one developed very extensive surgical emphysema. Whooping cough was highly prevalent in the Borough during the Autumn and Winter of 1929 and the first two months of 1930. The pneumonia that accompanied whooping cough was of an exceedingly fatal type. Of the 27 cases of pneumonia and broncho pneumonia in infants which were notified and nursed at home, 16 died and 11 recovered; of the 23 cases which were notified and removed to Hospital, 5 died and 18 recovered. We cannot say for certain how many of the 27 cases treated at home were whooping cough, but of the 23 admitted to Hospital, 19 were whooping cough. If the home-treated cases were similar to the Hospital cases, there would have been 24 whooping cough pneumonias, of which 16 ended fatally. Several of the cases were treated with Immunogen and our experience of this agent suggests that it is worth scientific exploration. It is the only agent which we have tried in the treatment of whooping cough pneumonia which we have not found absolutely useless. Though, with the possible exception of this agent, the medicinal treatment of whooping cough pneumonia is worth nothing, the nursing and hygienic management is of the greatest possible importance. It is almost safe to say that had these 19 cases which were nursed in Hospital remained at home, more than two-thirds of them would have died. The pneumonia which occurs in connection with whooping cough has little, if any, connection with any other form of pneumonia. Certain experimental work that was carried out on the lung juice of whooping cough pneumonia cases suggests that this so-called pneumonia is not caused by the pneumococcus and, therefore, has no connection whatever with the other diseases which are grouped together under pneumonia.

There were 16 cases of croupous pneumonia, all of which recovered. Croupous pneumonia is the typical pneumonia of the healthy adult. It is a very alarming disease, but, in our experience, one with a trivial mortality, the only cases which die being those in which the apex is involved and which clinically appear to be the least ill. It may be said in passing that a blood examination will always enable a prognosis to be made in cases of croupous pneumonia and will separate those cases which actually are trivial from those which clinically appear to be trivial, but which end fatally.

There were only 5 cases of influenzal pneumonia and of these, 4 recovered, which means that influenza was not prevalent in Swindon during the year under review. There were 3 cases of

the pleuro pneumonic type, 1 of which ended fatally ; 1 empyema, which is still in Hospital, but which is going to recover ; and 3 cases of uncertain type, all of which recovered. One of these was suspicious of Brucella, but was bacteriologically negative.

There was no measles in Swindon and its neighbourhood during the year under review, so, for the first time since pneumonia has been accepted for admission into the Hospital, there were no cases of measles pneumonia.

We are at present attempting to work out the various types of diseases which are grouped together under the name of pneumonia. It would appear to be possible to correlate the different clinical types of pneumonia with the bacteriological types of the pneumococcus and of other organisms which may produce consolidation of the lung as part of their reaction. In the study of epidemiology there is nothing approaching the importance of a correct knowledge of the distribution and typing of pneumonias. They are by no means unimportant diseases, for they kill more than any other disease except cancer, and as most types are definitely epidemic in their prevalence, it is probable that if they are studied seriously they may be reduced in frequency. As most forms of pneumonia kill rapidly, generally adults who but a week before death were in full activity and health, more often than not supporting a family, the reduction of the deaths from pneumonia is of infinitely greater importance to the community than the reduction of deaths from cancer, or from the more chronic diseases which do not kill without ample warning. There is no disease which produces such sudden and overwhelming catastrophes.

So, both from the clinical and from the epidemiological point of view, pneumonia stands first in importance of all human diseases. But that what passes under the name of pneumonia is not a single disease,but a group of various diseases having nothing in common except that consolidation of the lung is part of their reaction. It is inexplicable why so little scientific attention is given to the study of the pneumonias. Had they received half the attention which is given to diseases which from their rarity are of insignificant importance to mankind, a considerable reduction would have been effected in their annual toll of two million deaths a year throughout the world. Some types of pneumonia are notifiable in most civilized communities, but notification is not satisfactory for two reasons ; first, that generally, as obtains in this country, certain types only are notifiable, and secondly, that notification is not only very faulty, but a large number of medical officers are but little insistent upon it.

The clinical treatment of pneumonia is as unsatisfactory as its epidemiological consideration. Most of the treatment which has been advised for pneumonia is worthless, and much is distinctly injurious. With the exception of the uncertain types, the pneumonias are self-limited diseases, never lasting beyond ten days and

prognosis can be settled with certainty twenty-four hours er the onset by cytological examination of the blood. It may admitted that this examination is not simple, but it is extremely curate and can divide cases of most forms of pneumonia into ose in which automatic recovery is a certainty, if they are operly nursed and are not treated with any agent which inter- es with reaction, and those which will end fatally unless some ecific interference is available. By such interference it is at esent possible to save a small number of cases which otherwise uld end fatally. But apart from such specific means, we have ind no treatment for pneumonia other than good nursing, gienic management and the artificial production of sleep by ents which have no influence upon reaction, which was not her useless or definitely harmful. If we could only get a com- ete jettison of all means of treating pneumonia which are futile, e slate would be clean for the clinical investigation of specific nedies which laboratory research suggests might be of utility. rhaps the same may be said of most acute diseases for which many forms of treatment are introduced which have no scien- ic foundation.

POLIO-MYELITIS.

15 cases were admitted to Hospital under the notification of olio-myelitis and of these, 10 were accepted as being due to that sease. Polio-myelitis was definitely epidemic throughout vindon and the neighbouring parts of the West of England uring the early Autumn of 1929. Generally, this epidemic had e features which are common in this disease, *i.e.*, that cases curred widely separated from each other and without any obvious nnection. But, of the cases which occurred in Swindon, three ere children of one household. These children lived in a farm- ouse and one after the other developed the meningeal fo m of olio-myelitis. They all bore considerable superficial resemblance tuberculous meningitis, but differed from that disease in the sence of optic neuritis, the absence of organisms from the cerebro- inal fluid, the presence of increased sugar in the cerebro-spinal uid and rapid recovery after spinal puncture. These three ases recovered completely, without any resulting paralysis. They ere admitted to Hospital respectively on 13-9-29, 19-9-29 and 9-9-29, in each case probably on the third day of the disease. he presumption is that the first case infected the other two and, this be so, the incubation period was six days.

There was also a definite connection between the following ases which occurred in Swindon :—

(1) Admitted 5-7-29, somewhat late in the disease.
(2) Admitted 13-8-29.
(3) Admitted 15-8-29.
(4) Admitted 15-9-29.
(5) Admitted 10-10-29.
(6) Admitted 16-11-29.

The connection here is that each of these children had been playin with the previous case the day that it was taken ill. Shoul these cases really have been infected from each other, it woul give an incubation period of about a month. From what is know of the epidemiology of polio-myelitis, it is more likely that ther was in the neighbourhood in which these cases occurred, an epidemi of totally abortive cases. But that there is some connectio grouping these six cases into a definite epidemic seems unque tionable.

Another point was the connection between polio-myelit and smallpox, which is referred to in the annual report of th Medical Officer of Health. The following clinical notes are wort recording :—

In the epidemic, two cases died, one a boy of 12 and th other a woman of 29. Both died from a rapidly spreading paralysi involving the muscles of respiration. The boy was remove from a house in which there had been smallpox ; the woma had been a case of confluent smallpox twelve months previousl One case also who had had smallpox, started with a meninge type of the disease and finished with total paralysis of both leg below the glutei. The spinal fluid in this case contained abou thirty per cent of blood. We have met with such cases of ha morrhage into the theca in polio-myelitis in former epidemic but, so far as we can remember, this was the only case of the kin which did not end fatally.

Three cases of the meningeal type of the disease recovere completely without any resulting paralysis. One case, in whic there had been a fairly generalized paralysis, also recovere completely. One case was left with a paralysed left shoulde one with a paralysed left hand, one with a moderate degree paralysis of the right hand and three with a slight degree of par lysis of the legs. All the cases were admitted to Hospital, wi the exception of the adult fatal case and two of those who we left with paralysis of the hand. The reason for not admittin the first was that she died too rapidly and for the others that th were not seen until the acute symptoms had subsided and be treatment was no longer indicated. The results of spinal punctu were similar in five out of the six cases in which it was performe the exception being the haemorrhagic case. In the others th fluid was under considerable pressure ; it contained from 200 400 cells per c.mm., all small lymphocytes ; it contained an avera amount of albuminous material and chlorides and an increas amount of sugar. There were no discoverable organisms. T resulting pareses are at present under treatment.

SCARLET FEVER.

There were 288 cases of scarlet fever under treatment, compared with 340 for the previous year, the present year dealing with the decline and termination of an epidemic period. There were no deaths from scarlet fever and the great majority of the cases were absolutely trivial, but there was a larger number of severe serious cases than had been encountered in previous years. There was a very distinct tendency for the disease to become more serious towards the end of the epidemic, for a larger number of complications to occur and for an increased number of doubtfuls and alternating cases of scarlet fever and other forms of streptococcal infection. The evidence of Swindon suggests that scarlet fever is becoming less benign, but it must be remembered that we are dealing mainly with the termination of an outbreak, in which serious and difficult cases are always more frequent than at the height of the epidemic wave.

Of the 288 cases, 4 relapsed, respectively on the 19th, 20th, 21st and 38th day. 1 relapsed after discharge. A remarkable feature was that 4 cases were second attacks occurring within twelve months of the first attack.

The complications were as follows:—

	Occurring in hospital.	Occurring after discharge.	TOTAL
Enlarged Glands *	19	1	20
Secondary sore throat	22	1	23
Otorrhoea	20	3	23
Systolic murmurs	13†	....	13
Endocarditis	1	....	1
Rheumatism	2	....	2
Herpes	14	....	14
Nephritis	4	....	4
Conjunctivitis	1	....	1
Relapse	4	1	5
Albuminuria	2	....	2
Septic Pleurisy	1	....	1
Pyorrhoea	1	....	1

* One case of abscess occurred.

† Two had not cleared up on discharge and one was an old rheumatic heart.

The cases of otorrhoea :—

Day of development :—

2nd	1
5th	1
6th	1
7th	2
8th	2
9th	1
10th	1
11th	3
12th	1
13th	2
16th	1
18th	1
23rd	2
38th	1
after discharge from hospital	3

Duration until perforation completely scarred :—

7 days	1
13 ,,	3
14 ,,	3
19 ,,	1
20 ,,	1
21 ,,	3
22 ,,	1
23 ,,	1
24 ,,	1
28 ,,	1
30 ,,	3
31 ,,	1
unknown	3

In the early months of 1930 acute ear disease occurred Swindon almost as an epidemic. Many of these cases develo mastoid disease and were operated upon and three died. the cases of otorrhoea which occurred in Hospital as a com cation of scarlet fever, every case cleared up without opera treatment. For the long continued cases ionization was tried succeeded. It is essential for the Public Health that no cas infectious disease should be sent back into the population suffe from any discharge, so that otorrhoea developing in the co of scarlet fever must be cured in Hospital. The results of last ten years are somewhat interesting. No case during period has been submitted to radical operation. In the year un review occurred a case of undoubted involvement of the mast in which the question of surgical interference had to be consid practically twice a day for a fortnight. This case cleared up w out radical treatment. Our experience in dealing with the

discharge which follows scarlet fever is definitely against paracentesis when otorrhoea is threatened and against surgical interference even when the mastoid is unquestionably infected, unless the case is one calling urgently for interference. It is against the removal of tonsils and adenoids when otorrhoea is present. It is in favour of the removal of tonsils and adenoids after otorrhoea has ceased and before the case is discharged from Hospital. It is in favour of the treatment by ionization of otorrhoea which lasts over three weeks. It is in favour of making Wild's incision over the mastoid as the first step in the treatment of cases which look as though they would require a radical operation. It is definitely against any form of syringing for otorrhoea at any period. It is admittedly difficult to decide upon the correct treatment of the complications of scarlet fever, particularly by anybody who is familiar with the disease in its severe form. To compare the results of the treatment now given for post-scarlet otorrhoea with that of twenty to thirty years ago is not quite fair, but it is significant that for the last ten years, in Swindon, no death has occurred from the ear complications of scarlet fever. We are convinced that there is grave danger in carrying out any form of surgical treatment during the course of scarlet fever and operations should be postponed unless called for imperatively to prevent a certain fatal issue. This applies not only to suppurations of the ear, but to suppurations of the glands of the neck and in the pleura. The study of the blood changes which occur in the course of scarlet fever suggests that during the negative phase of leucocytosis, which occurs roughly from the eleventh to the twenty-fourth day, operative treatment is far more dangerous than the continued presence of septic foci. During this phase of the disease, any flooding of the tissues with toxin produces dangerous and often fatal symptoms, so that the call for the severance of healthy tissue to reach a septic focus must be very urgent indeed before this is justifiable.

Of the 288 cases, 11 were definitely of the septic type, which for these days is a somewhat high proportion. Anti-toxin was given in 34 cases. The proportion of cases in which anti-toxin is exhibited is the best indication of the severity of the outbreak, for anti-toxin is only given in cases in which the disease is of some importance. To-day, the majority of attacks of scarlet fever are of less serious consequence and of shorter duration than a cold in the head. 10 of the cases had tonsils and adenoids removed prior to discharge from Hospital and 15 were sent out with tonsils which should have been removed, but the facilities for treatment were not available, or permission for the operation had been refused.

We were much troubled by cross infection during the year. 4 cases developed smallpox. How this disease got in is a mystery.

It is discussed in the annual report of the Medial Officer of Health. The cases were all mild and were nursed in separation in the Isolation Hospital.

26 cases developed chickenpox in Hospital. 4 of these were incubating the disease on admission and were responsible for the 22 cases which were infected in Hospital. Chickenpox was very severe in Swindon, particularly in Old Town, and the Hospital cases were part of this Old Town epidemic. Owing to the severity of the type, we had the opportunity of obtaining evidence on two points in connection with chickenpox which are of epidemiological importance. The first is that the rash of chickenpox occurs not on the first, but upon the third day and, secondly, that its infectivity is almost, if not entirely, limited to the second day of the disease, *i.e.*, to the period when the first crop of spots is just beginning to develop. It is a well known fact that the spread of chickenpox cannot be prevented by means which are adopted for the suppression of other forms of epidemic disease liable to occur in Hospitals. The reason is apparently that the infectivity of the disease is greatest before the disease can usually be recognized and so the means adopted to prevent its spread are adopted too late. Severe chickenpox has, however, the characteristic M shaped course which is common to all virus diseases, *i.e.*, there is the first reaction, which is indefinite, followed by a pause which in its turn is followed by a second reaction carrying the characteristic signs. It is only in severe chickenpox that the first phase of the reaction can be recognized.

The only other cross infection was one case of diphtheria which developed in a scarlet fever patient. Two patients were admitted on the same day, a brother and a sister, one suffering definitely from diphtheria and the other from scarlet fever. The case which had scarlet fever was bacteriologically negative to Klebs-Löffler and was also Schick negative, so he was treated in the general scarlet fever ward ; but the patient in the next bed developed diphtheria.

RETURN CASES.

There were 6 alleged return cases, 1 of which was rejected and 5 accepted. The details are as follows :—

(1) Case discharged after 28 days in Hospital. Simple scarlet fever, no complications. Return case started 7 days later.

(2) Discharged after 35 days in Hospital. A severe case treated with serum. Two sisters developed scarlet fever respectively 7 and 14 days later. These cases were not treated in Swindon Isolation Hospital.

(3) An adult, 19 days in Hospital. Uncomplicated case. The return was the man's father, aged 60, who sickened two days after the first case went home. This case is accepted, though the incubation period of forty-eight hours is short. The age of the return case may perhaps explain this.

(4) 32 days in Hospital. A mild case. Had tonsils and adenoids removed before discharge. The return case started 16 days later. It was accepted, though it is just as likely that the return had been infected from another source.

(5) Original case in Hospital 37 days. The case was mild, but not altogether satisfactory. There were two returns from this case. Both developed eighty hours after the first case got home and so are acceptable.

The proportion of return cases works out at about 2.08% *i.e.*, that about 2% of the patients are sent out of Hospital in a state in which they are capable of infecting others. From some observations that were carried out six or seven years ago there is a suspicion that in epidemic times about a similar proportion of all children are capable of spreading scarlet fever.

PUERPERAL PYREXIA.

15 cases of puerperal pyrexia were admitted during the year and, of these, 4 died. This is the highest number of admissions and the highest number of deaths occurring in any year since puerperal pyrexia was admitted to Hospital. 1 case remained in Hospital from the previous year, so that 16 cases altogether were dealt with.

4 were cases of scarlet fever occurring in the puerperium. They all occurred in the practice of one midwife and are referred to in the annual report of the Medical Officer of Health. Clinically these were cases of typical scarlet fever above the average severity, but showed no very special feature. In two cases there was slight retention, with blocking of the os ; in the other two there was no indication to do any local exploration at all. There is every reason to believe that these cases were infected by the midwife by throat to throat droplet infection.

The Puerperal Pyrexia Order requires the notification of every woman who develops a temperature of 100.4 which has been sustained for 24 hours or has recurred within that period, within three weeks of delivery. The Order defines what is to be notified, but it purposely relieves the notifying physician from expressing an opinion as to what is the cause of the pyrexia. The

one fault in the wording of the Order is that it is obscure as to whether pyrexia following miscarriage earlier than the twenty-sixth week is, or is not, notifiable as puerperal pyrexia. It is obvious from the wording of the Order that puerperal pyrexias can be at once divided into two groups : those due to infections connected with delivery and those due to accidental infections which are not specially connected with the reproductive process. Amongst the latter should be included the 4 cases of scarlet fever mentioned above. The pyrexias connected with delivery may be further divided into three groups ; (1) Those due to septic absorption from trauma other than to the interior of the uterus ; (2) Infection plus retention of the uterine contents, and (3) Septicaemia. The cases in Swindon last year were :—Group 1, two cases. One severe trauma which recovered and one severe trauma in an eclamptic patient. This second case died of uraemia. Group 2, namely, retention and decomposition within the uterus, six cases. All recovered. In the septicaemic group there were four cases ; one of coli infection, which died, two of haemolytic streptococcus septicaemia, one of which died and the other recovered, and one case of uncertain septicaemia, which died. It must remain doubtful for some time whether septicaemia actually does, or does not, originate within the uterus.

With the help of Professor Walker Hall of Bristol University, a preliminary investigation was made into the bacteriology of puerperal sepsis, founded upon a point which had been observed clinically; namely, that if material taken from the interior of the uterus grows diphtheroids in culture, septicaemia will not develop and the patient will recover for certain, however unfavourable the clinical condition may appear to be. The converse does not hold, as many cases in which diphtheroids do not grow, recover ; but generally if cultures from the interior of the uterus grow pure streptococcus, or if swabs from the interior of the uterus show streptococcus only, septicaemia is pretty certain to occur, or to have occurred, and the outlook is very grave. The investigation explained this clinical finding, but unfortunately further research into the matter had to be abandoned owing to expense.

The method of investigation into puerperal pyrexia cases admitted into Gorse Hill enables a diagnosis to be made with tolerable accuracy and as this investigation involves the dilatation of the os and a bacteriological examination of the contents of the uterus, it automatically supplies the first element in treatment for all cases and the only essential element in most cases ; namely, dilatation of the cervix to ensure that uterine drainage is free. Glycerine irrigation is carried out in all cases, but we are fairly satisfied that the dilatation is the important element in local treatment. The uterine cases generally clear up at once, though

occasionally the process has to be repeated as the os closes again before the uterus has finished draining. We are averse to the use of any form of drainage tube, on the ground that it is unnecessary and adds a very distinct danger. In the septicaemic cases the results of dilatation are disappointing, in that the uterus is generally empty ; but in the uterine cases there is always a considerable gush of septic material as soon as a passage has been made for its discharge. A method has been devised for obtaining cultures from the interior of the uterus, free from contamination from the cervix. It is interesting to record that as this method became perfected, so did the number of cases in which the interior of the uterus was found to be sterile increase considerably. We are perfectly satisfied that in the normal puerperium the interior of the uterus remains sterile. But it does not appear to be of much consequence if it becomes infected, so long as the diphtheroids which are normally found in the upper part of the genital canal during the puerperium are able to outgrow any possibly pathogenic organisms which might find their way into the uterus. Our experience is that bacteriological examinations of the lochia or of the cervix are a sheer waste of money and time and that in the present state of our knowledge a bacteriological examination of the blood is more misleading than useful. So we are inclined to rely entirely upon a bacteriological examination of the uterine content. In the four cases of septicaemia a blood examination was carried out. Two showed abundant growth of haemolytic streptococcus, one of which recovered and one died ; two showed no growth from the blood and both these cases died. The case of coli septicaemia is of clinical interest as the condition is rare and, indeed, its existence has been questioned. In this case the woman had suffered for some time from bladder trouble. Cultures from the uterus showed pure bacillus coli and after death the pericardial fluid grew abundant bacillus coli mixed with streptococcus faecalis.

In the treatment of puerperal septicaemia we have tried sulfarsenol, with very disappointing results, and also intravenous anti-toxin against various strains of streptococcus. From the latter we have had some very remarkable, in fact, dramatic, recoveries, but in the majority of cases it produces no reaction whatever, probably due to the fact that the anti-toxin used was not truly antigenic to the toxin which was killing the patient.

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EPILOGUE.

EPILOGUE.

The only thing both laudatory and true that can grace the epitaph of 1929 is that it made a repentant end. It was not a good year for preventive medicine, for though there was much talk and the old platitudes were trotted out to do double duty, the actua' work done in the development of the great aim of cherishing the health of the people was disappointing. What advance was made in administration and medicine during the year was not favourable to prevention. The Local Government Act of 1929 diverted attention from the prevention of disease to its management, for the Act contains no provision which deals directly with the suppression of disease, and the time and labour spent by local authorities and their officers in formulating schemes for its administration, turned them from what should be their main function, the preservation of health. The rise of surgery since the War is antagonistic to prevention. The family doctor who in past generations was the main guardian of individual health, has gone and he cannot be recalled, for the family has changed into gramophones and motor-cars and the doctors into surgeons. The slogan has displaced the precept and stunts (an offensive word to represent an abomination) delay and thwart the true progress of applied science, which must always be slow and unsensational. We do to-day precisely what we laugh at the old alchemists for attempting, save that we find it easier to wring gold out of dull humans than of dull lead and better business to dispense the elixir of life in 50,000,000 bottles than from one small phial. But the principle is the same, the attempt to fool Nature by craft rather than to gain her gifts by understanding and obedience. In 1928, man was to be rendered proof against sickness by artificial light. No one took the time or the trouble to ponder over the ways in which Nature protects all warm-blooded animals from this dangerous element. In 1929 we were told that all this wonderful light treatment did no more than a mustard plaster ! This was a pity, for it is not true. For if nine tenths of what was alleged in favour of artificial light treatment was biologically absurd, one tenth was true and valuable, and in the collapse which must follow exaggerated claims, the grain of truth which lies hidden in the mass of dross is apt to be lost. In all these ' great discoveries ' which from time to time are thrust upon us with a discordant blare, and pass into oblivion before the next dictator, there is something which is genuine. It is impossible to deceive everybody at any time and those who seek the improvement of man's health, not through pinchbeck creations, but by steady reformation founded solely upon our slowly increasing knowledge of the truth, are disturbed but not dismayed by the pedlers ; and when the obvious fraud causes the inevitable collapse retain from the scattered tinsel the few gems which made imposition possible.

The progress of prevention is slow, but it is very sure. The time has gone when we could expect to do in twelve months more than our fathers did in twelve centuries, but nevertheless we can, and we do, do much to raise further the level of health and depress the ravages of disease. Prevention was founded on medicine, for in the past there was no other basis upon which it could be built; but its foundations must be shifted, it must rest upon the broader base of biology, for progress can come only from the knowledge of the principles and behaviour of living matter. Health cannot be presumed from a knowledge of disease, the normal can never be revealed by the abnormal; all that the latter can do is to indicate the direction in which the former might be found. Two of the greatest triumphs of curative medicine are the treatment of appendicitis and of peptic ulcer. But the surgeons have told us nothing whatever of the causes of these diseases. In spite of the improvement of surgery, the death rate of appendicitis has increased and that from peptic ulcer has nearly doubled in twenty years. The true explanation of this is not that which the cynic will see on the surface, but it does mean that prevention precedes with the advance of remedy.

The complexity of that event in organic evolution which we call man, should warn us that the unravelling of his functions is no easy task. In the days when our conceptions of nature were simpler than they are to-day, when we believed that we could separate the units and explore them singly, it seemed that the functions of the various organs and tissues of organic beings might be deduced from their structure, but this view is quite untenable. The tonsil is an organ to which, up to the present, we have not been able to attach any important function. We know that it is frequently diseased, that its removal when diseased is generally of benefit to the individual and we are unaware of any loss which its removal may occasion. But the fact that the tonsil is present in all mammals, except the lowest order, the species of which lay eggs, should tell us at once that the tonsil is an essential to the body framework and that only by searching for its functions can we discover the factors which over-stretch its capacity and cause it to become diseased; and thereby to see our way to prevent what is at present one of the most frequent forms of failure of health. Removal of the tonsils can never tell us why the organs are there or what caused their removal to be desirable. It is scarcely more difficult to remove the tonsil or the appendix than it is to open a tin of sardines and, so far as we can see, not much more dangerous; whereas to lay bare the functions of these organs and the causes why they fail so frequently, requires prolonged and difficult research. That he should shirk the laborious and thankless task of study for the sensational and profitable action, is only to be expected of man. For who will forego a life of comparative ease, with a full share of goods and honours for one of

toil and exasperation in poverty, ridicule and insult ? There have been, there are, and there always will be, such men and women and the world will honour them as the only members of her family who are not contemptible, but the welcome they get whilst they are here is not encouraging. Is it any wonder that true preventive medicine halts along so slowly ; that those who attempt it are continually being led astray into paths which promise so much more immediate return, or that it is almost impossible to prevent the maintenance of health from degenerating into the treatment of disease ? Edwin Chadwick, the father of modern sanitation, was crushed by the fools and knaves who thwarted him and Semmelweiss, who made modern surgery possible, was driven to destroy himself. Disraeli, when he introduced the Public Health Act of 1875, had to apologise to his supporters as well as to his opponents for asking them to forego a few hours from strife and diplomacy to devote to the suppression of squalor, misery, vice and disease. As throughout human history we have exalted the makers of war above the peacemakers and those who destroy above those who build.

It is, we believe, possible to raise a human generation free from disease, but we shall only do so by finding out the correct relationship of man's being to his environment, by disclosing what he can do and what hinders him, what cripples his development and his freedom of function and the correct atmosphere for his evolution. We must discover and teach ; it is by teaching and learning, not by tinkering, that the golden age of human energy may be brought into being.

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BOROUGH OF SWINDON.

GENERAL STATISTICS.

Area (Acres)	6021	
Population (1929)	62020	
Number of inhabited houses (1929)	15436	
Number of families or separate occupiers (1929)		(Figure not available).
Rateable Value (General Rate)	£309,712	
Sum represented by a penny rate	£1,255	

EXTRACTS FROM VITAL STATISTICS OF THE YEAR.

		Total	M.	F.	
Births	Legitimate	836	434	402	
	Illegitimate	31	18	13	Birth Rate 13.98
Deaths		680	346	334	Death Rate 10.96

Number of women dying in, or in consequence of childbirth — From sepsis 3; From other causes 3

Deaths of Infants under one year of age per 1,000 births :—
Legitimate 47.85 Illegitimate 32.26 Total 47.29

Number of deaths from Measles (all ages)	—
,, ,, ,, Whooping Cough (all ages)	3
,, ,, ,, Diarrhoea (under 2 years of age)	1

INFECTIOUS DISEASE.

TABLE showing the numbers of Infectious Diseases notified in the Borough during the year 1929.

Disease.	Cases notified at various ages. (Years).												Total cases notified	No. of cases admitted to Hospital	Total Deaths
	Under 1	1-2	2-3	3-4	4-5	5-10	10-15	15-20	20-35	35-45	45-65	65 & upwards			
Smallpox	5	1	3	3	3	20	22	23	33	12	13	2	140	131	—
Diphtheria	—	2	1	2	1	10	6	2	4	1	3	—	32	31	*3
Erysipelas	—	—	—	—	—	—	1	1	1	5	11	4	23	4	2
Scarlet Fever	1	3	6	20	20	120	87	18	42	8	2	—	327	303	—
Ophthalmia Neonatorum	3	—	—	—	—	—	—	—	—	—	—	—	3	1	—
Chickenpox	2	2	2	11	11	66	14	—	1	1	1	—	111	—	—
Dysentery	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Pneumonia	19	18	5	4	9	20	7	6	24	13	39	12	176	52	54
Enteric Fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Continued Fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Encephalitis Lethargica	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Puerperal Pyrexia	—	—	—	—	—	—	—	2	26	6	—	—	34	11	3
Puerperal Fever	—	—	—	—	—	—	—	—	1	1	—	—	2	1	1
Poliomyelitis	—	—	3	—	1	4	—	—	—	—	—	—	8	6	—
Cerebro-spinal Meningitis	—	—	—	—	—	—	—	—	1	—	—	—	1	1	—
Polio-encephalitis	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Malaria	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tuberculosis—															
(a) Pulmonary M.	—	—	—	—	—	—	—	2	16	4	5	—	27	—	15
F.	—	—	—	—	—	—	—	3	16	5	2	—	26	—	8
TOTAL													53	—	23
(b) Non-Pulmonary M	—	1	—	1	1	7	4	1	—	1	2	—	18	—	1
F	3	—	—	2	1	7	1	2	2	2	1	—	21	—	3
TOTAL													39	—	4
TOTALS	33	27	20	43	47	254	142	60	167	59	79	18	949	541	90

TABLE SHOWING MONTHLY INCIDENCE OF INFECTIOUS DISEASES AND THE NUMBER OF DEATHS DURING 1929.

Disease.	No. of Cases.												Total	No. of deaths.
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.		
Smallpox	8	—	27	43	25	6	2	7	7	5	6	4	140	—
Diphtheria	6	2	4	5	3	—	—	4	1	3	4	—	32	*3
Erysipelas	3	2	1	—	3	1	2	—	2	2	4	3	23	2
Scarlet Fever	49	33	17	27	34	26	17	33	23	24	30	14	327	—
Ophthalmia Neonatorum	1	—	—	—	1	—	1	—	—	—	—	—	3	—
Dysentery	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Pneumonia	24	27	31	15	12	6	5	5	9	11	7	24	176	54
Enteric Fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Encephalitis Lethargica	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Puerperal Pyrexia	—	6	1	4	6	3	—	2	2	5	1	4	34	3
Puerperal Fever	—	—	—	1	—	—	—	—	—	1	—	—	2	1
Poliomyelitis	—	—	—	—	—	—	1	2	1	1	3	—	8	—
Polio-encephalitis	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cerebro-spinal Meningitis	—	—	—	—	1	—	—	—	—	—	—	—	1	—
Malaria	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Continued Fever ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Chickenpox	—	10	8	12	10	16	7	2	1	4	10	31	111	—
TOTALS	91	80	89	107	95	58	35	55	46	56	65	80	857	63

* One of these cases died from diabetes.

TUBERCULOSIS 1929.

Age Periods.	New Cases. Pulmonary		Non-Pulm'ry		Deaths. Pulmonary		Non-Pulm'ry	
	M	F	M	F	M	F	M	F
Under 1 year	....	....	....	3	....	....	....	1
1—5	....	....	3	4	....	....	1	1
5—10	....	....	7	8	....	....	....	....
10—15	....	....	4	2	....	....	....	....
15—20	2	3	1	2	....	1	....	....
20—25	4	8	1	....	2	2	....	....
25—35	13	8	....	2	3	....	....	....
35—45	4	5	1	2	5	2	....	1
45—55	2	2	1	....	2	2	....	....
55—65	5	1	....	....	3	1	....	....
65 and over	....	....	....	....	....	....	....	....
Totals	30	27	18	23	15	8	1	3

DEATHS FROM TUBERCULOSIS, 1929.
TABLE SHEWING WHEN CASES WERE NOTIFIED.

When Notified.	Pulmonary		Non-Pulmonary	
	Males	Females	Males	Females
One year or more before death	7	5	....	....
Less than one year and more than 6 months before death	2	2	....	....
Less than six months and more than two months before death	....	....	....	....
Less than two months before death	2	....	....	....
At or immediately before death	4	....	1	3
Unnotified. (Cases who died outside the Borough and never notified to Swindon.)	....	1	....	....
Totals	15	8	1	3

Comparative statement showing the number of notifications received of the various forms of Tuberculosis and the Death Rates resulting from each form of the disease for the years 1914-1929.

	1929	1928	1927	1926	1925	1924	1923	1922	1921	1920	1919	1918	1917	1916	1915	1914
No. of cases notified (all forms)	98	114	102	94	91	111	117	103	98	97	73	116	129	132	140	160
Respiratory Tuberculosis	57	69	70	56	66	75	75	68	63	72	51	86	102	95	86	101
Deaths from Respiratory Tuberculosis	23	40	45	30	42	42	48	59	42	55	44	66	60	48	51	53
Deaths from Tuber. Meningitis	3	6	1	8	5	4	12	6	11	8	8	11	8	10	10	3
Deaths from other forms of the disease	1	2	9	3	4	7	7	6	12	6	8	11	10	10	8	1
Total deaths from Tuberculosis	27	48	55	41	51	53	67	71	65	69	60	88	78	68	69	57
General Death Rate for all forms of Tuberculosis	0.44	0.82	0.96	0.71	0.89	0.93	1.19	1.27	1.17	1.28	1.16	1.74	1.5	1.3	1.32	1.07
Death Rate for Respiratory Tuberculosis	0.37	0.68	0.78	0.5	0.73	0.74	0.85	1.05	0.75	1.02	0.85	1.30	1.15	0.95	0.98	1.0

BACTERIOLOGICAL INVESTIGATIONS.

	Public Health Dept.							School Medical Dept.						
	1923	1924	1925	1926	1927	1928	1929	1923	1924	1925	1926	1927	1928	1929
Examinations carried out by Bristol University	3	....	5	4	9	13	26	....	2	1	2	....	1	....
Examinations carried out at Gorse Hill Hospital :—														
Throat swabs examined	161	613	780	646	93	168	115	1	....	....	....	....	....	....
Urine : Examination for Tubercle bacilli	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Examinations carried out at 61 Eastcott Hill :														
Throat ; swabs examined direct	....	....	5	83	157	244	241	1	2	6	1	3	21	5
Eyes ; swabs examined direct	71	48	33	45	41	55	36	9	11	1	5	....	6	2
Pus and discharges :—														
For Tubercle bacilli	8	3	20	9	9	9	6	9	5	8	2	....	1	....
For other organisms (cultures)	43	25	47	34	37	22	66	18	18	11	4	1	1	2
Hair. Examinations for Ringworm fungus	13	18	12	11	9	....	....	430	507	439	253	229	271	206
Other conditions	....	1	3	1	....	1	....	....	5	4	1	....	2	....
Blood, Histological examinations	9	50	48	27	18	14	12	36	66	149	83	53	56	35
Blood for Wassermann-Reaction	....	....	2	....	....	....	....	....	....	....	1	2	1	....
Cerebro-spinal fluid	....	1	....	....	1	1	8	....	....	....	....	....	....	....
Sputum. For Tubercle bacilli	1	1	....	....	2	2	1	....	2	....	1	....	1	....
For other organisms	1	1	....	....	....	....	....	....	2	....	....	....	....	....
Urine-Chemical examinations	27	19	15	....	13	49	24	8	23	16	12	6	23	18
,, Microscopical examinations	....	....	9	....	8	17	9	....	....	2	....	4	19	4
,, Bacteriological examinations	3	5	....	....	....	....	....	....	3	....	4	....	....	....
For diseased meat	13	10	16	33	17	23	17	....	....	....	....	....	....	....
Miscellaneous	13	....	....	26	34	22	2	2	2	....	1	....	....	....
Totals	366	795	995	919	448	640	563	514	648	637	370	298	403	272

No. of samples of water submitted for chemical and bacteriological analysis during 1929 45

REVIEW OF THE COMPARATIVE VITAL AND MORTALITY STATISTICS FOR THE BOROUGH OF SWINDON, TOGETHER WITH THOSE FOR ENGLAND AND WALES FOR THE YEARS 1901 TO 1929 INCLUSIVE.

Year	Birth Rate		Death Rate		Infant Mortality Rate.		Illegitimate Death Rate.
	Swindon	England and Wales	Swindon	England and Wales	Swindon	England and Wales	
1901	30·6	28·5	11·8	16·9	102·9	151	—
1902	28·3	28·5	12·7	16·3	104·7	133	—
1903	29·5	28·5	11·27	15·5	106·9	132	—
1904	30·0	28·0	12·49	16·3	111·2	145	—
1905	28·4	27·3	11·2	15·3	95·4	128	—
1906	29·4	27·2	9·9	15·5	86·2	132	—
1907	28·8	26·5	12·3	15·1	91·8	118	—
1908	28·9	26·7	11·8	14·8	101·5	120	—
1909	26·5	25·8	10·8	14·6	78·2	109	—
1910	23·4	25·1	9·7	13·5	86·8	105	—
1911	21·6	24·3	10·9	14·6	103·1	130	—
1912	23·4	23·9	10·3	13·3	76·3	95	—
1913	23·39	24·1	12·08	13·8	86·4	108	—
1914	22·5	23·8	11·5	14·0	73·7	105	—
1915	21·16	21·9	12·83	15·7	67·7	110	—
1916	18·9	20·9	11·3	14·4	72·4	91	—
1917	15·5	17·8	12·25	14·4	88·6	96	—
1918	16·53	17·7	15·13	17·6	81·3	97	129·63
1919	16·86	18·5	11·97	13·8	83·9	89	79·52
1920	23·25	25·4	11·64	12·4	69·0	80	122·44
1921	20·27	22·4	9·58	12·1	67·5	83	102·56
1922	18·98	20·6	12·17	12·9	60·5	77	121·95
1923	17·77	19·7	9·27	11·6	53·2	69	83·33
1924	17·11	18·8	10·78	12·2	63·01	75	192·30
1925	16·56	18·3	11·09	12·2	60·5	75	52·63
1926	17·09	17·8	10·67	11·6	47·95	70	193·54
1927	14·52	16·7	11.16	12·3	46·98	69	107·14
1928	15·63	16·7	9·92	11·7	36·26	65	51·28
1929	13.98	16.3	10.96	13.4	47.29	74	32.26

BOROUGH OF SWINDON.

CAUSES OF DEATH, 1929.

(Registrar General's Official Returns).

CAUSES.	MALES	FEMALES	TOTAL
Whooping Cough	1	2	3
Diphtheria	2	—	2
Influenza	16	11	27
Tuberculosis of Respiratory System	15	8	23
Other Tuberculous Diseases	1	3	4
Cancer, malignant disease	41	50	91
Rheumatic Fever	2	—	2
Diabetes	6	7	13
Cerebral Haemorrhage &c.	20	20	40
Heart Disease	58	68	126
Arterio-sclerosis	15	11	26
Bronchitis	20	24	44
Pneumonia (all forms)	23	21	44
Other respiratory diseases	5	3	8
Ulcer of Stomach or duodenum	5	2	7
Diarrhoea &c. (under 2 years)	1	—	1
Appendicitis and typhlitis	1	3	4
Cirrhosis of liver	2	—	2
Acute and chronic nephritis	14	7	21
Puerperal Sepsis	—	3	3
Other accidents and diseases of .... pregnancy and parturition	—	3	3
Congenital Debility and Malformation, premature birth	12	10	22
Suicide	7	1	8
Other Deaths from Violence	9	6	15
Other defined diseases	70	71	141
	346	334	680

BOROUGH OF SWINDON.

INFANT MORTALITY.

1929. *Nett Deaths from stated causes at various ages under One Year of Age.*

Compiled from the Official Registrations.

CAUSES OF DEATH.	Under 1 week	1–2 weeks	2–3 weeks	3–4 weeks	Total under 4 weeks	4 weeks and under 3 months	3 months and under 6 months	6 months and under 9 months	9 months and under 12 m'ths	Total deaths under 1 year.
Causes :—										
Certified	14	2	1	1	18	8	7	5	3	41
Uncertified	....	....	....	....	....	....	....	....	....	....
Small-pox	....	....	....	....	....	....	....	....	....	....
Chicken-pox	....	....	....	....	....	....	....	....	....	....
Measles	....	....	....	....	....	....	....	....	....	....
Scarlet Fever	....	....	....	....	....	....	....	....	....	....
Diphtheria and Croup	....	....	....	....	....	....	....	....	....	....
Whooping-Cough	....	....	1	....	1	....	....	...	....	1
Diarrhoea	....	....	....	....	....	....	....	....	....	....
Enteritis	....	....	....	....	....	....	1	....	....	1
Tuberculous Meningitis	....	....	....	....	....	....	1	....	....	1
Abdominal Tuberculosis	....	....	....	....	....	....	....	....	....	....
Other Tuberculous Diseases	....	....	....	....	....	....	....	....	....	....
Congenital Malformations	3	....	....	....	3	2	....	....	....	5
Premature Birth	6	1	....	....	7	2	....	....	....	9
Atrophy, Debility & Marasmus	3	1	....	....	4	3	....	....	....	7
Atelectasis	1	....	....	....	1	....	....	....	....	1
Injury at Birth	....	....	....	....	....	....	....	....	....	....
Erysipelas	....	....	....	....	....	....	....	....	....	....
Syphilis	....	....	....	....	....	....	1	1	....	2
Rickets	....	....	....	....	....	....	....	....	....	....
Meningitis (not Tuberculous)	....	....	....	....	....	....	....	....	1	1
Convulsions	....	....	....	....	....	....	....	....	....	....
Gastritis	....	....	....	....	....	....	....	....	....	....
Laryngitis	....	....	....	....	....	....	....	....	....	....
Bronchitis	....	....	....	....	....	1	1	1	....	3
Pneumonia (all forms)	....	....	....	1	1	....	2	3	....	6
Suffocation, overlying	....	....	....	....	....	....	....	....	....	....
Other causes	1	....	....	....	1	....	1	....	2	4
Totals	14	2	1	1	18	8	7	5	3	41

LIST OF HOSPITALS PROVIDED OR SUBSIDISED BY THE LOCAL AUTHORITY OR BY THE COUNTY COUNCIL.

TUBERCULOSIS.	Two beds at Winsley Sanatorium near Bath, provided by the local authority. The Wilts County Council has two sanatoria for the treatment of tuberculosis; one at Winsley for early cases and the other at Harnham wood, near Salisbury, for advanced cases.
MATERNITY.	A Maternity Hospital of 13 beds provided by the local authority.
CHILDREN.	Nil.
FEVER.	A fever hospital provided by the local authority (about 90 beds).
SMALLPOX.	A Smallpox Hospital provided by the Wilts County Council.
VENEREAL DISEASES.	A hospital with 6 beds provided by the Wilts County Council.
ORTHOPAEDIC.	Use of beds in Bath Orthopaedic Hospital.

LIST OF CLINICAL TREATMENT CENTRES IN THE BOROUGH OF SWINDON.

Name of Clinic.	Where held	Days and hours of attendance	By Whom Provided.
Maternity and Child Welfare	61, Eastcott Hill	Mondays, Wednesdays & Fridays, 2.30 p.m. to 4.30 p.m.	Swindon Corporation
Maternity and Child Welfare	Girls' Club, St. Paul's Street	Tuesdays, 2.30 p.m.—4 p.m.	,, ,,
Maternity and Child Welfare	Primitive Methodist School, Romsey St.	Thursdays, 2.30 p.m.—4 p.m.	,, ,,
Maternity and Child Welfare	Primitive Methodist Church, Pinehurst	Mondays, 2.30 p.m.—4 p.m.	,, ,,
Ante-Natal Clinic	Maternity Home, Milton Road	Tuesdays, Thursdays and Fridays, 2.30 p.m.—4.30 p.m.	,, ,,
Minor Ailments	61, Eastcott Hill	Every morning 9 a.m.—11 a.m.	,, ,,
Dental Clinic	Faringdon Road	Daily 9.30—12.30 a.m. & 2—5 p.m. (Saturdays 10—12.30 p.m.)	,, ,,
Eye Clinic	Faringdon Road	Tuesdays 2—4.30 p.m.	,, ,,
Ringworm Clinic	61, Eastcott Hill	Tuesdays, 2—5 p.m.	,, ,,
Throat, Nose & Ear Clinic	,, ,, ...	Mondays, 2—5 p.m.	,, ,,
Enlarged Thyroid Glands	,, ,, ...	Thursdays, 2—5 p.m.	,, ,,
X'Ray Clinic	,, ,, ...	Thursdays, 2—5 p.m.	,, ,,
Electrical Treatment (General)	,, ,, ...	Mondays, 2—4 p.m.	,, ,,
Electrical Ionization Clinic	,, ,, ...	Fridays, 2—4.30 p.m.	,, ,,
Observation Clinic	,, ,, ...	Saturdays, 9.30 a.m.—12 noon	,, ,,
Tuberculosis Clinic	Tuberculosis Dispensary, Milton Road	Thursdays, 10 a.m.—3 p.m.	Wilts County Council.
Venereal Diseases Clinic	Isolation Hospital, Gorse Hill	Men. Wednesdays, 6.30—8.30 p.m. Fridays, 6—8 p.m.	
		Women and Children— Mondays, 5—7 p.m. .... Fridays, 2—4 p.m.	Wilts County Council
Orthopaedic Clinic	Isolation Hospital Grounds, Gorse Hill	Tuesdays, 11 a.m.—5 p.m.	Voluntary Association

AMBULANCE FACILITIES.

(a)	For Infectious Diseases	Two Motor Ambulances are supplied by the Swindon Town Council
(b)	For non-infectious and accident cases.	A Motor Ambulance is provided by the Swindon Town Council.

LIST OF LOCAL ACTS, SPECIAL LOCAL ORDERS AND GENERAL ADOPTIVE ACTS IN FORCE IN THE DISTRICT.

LOCAL ACTS AND ORDERS.

The Swindon Corporation Act, 1904.
Swindon Water Act, 1894.
Swindon (Water) Orders of 1902 and 1919.
Swindon Tramway Order, 1901.
Swindon New Town Electric Lighting Order, 1895.
Swindon Corporation (Wilts and Berks Canal Abandonment) Act, 1914.
The Swindon Order, 1923.
The Swindon Order, 1925.
Swindon Corporation Act, 1926.
The Swindon Order, 1927.
The Swindon (Extension) Order, 1928.

ADOPTIVE ACTS IN FORCE.	DATE OF ADOPTION.
Infectious Diseases (Prevention) Act 1890	11th March, 1902
The Museums & Gymnasiums Act, 1891	6th June, 1905
The Public Health Acts Amendment Act, 1890	11th Nov., 1890
The Local Government and Other Officers Superannuation Act, 1922	1st July, 1924

THE PUBLIC HEALTH ACTS AMENDMENT ACT, 1907:—

Section 85 (Registries for Servants)	22nd Dec., 1926
Part III. Secs. 36, 37, 49, 50 and 51. Part IV. Secs. 62, 64 and 65. Part X. Sec. 93.	3rd Jan., 1927

THE PUBLIC HEALTH ACT, 1925:—

Part II. (except secs. 20, 24 and 29). Part III. Part IV. Part V.	1st Feby., 1927

APPENDIX.

BOROUGH OF SWINDON.

ANNUAL REPORT

OF THE

Chief Sanitary Inspector,

F. H. BEAVIS,

For the Year 1929.

To the Chairman and Members of the Health, etc., Committee.

LADIES AND GENTLEMEN,

I have the honour of submitting my fourth Annual Report dealing with the work carried out by the Sanitary Department during the year ending 31st December, 1929.

Appended hereto will be found the tables giving full particulars of the inspections made during the year in conformity with the requirements of the Ministry of Health.

The year under review proved to be an exceptionally trying one in the Sanitary Department. In March two of the Assistant Sanitary Inspectors, Mr. Dewi Davies and Mr. Josiah Bowers, left the service of the Corporation, having obtained more remunerative posts elsewhere. The two men leaving together left the Department with a greatly depleted staff and threw a tremendous strain upon those who remained. It was close upon three months before other help was obtained and quite six months before the work of the Department regained its normal course. During this time the greatest difficulty was experienced in keeping abreast of the urgent matters requiring immediate attention. Consequently the routine work of the Department was unavoidably suspended for a considerable portion of the year. The taking over of the added area upon the extension of the Borough last year greatly added to these difficulties and it was only by very strenuous efforts on the part of those who remained that the more pressing work of the Department was kept going.

FOOD SUPPLY.

The following gives a résumé of the work carried out under the Meat Regulations. There was a total of 15,265 animals slaughtered for human consumption during the year, every one of which was seen by your Inspectors before being offered for sale as food. The public in this way are safeguarded when consuming meat from animals slaughtered within the Borough, but the traffic in 'dead' meat from outside districts still continues and it is only by constant watchfulness on the part of the Department that meat of doubtful quality is prevented from being foisted upon the public. The only solution to this problem seems to be the compulsory inspection of all meat at a recognised clearing house before it is allowed to be sold in the Borough.

The question of the provision of a Public Abattoir is still in abeyance, but the desirability of such an institution must be apparent to all, because it would result in all slaughtering being

ne at one centre, thereby simplifying the work of adequate spection and control ; and in the event of legislation requiring meat to be submitted for inspection at a clearing house, the battoir could also be utilised for that purpose.

The unsound food destroyed during the year amounted to se upon 40 tons. This amount is about the same as last year d shows how important it is that all meat and other foods should adequately inspected in order to ensure to the public a pure d wholesome food supply. As I stated in my last year's report, s work is performed under considerable difficulties owing to e lack of quick mechanical transport. Your Committee are nsidering the question and no doubt something will be done this matter in the near future.

During the year a considerable quantity of imported carcases frozen mutton were released from the ports on condition that ese carcases were submitted for inspection in the various districts which they were consigned. In Swindon we had about 500 rcases and, upon inspection, about 4% were found to be affected h Caseous Lymphadenitis.

Two cases of having diseased meat came before the Borough stices during the year. One was a case in which ' dead ' meat s brought into the Borough from an outside district and the fendant was fined £10 and 4/- costs on each of the other six unts, making a total penalty of £11 : 4 : 0. The other was case in which diseased meat was exposed for sale on one of the lls in the covered market. In this case a fine of £3 and £2 sts was imposed.

Small shops and fish frying establishments where cooked d is sold are still on the increase. These premises are kept der constant supervision by your Officer, and every effort is de to ensure cleanliness, but a much better system of control uld be evolved if every purveyor of food was required to be ensed or registered by the Local Authority.

LK SUPPLY.

The milk supply of Swindon is obtained from the immediate rrounding districts which are of a purely agricultural character, ere milk production is carried on to a very large extent. This an advantage as the inhabitants receive their supply of milk ctically direct from the farms and with a minimum of delay in nsit, thus ensuring absolute freshness in this very important icle of food.

Owing to a depleted staff and pressure of other work, the taking of samples of milk for bacteriological examination was practically suspended during the year, but it is hoped to resume this important work in the near future.

There are at present within the Borough one farm and one bottling establishment licensed for the production and bottling respectively of Grade A (Tuberculin Tested) milk. Another farm is licensed for the production and distribution of Grade A milk. A subsidiary licence to retail Grade A (Tuberculin Tested) milk was granted to a producer at Burderop while Grade A milk is being retailed within the Borough from a farm at Hodson.

HOUSING.

The housing problem is still with us and there is a fair amount of overcrowding within the Borough. The worst cases occur amongst the poorer classes of the community who cannot afford to pay a rental of more than 5/- to 7/6 per week for a house in which to live. This problem will be solved when it is found possible to build houses, the economic rent of which will not exceed the above figures.

TENTS VANS AND SHEDS.

Very little trouble from this class of the community was experienced during the year. There are still a few caravans used as dwelling places within the Borough, but the bye-laws relating to these structures are strictly enforced and no serious nuisance exists.

THEATRES, CINEMAS, ETC.

There are at present in Swindon :—one theatre, eight cinemas, one billiard hall, and six dancing halls. These premises are regularly visited and every effort is made to see that they are kept in a satisfactory condition.

GENERAL.

During the summer some trouble was experienced with mosquitoes on the site of the old canal and also on some stagnant water at Coate. Spraying was carried out and these pests were destroyed.

Owing to the exceptional weather conditions during the autumn, there was a considerable amount of flooding in the low lying portions of the Borough, but the problem solved itself when the conditions became more favourable.

RATS AND MICE DESTRUCTION.

Owing to the ideal weather conditions which prevailed during the summer of 1929, both rats and mice increased to an alarming extent. Extra efforts were made to keep down the numbers and close upon 9,000 of these vermin were destroyed. The heavy flooding which occurred during the autumn drove the rats from all the surrounding districts to the various Tips for food and shelter. Consequently these centres became thoroughly infested and it has been necessary to concentrate entirely upon the Tips in order to keep down the number of rodents.

A perusal of the table under this heading will show that very useful work is being done.

I am, Ladies and Gentlemen,

Your obedient servant,

F. H. BEAVIS,

Chief Sanitary Inspector.

SANITARY STATISTICS.

TABLE OF NUISANCES RECORDED AND ABATED 1929.

Nature of Complaints registered.	Defects brought forward from 1928	Complaints received and visited during 1929.	Total	No. of complaints abated during 1929	No. of cases not abated at end of year.
Defective drains	3	80	83	80	3
,, traps	—	14	14	13	1
,, spouts and eaves troughing	30	62	92	61	31
,, roofs	44	128	172	81	91
,, and dirty W.C. pans	5	112	117	101	16
,, floors	25	71	96	54	42
,, and insufficient yard paving ...	9	57	66	46	20
,, walls	25	90	115	66	49
,, flushing cisterns	3	35	38	30	8
,, ceilings	27	64	91	61	30
,, forecourts	1	8	9	3	6
,, sinks	—	9	9	6	3
Offensive animals	—	5	5	5	—
Offensive accumulations	2	111	113	104	9
Choked drains	4	222	226	226	—
Damp walls	8	26	34	22	12
Dirty rooms	68	436	504	360	140
Overcrowding	10	20	30	15	15
Absence of covered receptacle at butchers' premises.	1	2	3	3	—
Miscellaneous	91	673	764	598	166
TOTALS	356	2225	2581	1935	646

VISITS AND INSPECTIONS, 1929.

Infectious Disease	551	
Work in course of construction	1540	
Slaughterhouses	4198	
Bakehouses	116	
Dairies, Cowsheds and Milkshops	402	
Markets	352	
Outworkers	30	
Common Lodging Houses	18	
Fried Fish Shops	567	
Re-visits	1676	
Miscellaneous	2391	
Workshops	534	
Ice Cream Shops	71	
Butchers' Shops	396	
Contacts with Small Pox	33	
Pig-killing on private premises	55	
House to House Inspections	84	
	13	24

DEFECTS IN OUTWORKERS' PREMISES.

Dirty Ceilings	3
Dirty Walls	3
Defective Roofs	2
,, Water-closets	—
,, Floors	—
,, Yard Paving	—
,, Firegrates	—
,, Walls	—
,, Drains	—
Other Defects	1
	9

INSPECTION OF FACTORIES, WORKSHOPS AND WORK-PLACES.

Including Inspections made by Sanitary Inspectors or Inspectors of Nuisances.

Premises	Number of		
	Inspections	Written Notices	Occupiers Prosecuted
(1)	(2)	(3)	(4)
Factories .... (Including Factory Laundries)	121	3	Nil
Workshops .... (Including Workshop Laundries)	370	9	Nil
Workplaces .... (Other than Outworkers' premises)	43	2	Nil
Total	534	14	Nil

DEFECTS FOUND IN FACTORIES, WORKSHOPS AND WORKPLACES.—Continued.

Particulars. (1)	Number of Defects. Found (2)	Remedied (3)	Referred to H.M. Inspector. (4)	Number of Offences in Respect to which Prosecutions were Instituted. (5)
Nuisances under the Public Health Acts :—*				
Want of cleanliness	60	59	....	....
Want of ventilation	....	....	....	....
Overcrowding	1	1	....	....
Want of drainage of floors	....	....	....	....
Other nuisances	7	6	....	....
Sanitary accommodation — insufficient	1	1	....	....
Sanitary accommodation — unsuitable or defective	24	23	....	....
Sanitary accommodation — not separate for sexes	7	4	....	....
Offences under the Factory and Workshop Acts:-				
Illegal occupation of underground bakehouse (s.101)	....	....	....	....
Other offences (Excluding offences relating to outwork and offences under the Sections mentioned in the Schedule to the Ministry of Health (Factories and Workshops Transfer of Powers) Order, 1921).	.. .	....	....	....
TOTAL	100	94	....	....

* Including those specified in sections 2, 3, 7 and 8 of the Factory and Workshop Act, 1901, as remediable under the Public Health Acts.

DISINFECTANTS.

Number of Applications	3217
Number of Applications Granted	3217
Quantity given: Fluid	390 galls
Powder ..	5cwts. 3qr. 13lbs.

DISINFECTION.

Cases of Infectious Disease	523
,, Cancer	23
,, Consumption	88
,, Small-Pox	418
Verminous Rooms	200
Number of Lots of Bedding destroyed	24
Number of Lots of Bedding disinfected	928
School Shawls disinfected	85
Library Books disinfected	124
Animals destroyed	15
Miscellaneous Articles disinfected	3
Miscellaneous Articles destroyed	100
No. of School Rooms disinfected	—

DAIRIES, COWSHEDS AND MILKSHOPS.

Dairies and Milkshops	47
Cowsheds	21
Milk Purveyors from outside the Borough	27
	95

There are two farms and one bottling establishment licensed for the production and distribution of Grade A (Tuberculin Tested) Milk within the Borough.

One subsidiary licence was granted for the retailing of Grade A (Tuberculin Tested) Milk.

Inspections	402
NUISANCES FOUND—	
Dairies requiring limewashing	14
Cowsheds requiring limewashing	10
Dirty yards	1
Defective paving	4
Offensive accumulations	3
Defective ceiling plaster	2
Unsuitable and dirty utensils	1
Milk and containers uncovered	14
Defective floors	1
Defective vent shafts	2
Dirty conditions	2
Insufficient water supply	—
Choked drains	—
Defective waterclosets	9
	63

SLAUGHTERHOUSES.

Registered	8
Licensed	12
TOTAL	20
Number of Inspections	4198
NUISANCES FOUND—	
Requiring limewashing	15
Want of cleanliness	7
Insanitary condition of pens and yards	15
Offensive accumulations	16
Choked drains	5
Other defects	14
TOTAL	72

COMMON LODGING HOUSES.

On Register 1
Number of persons for whom accommodation is provided :—
Adults 111. Children 8.
Inspections .... 18.

RATS AND MICE (DESTRUCTION) ACT, 1919.

The following is a table showing the work carried out by your officer under the above Act during the year under review :—

Rats caught	Complaints Received.	Due to Defects of Drains or Sewers.	Due to Structural Defects.
9,008	122	33	24

BAKEHOUSES.

Factory Bakehouses	11
Workshop Bakehouses	16
Domestic Bakehouses	1
TOTAL	28
Number of Inspections	116

NUISANCES FOUND—

Limewashing overdue	13
Dirty yards	1
Ceilings requiring re-painting	13
Choked drains	—
Dirty W.C. pans	1
No separate accommodation for sexes	1
Accumulations of manure	2
Defective yard paving	1
,, vent shafts	—
Want of cleanliness	1
Other defects	4
TOTAL	37

FOOD SUPPLY.

There are on the registers of the Department—

Butchers Shops	91
Butchers Stalls (in covered market)	3
Wholesale Meat Store	1
Fried Fish Shops	35
Ice Cream Shops	144
Cooked Meat Shops	39

and these premises are regularly inspected by your officers.

MEAT AND FOOD DESTROYED.

	Tons	cwts.	qrs.	lbs.
Carcases of Beef and Offal	21	13	0	17
Portions of Beef	5	19	3	6
Carcases of Veal		3	1	6
Portions of Veal		1	1	2
Carcases of Pig and Offal	1	2	0	6
Portions of Pig		11	2	22
Carcases of Mutton		8	1	12
Portions of Mutton			2	14½
Portions of Goat				10
Heads	1	5	0	19¼
Hearts		1	0	6
Kidneys				13
Lungs		4	0	22½
Livers		14	3	1½
Plucks		8	0	17½
Offal	1	10	1	8
Potatoes	4	14	0	0
Fish			3	21
15 Tins of Corned Beef				21
Frozen Tripe				15
17 Rabbits				
4 Brace of Grouse				
	38	19	1	16¼

PUBLIC HEALTH (MEAT) REGULATIONS 1924.

The following is a table showing the number of carcases inspected during the year, together with the average per week.

	Beasts	Calves	Pigs	Sheep	Total
Total Inspected	1428	1570	6011	6256	15265
Average per week	27.46	30.19	115.59	120.31	293.55

CLASSIFICATION OF DISEASES FOUND IN THE UNSOUND FOOD.

	Tons	cwts.	qrs.	lbs.
Abscesses		8	2	6
Actinomycosis			3	12
Angioma		1	0	19
Bone Taint		1	1	26
Bruising	2	12	3	22½
Caseous Lymphadenitis		8	0	10
Cirrhosis		1	0	21
Cystercercus Tenuicollis				24
Decomposition		7	1	1
Degeneration				16
Distomum Hepaticum		7	3	27½
Emaciation	4	11	0	4
Echinococcus Veterinorum			2	10
Hydatid Cysts				12
Ill-bled		5	3	26
Inflammation	1	16	2	15
Jaundice			2	20
Johnes Disease	2	5	1	10
Melanosis				12
Moribund		9	0	18
Necrosis			1	1
Nephritis		7	2	19½
Pericarditis		16	3	18
Peritonitis		7	1	0
Pleurisy		2	0	1
Pneumonia		9	1	24
Rickets				26
Sarcoma		1	0	6
Strongylus Rufescens			2	8½
Tuberculosis	17	17	1	19¾
Unsoundness	4	15	3	10½
Urticaria		1	0	18
	38	19	1	16¼

TABLE SHOWING THE RESULTS OF BACTERIOLOGICAL EXAMINATION OF MILK SAMPLES.

Sample	Organisms per $\frac{1}{1000}$ c.c.	T.B.	Coli per $\frac{1}{10}$ c.c.	Sediment.
No. 1	56	−	+	−
„ 2	136	−	+	−

HOUSING.

Number of new houses erected during the year :—

(*a*)	Total (including numbers given separately under (*b*)	225
(*b*)	With State assistance under the Housing Acts :—	
	(i) By the Local Authority	59
	(ii) By other bodies or persons	77

I. Inspection of Dwelling-Houses During the Year :—

(1)	Total number of dwelling-houses inspected for housing defects (under Public Health or Housing Acts)	879
(2)	Number of dwelling-houses (included under sub-head (1) above) which were inspected and recorded under the Housing Consolidated Regulations, 1925	82
(3)	Number of dwelling-houses found to be in a state so dangerous or injurious to health as to be unfit for human habitation	—
(4)	Number of dwelling-houses (exclusive of those referred to under the preceding sub-head) found not to be in all respects reasonably fit for human habitation	765

II. Remedy of Defects During the Year Without Service of Formal Notices.

Number of defective dwelling-houses rendered fit in consequence of informal action by the Local Authority or their officers	706

III. Action under Statutory Powers During the Year.

A. Proceedings under Section 3 of the Housing Act, 1925 ;

(1)	Number of dwelling-houses in respect of which notices were served requiring repairs	3
(2)	Number of dwelling-houses which were rendered fit after service of formal notices—	
	(a) By Owners	3
	(b) By Local Authority in default of owners	—
(3)	Number of dwelling-houses in respect of which Closing Orders became operative in pursuance of declarations by owners of intention to close	—

B.	Proceedings under Public Health Acts :—	
	(1) Number of dwelling-houses in respect of which notices were served requiring defects to be remedied	4
	(2) Number of dwelling-houses in which defects were remedied after service of formal notices—	
	(a) By Owners	4
	(b) By Local Authority in default of owners	—
C.	Proceedings under Sections 11, 14 and 15 of the Housing Act, 1925 :—	
	(1) Number of representations made with a view to the making of Closing Orders	—
	(2) Number of dwelling-houses in respect of which Closing Orders were made	—
	(3) Number of dwelling-houses in respect of which Closing Orders were determined, the dwelling-houses having been rendered fit	—
	(4) Number of dwelling-houses in respect of which Demolition Orders were made	—
	(5) Number of dwelling-houses demolished in pursuance of Demolition Orders	—