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ROYAL BURGH OF ST. ANDREWS.

REPORTS

BY THE

Medical Officer of Health,

Veterinary Inspector

AND

Sanitary Inspector

For the Year 1928.





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To the Department of Health for Scotland, The Provost,
Magistrates and Councillors of the Royal Burgh
of St. Andrews.

Gentlemen,

I have the honour to present a Report on the Health of the Burgh of St. Andrews for the year 1928, in submitting which I avail myself of an opportunity of acknowledging the ready support and valuable assistance rendered by all those associated with me in the health activities of the Burgh.

I have the honour to be,

Gentlemen,

Your obedient Servant,

G. MATTHEW FYFE, M.B., Ch.B., D.P.H.,
Medical Officer of Health.

May, 1929.

Public Health Department,
St. Andrews.

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ANNUAL REPORT, 1928.

STATISTICAL COMMENTARY.

Population.

The population of the Royal Burgh of St. Andrews at the middle of 1928 was estimated at 9922 as compared with 9881 in 1927, an increase of 41. The excess of births over deaths was 23, so that, up to the middle of the year 1928, the roll of the Burgh had been increased by an estimated total of 18 immigrants.

As has been pointed out in previous Reports, these figures underestimate the population of the Burgh. Since the Census of 1921, although over 300 houses have been erected in the town, no dwelling-houses have been permanently untenanted and overcrowding still exists. There is good reason to assume that the population is in excess of 10,000.

Birth Rate.

The total number of births (including illegitimate), corrected for transfer in and transfer out, was 119, of which 51 were males and 68 females.

The birth-rate per 1000 of estimated population was 12, the fifth highest for the past fifteen years.

Year	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928
Birth Rate	18·3	13·7	11·1	9·1	9·3	10·6	16·2	13·7	11·6	10·8	10·7	10·0	11·9	10·9	12·0

The Scottish birth rate was equal to that of the previous year, which was the lowest ever recorded, namely, 19·8 per 1000 of population.

Illegitimate births numbered 10, representing a rate of 8·4 per hundred births, the highest rate since 1921. There were 3 still births as compared with 1 in 1927.

Marriage Rate.

Thirty-seven marriages were registered during the year, representing a rate of 3·7 per 1000 of estimated population, the lowest rate since 1926.

Death Rate.

Corrected for transfers, the number of deaths from all causes was 96, of which 45 were males and 51 females, the rate per 1000 being 9·7, a figure lower by 2·3 than the birth rate. No deaths were due to the principal epidemic diseases but influenza and erysipelas caused 3 deaths.

There was a slight increase in the tuberculosis death rate as follows :—

<i>Year.</i>	<i>Rate per 1000.</i>
1923,	0·74
1924,	1·06
1925,	0·82
1926,	0·30
1927,	0·10
1928,	0·50

Infantile Mortality.

The number of deaths among infants rose from 46 per 1000 births in 1927 to 76 per 1000 births in 1928. The increase, although to be regretted, is not to be regarded as having been to any extent preventable. With one exception, all the infants were attended at birth by Mother and Child Welfare Nurses. Three of the infants died of infectious diseases and 6 died of structural defects or ailments against which no known measures of immediate treatment or prevention could have been of avail. The causes of death were as follows :—

<i>Age.</i>	<i>Cause of Death.</i>	<i>Remarks.</i>
Under 12 hours.	Shock. Haemorrhage.	Case of concealed birth.
1 day.	Prematurity.	Born barely viable. Mother a visitor to town.
3 days.	Hydrocephalus.	

<i>Age.</i>	<i>Cause of Death.</i>	<i>Remarks.</i>
Under		
3 days.	Spina Bifida. Meningitis.	
4 days.	Melaena Neonatorum.	
7 weeks.	Acute Cerebral Meningitis.	
7 months.	Prematurity.	Tuberculous Mother.
7 months.	Erysipelas.	Admitted to City Fever Hospital. Cerebral abscess rapidly developed.
3 months.	Acute Primary Pneumonia.	Found in dying con- dition by visiting nurse.

As against the increase in the number of infantile deaths, there were no deaths among infants in the 1—5 age group.

The following is the Registrar General's Table showing the causes of deaths in St. Andrews at various age periods :—

No.	Causes of Death.	All Ages			Age												
		Both Sexes	Males	Fe- males	-1	1-	5-	10-	15-	25-	35-	45-	55-	65-	75-	85 & over	
1.	Influenza,	2	1	1									1		1		
2.	Other Epidemic Diseases,	1	1		1												
3.	Tuberculosis of Respiratory System,	5	4	1						3			1		1		
4.	Malignant Tumours,	16	7	9					1		1	2	6	4	2		
5.	Meningitis (not Cer. Spin. or Tuberc.),	1	1		1												
6.	Apoplexy,	19	6	13								2	3	4	8	2	
7.	Heart Disease,	15	6	9					1			1	3	3	6	1	
8.	Disease of Arteries,	1	1											1			
9.	Bronchitis,	1		1												1	
10.	Pneumonia (all forms),	4	3	1	1		1						2				
11.	Other Diseases of Respiratory System,	1	1												1		
12.	Appendicitis,	2	1	1			1			1							
13.	Nephritis (Acute and Chronic)	4	4									1		2		1	
14.	Other Dis. and Acc. of Preg- nancy,	1		1							1						
15.	Diseases of Early Infancy and Malformations,	6	4	2	6												
16.	Other Violent Deaths,	4	3	1					1	2			1				
17.	Other Defined Diseases,	12	2	10					1		1	2	1	2	3	2	
18.	Causes Ill-defined or Unknown,	1		1												1	
	All Causes,	96	45	51	9		2	4	6	3	8	18	17	21	8		

The longevity of the citizens of St. Andrews is significantly illustrated in the above Table. Forty-eight per cent. of deaths from all causes occurred in persons over 65 years of age ; 36 per cent. of the deaths occurred in the age group 25 to 65 years, while 16 per cent. were among young people under the age of 25 years. The mean age at death in 1928 was 62 years. Of recent years the inhabitants of the Burgh have been dying at a progressively older age as is illustrated in the following table :—

<i>Year.</i>	1923	1924	1925	1926	1927	1928
Number of Deaths registered,	89	88	87	85	94	96
Mean age at Death,	57 yrs.	50 yrs.	59 yrs.	61 yrs.	58 yrs.	62 yrs.

Diseases of the circulatory system caused 36 per cent. of the total deaths. Although diseases of the heart and blood vessels are shown yearly to be the chief cause of death in the town, it is not to be inferred that the populace is particularly liable to these diseases. The majority of the deaths occur during the age period 65 years and over so that death from so-called cardiac disease in St. Andrews is more frequently to be regarded as the culminating episode in healthy lives than as the terminal event in lengthy periods of chronic invalidism. During the past seven years out of a total of 198 persons who have died of cardiovascular disease, only 5 were under the age of 45 years while 142 had passed their 65th birthday.

The principal "killing disease" in the town is unquestionably cancer. During 1928 it accounted for 17 per cent. of the total deaths and, during the past seven years, it has claimed 16 out of every 100 persons who died. As in past years more women than men succumbed to the disease in 1928. All the cases were over 37 years of age with the exception of one, a girl of 16 who died of sarcoma of the leg. Among males cancer of the tongue and oesophagus accounted for two deaths and cancer of the liver and pancreas accounted for five deaths. Among females cancer of

the gastro-intestinal tract was responsible for four deaths, cancer of the breast for two, cancer of the uterus for two and cancer of the bone for one.

Respiratory diseases claimed 6 per cent. of the total deaths. The majority of the deaths occurred among elderly people. Only one infant death occurred.

ENVIRONMENTAL CONDITIONS.

Sanitary Conditions.

The spaciousness of the new housing schemes and the cleanliness of the environment have undoubtedly had a beneficial effect on the health of the inhabitants. A study of family histories has demonstrated that those families who have been living under bad housing conditions and who have removed to the new houses have quickly shown a marked improvement in their general health. Investigations into the spread of infectious diseases have made it clear that, while infectious diseases do occur in the new houses, they do not show the same tendency to spread as they have done, in spite of every precaution, in the old and overcrowded parts of the town. Tenants have remarked upon the change for the better; indeed it has been said that increased expenditure required for rent is balanced by a saving in doctor's bills.

Improvements in the streets have also had an effect on health. During the past few years the activities of the Cleansing Department, the provision of dustless surfacing and the reduction in the number of horses have served to raise the hygienic standard in many parts of the town. Cleanliness of the streets must always be an important factor influencing health, especially, perhaps, the health of the children. A tidy street encourages tidy habits. As modern methods of street paving have crept into the older parts of the town, the practice of using the streets as a means of disposing of household refuse has gradually died out.

The campaign against rat infestation was continued during 1928 and complaints are becoming still less frequent. It will be a difficult, if not an impossible, task to exterminate rats from several of the older houses. Rat runs are so numerous and extensive in these houses that nothing short of demolition will prevent access from disused drains and outhouses.

During the year operations were commenced to correct the inadequacies of the burgh sewage system. At Abbey Park 108 yards of a new 15 inch sewer were laid down to take the place of a portion of the main South sewer which collapsed in 1926. Plans were prepared for the construction of a new main sewer along the south bank of the Kinnessburn. An 18 inch sewer will commence in the neighbourhood of Maggie Murray's Bridge and will extend for 400 yards to the bridge at the Boys' Brigade Hall. From that point a 21 inch sewer will continue for 369 yards to a point opposite Abbey Park. Thence for 210 yards a 24 inch sewer will proceed to a point opposite the Memorial Cottage Hospital where the pipe will siphon under the stream and join a 30 inch sewer which will extend for 587 yards to a screening chamber at Shorehead. From the screening chamber two pipes, one of 12 and the other of 15 inches, will lead into an 18 inch outfall sewer which will extend seawards for 45 yards. This new sewer will effect a marked improvement in the arrangements for sewage disposal in the South side of the town and, allowing for probable housing developments, will adequately meet the needs of that area for the next forty or fifty years. Plans were also prepared to cope with the flooding which periodically occurs at the Links Area and with the pollution (with sewage) of the West Sands. A new 21 inch sewer will extend across the Putting Green, acting in duplicate with the existing 20 inch sewer, and will lead into a large screening chamber connected with the existing outfall pipe and having in addition a 30 inch storm overflow pipe. These alterations will relieve the congestion and flooding which occurs when a high tide coincides with heavy rain and the provision of flap valves in the houses utilizing the sewer, and near its termination, will act as an added precaution. The construction of two screens, a basket screen and a lock screen, in the screening chamber will serve to break up solid masses whereby there will be less tendency for offensive matter to be washed up on the sands.

The practice of erecting high boardings for the purpose of securing privacy has given rise to an undesirable situation in one or two cases. Everyone has a right to privacy, but when the method of obtaining it creates conditions which are injurious to the health of others, it would seem to be only fair that the sufferer

should have redress. One such case was investigated during the year, and it was clear that the lighting of a living room was markedly restricted and, according to the complainant's family doctor, that, from the erection an injurious effect on health was resulting. As, however, it was not clear that the Public Health Act was strictly applicable to the situation, the matter was referred to the Department of Health for Scotland.

Dogs continue to foul the streets. The number of licences has increased in 1928 from 477 to 690. It is surely not too much to expect that owners should keep their dogs under proper control—at least on the pavements.

The habit of blowing into paper bags in order to open them has been prevalent in shops. The attention of several shopkeepers has been drawn to the risks attending this unpleasant practice, and it has been pointed out that it can be prevented by the simple expedient of wetting the fingers on a clean damp sponge kept for the purpose. Customers should refuse to accept provisions in bags which have been blown into.

Atmospheric Conditions.

The sunniest month was July, when there were 184·8 hours of bright sunshine, equivalent to a period of 6 hours per day. The month with least sunshine was December, when there were 40·7 hours of sunshine or 1·3 hours per day. The total amount of sunshine for the year was 1274 hours, which was less by 16·4 hours than the amount for the previous year.

The warmest month was July, the highest temperature reached being 73 degrees F. The coldest month was March, when the lowest maximum day temperature was 35 degrees F. On the night of January 1st, the lowest minimum night temperature of the year was registered, namely 22 degrees F. The mean temperature for the whole year was 46·7 degrees F., a figure exactly coinciding with that of the previous year.

The driest month was April when there was a rainfall of 0·84 inches, while the wettest month was January when there were 6·09 inches of rainfall. The total amount of rainfall for the year

was 36·36 inches. The total number of rainy days was 203 and the greatest fall occurred on July 27th, when there were 1·28 inches of rain.

The most prevalent winds were from the west and south-west and the least prevalent from the north.

The predominant features of the year were an excess of rainfall and a deficiency of bright sunlight. These conditions were common to all localities in Scotland with most of which St. Andrews compared favourably.

Offensive Trades.

Slaughtering of cattle, hide factoring and gut and tripe cleaning continue to be the only offensive trades carried on in St. Andrews. No new applications were made during the year.

Inspection of meat and general supervision of work in the Slaughter House was carried out by the Veterinary Inspector in a thoroughly efficient manner. Records were accurately kept and, considering the nature of the premises, a creditable degree of cleanliness was maintained by the Superintendent.

At the beginning of the year the Reports and Plans requested from a firm of experts in slaughter house construction, on the reconstruction of the existing slaughterhouse and on the erection of a new slaughter house at Cannongate, were considered by the Town Council. The Town Council were of opinion that there was no very strong reason for the erection of a new slaughter house, especially since the existing premises could be altered to comply with modern requirements at a less cost. The Sanitary Officers submitted various amendments of the plans for reconstruction, and it was remitted to them to draw up fresh plans embodying the improvements suggested. At the end of the year, however, the matter had proceeded no further. The delay is to be regretted, all the more so since one or two of the butchers' shops in the town are now in a more up to date condition than is the municipal slaughter house from which meat supplies are drawn.

Housing Conditions.

During the year the fifth development of the Burgh Housing Scheme, which commenced in 1920, was completed. The following is the total number of houses which have been erected under the Scheme :—

Two-roomed houses,	..	..	..	51
Three-roomed houses,	..	..	..	112
Four-roomed houses,	..	..	..	83
Five-roomed houses,	..	..	..	12
				<hr/>
				258
				<hr/>

All these houses have been occupied and yet there remained on the register of the Housing Factor at the end of the year the following number of applicants for houses :—

Applicants for two-roomed houses, ..	..	142
Applicants for three-roomed houses, ..	..	107
Applicants for four and five-roomed houses, ..	..	40
		<hr/>
		289
		<hr/>

The number of applicants on the register, however, is an over-statement since it is known that at least 90 applicants are no longer in need of municipal houses. There remain, therefore, some 200 families for whom houses require to be found. To help to meet their needs the erection of 48 two-roomed houses was commenced during the present year. The erection of these houses will not meet requirements but the Town Council is alive to the situation and is prepared to do everything in its power to relieve it.

In the Report for 1927 it was stated that there were then 28 known over-crowded houses and approximately 75 houses which should be closed and demolished—these in addition to the number of houses required for applicants. No survey of housing conditions was undertaken in 1928 with reference to overcrowded or to defective dwellings so that, in estimating the number of houses required at the end of 1928 adequately to meet the needs of the town, the figures for 1927 are given as a probable minimum, no action having been taken during the year to improve the conditions previously reported upon.

Number of houses required to meet the needs of the Burgh.

Number of applicants for houses, ..	200	(approx.)
Number of overcrowded houses, ..	28	(approx.)
Number of defective or uninhabitable houses,	75	(approx.)
	—	
Total, ..	303	(approx.)
	—	

Lack of definite information regarding the true state of housing affairs in certain areas of the town has caused the Town Council some anxiety, and at the beginning of the present year clerical assistance was lent to the Sanitary Inspector to enable him to undertake a systematic inspection of houses. The investigation is one of considerable importance and will be reported upon at a later date.

The construction of new houses on the present scale cannot go on indefinitely, besides which there are many reasons for assuming that the problem of the insanitary state of existing houses must be considered, in many cases, apart from the erection of new houses. Many people cannot afford to occupy a modern house and, as things are, must perforce remain where they are. If by chance, however, any uninhabitable house should become untenanted, it should be immediately condemned and closed and on no account re-let. Thereafter will arise the question as to whether it should be partially or wholly demolished and rebuilt or whether it should be razed and the site utilized for another purpose, for instance to help in the creation of open spaces—the amenities of certain areas of the town would certainly be improved by greater access of light to dwelling houses.

Intimately bound up in the problem of the disposal of defective houses is the problem of a possible extension of the town's attractions to visitors; particularly does this refer to the houses in the neighbourhood of the harbour on which time and use have laid heavy hands. Many of these houses are not now fit for habitation and, when they are demolished, what is to take their

place? Is the locality one which lends itself to the erection of new dwelling houses overlooking a clean and sightly harbour or is it in the interests of the community as a whole that that comparatively isolated quarter should be devoted to the development of those artificial attractions which characterize modern seaside resorts, so as to relieve the congestion which occurs at the west end of the town's sea front and to provide additional attractions for visitors? Plans will have to be made ahead.

St. Andrews attracts some visitors because of its ancient connections and buildings, others because of its position in the world of learning, others because of its eminence in the world of golf and others (not so numerous perhaps) because of the sea and sands. Room can be provided for all.

HOSPITAL FACILITIES.

The Hospital facilities available for the Burgh are as follows:—

City Fever Hospital—Infectious Diseases.

Memorial Cottage Hospital—General Medical, Surgical and Maternity Treatment.

Scores Nursing Home—General Medical, Surgical and Maternity Treatment.

Glenlomond Sanatorium—Tuberculosis.

Thornton Infectious Diseases Hospital—Ophthalmia Neonatorum.

St. Leonards School Seniors' Children's Convalescent Home provides accommodation for boys and girls, to the number of 15, convalescent from non-infectious diseases and disorders acquired in other larger cities of Scotland.

The practice of accommodating occasional maternity cases in the Home of Rest was discontinued during the year, provision for all necessitous maternity cases having been arranged in the Scores Nursing Home.

Smallpox Hospital Accommodation.—In the course of the year a communication was received from the Department dealing with the provision of one Smallpox Hospital for the County of Fife,

both burghal and landward, and for the County and Burgh of Kinross. A statement was also received from the Kirkcaldy Joint Hospital Committee defining the conditions upon which the Local Authority would be entitled to send smallpox cases to the Thornton Smallpox Hospital. It was ascertained that the Williamstead Joint Smallpox Hospital, which was available for smallpox cases from St. Andrews, was in a thoroughly dilapidated condition and totally unsuitable for the accommodation of patients. Three alternative plans were submitted to the Town Council for consideration and at the end of the year the Medical Officer of Health was asked formally to report on the proposal that St. Andrews Burgh should enter into a joint scheme with the authorities making up the Kirkcaldy Hospital combination.

The conveyance of infected persons and the disinfection of infected articles are dealt with in the Report of the Sanitary Inspector. The practice at St. Leonards School of conveying infected persons from Schoolhouses to Sanatorium in a hired horse-drawn cab continues. It has been ascertained that the cab is retained for the purpose and is not for hire as a public conveyance. Disinfection after use is thoroughly performed by the hirer. Articles in contact with a case of infectious disease at St. Leonards School are fumigated with sulphur or formaline for 8 to 12 hours in a closed room. The arrangements which exist in the local Laundry for the disinfection of infected articles received from the School as well as from the Town are of a highly satisfactory nature. Unless by contact with an infected person, there is little or no chance of a spread of infection from the School to the Town. A special investigation into this matter was made by the Medical Officer of Health during the year in the course of an outbreak of measles affecting both Town and School.

INFECTIOUS DISEASES.

The total number of notifications made to the Medical Officer of Health was 60. Classified according to diseases these were as follows :—

Typhoid Fever,	..	..	..	..	2
Diphtheria,	..	..	..	..	23
Erysipelas,	..	..	..	..	3
Ophthalmia Neonatorum,	..	..	..	..	1
Chickenpox,	..	..	..	..	11
Malaria,	..	..	..	..	1
Dysentery,	..	..	..	..	2
Acute Primary Pneumonia,	..	..	..	..	5
Acute Influenzal Pneumonia,	..	..	..	..	3
Pulmonary Tuberculosis,	..	..	..	..	6
Non-Pulmonary Tuberculosis,	..	..	..	..	3
Total,	..	..	..	..	60

In addition to the above, through a system of partial notification arranged with the staff of the James Mackenzie Institute, 158 cases of measles were reported.

One hundred and twenty-five cases of infectious diseases were removed to Hospital or other institutions. Classified according to disease these were as follows, the average stay of patients in the City Hospital being 24 days :—

			City Hospital.	Other Institutions.
Typhoid Fever,	..	..	1	1
Diphtheria,	..	..	22	—
Erysipelas,	..	..	3	—
Chickenpox,	..	..	1	4
Dysentery,	..	..	1	—
Pulmonary Tuberculosis,	..	..	—	4
Non-Pulmonary Tuberculosis,	..	..	—	3
Measles,	..	..	11	74
Total,	..	..	39	86

In addition 8 cases were admitted to the City Hospital for purposes of observation. Four of them were suffering from gastroenteritis of brief duration not due to any known organism ; 2 of them, living under bad housing conditions, had a rash which simulated that of scarlet fever but was of influenzal origin ; 2 of

them were sent in as diphtheria cases but were proved to be cases of ordinary tonsillitis. The total number of cases treated in the City Hospital, therefore, was 47.

Incidence and Housing Conditions.

<i>Disease.</i>	<i>Size of House.</i>				
	<i>One room.</i>	<i>Two rooms.</i>	<i>Three rooms.</i>	<i>Four rooms.</i>	<i>Five and more rooms.</i>
Typhoid Fever,	—	—	—	—	2
Diphtheria,	4	11	1	4	3
Erysipelas,	—	1	2	—	—
Ophthalmia Neonatorum,	—	1	—	—	—
Chickenpox,	—	1	3	1	—
Malaria,	—	—	—	—	1
Dysentery,	—	—	2	—	—
Acute Primary Pneumonia,	1	2	—	—	2
Acute Influenzal Pneumonia,	—	1	—	—	2
Pulmonary Tuberculosis,	—	1	1	2	2
Non-Pulmonary Tuberculosis,	—	2	—	—	1
Measles,	4	35	19	5	21
Total,	9	55	28	12	34

SCARLET FEVER.

There were no cases of scarlet fever in 1928.

Diphtheria.

An epidemic of diphtheria occurred in the latter months of the year, commencing in September and continuing until March of the present year. Forty-five individuals were infected.

Epidemiology.—At the beginning of September a child attending one of the Infant Schools was infected, almost certainly, by a visitor to the town. The child attended school with a sore throat for four days before medical advice was sought, with the result that six of her schoolmates developed diphtheria of a more or less severe type. One of these children resided in a tenement house in the town and was ill and away from school for a fortnight before he was seen by a doctor. The result was a heavy infection of the tenement house and a spread of the disease to a bakery and probably (although it was not proved) to a dairy. Isolated cases then occurred throughout the town, the origin of their attack being for the most part clearly traceable to these shops. Fortunately, the shop infections were detected at a very early period and steps were taken to prevent any further spread.

Epidemic Control.—It was a remarkable fact that the school infection was limited to the six children mentioned and that, with the exception of the child who lived in the tenement house, none gave rise to other cases. The original case was detected on the 22nd September and the six contact infections occurred between the 24th and the 29th. Preparations were made to swab the throats of the entire school (183 infants). In the interval, however, no further cases occurred and to avoid causing undue alarm, it was decided to postpone the procedure. A distinct risk was thereby taken and, even although no evil effects resulted, it is doubtful if the step was justified. One result of the school infection, however, was that the visits which it occasioned gave rise to opportunity for propaganda work in connection with immunisation by means of toxoid-antitoxin injection. All the inmates of the tenement house were swabbed, as were the workers in the dairy and the bakery. A case of diphtheria and a carrier were detected in the bakery and a carrier in the dairy. All were isolated. It is of interest to note that three widely separated cases in the town were found to have consumed cream sponges purchased from the bakery (this was their only common article of diet) and that the carrier in the bakery was a girl whose duty it was to prepare cream for use. From the first week of the epidemic until it had definitely subsided, by arrangement with the general practitioners of the town, every sore throat coming to

their notice was swabbed. In the course of the investigation nearly five hundred throat swabs were examined. All infected cases, with the exception of one who was completely isolated at home, were isolated in the City Fever Hospital.

Symptomatology.—Twenty-four of the affected persons were clinically unmistakable cases of diphtheria. In each case a typical diphtheritic membrane covered the tonsils, and in 12 of them the uvula and soft palate were involved. In one case the infection spread to the nasal mucous membrane. Seven of the cases had a diphtheritic infection of the tonsils which could not be distinguished clinically from ordinary follicular tonsillitis. In the course of the epidemic 14 carriers (11 of them resistant hosts) were detected. These presented no clinical signs of infection and were in excellent health. On admission to hospital, in the majority of acute cases, the knee jerks were absent.

It is very important to emphasise the occurrence of 7 cases of diphtheritic tonsillitis in the outbreak. Since the local clinical signs do not resemble those of diphtheria, this type of case is liable to be overlooked. Absence of knee jerks and an unduly protracted and prostrating illness may raise suspicions after a few days, but by that time irretrievable damage may have been done. On the other hand individuals who have previously acquired a certain degree of immunity may recover uneventfully. But for the fact that the general practitioners took brushings from every case of sore throat in the town, the probability is that some of these patients would have developed serious complications and that others would have remained at large spreading infection to neighbours.

Treatment.—All the cases of diphtheria received toxin antitoxin in doses ranging from 4000 to 32,000 units. It was noticeable that a longer time elapsed before negative swabs were obtained from those cases who received the smaller doses than from those, equally indisposed, who received larger doses. Four of the cases developed post-diphtheric complications. Each had a membrane involving the tonsils but none was really very ill. Yet one developed paralysis of the visual accommodation, another slight

palatal paralysis and two a definite and persistent interference with cardiac rhythm. These cases occurred early in the epidemic and, on account of the apparent mildness of their infection, received only 8000 units. One child, the boy who infected the tenement house, continued to give positive swabs in spite of intensive local treatment. Eventually tonsillectomy was performed and subsequently diphtheria bacilli were found to be no longer present in the throat brushings.

Schick Test.—No time was lost in administering serum to the cases of clinical diphtheria. In a few children, however, the Schick Test was performed just prior to the serum injection. Five of the cases of diphtheritic tonsillitis were Schick positive on admission and received serum treatment, one subsequently requiring tonsillectomy. One was negative and the other gave a negative pseudo-reaction. These received no serum treatment and cleared up after local antiseptic treatment. Three of the carriers were Schick positive on admission and received prophylactic doses of antitoxin; the others (resistant hosts) were negative and received no antitoxin. The Schick test was performed in all cases before discharge from Hospital; all gave negative results. (See Tabular Summary).

Morbidity and Mortality.—Generally speaking the outbreak was characterised by a comparatively mild degree of illness. In no case was the larynx involved and in only three cases were signs of toxæmia sufficiently marked to cause anxiety. One case, a boy attending school and residing in the county, died.

Incubation Period.—The incubation period varied from 48 hours to 6 days. At the beginning of the epidemic the incubation period was shorter than at the end. Clinical and bacteriological investigations provided good reasons for assuming that many of the cases in the later stages of the outbreak had sickened primarily with an ordinary follicular tonsillitis on which was superimposed the diphtheritic condition. Diphtheria bacilli had probably been present in the throat for some period before the onset of diphtheria.

Bacteriology.—Klebs Loeffler Bacilli were isolated in every case. There was one exception, however, that of a woman of 51 years who had been ill for 8 days before admission to Hospital and who presented a very definite clinical picture of diphtheria. Numerous cultures from her throat showed a very mixed coccal and bacillary infection in which the diphtheria bacillus was not definitely detected.

All the Klebs Loeffler strains fermented glucose and saccharose. Tests for virulence were carried out by subcutaneous inoculation of rabbits. Preparations from the clinically unmistakable cases produced, in two to three days time, an erythema round the site of puncture of a degree varying from moderate to intense. Preparations from the cases of diphtheritic tonsillitis produced a faint erythema round the site of puncture. Inoculations from the carrier cases produced a varying degree of redness.

It was noticeable that in many cases throughout the epidemic spirochaetes and fusiform bacilli, morphologically indistinguishable from Vincent's organism, were in symbiosis with Klebs Loeffler bacilli. Indeed examinations of films of throat brushings frequently favoured a diagnosis of Vincent's Angina rather than one of diphtheria. Cultures, however, always displayed the presence of true diphtheria organisms.

Comments.—From the epidemiological point of view the outbreak was characterised by the comparative mildness and the diversity of its clinical features. From the administrative point of view it was of interest as illustrating the help which can be rendered by general practitioners in the control of epidemics, in that the swabbing of contacts and of every case of sore throat was left in their hands. Out of an unprotected population of about 12,000 people only 45 individuals were infected, of whom 14 were carriers and 7 were suffering from an inflammatory condition of the throat clinically indistinguishable from ordinary follicular tonsillitis.

Tabular Summary.

I. Cases of Clinical Diphtheria.

Case.	Sex.	Age.	Days in Hospital.	Organisms.	Units of Antitoxin.	Schick Test.		Remarks.
						On Admission	On Discharge	
1.	F.	7	29	K.L.B.Sp.	8000	Positive.	Negative.	Loss of power of accommodation developed in 3rd week.
2.	F.	4	29	K.L.B.	16000	..	Negative.	
3.	M.	6	27	K.L.B.	16000	..	Negative.	
4.	M.	6	25	K.L.B.Sp.	8000	..	Negative.	Slight palatal paralysis developed in 5th week.
5.	F.	6	25	K.L.B.Sp.	12000	..	Negative.	Admitted on 10th day of illness.
6.	M.	6	54	K.L.B.	12000	Negative.	Negative.	Tonsillectomy.
7.	M.	6	49	K.L.B.	16000	..	Negative.	
8.	M.	4	36	K.L.B.Sp.	8000	..	Negative.	Cardiac irregularity developed in 3rd week.
9.	M.	9	37	K.L.B.	24000	..	Negative.	
10.	M.	7	78	K.L.B.	16000	..	Negative.	
11.	F.	38	29	K.L.B.	12000	..	Negative.	
12.	F.	17	33	K.L.B.	16000	..	Negative.	
13.	M.	7	..	K.L.B.	32000	..	..	Died.
14.	M.	10	39	K.L.B.	16000	..	Negative.	
15.	F.	8	31	K.L.B.	8000	..	Negative.	
16.	M.	22	24	K.L.B.Sp.	16000	Positive.	Negative.	Cardiac irregularity developed in 3rd week.
17.	F.	12	28	K.L.B.	8000	..	Negative.	
18.	F.	19	28	K.L.B.Sp.	4000	..	Negative.	
19.	F.	40	16	K.L.B.Sp.	4000	Positive.	Negative.	
20.	M.	13	24	K.L.B.Sp.	12000	..	Negative.	
21.	M.	5	39	K.L.B.	32000	..	Negative.	Nasal Infection.
22.	F.	11	26	K.L.B.	16000	..	Negative.	
23.	M.	15	26	K.L.B.	16000	..	Negative.	
24.	F.	51	25	..	24000	Positive.	Negative.	

II. Cases of Diphtheritic Tonsillitis.

Case.	Sex.	Age.	Days in Hospital.	Organisms.	Units of Antitoxin.	Schick Test.		Remarks.
						On Admission	On Discharge	
1.	M.	7	49	K.L.B.	8000	Positive.	Negative.	Tonsillectomy. Throat appearances and subjective signs were those of severe follicular tonsillitis.
2.	F.	9	23	K.L.B.	4000	Positive.	Negative.	
3.	M.	17	13	K.L.B.	4000	Slightly positive.	Negative.	
4.	F.	26	17	K.L.B.	4000	Slightly positive.	Negative.	
5.	M.	23	14	K.L.B.	..	Negative.	Negative.	
6.	F.	16	10	K.L.B.	8000	Slightly positive.	Negative.	
7.	F.	44	10	K.L.B.	..	Negative.	Negative.	

III. Carriers.

Case.	Sex.	Age.	Days in Hospital.	Organisms.	Units of Antitoxin.	Schick Test.		Remarks.
						On Admission	On Discharge	
1.	M.	14	13	K.L.B.	..	Negative.	Negative.	
2.	F.	9	9	K.L.B.	..	Negative.	Negative.	
3.	M.	14	14	K.L.B.	..	Negative.	Negative.	
4.	F.	15	21	K.L.B.	..	Negative.	Negative.	
5.	F.	14	16	K.L.B.	..	Negative.	Negative.	
6.	M.	11	15	K.L.B.	..	Negative.	Negative.	
7.	M.	7	13	K.L.B.	..	Negative.	Negative.	
8.	F.	35	16	K.L.B.	..	Negative.	Negative.	
9.	F.	11	18	K.L.B.	8000	Positive.	Negative.	Contact case detected during incubation period.
10.	M.	1	20	K.L.B.	4000	Positive.	Negative.	Do.
11.	F.	17	21	K.L.B.	6000	Positive.	Negative.	Do.
12.	F.	27	13	K.L.B.	..	Negative.	Negative.	
13.	F.	19	16	K.L.B.	..	Negative.	Negative.	
14.	F.	15	12	K.L.B.	..	Negative.	Negative.	

K.L.B.—Klebs Loeffler Bacilli. Sp.—Organisms indistinguishable from Vincent's organism.

Scarlatina and Diphtheria Immunisation.

The outbreak of diphtheria described gave some impulse to the immunisation campaign which has been in operation for the past three years. Up to the end of the year, however, the number of people who received protection was not so great as was to be expected. Reference has already been made to the 44 patients who were tested for susceptibility to diphtheria and from the tabular summary it will be seen that results correspond to the clinical findings. In addition to these another 24 persons were tested, five of them proving susceptible. No cases of Scarlet Fever having occurred during the year, there was little opportunity for applying the Dick Test. Eighteen persons, however were tested for susceptibility. The majority of them gave a positive result, some of them at an age when one would naturally expect a negative result. Conclusions, however, cannot be justly based on small figures.

Fourteen persons received combined protective inoculation against Scarlet Fever and Diphtheria. Three persons were inoculated against Diphtheria. In these persons, in place of the Schick test, the first subcutaneous injection was used as an indication of susceptibility.

It was noted that no person who had previously been immunised contracted diphtheria during the outbreak.

Erysipelas.

One family was severely infected with erysipelas. A baby of five months sickened with the disease. The mother nursed the child for a few days and herself contracted the disease. On the following day her son, aged 3 years, fell ill with a temperature and a scarlatiniform rash. All were removed to Hospital. The baby was found meanwhile to have developed broncho-pneumonia and, in spite of serum treatment (Erysipelas and Scarlet Fever), the inflammatory condition became generalised. Subsequently a cerebral abscess developed and the infant died. Otorrhoea complicated the mother's condition but she made an otherwise uninterrupted recovery. Pyrexia, erythema and congestion of the throat continued for some days in the case of the son, whose

condition simulated but was not truly scarlet fever. He remained Dick positive throughout. An interesting bacteriological point was that a like strain of streptococcus was isolated from the throat of the son, the ear of the mother and the skin lesions of the baby.

Chickenpox and Smallpox.

Chickenpox continued to be a notifiable infectious disease throughout the year. Eleven cases occurred in the town, six of them in St. Leonards School Seniors Children's Convalescent Home.

The following letter which was written to the Town Council on July 23rd, 1928, describes the position of the town at the middle of the year with reference to protection against smallpox :—

“ During the past sixteen months outbreaks of Smallpox have occurred in the neighbourhood of St. Andrews and there is reason to expect that the disease will spread to other parts of Scotland.

Smallpox is a costly disease. It is costly to combat and its presence seriously handicaps the enterprise of important sections of the community. Any outbreak of smallpox in St. Andrews would be a serious check to the town's prosperity. For this reason, it is incumbent upon the Town Council to take stock of the measures available for resisting infection.

I have dealt elsewhere with the Hospital accommodation provided for local cases of smallpox. The purpose of this memorandum is to call attention to certain grave defects in the protective armour of the citizens.

The first of these refers to the number of unvaccinated members of the community. During the past ten years the number of infants, unvaccinated on account of the conscientious objections of their parents, has varied yearly from 13 to 38 per cent. According to a recent census, 70 per cent. of the children attending the Burgh School are unvaccinated and 11 per cent. have been inadequately vaccinated—a total of 81 per cent. of unprotected children. No means are available for ascertaining the state of affairs among the adult population.

The reason for this serious situation rests with excessive claims for exemption by professed conscientious objectors. While one has every respect for those who entertain a genuine belief that vaccination is prejudicial to the health of a child, one cannot help wondering to what extent the sworn declaration of others is prompted by a conviction that vaccination is prejudicial to their own comfort, because of the possibility of a fretting child. It is a noticeable fact that the great majority of the conscientious objectors of St. Andrews reside within the circumscribed area having its centre at the east end of Market Street. There is reason to

believe that sometimes those authorised to receive a statutory declaration regard their privilege too lightly and make no attempt to point out to applicants the serious nature of their undertaking. It is now to be regarded as fully established that vaccination will prevent smallpox, so much so that it has been stated authoritatively that 'smallpox is the perquisite of those who care to have it.' In the neighbouring areas where the disease has occurred not a single vaccinated person took the disease.

I beg to suggest to the Town Council that it take upon itself to point out to the citizens of St. Andrews and to those who witness the solemn declarations of those who claim exemption on conscientious grounds, that the present situation is a dangerous one, and that both declarers and witnesses should understand the full significance of their action.

The second defect in the means for prevention of smallpox lies in the present mild nature of the disease. Unfortunately there is no reason to believe that it will remain mild. Frequently the disease has been confused with chickenpox and has remained unrecognised until many people have become infected. In St. Andrews, there is a tendency on the part of parents to regard chickenpox as a disease of no consequence and unworthy of the attention of a doctor. Therein lies a danger. The disease may not be chickenpox. It may be smallpox. I suggest, therefore, that the Town Council impress upon the citizens of St. Andrews that it is desirable and necessary that the family doctor be consulted on the occurrence of a case of chickenpox in a household.

In conclusion let me point out that facilities for free vaccination have been given to the citizens of the town more than a year ago. These facilities are still available."

Following upon consideration of the terms of the letter, the Town Council, later in the year, caused an appropriate notice to be inserted in the press and posters to be exhibited in the town. All those connected with the Mother and Child Welfare Scheme were advised to urge upon mothers the necessity of having their children vaccinated. At the end of the year the percentage of unvaccinated infants in the Burgh, as determined by comparing the number of infants of age and unvaccinated on account of the conscientious objections of their parents with the total births in the year, was 11, the lowest percentage on record.

Gastro-Intestinal Infections.

Six cases of diarrhoea and vomiting occurred suddenly during one week in February. From one of the cases an unrecognised virus of the Dysentery group was isolated. Milk from a certain

dairy was the only common factor in the food supply. Investigations at the dairy, however, proved abortive. The outbreak subsided as quickly and as mysteriously as it arose.

Early in May two children, of different families, were found to be suffering from diarrhoea and vomiting. Both children were in the same class at school and from one of them *B. dysenteriae* Flexner was isolated. There was no evidence of infection from food but, in the course of investigation, suspicion was aroused that a carrier of the disease existed in the family of one of the children. Repeated examinations of specimens were made but no bacteriological confirmation was obtained. Meanwhile it was found that the father of the infected child had become infected from the child. All the cases were isolated in Hospital and no further spread occurred.

Two cases of paratyphoid fever occurred in the month of September. One case was admitted to the Scores Nursing Home from the County when it was found that her blood serum, in a dilution of 1 in 640, agglutinated *B. paratyphosus* B. Her illness was complicated by a lesion of the central nervous system and for several weeks she was seriously ill. Eventually, however, she made a complete recovery. The other case was that of a boy of twelve years who fell ill four days after arriving in the Burgh on holiday. His blood gave a positive Widal reaction to *B. paratyphosus* B. in a dilution of 1 in 160. He was isolated in Hospital and made a rapid and uneventful recovery. So far as is known no source of infection in either case was discovered.

Pneumonia.

Eight cases of pneumonia occurred during the year, three of them influenzal. There were four deaths, one in infancy, one in childhood and two in adult years.

Tuberculosis.

Nine cases of tuberculosis were notified during the year. These and those notified in previous years made a total of 18 persons in the Burgh who were known, at the end of the year, to be suffering from tuberculosis. Eleven were males and seven were

females. Fourteen of them were suffering from tuberculosis of the lungs and four of them from tuberculosis of bones or glands. There were five deaths (4 males and 1 female), all of them from infection of the lungs.

There was an increase during the year in the number of cases from St. Andrews admitted to Glenlomond Sanatorium. At the beginning of the year one St. Andrews case was in the institution and during the year seven cases were admitted. Of recent years a considerable amount of publicity has been given locally to the desirability of sanatorium treatment for cases of tuberculosis. The doctors and the visiting nurse have been urging patients to seek the benefit of this form of treatment. These factors have undoubtedly contributed to the increase in the number of admissions and it is significant that of the five cases who died three had refused to have sanatorium treatment and two had delayed so long as to have become hopeless subjects. It is not suggested that this form of treatment will cure the disease but it has been repeatedly demonstrated that the rest obtained and the habits acquired in the course of institutional treatment serve to arrest the progress of the infection and to convert distressed invalids into fit citizens, no longer a menace to their fellows. If persons who find they are becoming unduly tired, continuously losing weight, persistently coughing, occasionally spitting blood, or suffering from pains in the chest or from bloodlessness were to see a doctor at once for a thorough examination, a great advance would be made in the prevention of tuberculosis. It is not carelessness which causes many sufferers to delay seeking medical advice but fear lest their forebodings may prove justified. Their forebodings may indeed prove justified but their fear is never justified because the longer the delay in detecting the disease, the less the chance of possible relief.

The scheme of Home Visitation of tuberculous patients, inaugurated in 1927, was continued during the year. In July 1928, the following report was sent to the Department of Health :

“ I beg to submit, in terms of the letter of the Board, dated July 5th, 1927, a report on the work carried out under the above arrangement, for the year 1st July 1927 to 30th June 1928.

Home visitation was carried out by the District Nurse under the St. Andrews Nursing Association, acting under the supervision of the Medical Officer of Health. Each patient on the register was visited monthly and reports were transmitted to the Tuberculosis Officer and to the general practitioners concerned.

The reports were of considerable value. Since the Tuberculosis Officer resides at some distance from the town and has other districts to visit, he has been hitherto unable to attend at St. Andrews as frequently as might have been, perhaps, desirable. These reports then have kept him in touch with the progress of patients and have been a means of increasing the usefulness of his visits by indicating the onset of a relapse in certain patients. The great majority of the patients are pleased at the attention they are receiving. During the year under review five patients were induced to go to Glenlomond Sanatorium, a record for St. Andrews.

Again, in addition to reporting on the well-being or ill-being of patients, the Nurse has provided useful information regarding environmental conditions. As the result of the information so received, steps have been taken in some cases to prevent a possible spread of infection.

The following information has been compiled :—

A.

Number of cases on the Register during the year under review, ..	38
Number of cases visited,	31

B.

Cases not visited.

<i>Pulmonary.</i>	<i>Non-Pulmonary.</i>	<i>Remarks.</i>
2	..	Died in Hospital or Institution.
3	..	Removed from Register as quiescent.
1	..	Diagnosed as non-tuberculous.
..	1	Left District.
6	1	Total.

C.

Cases ceased to be visited during the year.

<i>Pulmonary.</i>	<i>Non-Pulmonary.</i>	<i>Remarks.</i>
2	1	Declined to be visited.
2	..	Died.
5	..	Diagnosed as non-tuberculous.
2	..	Left District.
11	1	Total.

D.

Number of visits.

	<i>Cases.</i>	<i>Visits.</i>
Pulmonary,	25	142
Non-Pulmonary,	6	34
	31	176

E.

Environmental conditions of cases diagnosed as definitely tuberculous.

1. Sleeping arrangements :—

	<i>Pulmonary.</i>	<i>Non-Pulmonary.</i>
Sleeping alone,	6	4
Sleeping alone but sharing bedroom,	2	1
Sharing bed with wife, husband, mother, sister or baby, ..	11	..
Sharing bed with others occupying bed in room,	1	1
Total,	20	6

2. Housing Conditions :—

	<i>Pulmonary.</i>	<i>Non-Pulmonary.</i>
Two rooms,	10	2
Three rooms,	3	1
Four rooms,	3	2
Five rooms and over,	1	1
Institutions, etc.,	3	..
Total,	20	6

It will be observed that the majority of cases of tuberculosis in the Burgh reside in two-roomed houses and have unsatisfactory sleeping arrangements."

Measles.

In the spring of the year an epidemic of measles occurred in St. Leonards School. Up till the end of March the outbreak was confined to girls in residence and to day girls attending the School. In the beginning of April the disease spread to the town and until

the end of May its incidence was practically confined to the Woodburn area. In June, North Street, Argyle Street and James Street were infected in turn. In July there were cases in every part of the town. At the end of the month, however, fresh cases had ceased to occur and early in August it was definitely established that the epidemic had come to an end.

A system of partial notification was arranged with the general practitioners of the town and when the epidemic had ended it was found that 74 children and 10 adults had been infected in the town and that 74 girls had been infected in St. Leonards School.

Generally speaking the symptoms were of a mild nature, but one or two children became severely ill through lung complications. When it was found that home conditions were such that the child could not be adequately nursed or isolated, removal to Hospital was effected. By this means the spread of infection was checked to a certain extent and two children at least were nursed through a very severe illness.

Ailments among Panel Patients.

During the year an investigation was made among 2000 panel patients into the causes of incapacity. Two hundred and fifty patients were treated. The chief disorder was common diseases of the respiratory tract including bronchitis and influenza. These comprised 22 per cent. of the total illnesses. Major and minor injuries due in the main either to motor or to occupational accidents came next with 19 per cent. Gastro-intestinal diseases followed with 9 per cent. Tonsillitis, diseases of the skin, rheumatic diseases and infectious diseases, each claimed 7 per cent. Diseases of the circulatory system accounted for 5 per cent. Diseases of the genito-urinary tract and of the eye each equalled 3 per cent., while diseases of the bones and joints represented 2 per cent.

The group investigated is to be regarded as representative of an average panel practice. The majority of the illnesses which occurred do not come within the direct purview of public health administration and yet the ailments noted represent the principal causes of incapacity among the people. Medical science has not

yet discovered the cause of many common complaints and, since their observation and treatment must remain in the hands of the general practitioners, it is difficult to conceive how much headway can be made until the work of the general practitioner is more intimately linked up with the services provided under public health administration.

The Tonsil-Adenoid Operation.

A paper of considerable interest to public health workers was contributed by Dr. J. Hunter P. Paton, Medical Officer to St. Leonards School and a member of the staff of the James Mackenzie Institute, to the *Quarterly Journal of Medicine*, Vol. 22, No. 85, 1928. Dr. Paton reviewed the medical histories of 424 girls on 182 of whom the tonsil-adenoid operation has been performed. His conclusions are that "while it is undoubted that, in a considerable number of cases, great benefit results from the tonsil adenoid operation, it is evident that a more conservative method of dealing with many of the cases must be devised and especially that attempts should be made to discover some method, other than surgical removal, of dealing with adenoid overgrowth in the nasopharynx."

When those operated on were compared with those not operated on, it was found that, among the former, there were more bad teeth (51 per cent. *v.* 46 per cent.), more postural spinal defects (32 per cent. *v.* 30 per cent.), more defective vision (26 per cent. *v.* 23 per cent.), more defective hearing and otorrhoea (14 per cent. *v.* 12 per cent.), more flat foot (13 per cent. *v.* 10 per cent.), more bone deformity (4 per cent. *v.* 3 per cent.), and more rheumatism (12 per cent. *v.* 8 per cent.). There was, however, less palpable enlargement of the anterior cervical glands (11 per cent. *v.* 14 per cent.), and less heart abnormalities (3·8 per cent. *v.* 4 per cent.). Of the cases of otorrhoea in the series more occurred subsequent than prior to the adenoid operation.

The numbers dealt with by Dr. Paton are perhaps too small and his population too selected to permit of a general application of his findings, but his results certainly call for an investigation on similar lines on a wide scale. At present it appears that more

than 50 per cent. of the children of the well-to-do classes are subjected to the tonsil-adenoid operation without any noticeable benefit to them as a group, indeed their after-histories seem to suggest a harmful effect. Has the tonsil-adenoid operation been too zealously prosecuted ?

Venereal Diseases.

The incidence of venereal diseases was very low. Among males 3 cases of neurosyphilis, 1 of tertiary syphilis and 2 of gonorrhoea were seen for the first time during the year. Among females 1 case of tertiary syphilis and 3 cases of gonorrhoea were examined. Eight persons presented themselves for examination for the diseases but were found to be free from infection. These figures refer to the work of the medical practitioners and of the Medical Officer of Health. In addition 1 case of syphilis attended the Treatment Centre at Dundee and 4 other persons were found, after examination, not to be suffering from infection. The fact that more people presented themselves for examination than were found to be suffering from the diseases is a good sign. There are probably districts in Scotland where a system of partial notification of venereal diseases would be beneficial but such a measure, as things are at present, would be quite unnecessary in St. Andrews. Small place though the town may be, persons who have run the risk of infection now approach their doctors for advice with confidence and with security.

Treatment.—Treatment was provided at home, at the special Centre in Dundee, or at the Clinical Institute. Four courses of salvarsan substitute, comprising 37 doses, were administered by the Medical Officer of Health and three, comprising 27 doses, by general practitioners.

Laboratory Facilities.—Under the combined scheme with the County of Fife, laboratory investigations are undertaken in the University College, Dundee, otherwise they are made in the Clinical Institute, St. Andrews. Specimens of blood and exudates, taken during inspections under the various Mother and Child Welfare Organisations, are examined in the laboratories of the Clinical Institute.

MOTHER AND CHILD WELFARE SCHEME.

Infantile Mortality.

The number of deaths in infants under 1 year of age was nine, representing a rate of 76 per 1000 births, calculated on the estimated population to the middle of 1927. The rate in 1927 was 46 per 1000 births. For the reasons given in the Statistical Section of this Report the increase is not to be regarded as having been to any degree preventable. According to age groups the deaths may be classified as follows :—

- (a) Under one week—5 (42 per 1000 births).
- (b) 4 weeks and under 3 months—1 (8 per 1000 births).
- (c) 3 months and under 6 months—1 (8 per 1000 births).
- (d) 6 months and under 12 months—2 (17 per 1000 births).

According to causes of death they may be classified as follows :

Erysipelas,	1
Meningitis (not tuberculous),	1
Hydrocephalus,	1
Acute Primary Pneumonia,	1
Congenital Malformations (Spina Bifida),	1
Melaena Neonatorum,	1
Premature Birth,	2
Shock, Haemorrhage,	1

Mortality in Children (1—5 years).

It is satisfactory to have to report that no deaths occurred among children of the 1-5 years age group.

Births.

The number of legitimate births registered and corrected for transfer was 109, comprising 47 males and 62 females. The number of illegitimate births registered was ten, 4 being males and 6 females. The total number of births notified to the Medical Officer of Health was 115 of which 67 were attended by doctors, 34 by midwives and 14 in Maternity Nursing Wards. There were 3 still births, all of which occurred in the practice of doctors and 1 miscarriage. Six infants were born alive prematurely.

Maternal Mortality.

One death occurred in the practice of a doctor. Severe ante-partum haemorrhage occurred and death from shock resulted after parturition.

Report under Midwives (Scotland) Act, 1915.

Four midwives gave notice under Section 18 of their intention to practice inside the Burgh. There was one case of Ophthalmia Neonatorum and no cases of Puerperal Sepsis.

There were 10 cases of emergency, necessitating the calling in of Medical Practitioners, as follows :—

Ruptured Perineum,	6
Delay in first stage of labour,	1
Delay in second stage of labour,	1
Pyrexia (Bronchitis),	1
Premature Birth,	1

The calls for medical help were two less than those of the previous year. All demands were justifiable.

One midwife is in residence in the Child Welfare Centre, her whole time being occupied with ante-natal work, with attendance at labour and with post-natal observation on breast-fed infants. A second midwife, who is primarily a child welfare nurse engaged in " follow-up " work among children of the 1-5 age period and in care of the few bottle-fed infants, is available when the whole-time midwife is off duty. This rearrangement of duties was effected when, during the course of the year, a change in the personnel of the staff occurred. A third midwife is engaged in private practice.

No indications of malpractice occurred in the Burgh during the year and no investigation was called for. The hands, uniforms, equipment and registers of the midwives were inspected by the Medical Officer of Health.

The midwives were successful in persuading a considerable number of pregnant women, who otherwise would have been without medical attention, to seek advice during the course of pregnancy.

An increase in the indoor staff of the Child Welfare Centre has liberated the midwives from certain ward duties and has given them more time for attention to out-patients.

Altogether, through the facilities provided under the Act, there has been an increase in the efficiency of the services available for the Burgh.

Home Visitation.

During 1928, 523 children appeared on the register of the Child Welfare Centre as compared with 501 children in 1927. With the exception of a few children resident at a distance in the County, all the children were visited.

	Number Visited.	Total Visits.
Infants,	202	1488
Children (1—5 years), ..	274	1484
Expectant Mothers,	103	454
	<hr/>	<hr/>
	579	3426
	<hr/>	<hr/>

The following figures are applicable to the number of infants at the age of 6 months :—

(i) Breast fed,	61
(ii) Partially breast fed,	11
(iii) Artificially fed,	27

Ante-Natal Consultation.

During the year a room in the James Mackenzie Institute for Clinical Research was fully equipped for the purpose of providing facilities for ante-natal consultations. The fact that certain structural alterations were necessary tended to delay the opening of the Clinic. At the end of the year, however, the following letter was issued to all general practitioners in the town :—“ The plans which were discussed at the Meeting on 12th July 1927, between the general practitioners of the Burgh and the Medical Officer of Health have now been completed. A room in the James Mackenzie Institute for Clinical Research has been equipped by

the Town Council for the purpose of ante-natal consultations. The following hours of consultations have been arranged." (Here followed a rota, each practitioner being allowed one session per month).

"The midwives have been instructed to urge all expectant mothers who are without medical attendance to attend for examination two or three times in the course of pregnancy. The midwives will notify the doctors concerned and will be present at the consultations in order to render any necessary assistance. A record card has been prepared detailing information to be obtained and the examinations to be made. The doctors should supplement the information supplied by the midwives by noting details of examination. The cards have been specially drawn up so as to avoid unnecessary writing. After completion they will be filed in the Institute and will be available for purposes of research.

While the arrangements have been made in order to ensure medical supervision of that considerable proportion of maternity cases in St. Andrews which are not attended before, during or after labour by medical practitioners, the facilities provided are also available for any other case which the doctors themselves may determine. It is to be noted that the value of the records kept in the Institute might be enhanced by the inclusion of an accurate ante-natal history such as can be afforded through the Ante-Natal Clinic."

The Clinic was opened at the beginning of the present year and attendances have been satisfactory.

Post-Natal Consultations.

No post-natal consultations are held in St. Andrews under the Scheme. Special arrangements are unnecessary. Post-natal work is in the hands of the general practitioners, in the ordinary routine of general practice, and in the hands of midwives who paid 1325 visits during the year in this connection.

Child Welfare Consultations.

Child Welfare Centre.

Clinics are held by Dr. A. Rowand, twice weekly in the Child Welfare Centre, in sessions lasting $2\frac{1}{2}$ hours each. One hundred and three sessions were held in 1928, during which 289 children were inspected. The following attendances were recorded :—

(a) Number of children attending—

(i) Under 1 year of age,	..	..	181
(ii) 1—2 years of age,	..	..	69
(iii) 2—5 years of age,	..	..	39
Total,	..	..	289

(b) Total number of attendances—

(i) Under 1 year of age,	..	..	871
(ii) 1—2 years of age,	..	..	243
(iii) 2—5 years of age,	..	..	115
Total,	..	..	1229

The following visits were paid to the Nurses at the Centre for purposes of direction as to feeding and baby hygiene :—

(i) Under 1 year of age,	..	..	127
(ii) Over 1 year of age,	..	..	51
Total,	..	..	178

There is a satisfactory indication of the usefulness and popularity of the various Mother and Child Welfare Organisations in the fact that 88 per cent. of the babies—rich and poor—born in 1928, received the benefit of the services provided.

James Mackenzie Institute.

In addition to the above, 73 special clinics, in sessions lasting $2\frac{1}{2}$ hours each, were held by Dr. Rowand in the James Mackenzie Institute for Clinical Research, for children over two years of age—

(a) Number of children attending,	..	..	331
(b) Number of attendances—			
(i) 2—5 years of age,	..	..	376
(ii) Over 5 years of age,	..	..	184
			<hr/>
Total,	..	..	560
			<hr/>

Concerning the illnesses recorded in the various Clinics held during 1928, Dr. Rowand reports, "Children suffering from acute diseases are not seen at the Child Welfare Centre or at the James Mackenzie Institute, but a history of such illnesses is obtained through the general practitioners and the nurses associated with the Centre. The system of regular observation from birth affords the opportunity of calling the attention of the mothers to conditions which require medical attention and nursing in the home, and it is found that in almost all cases they put the children under the care of the family doctor when advised to do so.

Respiratory troubles continue to be the main cause of illness and disability among the children, but mothers are gradually learning the value of open air and ventilation in combating tendencies to recurrent attacks. The improvement of the health of families on removal to the well planned houses and open spaces of the successive housing developments has been very manifest.

The malnutrition and digestive disorders from which children suffer in the absence of disease are largely due to unsuitable and irregular feeding and to general mismanagement in the earliest years of life. It is constantly impressed on the mothers that by following simple rules they may prevent such disorders which, when once established, cannot be completely overcome by bottles of medicine.

All the children who have shown a tendency to acidosis have been under instructions as to diet by the family doctors. When they are brought for observation the opportunity is taken to emphasise the importance of following these instructions.

Many children who have enlarged tonsils show no evil effects, but in all cases in which the tonsils are unhealthy and associated with adenoids the mothers are referred to the family doctor for

consideration of treatment, operative or otherwise. As a rule the doctor has already observed the condition and the notes at the Clinic on the child's general health, whether improving or the reverse, are available to assist him in forming a conclusion as to the best line of treatment.

An effort is made to ensure that no cases of otorrhoea lack treatment. The condition might often escape notice if the children were not under observation.

The amount of dental caries among children nearing school age is deplorable and school dentists have an overwhelming amount of work to face with every batch of newcomers. It is difficult to combat the common belief that the condition of the deciduous teeth is of little or no importance to the health of the child in the absence of persistent toothache. A good deal has been done, however, to correct the erroneous impression. On the first appearance of caries the mothers are strongly advised to seek early preventive treatment, and it is satisfactory to record that in about half of the cases in which the advice has been given the child has been taken to a dentist.

All cases of strabismus, photophobia, etc., have received treatment—Dr. Maitland Ramsay is ready to give his valuable advice in the case of all young children who are kept under observation.

The urine of every child attending the Child Welfare Clinics is examined in the laboratories of the Clinical Institute. The practice has proved to be well worth the labour entailed."

Special Treatment Centres.

No treatment is undertaken at the Child Welfare Clinics and no special treatment centres are run in connection with them. Children who require treatment are referred to their family doctor in every case. There is a marked degree of co-operation between the Child Welfare Organisation and the general practitioners in this respect.

Observation Nursery.

During the year facilities were provided, for the first time, for the overnight residence of ailing babies in the Child Welfare Centre by the appointment of a Truby-King Nurse. As a result,

not only were the difficulties which attend the removal home of babies overnight and during the week-end removed, but by liberating the Child Welfare Nurses from indoor duties a great increase in the number of outdoor visits took place. The Nurse was appointed in March and during the ensuing months eight babies were accommodated in the nursery. In addition 39 babies were brought to the nursery during the day for dietetic and hygienic care. The following attendances were recorded :—

		Resident.	Non-Resident.
(i) Under 1 year of age,	..	165	597
(ii) Over 1 year of age,	..	53	72
		<hr/>	<hr/>
Total,	..	218	669
		<hr/>	<hr/>

No charge was made for nursing or attendance but mothers who can afford to do so are expected to pay the cost of feeding.

Food and Milk Supply.

Three nursing mothers and four children, all in necessitous circumstances, were supplied each with one pint of certified milk daily by the Town Council and by the Parish Council. Help in kind was given freely by private individuals. Through the generosity of interested ladies a necessitous infant receives a daily supply of milk and the Centre its whole supply of Cod Liver Oil.

Measles.

An epidemic of measles of considerable dimensions occurred in the spring of the year. By arrangement with the staff of the James Mackenzie Institute every case of measles brought to the notice of the general practitioners of the town was reported to the Medical Officer of Health—a system of partial notification. In the course of the outbreak, which is described in detail in the Section of the Report dealing with infectious diseases, 158 persons were infected, 90 being over the age of 15 years. Ten children were removed to the City Hospital either because of the onset of broncho-pneumonia or because of bad housing conditions. No deaths resulted from the epidemic.

Whooping Cough.

The epidemic of whooping cough referred to in the Annual Report for 1927 recurred early in 1928 and lasted throughout the year. In many cases the degree of infection was so mild that medical advice was not sought, so that it was not possible to determine accurately the extent of the outbreak. It was estimated, however, that some 80 children were infected. Much reference was made, publicly and privately, through the medium of the press, the Child Welfare Clinics and the general practitioners, to the dangers and folly of exposing infected children in public places. In spite of these precautions, however, infected children were frequently to be heard in the streets, the shops, the parks and other public places. It was only after a measure of public indignation had been aroused that the appearance of such children among others began to be of less frequent occurrence. Fortunately no cases were so severely ill as to require removal to Hospital and no deaths occurred.

Ophthalmia Neonatorum.

One case of ophthalmia neonatorum, not of gonococcal origin, was notified by a doctor. The case was treated at home. No loss of vision ensued.

Provision for Maternity Cases.

Arrangements were completed during the year for the Hospital treatment, in the Scores Nursing Home, of necessitous maternity cases living under conditions which might have an injurious influence on their well-being and of necessitous cases of difficult or dangerous labour. These facilities were required for a case of abortion and an excellent recovery was made.

In accordance with the requirements of the Midwives and Maternity Homes (Scotland) Act, 1927, the Memorial Cottage Hospital and the Scores Nursing Home were inspected by the Medical Officer of Health. Both were reported upon favourably with regard to situation, sanitation, accommodation, staff and equipment. The Memorial Cottage Hospital has available 4 beds in single wards and the Scores Nursing Home 6 beds, 3 in one ward, 2 in another and 1 in a third. No further applications for registration were made during the year.

Provision for Puerperal Sepsis Cases.

Accommodation and treatment are provided for cases of puerperal sepsis in the City Fever Hospital. No cases, however, occurred during the year.

Statistical Review of Eight Years Work under the Mother and Child Welfare Scheme.

A. Child Welfare Register.

<i>Year.</i>	1921	1922	1923	1924	1925	1926	1927	1928
Number of children on register,	139	227	349	352	444	497	501	523

B. Visitations.

<i>Year.</i>	1921	1922	1923	1924	1925	1926	1927	1928
Maternity—								
(a) Confinements	92	87	80	94	80	94	90	97
(b) Ante-Natal Visits,	236	203	374	398	398	454	388	454
(c) Post-Natal Visits,	868	1110	1181	1375	1330	1134	1108	1330
Child Welfare—								
(a) Home Visitation, Under 1 year,	1109	880	1694	1072	995	1455	1183	1488
Over 1 year,					265	980	1344	1484
(b) Visits paid at Centre,	128	316	326	531	144	241	235	178
(c) Visits paid at Observation Nursery,	..	22	358	410	495	744	855	887
Others,	54	36	2	6	3	..	..	..
Total,	2487	2654	4015	3886	3710	5102	5203	5918

C. Consultations.

<i>Year.</i>	1921	1922	1923	1924	1925	1926	1927	1928
Infants' Clinics—								
(a) Number held	29	104	104	104	100	103	103	103
(b) Number attending—								
under 1 year				148			163	181
1—2 years	91	215	168	52	191	238	56	69
over 2 years				10			34	39
(c) Number of attendances								
under 1 year							930	871
1—2 years	389	652	792	1037	1061	1257	324	243
over 2 years							56	115
Children's Clinics—								
(over 2 years)—								
(a) Number held,	..	..	..	..	23	56	64	73
(b) Number attending,	..	..	..	..	100	213	251	381
(c) Number of attendances,	..	..	..	..	100	292	475	560

D. Day Nursery.

<i>Year.</i>	1921	1922	1923	1924	1925	1926	1927	1928
Number attending,	23	30	24	38	40	39
Number of attendances,	270	390	465	685	795	669

E. Ailing Babies Ward.

<i>Year.</i>	1921	1922	1923	1924	1925	1926	1927	1928
Number admitted,	..	1	4	4	7	3	2	8
Number of days in Ward,	..	22	88	20	30	59	60	218

F. Infant Feeding.

<i>Year.</i>	1921	1922	1923	1924	1925	1926	1927	1928
Per cent. breast fed,	59	64	61	62	63	59	66	62
Per cent. partially breast fed,	6	6	6	16	4	12	8	11
Per cent. bottle fed,	35	30	33	22	33	29	26	27

These figures need no explanation. The steady progress which has been made throughout the years provides a commendable indication of the nature of the work and of the increasing popularity of the various clinics.

WATER SUPPLY.

It was not to be expected that the improvements effected at the Water Works and in the catchment area in 1927 would completely solve the problem of the bacteriological impurity of the water supply of the town, nevertheless, it was to be hoped that an improvement would follow. Intensive investigations, however, at the beginning of 1928 showed that the new filters were only half as efficient as they should be and that the old filters were ten to a hundred times below the level of efficiency. It was ascertained and the sand used as a filter medium in both old and new filters was not of sufficient fineness and in many filters of insufficient depth. There was evidence, too, that the process of filtration was unduly quickened in order to keep up a volume of water in the storage wells sufficient to supply the needs of the town. It was also clear that a higher standard of cleanliness was desirable at the water works.

The Medical Officer of Health submitted a Report to the Water Committee on his bacteriological and other investigations of the water supply. He suggested that it was necessary that the

filtration area should be considerably extended and that a primary rapid filter should be constructed so as to retain the grosser particles which were doing much to shorten the lives of the existing filters. A firm of Civil Engineers was consulted and recommendations were discussed by the Town Council. Eventually, in November, the following proposals, submitted by the Burgh Engineer, were approved :—

- (a) The demolition of two of the four lower filters and the reconstruction of the others as a clear water well with a storage capacity of 75,000 gallons.
- (b) The construction of a battery of four primary filters.
- (c) The construction of a balance tank of 50,000 gallons capacity between the primary and secondary filters.
- (d) The construction of a set of four sand filters so as to increase the number of secondary filters to twelve.
- (e) The construction of an additional clear water well north of the present upper well, with Venturimeter attached.
- (f) The purchase of Arran sand for use as a filtering medium.
- (g) The repair, at a later date, of Lambieletham Reservoir for use as a service reservoir for the storage of Cameron water.

The carrying out of these alterations would secure a daily supply of 1,200,000 gallons at a filtration rate of 7·9 inches per hour or of 750,000 gallons at a rate of 5 inches per hour and would increase the storage capacity of the clear water wells to 560,000 gallons. The estimated cost of the work was in the neighbourhood of £13,500.

The Burgh Engineer was instructed to invite tenders for contract and in the meantime steps were taken to purchase an additional 271 acres of land in the catchment area for conversion into sheep pasture.

All the streams feeding Cameron Reservoir were cleaned out during the year from source to mouth.

When the alterations described have been completed, St. Andrews will be in a position to claim the possession of a system of water purification unsurpassed in Scotland, and a pure and copious water supply, automatically controlled.

FOOD SUPPLY.**Milk.**

Every good housewife knows that the first essential to a clean house is a clean housewife. The principle is equally true of dairies and dairyworkers. Legislation will not maintain true cleanliness in a dairy unless the dairyworker brings clean personal habits to the aid of legal requirements. The cleanliness of a dairy is not a matter of the eye alone, it is even more essentially a matter of the microscope. So that the dairyman must be considerably more careful and exacting than is a good housewife, because while milk is one of the most suitable and easily infected breeding grounds of germs, the germs of disease may lie in millions in utensils and on the hands and may be suspended in countless numbers in the breath.

Among those who are primarily responsible for the feeding of the nation the dairymen stands forth as one with perhaps the least enviable task of all. For a generation he has been beset with Acts of Parliament, Orders and Regulations defining what he must or must not do. These were necessary since he handles a food supply which is vital to the health of the nation and which is dangerous if contaminated. He has done much of late to conform with the law and now there is room for a more encouraging and helpful attitude on the part of the Sanitary Authorities and of the public.

With such considerations as these in mind the Town Council of St. Andrews decided, at the end of 1928, to hold a clean milk competition in the Burgh during the first six months of the present year. It was arranged that an account should be kept of the bacteriological cleanliness and keeping qualities of the milk supplied by all dairy shops and dairy farms within the Burgh and of the state of the premises. Two Cups, one for each group, of dairies were generously presented as prizes by the Provost. The competition was instituted in order to help the dairyworker to ascertain the stage in the process of milking or storing at which his milk was being contaminated, and in order to give him the benefit of advice as to the best means of overcoming his difficulties. In no sense is such a competition to be regarded as censorious. Its object is to help every dairyman and not to 'boost' the best.

The public ought to help the dairyman. Empty milk bottles are frequently left precariously perched on door steps or on railings, and are frequently smashed. Conveyance of milk in bottles is one of the factors which help towards cleanliness and bottles are a costly item to the dairyman. Sometimes bottles are left on the pavement where they become objects for close investigation by stray animals. Sometimes, too, a busy housewife finds it convenient to put a milk bottle to alien domestic uses and omits to wash off the evidence of her enterprise. Such practices as these serve to hinder, often to dishearten, the dairyman in his endeavours to produce clean milk. Bottles should be kept indoors in a clean place until they are called for.

Activities under the Milk and Dairies (Scotland) Act, 1914, are described in the Reports of the Veterinary and the Sanitary Inspectors. Bacteriological and chemical examinations of samples were undertaken by the Medical Officer of Health and by the City Analyst, Dundee. During the year six specimens were tested by the Medical Officer for the presence of tubercle bacilli, all with negative result.

The consumption of *certified milk* continued to increase during the year. In one instance a sample was found to give a bacterial count approaching too near to the standard laid down in the Milk (Special Designations) Order (Scotland) 1922. The producer was at once notified and after certain alterations had been made in the transport arrangements, the milk was found to improve.

Copies of the Regulations of 1927 concerning the sale of Condensed and of Dried Milk were circulated among the tradesmen concerned early in the year.

Sale of Food and Drugs Acts.

Public Health (Preservatives, etc., in Food) Regulations.

One sample of butter was sent to the City Analyst for chemical examination in connection with a case of suspected food poisoning. This was the only specimen of food, other than milk, sent for analysis during the year. It is a matter of prime importance to both dealers and customers that the quality of the food sold in such a town as St. Andrews should be under constant supervision,

FACTORY AND WORKSHOPS ACT.

A statement regarding conditions in the Burgh under the provisions of the Act is supplied in the Report of the Sanitary Inspector. The revision of the Register, which was commenced in 1927, is progressing.

EDUCATIONAL.

For various reasons it was found impossible to arrange a Health Week in 1928. During the autumn of the present year, however, a Health Week is to be organised in the promotion of which the co-operation of a large number of citizens will be sought.

LABORATORY SERVICES.

The following is the number of examinations made in the laboratories of the James Mackenzie Institute in connection with Public Health work in 1928 :—

	<i>Total.</i>	<i>Positive.</i>
Throat Infections—		
Diphtheria,	246	56
Scarlet Fever,	8	—
Tuberculosis—		
Sputum,	22	7
Pus,	6	—
Urine,	3	—
Coli-Typhoid Infections—		
Agglutinations,	15	4
Blood Cultures,	7	2
Faeces,	44	5
Venereal Diseases—		
Wassermann Reaction,	17	2
Gonococcal Examinations,	25	3
Spirochaete Examinations,	—	—
General—		
Urines for Bacteriological Examination,	6	
Urines for General Examination,	404	
Throat and Nose Swabs for Organisms,	15	
Sputum for Organisms,	4	

Ophthalmia Neonatorum,	1
Cerebro-Spinal Fluid for Organisms,	3
Blood Cultures,	7
Faeces for Blood,	10
Malaria Films,	5
Hair for Ringworm,	1
Biochemical Examinations—	
Blood Sugar,	1
Milk,	6
Food Samples,	2
Bacteriological Examination of Water, ..	108
Bacteriological Examination of Milk, ..	3
Animal Experiments—	
Guinea Pigs inoculated with Milk for tubercule bacilli,	6
Grand Total, ..	<hr/> 945 <hr/>

ANNUAL REPORT OF THE VETERINARY INSPECTOR.

To the Department of Health for Scotland, The Provost,
Magistrates and Councillors of the Royal Burgh
of St. Andrews.

Gentlemen,

I have the honour to submit my Annual Report on the work of the Veterinary Department of the Burgh of St. Andrews for the year ending 31st December 1928.

The work of the Department was largely concerned with the following :—

- (a) Milk and Dairies (Scotland) Act, 1914.
- (b) Inspection of Meat.
- (c) The Diseases of Animals Act, 1894.
- (d) Veterinary Supervision of the horses of the Cleansing Department.

(A) MILK AND DAIRIES (SCOTLAND) ACT, 1914.

Careful attention was paid, during the year, to the requirements of the Bye-laws framed under the above Act. Considerable improvement was made in the condition of the cowsheds. The personal cleanliness of the milkers was marked and a very satisfactory amount of care was shown in the process of milking. One tuberculous cow was slaughtered.

Registered Dairies.

The number of dairies registered in the Burgh during the year was five as compared with seven in the previous year. The number of cows was sixty as compared with eighty-four. In addition thirteen dairies outwith the Burgh supplied milk daily to householders, hotels and schools by vans and motor cars,

The cows in the Burgh dairy farms were inspected monthly and were found to be in a very satisfactory condition. Two dairies were closed in the course of the year, one because of the departure from town of the owner and the other because of inability on the part of the owner to come up to the requirements of the Milk and Dairies Bye-laws.

Fodder and Diet.

The fodder and diet was of good quality. During the period in which they were housed the cows were well fed, there being an ample supply of turnips, linseed, cotton and other dairy cakes as well as of hay and straw. There was excellent grass feeding.

Health of Cows.

One case of tuberculosis was detected among the cows and the animal was slaughtered. There was no further clinical evidence of the presence of this disease among the cows. No milk was required to be disposed of. The dairy farmers in the Burgh were repeatedly asked by the Veterinary Inspector to submit their cows to the tuberculin test. All, however, refused. Further attempts are being made, however, during the present year to overcome the scruples of the owners.

As regards the class of cows kept in the dairies in the town, Ayrshires and Crosses continue to be in the majority.

Offences under Sections 13 and 14 of the Milk and Dairies (Scotland) Act, 1914.

There were no offences under these Sections during the period under review.

Samples for examination under Section 21 of the Act of 1914.

One sample only was taken. The result of examination was negative.

(B) INSPECTION OF MEAT.

Slaughter House.

The Superintendent appointed in 1927 has rendered very efficient service and has been most careful in immediately notifying any case of disease suspected by him. The booths, courts,

pens and pans were kept in a thoroughly clean condition as was the cart used for the removal of offal.

As has been stated in previous years, however, the slaughter house premises are not in keeping with modern requirements. Several of the butchers' shops in town are in a more up-to-date condition whereby difficulties are sometimes presented. A scheme for reconstruction was prepared during the year and received the approval of the Town Council. Preparation of the final plans has been left in the hands of the Burgh Engineer. No further steps were taken to remodel the existing slaughter house bye-laws. These are urgently requiring attention.

Inspection of Carcasses.

Detailed records are kept of all cattle, cows, bulls, sheep, swine, lambs and calves found to be diseased. During the year the following carcasses and parts of carcasses, to the weight of 1701 lbs., were condemned and destroyed as unfit for human food. Last year 2475 lbs. were destroyed.

COMMERCIAL CAUSES, FURFURY AND HONEY DISEASE, 1920.

Disease.	Cattle.		Sheep.		Calves.		Swine.		Total.	
	Seized wholly.	Seized partially.	Seized wholly.	Seized partially.	Seized wholly.	Seized partially.	Seized wholly.	Seized partially.	Seized wholly.	Seized partially.
Tuberculosis,	..	327 lbs.	..	..	1 (86 lbs.)	1 (89 lbs.)	1 (85 lbs.)	..	181 lbs.	416 lbs.
Cirrhosis,	9 (186 lbs.)	53 (199 lbs.)	..	..	..	..	..	..	186 lbs.	199 lbs.
Distomatosis,	..	43 lbs.	..	60 lbs.	..	66 lbs.	..	..	..	169 lbs.
Dropsy,	1 (30 lbs.)	..	..	..	..	..	30 lbs.	..
Fever,	5 (157 lbs.)	..	..	..	..	..	157 lbs.	..
Actinomycosis,	..	5 (155 lbs.)	..	..	..	..	..	..	..	155 lbs.
Abscess,	..	48 lbs.	..	..	..	..	..	..	..	48 lbs.
Emaciation,	2 (48 lbs.)	..	..	..	..	..	48 lbs.	..
Bruising,	..	1 (16 lbs.)	..	20 lbs.	..	1 (16 lbs.)	..	..	..	42 lbs.
Not bled,	1 (70 lbs.)	..	..	..	..	..	70 lbs.	..
Total,	186 lbs.	788 lbs.	305 lbs.	80 lbs.	86 lbs.	161 lbs.	85 lbs.	..	672 lbs.	1029 lbs.

1701 lbs.

Inspection of carcasses is most rigidly carried out. The fact that the local butchers are buying a better class of animal helps to explain the diminution in the amount of meat condemned. One hundred and nineteen inspections were made in 1928 as compared with 73 in the previous year.

The following table shows the number of animals killed during the year and differentiates between the kind of animal killed and the number slaughtered each month :—

Animals Slaughtered, 1928.

Month.	Cattle.	Cows, &c.	Sheep.	Lambs.	Calves.	Pigs.	Total.
January ..	49	2	20	178	7	26	282
February ..	44	..	11	171	4	31	261
March ..	45	4	7	193	5	18	272
April ..	47	..	200	22	6	21	296
May ..	42	1	126	164	7	20	360
June ..	43	2	75	136	5	11	272
July ..	52	..	51	206	4	15	328
August ..	65	1	58	296	6	17	443
September	54	1	13	248	5	14	335
October ..	49	..	17	209	7	25	307
November ..	47	..	8	195	3	22	275
December ..	47	..	4	170	1	44	266
Total ..	584	11	590	2188	60	264	3697

(C) DISEASES OF ANIMALS ACT, 1894.

No occasion for action under the above Act arose during the year. As has been stated one cow was slaughtered under the Milk and Dairies (Scotland) Act, 1914. The circumstances were reported upon by the County Veterinary Inspector.

(D) VETERINARY INSPECTION OF TOWN HORSES.

A motor lorry having been purchased for the purpose of conveying town's refuse, three of the four Corporation horses were sold. When additional horses are required they are hired. The stable premises were kept in a clean condition. The horse was well looked after and remained in a good state of health.

I have the honour to be,

Gentlemen,

Your obedient Servant,

PETER YOUNG, M.R.C.V.S.,
Veterinary Inspector.

REPORT BY SANITARY INSPECTOR.

To the Scottish Board of Health for Scotland, The Provost
Magistrates and Councillors of the Burgh of St. Andrews.

Gentlemen,

ANNUAL REPORT, 1928.

In accordance with the provisions of Section 15, of the Public Health (Scotland) Act, 1897, I have the honour to present my Eighth Annual Report on the work of the Sanitary Department within the Burgh of St. Andrews, for the year ending 31st December 1928.

On the 19th December 1928, a Circular (Public Health Circular No. 8, 1928) was issued by the Scottish Board of Health in which Sanitary Inspectors were called upon to give in their Annual Reports :—

(a) A general account of the sanitary state of the Burgh. This account should deal specifically with water supply, drainage (including sewage disposal) and scavenging, and with any suggestions for the improvement of these services. It should also deal with nuisances and other matters affecting the public health. The report should show the number (if any) of closets on the conservancy system that have been converted to the water-carriage system during recent years, and the number of privies, earth-closets, and privy middens remaining at the end of the year, etc.

(b) An account of his general inspections, and of any special inspections or enquiries, including the supervision of slaughter-houses and other offensive trades, and the sanitary condition of schools and of factories and workshops.

(c) An account of the condition of the common lodging-houses.

(d) An account of the condition of the burial-grounds.

(e) An account of his proceedings under the Burgh Police Act.

(f) Observations on food inspection, unsound food, and particulars of the sanitary condition of premises where foods are manufactured, prepared, stored, or exposed for sale.

(g) A report on the work done by the Local Authority under the Sale of Food and Drug Acts, the Public Health (Preservatives, etc., in Food) Regulations, and the orders relating to milk.

(h) (Where the Sanitary Inspector has been appointed to carry out the sanitary inspection of registered cowsheds and exempted premises).

- (1) A statement of the conditions found, and of any particular points that are of outstanding interest or that require remedy ;
- (2) Particulars of the extent to which (a) the cowsheds comply with the structural and sanitary requirements of the Dairy Bye-laws ; (b) dairymen and their employees conform with the requirements of the Bye-laws relating to methods of milking, handling, and generally the production of clean milk ;
- (3) Notes of improvements obtained in the condition of cowsheds and milk stores, including observations regarding any complaints received or dealt with ;
- (4) (a) The number of registered cowsheds in the district and the approximate total number of cows therein ; (b) the number of cowsheds exempted from registration (if available) and the approximate number of cows in such cowsheds, with observations on this class of cowshed ;
- (5) A statement of the extent to which Articles 5 to 16 of the Milk and Dairies (Scotland) Order, 1925, are being complied with ;
- (6) A comparative statement of the results of inspection of dairies.

A—WATER SUPPLY.

St. Andrews obtains its supply of water from reservoirs outwith its Burgh Boundary. There are three reservoirs of which the largest (Cameron Reservoir) is situated about 5 miles from St. Andrews. The next in size is Lambieytham, which lies about 3 miles from the Burgh while the smallest reservoir, Cairnsmill is situated $1\frac{1}{2}$ miles away. The main supply is obtained from

Cameron Reservoir which has a cubic capacity of 37,680,000 cubic feet and holds 222,000,000 gallons of water. The cubic capacities and volume of the others being as follows:—Lambie-
letham having a cubic capacity of 2,080,000 and containing 13,000,000 gallons and Cairnsmill with a cubic capacity of 60,000 and containing 3,750,000 gallons of water. The total volume of the reservoirs is, therefore, 238,750,000 gallons.

In these reservoirs precipitation of the inorganic matter in suspension takes place before the water is conducted to the Filters. In the Filters the organic matters in suspension are eliminated from the supply and after passing through the filters the water is led to the still wells where it remains for a period prior to entering the mains for distribution in the Burgh.

The area of the Filtering medium at present is as follows:—

High Filters, 4 at 980 sq. feet, ..	..	3,920 sq. feet.
Low Filters, 4 at 950 sq. feet, ..	..	3,800 sq. feet.
New Filters built in 1927, 4 at 1000 sq. ft.		4,000 sq. feet.
		11,720 sq. feet.

which, giving a rate of filtration of 4 inches per hour and provided the entire filtering area is in operation at one time, will be capable of passing 586,000 gallons of water per day of 24 hours. Assuming the population of the Burgh to be 10,000 this is equivalent of 58·6 gallons per head per day.

No extension of water mains were made during 1928.

On the following pages are abstracts of the water filtered during the past 18 years (1911-1928) together with an abstract of the water passing through the filters during each month of 1928. From this abstract it will be noted that the average daily consumption per head of population was 60·13 gallons.

ST. ANDREWS WATER.
Abstract of Monthly Consumpt of Water Filtered at Pipeland 1928.

Date.	Upper Filters	Lower Filters.	Grange.	Total Consumpt Gallons.	Rainfall Pipeland, Cameron inches.	Average daily Consumpt.	Galls. per head 10,000.
January,	8,966,200	8,976,000	422,400	18,364,600	6.09	592406.45	59.24
February,	8,393,000	8,194,600	529,300	17,116,900	1.52	590231.00	59.02
March,	9,402,800	8,253,300	465,900	17,502,000	3.02	564580.00	56.45
April	9,586,000	7,146,400	224,400	16,956,000	.84	565226.66	56.52
May,	11,468,000	7,827,500	..	19,295,000	1.28	622435.48	62.24
June,	12,162,000	6,784,700	..	18,946,700	3.94	631556.66	63.15
July,	14,108,000	6,802,300	..	20,910,300	2.02	674525.80	67.45
August,	14,262,000	6,184,400	..	20,446,400	3.99	659561.20	65.95
September,	12,722,000	5,056,600	..	17,778,100	2.50	592636.66	59.26
October,	14,226,000	4,211,100	..	18,437,100	3.71	594745.16	59.47
November,	13,414,000	3,645,000	..	17,059,000	3.37	568633.33	56.86
December,	12,895,000	3,766,000	..	16,661,000	3.08	537451.60	53.74
	141,605,000	76,847,900	1,642,000	220,094,900	35.36	601352.18	60.13

Average consumpt per day, .. $\frac{220,094,900}{366} = 601,352.18$ gallons.

.. per month, .. $\frac{220,094,900}{12} = 18,341.200$ "

.. per head, .. $\frac{220,094,900}{366 \times 10,000} = 60.13$ "

ST. ANDREWS WATER.
Abstract of Consumpt of Water Filtered at Pipeland Filters.
Years 1911-1928.

Year.	Total Consumpt.	Average per day.	Average per month.	Average per head.	Rainfall Cameron. Pipeland.	Rain Days.
1911,	121,393,300	332,812.83	10,116,025	41.59	.. 18.95	170
1912,	136,199,500	372,076.72	11,349,958	46.50	.. 27.93	180
1913,	141,001,700	386,281.75	11,750,141	48.28	.. 24.38	172
1914,	139,544,700	382,314.24	11,328,725	47.79	.. 21.10	180
1915,	132,682,500	418,308.22	12,723,541	52.28	.. 32.68	185
1916,	157,959,700	432,766.30	13,163,308	54.09	43.75 38.85	204
1917,	155,841,200	426,962.16	12,986,736	53.37	24.51 20.94	166
1918,	156,302,200	428,252.60	13,026,016	53.53	26.81 24.92	177
1919,	152,451,400	417,675.06	12,704,283	32.22	30.16 26.52	172
1920,	161,043,600	440,009.83	13,420,300	55.00	30.02 26.91	185
1921,	157,227,000	429,581.96	13,100,200	47.73	24.42 22.00	156
1922,	161,520,900	441,040.71	13,460,075	47.42	24.40 27.23	181
1923,	181,272,700	496,637.53	15,106,058	52.83	28.96 27.23	208
1924,	178,209,800	486,912.02	14,850,816	51.25	34.10 31.85	185
1925,	216,163,400	592,228.49	18,013,616	62.33	30.34 27.05	154
1926,	253,879,300	695,556.98	21,156,608	69.55	37.13 34.76	190
1927,	229,988,500	630,106.43	19,165,700	63.00	33.58 31.61	188
1928,	220,094,900	601,352.18	18,341,200	60.13	37.76 35.36	203

A—DRAINAGE.

For the removal of waste from dwelling-houses, etc., and the removal of surface water from streets, the system of sewerage known as the "combined system" operates within the Burgh. It is a system which, during the past year, has been the subject of investigation in order that improvements upon it could be effected. The sewers were originally laid many years ago and met the demands upon them, until recent years, adequately, but with the growth of the City and the improvements made in street construction they were unable, under all conditions, to execute their work efficiently, and at times flooding occurred in parts of the Burgh. It is true that during such periods a series of circumstances operating concurrently created them and that under normal conditions the system of sewerage functioned all right. Taking into review these circumstances, it must be borne in mind that the modern type of street construction, which now presents a more or less impervious surface, throws into the sewers not only more rapidly than formerly, but practically all the rain water which falls upon them, and thus increases the load on the sewers. The factors which give rise to the conditions of flooding were as follows:—The modern type of street construction; the increased number of houses in the Burgh, and the system of sewage disposal; and the conditions which, upon occasion caused flooding were, the periods during which a heavy rainfall coincided with the times when the sewers were handling their maximum dry weather and a full or high tide. To mitigate these conditions much had already been done but more was still to do at the close of the year. For example, within recent years a pipe for surface water was laid in the West end of the Burgh having its discharge into the Kinness Burn and which naturally relieves the sewers of a considerable proportion of surface water from that district. A scheme for improving the outfall sewer at the Bruce Embankment was drawn up and although the execution of it was not carried out in 1928, it has since been completed. It is sufficient to mention here that in this scheme (fuller particulars of which will be included in next year's report), provision has been made for the immediate relief of storm water during periods of excessive rainfall. Both these improvements, the provision of the surface

water pipe in the West end of the Burgh and the provision now made for the relief of street water at the outfall sewer, will, it is hoped, bring about a great improvement in the system of sewerage generally, and that all parts of the City may be immune from flooding for many years.

In last year's report it was stated that the fractured sewer in the grounds of Abbey Park had not been repaired, and that reference would be made to it in the Report for 1928. The work of repairing this sewer and the re-erection of the retaining wall which collapsed with it in 1926 was carried out during the year, and this sewer is now in good order.

In 1928 the 9 inch fireclay sewer in Strathkinness Road was extended for a length of 260 yards.

The Smoke Test was applied to the drainage system of all new houses erected within the Burgh during the year. In cases where defective work or defective materials were encountered these had to be made good and the drainage system retested, if necessary, before the work was passed and the tracks filled in.

In addition to new property there are occasions when a report on the drainage system of existing dwellings are called for. On such occasions an examination of all the sanitary fittings in the house is made in addition to applying the smoke test to the system of drainage, and a detailed report on the fittings and drainage system together with notes on the defects found and the work necessary to put the system into order is thereafter prepared and transmitted to the owners of the properties concerned.

A—SCAVENGING.

Collection of Refuse.—Following upon a demonstration in refuse collection undertaken at the request of the Town Council by the manufacturers of the S.D. Freighter, one of these vehicles was purchased during the earlier part of 1928. The Freighter in use in St. Andrews has a body capacity of 7 cubic yards and it has taken up the work of collection with very great success. Since its arrival here, in April last, three horses have been displaced, and the entire collection of refuse from the Burgh is undertaken by the S.D. Freighter and two horses. The hours of collection are from 7 a.m. to noon each day excluding Sundays.

The refuse is disposed of by tipping. At the tipping grounds, of which there are two, measures are taken throughout the year to keep down vermin. These measures consist of periodical visits of a rat-catcher to the tipping grounds who employs poisoned baits and has done good work in keeping the dumps clear. In addition to the ordinary collection of refuse a collection of waste paper is made twice weekly. The paper is sorted out, baled and sold.

For purposes of scavenging the Burgh is divided into districts and upon each district one scavenger is constantly employed. In addition to the cleaning of all streets, water channels, and gutters in his district, he also, in the morning, assists with the work of refuse collection.

The system of refuse collection, and the cleansing of the Burgh has worked smoothly during the past year.

It is interesting to record that at the Horse Parade held on Saturday, the 21st July 1928, the First Prize for harness, the First Prize for grooming, and the Championship Cup for the Parade were won by an employee in the Cleansing Department.

A—NUISANCES.

In last year's report reference was made on page 59 to smoke nuisance from the chimney of a washing house. The complaint was again made during 1928 and considerable correspondence developed in regard to it, between the complainer, the agents for the author of the nuisance, and the sanitary officials, and which gave rise to discussions regarding the complaint in Committee Meetings of the Town Council. Members of the Council visited at different periods, the site of the property from which the nuisance complained of existed, and two modified suggestions to the officials proposals, were brought forward and ultimately put before the author of the nuisance. One of the suggestions, though practical was too costly to execute, and the other which was a modified form of the officials' proposal was eventually carried out; this consisted of increasing the height of the chimney-can by about 3 feet. This was not sufficient to overcome the nuisance and gave rise to a renewal of the complaint within a short interval thereafter. The chimney was however,

ultimately extended to about 7 or 8 feet above its original height and since then no complaints have been made. The following is a copy of my last letter bearing date 21/8/28 on the subject to the complainer of the nuisance and to which I have so far had no reply.

Dear Sir,

Smoke Nuisance.

With reference to my visit to your house yesterday regarding the above, I write to confirm the interview.

From the staircase window of your house I saw the extensions which have been made to the chimney-can from the washing-house of ————— and on making enquiry then of the result which these extensions have upon the smoke nuisance, I was informed that "It was now all right."

If I have inaccurately stated the result of my interview perhaps you will be kind enough to let me hear from you on the matter.

The sanitary arrangements in some property in North Street gave rise to complaints during the year and advantage of the complaint was taken to call upon the proprietors to completely reconstruct the water closets. This proposal gave rise to numerous letters from the agents of the property who, however, ultimately undertook to execute the works called for. The works requiring to be done consisted of the demolition of the existing arrangements and the provision and erection of four water closets of modern design. When these were erected and the drains laid, an examination of the work and the testing of the drains was undertaken. The work executed was well done and the drains stood the smoke test satisfactorily. A great improvement in the sanitary conditions of this property has therefore been made and has since execution given rise to no complaints.

Various complaints regarding rat infestation were received throughout the year, all of which were investigated and steps taken to have the vermin exterminated. The history of one of those complaints may be of interest and is briefly as follows :—

Towards the close of the year a complaint was made by the occupier of a newly-built house that rats were gaining access to his house from the stack yards situated opposite to it. These stacks were looked over and evidence of rats were clearly seen. The owners of the stacks were written to and they in turn complained that the rats were coming into their stacks from areas

outside the Burgh Boundary. On further investigations being made it was discovered that the ditches along the side of the county road outwith the Burgh Boundary for a considerable distance were more or less infested. The District Council's attention was directed to those conditions who made arrangements to have the vermin removed. This was eventually accomplished by gassing operations. These matters naturally took time to go into and before the cause giving rise to this complaint had been traced to its source, complaints from other householders in the district were lodged. The concentrated action taken to overcome the vermin however, has been successful as the following excerpt from a letter from the householder who first lodged the complaint will show. "I have seen no trace of rats round the house lately."

In the month of May 1928 it was learned that a Bell Tent had been erected behind the property 94 North Street, and that it was being used for purposes of habitation. My report, bearing date 30th May last, on this matter to the Public Health Committee, was as follows :—

Tent at 94 North Street.

I now submit herewith for your consideration my report on the tent which has been pitched behind 94 North Street for habitation purposes by Mr. James Cameron, jobbing gardener.

The tent stands in the ground situated to the south of the house occupied by Mr. D. Fergusson, 94 North Street, property belonging to Mr. Pirie, China Merchant, who I understand has consented to its erection. It is occupied by Mr. Cameron, his wife, and three grandchildren—a boy and two girls. The boy's age is 18 months, and the ages of the girls are 4 years and 6 months respectively. Sgt.-Major Edie, who is on leave from India, and James Cameron, a caddie, both sons of Mrs. Cameron, occupy a temporary wooden erection close to the tent. These people have permission to use the outside sanitary accommodation which is situated a few yards distant from the tent. This W.C. is also used by three neighbouring tenants. A supply of water is also available. The supply being obtained from an outside tap, also a few yards distant from the tent.

So far as I can learn the Camerons returned to St. Andrews from Leuchars about March 1927, and from then until March 1928 they occupied Argyle Farm House for which a rental of 10s per week was paid. Mr. Forgan the proprietor of Argyle Farm House, made it clear to Mr. Cameron that he had that accommodation only until such time as he, Mr. Forgan, required the property. Having, therefore, to vacate this house in March last, the Camerons obtained temporary accommodation in 94 North Street

and for which a weekly rent of 2s 6d was paid. This house, having been let from the 28th May, had also to be vacated by them on Monday last. Since then they have lived in the tent above referred to. The tent, I am informed, has been loaned to them by Mr. A. Perrie, Inspector of Poor.

As much as possible of their household belongings has been taken into the tent, and the remainder stands in the open outside. The tent is the ordinary Army Bell Tent. A temporary stove for cooking purposes has been erected in the wooden erection occupied by the two sons.

I do not know what efforts they have made to secure any other house, apart from the fact that an application for a three-roomed flat was lodged with me on the 15th day of February last.

A situation such as this is most distinctly undesirable from the points of view of the Local Authority and the occupiers of the tent, and, in my opinion, it should not under any circumstances be permitted to continue indefinitely, whereby a precedent might be created, which, if followed by other similar cases would give rise to conditions antagonistic to Public Health. Nevertheless I am of opinion that some consideration should be extended to this unfortunate household, in view of the fact that since March 1927 they have only been able to live in temporary accommodations for which they have paid a sum of about £28. I would, therefore, suggest to you, Miss Warrack and Gentlemen, that written intimation be forwarded to Mr. Cameron directing his attention to the necessity for him to procure suitable housing accommodation within a stated period, and that he must, on any account, remove from his present position and cease to occupy a tent as a habitation for his family within the Burgh at the expiry of this period. The period, I would further suggest, should not extend to more than one month from to-day, the 30th May 1928.

After considering this matter the Public Health Committee agreed that notification should be sent to the occupier of the tent calling upon him to cease, as from Saturday, 30th June, to occupy the tent as a habitation.

On 30th June, a visit was paid to the site of the tent and as a result of it the following letter was forwarded to the Town Clerk :

2nd July 1928.

J. Cargill Cantley, Esq.,
Town Clerk.

Dear Sir,

Tent at 94 North Street.

I visited the site of the tent occupied by Mr. Cameron and his household at 94 North Street on Saturday last, the 30th June, when I found that conditions there, with the exception of illness among the children, were exactly the same as they had been at the date of my report to the Public Health Committee on 30th May.

The children are suffering from measles.

Yours faithfully,

(Sgd.) JOHN ROSS.

This letter was brought before the Council for instructions and when it was arranged to interview the Inspector of Poor and to ascertain if he was prepared to take proceedings for the removal of the tent.

In my report of 30th May on this matter it was stated that the proprietor of the property had given his consent to the erection of the tent. This statement, however, proved to be inaccurate. (It was made to me by the occupier of the tent). The proprietor of the property through his Agents caused the following letter to be sent to the occupier of the tent on the 6th July :—

6th July 1928.

Mr. James Cameron,
Jobbing Gardener,
94 North Street.

Dear Sir,

We have been instructed by the Proprietor and Tenant of the garden behind 94 North Street, to have you removed from the Tent which you are occupying in said garden, and we are asked to intimate to you that any permission given by the Tenant to you to have the Tent in the garden for a few days after 28th May last is definitely withdrawn.

We have to request you to remove the Tent along with yourself and family from the garden ground by Wednesday, 11th inst., at latest, failing which our instructions are to take immediate proceedings against you to have you ejected.

Please note that no further intimation will be given to you.

Yours faithfully,

(Sgd.) THOMSON & CANTLEY.

On the 12th July I paid a further visit to the site and thereafter sent the following letter to the Town Clerk.

12th July 1928.

J. Cargill Cantley, Esq.,
Town Clerk.

Dear Sir,

Tent at 94 North Street.

With further reference to my letter of the 7th inst., I have to inform you that the site of the above tent was visited by me to-day, and that conditions there were similar to that previously reported, with this exception, that Mrs. Cameron was in bed suffering from bronchitis.

Yours faithfully,

(Sgd.) JOHN ROSS.

The above letter was duly submitted to the Town Council and on the 27th July I received the following letter from the Town Clerk :—

27th July 1928.

Dear Sir,

Pirie & Fergusson v. Cameron.

The Sheriff has ordered Cameron to remove from the garden at 94 North Street within three weeks from yesterday's date. Will you kindly make enquiries about Friday, 17th August, and let me know whether Cameron has removed, as, if he has not vacated the garden by that time, I shall instruct the Sheriff Officer to have him put out, under the Sheriff's Decree.

Yours faithfully,

(Sgd.) J. CARGILL CANTLEY.

On 13th August I again visited the site and thereafter sent the following letter to the Town Clerk :—

14th August 1928.

Dear Sir,

Pirie & Fergusson v. Cameron.

With reference to my letter of the 28th ult., I now write to let you know that on visiting the site of the tent at 94 North Street on Monday, the 13th inst., I found that the Camerons were still in habitation there, but Mrs. Cameron stated that they were leaving on the 16th inst.

Yours faithfully,

(Sgd.) JOHN ROSS.

On the 17th and 24th August I received the following letters from the Town Clerk :—

17th August 1928.

Dear Sir,

Pirie & Ferguson v. Cameron.

I have received your letter of 14th inst. I am informed to-day that the Camerons have not yet left and I shall now take the necessary steps to get the Sheriff Officer to eject them.

Yours faithfully,

(Sgd.) J. CARGILL CANTLEY.

24th August 1928.

Dear Sir,

Tent at 94 North Street, St. Andrews.

Pirie & Fergusson v. Cameron.

The Sheriff Officer tells me that he has now ejected Cameron from the garden ground at 94 North Street. Perhaps, after your return from holiday, you will call at 94 North Street, and satisfy yourself that the ground is now completely cleared. You had better also make sure that Cameron has not set up his tent at some other part of the Burgh.

Yours faithfully,

(Sgd.) J. CARGILL CANTLEY.

On the 30th August I transmitted the following letter to the Town Clerk :—

30th August 1928.

Dear Sir,

Tent at 94 North Street, St. Andrews.

Pirie & Ferguson v. Cameron.

Your letter of the 24th inst. awaited me on my return from holiday. I visited the site at 94 North Street yesterday afternoon, the 29th August, and found that the ground was completely cleared and learned that the Camerons had now left the Burgh.

Yours faithfully,

(Sgd.) JOHN ROSS.

The last letter on this subject from the Town Clerk bears the date 31st August 1928. It is as follows :—

31st August 1928.

Dear Sir,

Tent at 94 North Street, St. Andrews.

Pirie & Ferguson v. Cameron.

I have received your letter of yesterday from which I am glad to learn that the ground at 94 North Street has now been completely cleared.

Yours faithfully,

(Sgd.) J. CARGILL CANTLEY.

In addition to the nuisances above referred to others dealt with during the year were :—defective drains, refuse accommodation, burning of household refuse in receptacle in garden, throwing of waste matter from windows into back area, hen run in filthy state and choked water closets.

Housing (Inspection of District) Regulations (Scotland) 1928.

Arrangements were made for a survey of houses under the above Regulations during the present year (1929) which, when completed, will give the corrected particulars regarding water closets and water supply. As no alterations to the properties have been carried out and little movement taken place among the various households, the particulars for the present report under these heads are as reported on last year, namely :—

114 water closets used by 2 tenants.

48 water closets used by 3 tenants.

31 water closets used by 4 tenants.

6 water closets used by 5 tenants.

2 water closets used by 6 tenants.

The occupiers of 135 houses obtain a supply of water from outside their houses, the supply being obtained from taps on common staircase, taps outside dwelling houses, etc.

Of the seven dry closets within the Burgh, two are at cottar's houses and the remainder at a factory which is so situated as to be below the sewer level in its vicinity. There are no privy-middens or ashpits in the Burgh.

B—GENERAL INSPECTION.

The lands of St. Nicholas Farm, to which reference was made in previous reports, was, during 1928 kept clear of tents. It will be remembered that owing to the lack of sanitary accommodation provided, the sea beach at this part was fouled and the nuisance traced to some of the occupiers of the tents. As this beach is one largely taken use of by residents and visitors, steps were taken to prohibit camping in its vicinity ; these were adequate last year and the previous year and no tents were pitched on the lands referred to. The beach during both these years has not been fouled.

During the year articles of clothing, etc., discarded by, presumably vagrants, were left at one or two places in the Burgh. These were removed and destroyed by fire.

B—SLAUGHTER HOUSE.

The Slaughter House has not yet been altered nor extended and the arrangements in it are therefore exactly similar to those of the previous year. The premises contain cattle courts, killing booths, with tripe and hide depots adjacent.

The premises are very efficiently cleansed and kept in good order by the superintendent.

Slaughter of Animals (Scotland) Act, 1928.

A joint report on this Act for submission to the Town Council was prepared on 6th December 1928, by the Medical Officer of Health, Veterinary Inspector and Sanitary Inspector. The report contained the following suggestion relative to the staff :—

“ We wish to take advantage of Section 3 of this Act to bring about a change in the present arrangements which we think desirable both from the Local Authority's point of view and the

public generally. Under present conditions the slaughter men are the employees of the Butchers' Association and are not, therefore, under direct control of the Local Authority's Officials. This has been found to be inconvenient in emergency and other cases which did not belong to the Butchers' Association. We are, therefore, of the opinion that the slaughter men should become the employees of the Town Council. To meet the wages which would be paid to these men the Town Council should collect from the Butchers' Association the fees which they, at present pay to the men for their services. Taking the year 1927 as a basis for estimating the fees which would be paid to the Town Council for the services of the men, the following statement shows the probable Income and Expenditure under the proposed new arrangement :—

Income.						
Animals killed in 1927.				Rate.		
622 Oxen,	4s	£124 8 0
24 Cows,	4s	4 16 0
65 Calves,	2s	6 10 0
2109 Sheep,	1s	105 9 0
180 Pigs,	3s	27 0 0
Debit balance,		25 4 4
Total,				£293 7 4

Expenditure.			
Licensed Killers.		Proposed wages per week.	Total per year.
2 Killers,	..	£2 15 0	£286 0 0
Employers Contributions under National Health and Unemployment Insur- ance Schemes, 2 at 1s 5d per week, ..		2 10 0	7 7 4
Total,		..	£293 7 4

Under this new arrangement a Debit Balance of £25 4s 4d is shown, but there is every reason to believe that there would be an increase in the number of animals slaughtered in the reconstructed and re-equipped abattoir, due to the greater facilities which will then be at the disposal of the Butchers, and this,

together with the advantages to be gained by these men being employees of the Town Council, previously referred to, will compensate for and possibly reduce the debit balance shown above."

After discussing the matter a Meeting with the Local Butchers was arranged to take place on the 14th December 1928, in order that their views might be had on the question of the suggested alteration in the staff. Thereafter the Local Butchers held a Meeting to discuss the question, and on the 20th December 1928 the following report was received from them :—

To the Convener, Slaughter House Committee.

Dear Sir,

Acting on the suggestions of the Town Council, a Meeting of the Butchers was held to consider the proposal that the Town Council take over and licence the present killers who would be at the disposal of the Butchers at the same rates for killing as are charged at present, but that no other Licences should be granted.

The Butchers object to the above proposal and would propose that the Town Council grant a licence to the present killers, leaving the Butchers to pay the Jobbers as at present, for work done, the Butchers to have a free hand to apply for and be granted a killers licence for themselves or their men as occasion should arise. We also object to the proposed charge in the Licence of 5s and suggest 2s 6d be the charge.

We are,

Yours faithfully,

(Signed)	JOHN MARTIN.	ROBERT ALEXANDER.
	DAVID P. NIVEN.	ANDREW H. DRYSDALE.
	A. & L. HENDRY.	MURRAY MITCHELL.
	JAMES BELL.	

On the 24th December 1928 a letter was sent to the Town Clerk from which the undernoted excerpt has been taken :—

"The Public Health Officials do not wish to press for their proposals with regard to the arrangements of the staff, and have in the meantime, obtained particulars for licences to stun animals under the Act from Messrs. Paterson and Kennedy. The fee for these licences, and any others which may in future be issued, should be decided on now."

The mechanically operated instrument that is used in the Slaughter House is the "Cash" Captive Bolt Pistol. The Pistol is the property of the Town Council who procured two Pistols—one of which is in constant use, the other held as reserve. The Council, in addition to maintaining them in good order also provide all cartridges necessary for the stunning of animals. The

pistol, etc., is under the custody of the superintendent. The superintendent and two other men—are licensed under the Act to stun animals—the License fee being 5s per annum. Only these men may legally use the Pistol and the superintendent issues it to them together with the cartridges necessary and receives it back again in good order. The rates for the cartridges used is, for each large animal 3d, and for each small animal 1d. Due notice of the requirements of the Act and the arrangements made in St. Andrews for the carrying out of these requirements was given in the Local Press of 29th December 1928.

On the 26th December 1928, a demonstration in the use of the Schemer, Cash and Temple Cox Pistols was given at the Local Slaughter House by an Inspector of the R.S.P.C.A., who explained the mechanism of these Pistols to the Local Butchers and others interested in the operations of the Act who were present.

It will therefore be seen that at the close of the year all necessary steps had been taken for the commencement of the requirements of the Act being made on 1st January 1929. Further particulars regarding it will be made in the report for 1929.

There are two offensive trades connected with the Slaughter House (1) Tripe Boiler and (2) Hide and Tallow Factoring. The former which is conducted in a building within the Slaughter House premises has been carried on in a satisfactory manner during the year and no complaints have been made regarding it. The Hide and Tallow Factoring is also undertaken in a building within the premises of the Slaughter House. The work involved here, however, plays a very minor part on this offensive trade, and consists of storing the hides for a day or two until removed to Dundee. The hides are removed at least twice each week. The business has been satisfactorily conducted during the year and no complaints were made regarding it.

B—Infectious Disease.

During the year 209 cases of Infectious Diseases (excluding tuberculosis, particulars of which may be obtained from the Report of the Medical Officer of Health) were notified and of which the following are the details :—

Typhoid Fever,	2
Diphtheria,	23
Erysipelas,	3
Ophthalmia Neonatorum,	1
Chicken Pox,	11
Malaria,	1
Dysentery,	2
Acute Primary Pneumonia,	5
Acute Influenzal Pneumonia,	3
Measles,	158
Total,	<hr/> 209 <hr/>

Hospital treatment was provided in the Isolation Hospital for 39 cases included in which were 1 Typhoid Fever ; 22 Diphtheria, 3 Erysipelas, 1 Chicken Pox, 1 Dysentery and 11 Measles.

It is gratifying to note that there were no cases of Scarlet Fever in the Burgh during 1928.

Diphtheria which accounted for 23 cases was first notified in the Burgh on the 4th of May when one isolated case occurred. The second case did not occur until the 26th of July. On the 20th September the third case was notified and which was followed by an additional 20 cases by the close of the year.

Piecing together information gathered from these cases it appeared that the infection was being spread from a Baker's shop, where it had been conveyed by a member of a household in which one of the earlier cases occurred. Unfortunately, however, this child before medical aid was called in had been ill for fourteen days, and had spread the disease throughout the house and presumably to the bakery referred to. This bakery and also a dairy, kept appearing intermittently but nevertheless fairly frequently in the particulars taken of the cases. Eventually precautionary measures were taken against further spread of infection, and the throats of all members and staff of the bakery were swabbed. Full particulars of this epidemic are contained in the Report of the Medical Officer of Health.

As in former years I should like, however, to continue the following table of the cases of Scarlet Fever and Diphtheria occurring in the Burgh since 1921.

Disease	1921	1922	1923	1924	1925	1926	1927	1928
Scarlet Fever, ..	0	7	15	90	14	4	10	0
Diphtheria, ..	11	2	3	5	21	5	7	23

Immediately following upon the removal of patients to Hospital articles of clothing and bedding, when required, are removed for steam disinfection, and in addition the disinfecting of the room or rooms occupied by the patient prior to removal to Hospital, is carried out.

A change was made during the year in the system of disinfection. Disinfection is now invariably carried out by spraying the room with a solution of IZAL disinfectant in the proportion of 1 table-spoonful of IZAL to 2 pints of water. This system of disinfection has this great advantage. After it has been carried out it is impossible for the householder to avoid thoroughly cleaning out the room—an important feature following any infectious disease.

B—SCHOOLS.

The cleanliness of the Schools within the Burgh continues to be satisfactory. The subject of the conveniences, however, is to be a matter of report during 1929.

B—FACTORIES AND WORKSHOPS.

In connection with the visits paid to the Factories and Workshops throughout the year, investigations into the cleanliness and sanitary arrangements of the premises were made. The under-noted works were called for, all of which were executed within a reasonable period of attention being directed to them.

1. Repairs to roof where rain enters ; clean down walls and ceilings of staircase and workshop and limewash these parts.
2. Walls and ceilings of workshop and area leading thereto to be cleaned down and limewashed.
3. Walls and ceilings to be cleaned and limewashed.
4. Walls to be cleaned and limewashed ; water closet walls also cleaned down. Called for Abstract of Act and General Register to be procured.
5. No water closet provided. Required water closet to be constructed and the factory to be limewashed. General Register to be brought up to date.

6. General Register to be provided. Limewashing and cleaning to be carried out.
7. Walls of Factory and workshop to be cleaned down.
8. Hood for gas iron heater called for in November 1928 and provided early in year 1929.
9. Water closet to be cleaned.
10. Water closet to be whitewashed, walls of workshop to be repaired where broken and thereafter the walls and ceiling to be limewashed.

C—COMMON LODGING HOUSES.

There are no Common Lodging Houses within the Burgh.

D—BURIAL GROUNDS.

Situated within the Burgh are two Burial Grounds and one for Burgh requirements outwith the Boundary.

The lairs in the Grounds situated within the Burgh have been disposed of some time ago, consequently no interments take place in these places other than by those possessing ground there.

In each Burial Ground within the Burgh one man is engaged to keep the grounds and paths in proper order and repair. When necessary, however, and during the summer months, additional labour is provided. Both places have been kept in a satisfactory state and no complaints were received regarding them throughout the past year.

E.—PROCEEDINGS UNDER THE BURGH POLICE (SCOTLAND) ACT.

During the month of May the agents for a property in the Burgh were, in terms of Section 246 of the Burgh Police (Scotland) Act, 1892, called upon to provide 4 water closets of modern type to replace the existing sanitary conveniences. After considerable correspondence on the matter the 4 water closets were provided, and in October I visited the property and examined the new work which was in every way satisfactorily carried out. Again in October the agents were served with a Notice under Section 246 of the Act to provide one modern wash-down closet to replace an existing defective one. This work was duly executed.

In terms of 242 of the Act of 1892 Notices were forwarded to four proprietors either direct or through their agents, calling upon them to clear choked drains within a period ranging from 24 hours to 2 days. All of which were immediately given effect to.

In addition to the above, four notices, a choked drain in a certain property in the Burgh which affected four different properties was another matter dealt with during the year. Letters calling for the drain to be cleared were written to the proprietors but the delay caused in getting replies from them all necessitated direct action being taken by the sanitary officials owing to insanitary conditions arising from the drains. This action consisted of engaging tradesmen to undertake the necessary work to put the drain into perfect order and communications being sent to this effect to the various proprietors. The accounts from the tradesmen engaged were thereafter forwarded to the sanitary department, who paid these in the ordinary way through a Finance Meeting of the Town Council and collected in course a fourth part of the accounts from the proprietors concerned.

A complaint was lodged in May last by a householder on a ground flat taking exception to his neighbour on the flat above shaking dusters and mops out of the windows. In his written complaint he stated "as a result of this, dust and rubbish of various descriptions enters our open windows and also litters our paths and gardens." The attention of the householder on the 1st floor flat was directed to the terms of the Local Bye-laws framed under Section 316A (5) of the Burgh Police (Scotland) Act, 1892, and thereafter the nuisance complained of ceased and no further complaints regarding it have been received.

F—OBSERVATIONS ON FOOD INSPECTIONS, Etc.

During the year samples of milk were submitted to the City Analyst and to the Medical Officer of Health.

Of the four samples transmitted to the City Analyst three were Certified Milk the other being a non-graded milk. Of the samples transmitted to the Medical Officer of Health five were non-graded milks and one was of skimmed milk.

Non-Graded Milks.—The following are the particulars of the reports received on each sample :—

No.	Total Solids.	Solids not Fat.	Fat.	Analysed by.
1.	12·18	8·77	3·41	City Analyst.
2.	12·89	9·93	3·91	M.O.H.
3.	13·14	9·87	3·84	M.O.H.
4.	12·84	8·64	4·02	M.O.H.
5.	13·24	9·31	4·17	M.O.H.
6.	12·97	9·47	3·75	M.O.H.

From the above it will be found that the averages for the Fat content and Non-Fatty Solids content were as follows :—

Average Fat Content,	3·85 per cent.
Average Non-Fat,	9·165 per cent.

The percentage of Fat above the required standard was therefore 0·85 per cent. and that of Non Fat above the standard was 0·665 per cent.

The particulars of the sample of skimmed milk submitted to the Medical Officer of Health were :—

Fat, 2·129 per cent. ; Solids, Non-Fat 8·576 per cent. Total Solids, 9·974 per cent.

Graded Milks.—During the year 3 Official Samples of Certified Milk were transmitted to the City Analyst for analysis and the following are the particulars received from him on each sample.

Sample No. 1—

Fat,	3·63 per cent.
Number of Colonies per c.c.,	12,200.
Bacillus Coli Communis, ..	Absent in 1/10th c.c.

Sample No. 2—

Fat,	3·64 per cent.
Number of Colonies per c.c.,	28,400.
Bacillus Coli Communis, ..	Absent in 1/10th c.c.

Sample No. 3—

Fat,	3·70 per cent.
Number of Colonies per c.c.,	27,500.
Bacillus Coli Communis, ..	Absent in 1/10th c.c.

All of which were certified by the Analyst to be genuine.

Butter.—A sample of fresh butter which was transmitted during the year to the City Analyst for analysis was certified by him to be genuine.

In the Veterinary Inspector's Report will be found the particulars of unsound meat dealt with at the Slaughter House.

G—SALE OF FOOD AND DRUGS ACTS, Etc.

In the foregoing section of this report detailed particulars have been given regarding the analysis of the samples procured during the year.

H—COWSHEDS, Etc.

A comprehensive survey of all Cowsheds and Dairy premises in the Burgh was carried out during the year and notes taken on all points calling for attention. Prior to this survey, however, the forms of application for registration (previously received from dairymen, but which had been held over until the Bye-laws under the Act had been in operation) were submitted to the Meeting of the Public Health Committee of the Town Council on 25th June 1928 for consideration. Certificates of Registration were recommended in all cases.

The Certificates of Registration were in due course prepared, signed by the Town Clerk, and transmitted by the Sanitary Inspector to the registered persons. Each certificate was accompanied by copies of the following :—

1. Copy of the Local Bye-laws.
2. Copy of the Milk and Dairies (Scotland) Order, 1925.
3. Copy of the Board's Circular No. VI.—Foods—dealing with infectious diseases at Dairies.
4. Copy of the circular issued by the Public Health Committee dealing with the prevention of the spread of infectious disease by milk.
5. A formal letter of receipt of these various enclosures was prepared and instructions given to the dairymen to have it completed, signed and returned to the Sanitary Inspector. (This letter of receipt is retained in the Office and is attached to the dairyman's copy of his certificate of registration).

In August the survey of the premises was commenced, it being concluded that by then the parties concerned would be fairly conversant with what they were required to do under the Act as the various documents transmitted to them in June would have shown.

To enumerate each point that received attention would render this section of the present report unnecessarily long and only the principal matters are recorded here, and that in an abstract form.

Producers Premises.

- Under Section 5 of Local Bye-laws. Called upon to clean down walls, ceilings, windows, doors, etc.
- Under Section 7 of Local Bye-laws. Repair defective concrete in floors.
- Under Section 8 of Local Bye-laws. Repair defective walls.
- Under Section 9 of Local Bye-laws. Close internal access to loft from Byre and provide other access.
- Under Section 10 of Local Bye-laws. Repair concrete work around troughs.
- Under Section 11 of Local Bye-laws. Windows to be kept clean.
- Under Section 12 of Local Bye-laws. Called upon to clear ventilations in external walls.
- Under Section 13 of Local Bye-laws. Beamfilling required.
- Under Section 15 of Local Bye-laws. Impliments to be removed from Byres.
- Under Section 19 of Local Bye-laws.—Metal gauze on windows called for.
- Under Section 23 of Local Bye-laws. Drains to be gone over and kept clear.
- Under Section 24 of Local Bye-laws.—Limewashing called for.
- Under Sections 30, 31, 32, 33, 34 and 40 of Local Bye-laws.—Attention directed to the methods of milking.
- Under Sections 20, 21, 37, 43, and 44 of Local Bye-laws. Attention directed to the requirements regarding provision of facilities for the washing and scalding of utensils.
- Under Section 45 of Local Bye-laws. Animals other than bevine animals not to be admitted to Byres.

It is exceedingly gratifying to report that each producer set about immediately to give effect to the matters affecting his premises and to which attention had been specially directed by letter after the survey of his premises was completed. It is true that all the above works have not yet been carried out but what has already been accomplished brings about a great improvement upon previous conditions. The works still to do will, it is anticipated, be carried out in the near future. It was never the intention of the sanitary officers to call upon the producers to execute immediately the works necessary to be done to their

premises under the 1914 Act and the Local Bye-laws framed thereunder. Their objectives embodied giving effect to essential features first and thereafter by gradual processes bringing all premises up to the required standards. This is being attained and from what has already been done during the past year it is apparent that the producers within the Burgh at least are willing and anxious to bring their premises up to modern demands.

Retailer's Premises.—In conjunction with the survey of the producers premises just referred to similar attention and action was directed during the year to retail premises within the Burgh. In connection with this work also, the retailer's forms of application for registration under the Act were submitted to the Meeting of the Public Health Committee referred to above. These being approved of by the Committee, the Certificates of Registration together with Copies of the following were transmitted to the registered persons :—

1. Copy of the Local Bye-laws.
2. Copy of the Milk and Dairies (Scotland) Order, 1925.
3. Copy of the Board's Circular No. VI.—Foods—dealing with infectious diseases at Dairies.
4. Copy of the circular issued by the Public Health Committee dealing with the prevention of the spread of infectious disease by milk.
5. A formal letter of receipt of these various enclosures was prepared and instructions given to the dairymen to have it completed, signed and returned to the Sanitary Inspector. (This letter of receipt is retained in the office and is attached to the dairyman's copy of his certificate of registration).

After completion of the survey of the retailer's premises, each was written to regarding the matters which required attention, and such points as the following were dealt with :—

Under Section 16 of Bye-laws.—Walls of milk store to be covered to height of six feet with impervious material.

Under Section 17 of Bye-laws.—Floors to be of cement or other impervious material.

Under Section 19 of Bye-laws.—Windows required to open and protected with metal gauze.

Under Section 20, 21 and 36 of Bye-laws.—Dealing with supply of boiling water.

Under Section 30 of Bye-laws.—Dealing with persons employed in dairies.

Under Sections 38 and 40 of Bye-laws.—Cleansing of vehicles used for conveyance of milk.

Under Section 47 of Bye-laws.—Dealing with bottling requirements.

Under Section 48 of Bye-laws.—Dealing with all vehicles being returned to dairy and not retained overnight in the houses of employees.

In addition to these, in one case the retailer was called upon to execute immediately certain works to the water closet provided at his premises. These called for a window to be slapped through the stone wall in order that adequate ventilation be obtained and also the execution of certain works on the partitions of the closet apartment. These works were completed within a short period after my survey.

In the case of the retailers I have similar comments to make as those to which I gave expression regarding the producers. The retailers have likewise shown a readiness and willingness to meet the sanitary officers requirements. In addition, however, to the urge put upon them by the sanitary officers, there is, I think, another factor which counts very much and that is the impetus arising out of competition between the retailers themselves to be better than his brother trader. This, in one particular instance, has played a part in the production of premises into which every modern appliance in the dairy trade is, I think, provided. In these premises there are steam chests for sterilizing bottles and other utensils; appliances for washing, rinsing and brushing of bottles prior to sterilization; appliances for steaming large and small cans; cooling machine and separating machine. The premises moreover have been recently erected, and therefore comply in every respect with the latest developments. In other retailing premises in the Burgh, additional provisions for scalding and washing utensils; fitting iron framework for storing utensils; impervious shelves; reconstruction of floors; and relining of walls with impervious materials have been executed.

To those outwith the Burgh Boundary who supply milk either by wholesale or retail within the Burgh, a request was previously made for registration in terms of Section 7 Sub-Section 8 of the 1914 Act. Upon receipt of each individual application for registration from these parties, the sanitary official of the district in which

their premises was situated was communicated with in order to ascertain if such premises were registered in his particular district. In all cases it was found that they were, and thereafter the Public Health Committee of the St. Andrews Town Council were, by the sanitary officers, subject to the Committees approval, recommended to grant certificates of registration. These were duly completed, and issued along with documents similar to those sent to the Producers and Retailers within the Burgh, details of which have already been furnished.

From the foregoing it will be observed that each person producing milk, retailing milk, or bringing milk into St. Andrews is provided with copies of the Local Bye-laws and other information bearing directly upon his work, and that a formal letter of receipt from each person in acknowledgment of these documents is filed along with their copies of Certificate of Registration in the Sanitary Inspector's Office.

All producers and retailers of non-graded milk in the Burgh together with those outwith the Burgh disposing of milk within it were called upon to supply, on a form prepared for that purpose, the replies to the following questions :—

1. Do you obtain milk supplies from any other person or persons in addition to the milk supply from your own premises ?
2. If so, give the names and addresses of all persons from whom you obtain the additional milk supply.

Upon receipt of these returns it was found that while there were 19 directly registered within the Burgh, they collectively received supplies from 13 others. From the foregoing it will therefore be observed that accurate information regarding the sources of the milk supply in the Burgh is available, for not only are those dealing directly in the Burgh registered within it but through them information is available regarding those supplying milk to them.

The undernoted Tables furnishes the particulars contained in the various Registers on 1st January 1928 and at 31st December 1928 :—

Description	On Register at 1/1/1928	Removed during year	Added during year	On Register at 31/12/29	Remarks
<i>Non-Graded Milk.</i>					
Wholesale Producers within Burgh, ..	1	..	..	1	
Retail Producers within Burgh, ..	4	..	..	4	
Dairy shops within Burgh,	4	2	1	3	
Occupiers of premises outwith Burgh but selling milk within Burgh,	7	..	4	11	
Totals, ..	16	2	5	19	
<i>Graded Milk.</i>					
Retail Producers within Burgh, ..	2	..	..	2	Certified Milk.
Dairy Shops within Burgh,	1	..	..	1	Do.
Tea Room within Burgh,	1	..	..	1	Do.
Co-operative Store in Burgh,	1	..	..	1	Pasturized Milk.
Totals, ..	5	..	..	5	

From the above Tables it will be noted that there are situated within the Burgh 5 registered cowsheds. The total number of cows accommodated in these cowsheds during the year was approximately 54. There are no cowsheds exempted from registration in the Burgh.

Milk and Dairies (Scotland) Order, 1925.—With the exception of Articles 5 and 16 the requirements of the above Order were satisfactorily carried out during the past year.

Article 5.—The transferring of milk in the Burgh from the vessels on one vehicle to the vessels on another vehicle was a matter that received the attention of the sanitary officers. As the vehicles belonged to different persons, it was evident that this

section of the Order was not being carried out by the milk vendors concerned, and as transferring milk in this case was a matter of daily occurrence, it was arranged that the milk should not be transferred from one vessel to another, but that an exchange of vessels should take place. This was agreed to by the parties concerned. A Circular letter directing special attention to this section was thereafter transmitted to all producers and retailers of milk. The following is an excerpt from the letter :—

The Milk and Dairies (Scotland) Order, 1925.

“ With reference to the above order, a copy of which was transmitted to you a few months ago. I now specially direct your attention to Section 5 of the Order. This Section expressly prohibits the transference of milk from one vessel to another vessel except in premises that have been registered under Section 7 of the Milk and Dairies (Scotland) Act, 1914. As there have been cases wherein this Section has been contravened, I have to request that careful and continual attention be directed to it.”

Article 16.—Labelling.—It was pointed out to the dairymen that in the event of skimmed or separated milk being exposed for sale in any vessels in their premises without the vessel bearing a label to the effect that the milk in the vessel was “ skimmed milk ” or “ separated milk ” as the case might be, they would be guilty of contravening Article 16 of the Order. It was further intimated to them that when drawing samples for analysis I should be entitled to assume that the contents of any vessel exposed for sale in their premises was not skimmed or separated milk unless the vessel bore a label to that effect in accordance with this Section of the Order. It was observed thereafter that labels were provided as called for.

Arrangements for carrying out the Clean Milk Competition to which reference was made in last year’s report were duly completed and the Competition commenced in February of 1929. Full particulars regarding it and the results obtained will be a subject for next year’s Report. It may be of interest, however, to note here that on a number of occasions the milks were found to be well within the standards laid down for Certified Milk.

The population of St. Andrews varies considerably during the summer and winter months, and from returns of the milk supplies sold during these periods the following table has been prepared. It cannot be regarded as strictly accurate, but care has been taken to make the figures as correct as possible.

<i>Description.</i>	<i>Winter Months.</i>	<i>Summer Months.</i>
Graded Milks (Wholesale and Retail),	103 gallons.	150 gallons.
Non-Graded Milk (Wholesale), ..	132.25 gallons.	167 gallons.
Non-Graded Milk (Retail), ..	587.0 gallons.	1050 gallons.
Totals,	822.25 gallons.	1367 gallons.

HOUSING.

The 24 houses of the Fifth Development remaining to be completed at the end of the preceeding year were duly finished and at the end of 1928 the number of houses erected by the Town Council (including the 15 houses at Abbey Court and South Court properties) is shown in the following table.

<i>Development.</i>	<i>Houses occupied at end of year.</i>				<i>Houses in course erection.</i>				<i>Totals</i>
	<i>2 rms.</i>	<i>3 rms.</i>	<i>4 rms.</i>	<i>5 rms.</i>	<i>2 rms.</i>	<i>3 rms.</i>	<i>4 rms.</i>	<i>5 rms.</i>	
First Development, ..	Nil	20	36	12	Nil	Nil	Nil	Nil	68
Second Development, ..	Nil	32	18	Nil	Nil	Nil	Nil	Nil	50
Third Development, ..	Nil	36	15	Nil	Nil	Nil	Nil	Nil	51
Fourth Development, ..	24	Nil	Nil	Nil	Nil	Nil	Nil	Nil	24
Fifth Development, ..	20	20	10	Nil	Nil	Nil	Nil	Nil	50
Abbey Court,	2	Nil	3	Nil	Nil	Nil	Nil	Nil	5
South Court,	2	2	1	Nil	Nil	Nil	Nil	Nil	5
42 South Street, ..	3	2	Nil	Nil	Nil	Nil	Nil	Nil	5
Totals,	51	112	82	12	Nil	Nil	Nil	Nil	258

The matter of the defective water closets to which reference was made in last year's report continues. A survey of the houses in the 2nd, 3rd, 4th and 5th Developments of the Housing Schemes was made during the year and notes taken regarding the conditions of the water closets. The particulars obtained during this survey were duly, on the instructions of the Town Council, submitted to the Housing Architect.

I have the honour to be,

GENTLEMEN,

Your obedient Servant,

JOHN ROSS, A.R.San.I.,

Sanitary Inspector.