[Report 1958] / Medical Officer of Health, Dartford Borough.

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Rural District Council of Dartford

ANNUAL REPORT

ON CERTAIN MATTERS
CONCERNING

Public Health

FOR THE YEAR

1958

SUMMARY

In 1958 the upward trend in the population of recent years continued.

The number of births was the highest on record and the birth rate was the highest since 1947.

The pattern of death was that to be expected in an area of South East England well provided with social services.

The infant rate for vaccination against smallpox declined. Revaccination of school children against smallpox continued to be neglected.

Sonne dysentery appeared in one residential institution; what may have been epidemic vomiting of virus origin appeared at one hospital and food poisoning occurred at another hospital. Paratyphoid fever thought to be due to imported egg products appeared in the district.

Flooding occurred in September.

Slaughtering and meat inspection diminished.

The problem of dust from cement works is reviewed.

RURAL DISTRICT COUNCIL OF DARTFORD

Annual Report for 1958 on certain matters concerning Public Health

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December, 1959.

To THE CHAIRMAN AND MEMBERS OF THE
RURAL DISTRICT COUNCIL OF DARTFORD.

Mr. Chairman, Ladies & Gentlemen,

INTRODUCTION

I am writing to give my observations on the statistical material contained in the tables and appendices of this Report. The reasons for providing these statistics have been explained in previous reports and also the part played by chance. Any opinions which may be expressed are not of course attributable to the Council.

POPULATION
Table I

The trend of the post-war years continued and the population figure was the highest recorded, similarly the natural increase i.e. excess of births over deaths, was the highest. The number of houses built, although not the highest recorded, is in keeping with recent trends having regard to the change of boundary in 1957, and the somewhat slower rate of building owing to the areas for development becoming used up, as mentioned in the last Annual Report.

The figure given in the last Annual Report for the population for 1957 was 45,810 yet in this Report the figure given for that year is 45,330. The explanation for this is that the change of boundary took place on April 1st, 1957, and for one quarter of the year we had the population of the area to be transferred producing births and deaths which were allocated to Dartford Rural District and, therefore, the population used for the calculation of birth and death rates could not be the actual mid-year number but had to be a "weighted" average which took this fact into account.

BIRTHS
Tables II & V

There was again a notable increase in the number of births in 1958 and the birth rate, like the national birth rate, noticeably increased and was in fact the highest on record in recent years; this is a feature of our young, immigrant population. The number of babies born at home increased to 33% compared with 31% in 1957 in this district. In this Local Health Authority area containing this and four neighbouring urban districts the ratios were 23% in 1958 and 22% in 1957.

The social classification of the births shows much the same pattern as in former years although some increase in the percentage of social classes I and II is discernible while percentages of classes IV and V are slightly diminished. By and large the percentages seem to present a fairly stable pattern over the years and private enterprise housing which has been a feature of this district does not seem to have caused any significant change. The social classification of the fathers of children born in recent years shows a higher percentage of social class III and a lower percentage of classes IV and V than the generation leaving us by death.

1958 will be the last year for which we shall have a classification of births as the method of classification has now altered and years subsequent to 1958 will not be comparable with the years before, We have therefore discontinued this classification.

DEATHS

Tables II, III, IV, VI, VII & VIII

In 1958 there was an increase in the number of deaths over previous years but as this was presumably related to the increase in population the death rate was not unusual and was less than the rate for England and Wales. The first quarter contributed the greatest number of deaths and the figure for that quarter was the greatest so far recorded, this was no doubt partly due to the aftermath of the influenza of the last quarter of 1957. There was a mild increase in the number of deaths of those aged 75 years and over and again the first quarter was responsible.

Diseases of the Respiratory System

Diseases of the respiratory system in 1958 showed an increase in deaths to 76 according to the Registrar General and 74 according to our own compilation.

The first quarter of the year resumed its usual role of producing the greatest quarterly figure for respiratory deaths.

	Deaths in first quarter	
	Respiratory diseases	All causes
1950	16	101
1951 (Influenza A)	30	144
1952	13	118
1953 (Influenza A)	36*	124*
1954	14*	115*
1955 (Mild Influenza)	20*	110*
1956	27*	142*
1957	21*	122*
1958 (Aftermath of Asian Influenza 1957)	29*	153*

*According to pre-1953 method of allotting deaths.

Aged respiratory mortality, by which I mean the percentage of respiratory deaths to deaths from all causes, showed an increase in the first quarter and this produced an increase for the whole year. This was perhaps the influence of the influenza of the last quarter of 1957.

		First Quarter	Year
Aged respiratory mortality	1955	21%	13%
" " "	1956	20%	17%
" " "	1957	16%	14%
" " "	1958	28%	19%

Cancer of the Lung

Cancer of the lung caused 11 deaths in 1958, none of these was in mental hospitals. The figures for previous years were 11, 8, 24, 17 and 11. The death rate in 1958 was 0.23 per 1,000 population compared with 0.44 for England and Wales and 0.64 for London.

Coronary Disease

Of the 80 deaths from coronary disease in 1958 one was a male under 45 years of age, 26 were aged 45 to 64 and 53 were aged 65 or older, 2 of these occurred in mental hospitals. The death rate was 1.68 per 1,000 population compared with 1.86 for England and Wales and 1.84 for London. These figures are an increase on the previous year.

Deaths from Violence

Road accidents: there were 7 motor vehicle accident deaths, 3 were pedestrians aged 57, 65 and 74, 2 being inmates of a mental hospital, 2 were motor cyclists aged 19 and 71 and 2 aged 45 and 53 were in a motor van.

Other accidents: there were 8; 4 at work and 4 at home, 3 of the latter are described below under accidents at home and 1 was an epileptic whose death although at home was not due to home conditions.

Suicide: there were 4, 3 females aged 34, 53 and 65 and 1 male aged 18.

Deaths from violence present a similar picture to former years and unfortunately the picture will not improve in the future. The influence that can be brought to bear on the problem can only through a large effort keep these deaths to a minimum.

Deaths relating to the Welfare of Mothers & Infants

Maternal deaths: there was one, the first for many years.

Still births: there were 17 compared with 20 and 11 in the previous years and the rate was less than that of England and Wales.

Neonatal deaths: these illustrate that infective conditions now play little part in infant mortality which is now largely a problem related to the unborn child and his delivery to independent existence. The infant death rates for 1958 were much the same as

the former year and are in keeping with the high standard of health and hospital services one is entitled to expect here. The causes of infant deaths were as follows:-

Less than one day old: prematurity 6 (including two pairs of twins), congenital defects 3, atelectasis (i.e. failure of lungs to expand) 2, haemolytic disease 1, Total 12.

One to six days old: birth asphyxia 2 (one a twin), pulmonary haemorrhage 1, Total 3.

7 to 27 days old: pneumonia (with congenital defect) 1, congenital defect 1, Total 2.

28 to 364 days old: congenital defect 3, encephalitis nature unknown 1, Total 4.

All but three of these deaths occurred in hospital.

INFECTIOUS DISEASE

Virus infections

POLIO-MYELITIS

No case of poliomyelitis occurred during 1958. There were 19 in 1957. Vaccination against poliomyelitis by the Local Health Authority got under way and almost 6,000 children received two injections which is something like 60% of the child population.

ENCEPHA-LITIS

There was an infant death mentioned above.

MEASLES

Table X

Measles made its expected appearance at the end of 1958 but it was preceded by several sporadic cases from April onwards. The precision of the measles cycle continues to be impaired by the immigration of young persons under the influence of a measles rhythm elsewhere.

INFLUENZA

The influenza at the end of 1957 had some influence on the beginning of 1958 but apart from this influenza was not a feature of 1958.

SMALLPOX

Table XII

Infant vaccination rates were less than in the previous year and this change also occurred in the rest of the county. This lowering of the vaccination rate was perhaps related to the introduction of vaccination against poliomyelitis into the routine immunisation procedures. The percentage of births of those vaccinated at the age of under 1 year was 58% in 1957 and 47% in 1958. In England and Wales the figures for these two years were 43% and 45%, perhaps it was that the rest of the country did not institute their poliomyelitis programme at the same time as Kent.

In 1957 infant vaccinations done by family doctors and clinics were 330 and 154 respectively, in 1958 the vaccinations were 253 and 194. There had of course been smallpox in London in 1957.

Revaccination of school children is still negligible. In 1958 there was no smallpox in this part of the country to stimulate vaccination as in 1957.

Bacterial infections

DIPHTHERIA
Table XII

The infant vaccination rate was up on the previous year. So was the percentage of children under five years of age who had obtained immunity, which figure was appreciably greater in Dartford Rural District than in Kent or in England and Wales but this percentage is inflated by an out of date low child population figure being the only one available. 1958 was the tenth year in succession in which no diphtheria occurred in this district.

WHOOPING COUGH
Table XII

The cases notified were much the same as previous years. It is not possible to compare the vaccination figures with previous years as 1958 is the first year we have received them.

DYSENTERY

An adult male of 21 years of age was notified in April and in June we heard of two families afflicted with alimentary upset but specimens from the families revealed no disease-bearing organisms.

In July 5 cases were notified and 6 cases were under observation for dysentery at a residential special school and 5 of these showed the presence of Sh. sonnei. 3 of these had not cleared up by the end of the school term and although carrying the organism were allowed to go home, advice on hand cleanliness, etc., was given to their parents. At the beginning of the subsequent term these were re-investigated and only 1 was then found to be infected. A month later three specimens failed to produce the organism.

In December a case of bacillary dysentery was notified on symptomatic grounds by an airport but no specimens were obtained.

FOOD POISONING
Table X

In June and July there was an outbreak of diarrhoea and vomiting in a mental hospital over a period of about 4 weeks, involving 43 patients. All the investigations which were carried out gave negative results except two. The two positive cases were notified as Salmonella infections and admitted to a general hospital. The Salmonella infection, however, of one of these was not confirmed by the Reference Laboratory, the other was identified as S. bovis morbificans. The Virus Reference Laboratory considered that the outbreak was one of "epidemic vomiting".

In July there was a case of food poisoning admitted urgently to hospital with vomiting, etc. Staphylococcus pyogenes was isolated from the vomit.

An outbreak at a general hospital in August resulting in 16 notified cases of food poisoning there, was attributed to cheese the agent being identified as a coagulase-positive Staphylococcus of the same 'phage type as one isolated from cheese which caused a hospital outbreak near Winchester.

In August a patient admitted to a general hospital for an acute abdominal emergency produced specimens which revealed S. enteritidis var. jena. (now no longer used as a rat poison).

In November a case who had been in a general hospital for over two years was notified. The agent was S. bovis morbificans.

In November also, an out-patient at a general hospital resident in this district was asked to submit specimens to the laboratory and S. bovis morbificans was found.

PARA-TYPHOID B.

In July a 33 year old male was admitted to hospital with paratyphoid fever. In addition to positive agglutination reactions, culture of the stools showed Salmonella paratyphoid B. 'phage type 3b. He was in hospital for seven weeks and in spite of an intensive course of treatment his stools remained positive. He was discharged home and subsequent specimens taken by us were negative. His parents at home and also a sewer swab revealed no organisms.

This case was one of several whose infection was attributed to confectionary bought in a neighbouring district made with Chinese egg albumen thought to be infected. Specimens from the bakery staff concerned taken in the neighbouring district revealed one of the food handlers to be infected and as this person lived in this district a notice was served on behalf of the neighbouring Medical Officer of Health under the Public Health (Infectious Diseases) Regulations, 1953, prohibiting this person from engaging in any occupation connected with the handling of food. This person was already voluntarily complying with this request and she subsequently provided us at intervals with 15 stool specimens the last being in February, 1959, and two blood specimens, all of which were negative and the statutory notice was eventually withdrawn.

TUBERCULOSIS RESPIRATORY

Table XI

The number of notifications received in 1958 was the lowest for 7 years and furthermore 2 of these were subsequently found not to be tuberculous. The figures are too small to provide conclusions but having regard to the increasing population they may be safely regarded as an indication of a downward trend. As usual males of middle age and over are a noticeable feature. Almost half of the cases notified were infectious.

The number of cases on the register has steadily increased in post-war years but in 1958 this trend changed and for the first time there was a drop in the number on the register. The reason for this was an increase in the removal of names from the register which was initiated by a further check on cases of whom nothing had been heard for five years, which resulted in the removal of 30 cases who could not be traced, 5 who had died before 1958 and 6 who had recovered before 1958. The number of cases removed from the register, namely 75 is the highest since 1950.

TUBERCULOSIS NON-RESPIRATORY Table XI

The number of cases notified in 1958 was the usual handful. They appear now to be products of human tuberculosis and milk infection by the cows' organism in this district seems to belong to the past as would be expected in view of the several years that have elapsed since non-designated milk was on sale here.

The number of cases on the register is the lowest since 1950, which is largely due to the removal of 13 cases as a result of the review of those cases on the register of whom nothing had been heard for more than 3 years.

WORM INFECTIONS

THE BEEF TAPEWORM

We received a report from elsewhere that cysticercosis bovis embryos had been found in the heart muscle of a steer which had grazed in the rural parts of this district in the area covered by the cesspool emptying vehicles. However the diagnosis had not been confirmed in the laboratory and apart from preliminary inquiries no action was taken.

LIVER FLUKE

Distomatosis at meat inspection began to receive a little more notice than in the past in view of one or two publications regarding the rare occurrence of this infestation in man as a result of eating watercress.

CHEMICAL POISONS

LEAD & ARSENIC

Cases of imported apples tainted with lead and arsenic were received by retailers in this district from suppliers in the neighbouring borough who in turn received them from suppliers in London. The contamination was found as a result of information received from the Public Health Department of the Metropolitan borough where these apples were imported. The lead and arsenic originated from a spray used as an insecticide. So far as possible the cases of apples were withdrawn from the shops

following the approaches of the Public Health Inspectors of this and the neighbouring authority and sent back to the wholesalers where they were washed. Subsequently the following statement appeared in the Monthly Bulletin of the Ministry of Health:-

> "Apples recently imported from certain Mediterranean and Middle East countries have been found to have surface contamination of excessive amounts of lead and arsenic derived from insecticidal sprays. The trade has co-operated with local authorities to protect the consumer against any toxic hazard by having the fruit washed before it is distributed or retailed. A few firms are able to wash large consignments and to re-pack the fruit for the distributors.
>
> Contamination has been found to vary within wide limits, even in the same case of apples and it may be that some contaminated fruit has escaped detection before retail sale. The elementary hygienic practice of washing all fruit before eating affords adequate protection from any hazard to the consumer: peeling and coring provide an added safeguard.
>
> The Ministry of Health and the Board of Trade have made representations to the exporting countries concerned and urged that the fruit should be inspected, and washed when necessary, before it is shipped. Washing of fruit before marketing has been the practice of North American growers for many years."

Since this statement a standard for arsenic has been provided by statutory regulations.

LEAD FROM BATTERY CASINGS

In 1954 the use of discarded car battery casings for domestic fuel in Rotherham gave rise to numerous cases of lead poisoning and caused 2 child deaths. In children the poisoning is incurred through the pollution of their hands with the ash and the behaviour of some in chewing such material.

In reporting on a source of atmospheric pollution here in 1958 the Public Health Inspector stated that disused car batteries were being used as fuel by a certain concern. A sample of the ash from the burning of the cases contained 4.1% lead and the supplier of the discarded battery casings agreed to dump the casings rather than let them be used for fuel. For administrative reasons, however, this was not as easy as had been anticipated, the battery casings being trade refuse.

ACCIDENTS IN THE HOME

Table XIII

The figures given in the table show much the same pattern as in previous years. Three children in their second year of life were admitted to hospital with scalds to the face, neck and chest.

Amongst the elderly persons admitted there were two female deaths from respiratory disease no doubt consequent upon prolonged immobilization following their fractured femurs caused by falls, their ages were 77 and 98 years. In addition to these deaths there were the three deaths occurring at home and not admitted to hospital - an infant of 1 year.who was asphyxiated due to "overlaying", an epileptic aged 46 who fell on an open fire and a male aged 83 accidentally poisoned with coal gas.

Records

The records department of the Dartford Group of Hospitals now have established the practice of classifying and recording admissions due to accidents in the home. The classification is in accordance with the international code of practice and is in accordance with the type of accident and the type of injury. Interest in home safety is increasing and so far as records are concerned the next step is also to record cases treated in the casualty department but not admitted to hospital but before this additional work is contemplated we should first see the use to which the existing information can be put. Furthermore, if we are to document completely our hospital admissions due to accidents in the home the hospitals serving the Swanley and Southfleet ends of the district will have to be requested to establish similar practices and after that we might ask the general practitioners to keep us likewise informed. However until we can ensure that the information is going to be put to practical use we should not be too ready to involve others in additional records.

ENVIRONMENTAL MATTERS

HOUSING

Appendix I

The number of houses built, the effective waiting list for new houses, the number of applicants for housing priority on medical grounds and the number of houses demolished present much the same picture as in former years. Caravans, however, show a notable increase and the number licensed in 1958 was almost three times that of 1955.

WATER

Appendix II

There was little sampling of small domestic well supplies during 1958 but as we know the bacteriological picture of these supplies, the omission is not of much significance. The full details of the bacteriological analyses of wells of the Metropolitan Water Board supplying this area are given in view of the fact that this district provides a gathering ground for this water and should be kept under observation for evidence of pollution. The abnormal analyses resulting from flooding are excluded from the yearly summary.

Of the Metropolitan Water Board wells inside this district judged by the E. coli count it is the Green Street Green and Wilmington No.2 wells which seem of interest.

Chemical analyses of the Metropolitan Water Board water have been given in full, in addition to their evidence on the absence of pollution the hardness figures may be of interest. As usual the nitrate content is one quarter of the maximum allowable for infant feeds.

Floods

On the evening of 5th September thunderstorms of exceptional severity developed over Southern England. In this district during the 24 hours ended 9 a.m. 6th September there were 4 inches of rain. There was serious flooding of fields and houses, some of which had to be evacuated, sewers were overloaded and sewage and flood water erupted through the manholes fouling the surrounding areas. Although flood water entered several of the Metropolitan Water Board works the protective measures, such as the sealing of well tops, prevented flood water gaining direct access to any of the wells. The exception was at Southfleet where the well was out of use on account of installation of new machinery. However, polluted flood water did gain access to the water stored in the chalk, the evidence of this being the deterioration in the standard of the water drawn into some of the wells but owing to chlorination no unwholesome water was pumped into supply. At Green Street Green the quality of the raw water was such that it had to be pumped to waste for six days until the quality of the raw water improved and as this station supplies Southfleet service reservoir which was flooded and which is also supplied by the Southfleet pumping station which was then out of action, certain consumers in that part of the district had to be supplied by tank waggon by the Metropolitan Water Board from the 11th to the 17th September.

The Mid Kent Water Company provided a sample taken on 1st October, 1958, with the probability of 1 E.coli per 100 ml. present which was an unusual event but was no doubt associated with the floods of the previous month.

We are obliged to the Metropolitan Water Board and the Mid Kent Water Company for supplying their results to us.

FOOD

Appendix IV

Milk

Two samples of tuberculin tested milk failed the methylene blue test one decolourising the dye in 3½ hours and the other in ½ an hour, which meant that the samples were below the

prescribed standard. Both samples were produced and bottled at the same farm and the Milk Production Officer was informed of these results. It so happened that two samples out of nine already taken by the Milk Production Officer at that farm during the year had also failed the methylene blue test. Samples of tuberculin tested milk should arrive at the laboratory within two hours if they are not packed in ice in special containers and a possibility arose that the above samples did not arrive within the prescribed time. Further investigations were not then possible as the farm at that time was in a closed area due to an outbreak of foot and mouth disease but later it was ascertained that milk bottles after cleansing by the retailer were being sent back to the producer in open crates and there being put into immediate use. This and other practices were modified and sterilization of the bottles was included in the procedure at the farm. Subsequent samples were satisfactory.

It must be remembered that the methylene blue test for tuberculin tested milk is an exacting one.

Meat

The specimen of actinomycosis came from an 18 month old heifer which was grazing in this district, it became ill in the field and was there slaughtered. The carcase was inspected at the slaughterhouse and a liver abscess with fibrinous peritonitis was found, histology by the hospital Pathologist revealed actinomycosis. Two years before an employee of the farm had been treated for actinomycosis of the jaw.

The number of carcases inspected was noticeably less than in the previous year, which was due to a change of tenancy at the slaughterhouse handling the bulk of the trade and the cessation of the practice of slaughtering animals for sale as opposed to slaughtering animals for individual butchers.

Other Foods

In July, 1958, a cold store at one of the farms in this district began to be used for the storage of imported frozen egg products. Bacteriological analyses of these products sampled in our presence were done by a London teaching hospital, the cost being borne by the importers. No disease bearing organisms were isolated.

Almost all the unfit food voluntarily surrendered was the result of the flooding of 5th September.

DUST FROM CEMENT WORKS

(a) Administrative Features

THE YEARS 1930-45

Atmospheric pollution lends itself to study over a wider area than this District and discussion of dust from cement works has been omitted from previous reports in view of the reports by the Thames-side Joint Committee to which reference can be made. However, it may now be useful to sketch the position regarding dust from cement works so far as it is known to me at the office desk.

The nuisance caused to the general public by this dust had been the subject of comment for many years before the last war and there is one oft quoted case which occurred about 1932 when a market gardener received satisfaction after action had been started in the Courts for damages caused by this dust.

The installation of electrical precipitators to arrest the dust from cement kilns began in 1933 and after 1935, when cement works were brought under the influence of the Alkali etc., Act, all new works were fitted with electrical precipitators which were also provided for certain kilns operating before 1935. During the 1939-45 war certain kilns along Thames-side were out of production, there was a suspension of the policy of progressive installation of precipitators and a deterioration of those already in use. Dusty pollution of the atmosphere was accepted for defence purposes.

After the war the need for cement led to an increase in production at a time when dust arrestment plant was in disrepair and new plant and spare parts were unobtainable owing to a shortage of steel. Thus the dust nuisance was accentuated.

LOCAL GOVERNMENT ACTION

In 1947 Dartford Rural District Council and Swanscombe Urban District Council convened a conference of Thames-side local authorities to discuss this nuisance and this conference appointed an Investigation Committee. This Committee found, amongst other things, that the cement industry was taking the best practicable means to abate the nuisance but was hindered by non-delivery of the necessary plant and consequently the Committee asserted their influence on the Ministry to release the necessary steel. There was, however, one case where there was a difference of opinion with the Chief Inspector of Alkali etc., Works in that at certain works the Committee thought that the absence of electrical precipitators for structural reasons was not justified; twelve years later following technical advances these precipitators were being provided.

In 1949 after amendment by a further conference of Thames-side local authorities, the report of this Committee was formally presented to the Parliamentary Secretary to the Ministry of Health in the presence of three Members of Parliament.

In 1952 the Thames-side Advisory Committee for the Abatement of Atmospheric Pollution was formed. However in consequence of dry weather and disrepair of five precipitators the dust nuisance was again accentuated and in 1953 a further conference of local authorities was called. This conference requested the Minister to hold a public inquiry to find what further steps should be taken to abate the nuisance and the same year a Towns Meeting at Dartford supported this request. However the Minister did not consider that a public inquiry would be of any practical assistance. In 1955 the Thames-side Advisory Committee was succeeded by the Thames-side Joint Committee who, in 1957, made a further approach to the Minister for a public inquiry which received a similar response. Early in 1959 a public hearing to inform the public rather than the Minister was under consideration.

PARLIAMENTARY ACTION

The question of this nuisance has been raised in the House in 1947, in 1953 and on other occasions. The local Members of Parliament have been closely associated with local government action in all its phases. The Parliamentary Secretaries of the Ministry of Health of two governments have visited the area and so also has the Parliamentary Secretary of the Ministry of Housing and Local Government. The Investigation Committee of 1947 produced a petition of almost 5,000 signatures and in 1954 the officers of the Ministry of Housing and Local Government received a deputation from the Thames-side Advisory Committee which presented a petition of 32,000 signatures. In 1955 suggestions were made to the Members of Parliament for amendments to the Clean Air Bill with the intention of bringing the cement industry under more effective and more local control. In the 1959 General Election the problem became a political issue although the emphasis on a parliamentary remedy varied inversely with the candidates' chances of return.

PLANNING

Two fifths of the United Kingdom supplies of cement are manufactured in the Thames-side area but about 1944 it became the policy of the government and the industry for all new cement works to be sited elsewhere. In 1952 the local cement industry obtained planning permission which would enable them to obtain chalk in the Thames-side area for another fifty years.

LAW

Common Law

"If atmospheric pollution is believed to cause a 'nuisance at common law', an action may be brought, in a County Court or the High Court, for damages and an injunction to restrain the defendants from committing the nuisance. ... When an injunction is granted, the offender must stop the nuisance or be liable to more serious penalties." No doubt the Court will be influenced in its judgement by whether the best practicable means are being taken to prevent the nuisance occurring.

Statute Law

The Clean Air Act, 1956, and Alkali etc., Works Regulation Act, 1906, require owners of cement works to use the best practicable means to prevent the escape of grit and dust. This refers not only to the provision and efficient maintenance of appliances adequate for preventing such escape but also to the manner in which such appliances are used and to the proper supervision by the owner of any operation in which such grit and dust are evolved.

Air pollution from cement works is subject to control by the Minister through the Chief Alkali Inspector, who is the expert with a wealth of experience and with a responsibility to the public. Local authorities may take proceedings under the Clean Air Act regarding dust from cement works but must first obtain the consent of the Minister which will only be forthcoming in exceptional circumstances.

Numerical Limits

English law provides no statutory numerical limit to the amount of dust that may be emitted from industry. In the United States of America certain cities do have Ordinances which prescribe a limit to dust emission. The city of St. Louis limits the emission of fly ash to 0.45 grains per cubic foot of flue gas. Los Angeles provides a scale which varies in proportion to the total weight of raw material used up to a maximum discharge rate of 40 lbs/hour but Los Angeles burns no coal and has no cement factories. (Report Cmd.9322 - 1954)

In the Federal German Republic tentative limits have been devised for the emission of dust from new cement works (V.D.I. 2092 1959) and the amount permitted is expressed as a percentage of clinker production. This is the mean of six percentages provided by reference to tables assessing

1) type of locality,
2) amount of clinker production,
3) distance from sensitive neighbours,
4) chimney height,
5) land contours,
6) meteorological conditions.

The figure for a new works with 300 ft. chimney at Thames-side would be $\frac{1}{6}$ (2 + 0.5 + 0.25 + 1.6 + 0.75 + 0.75) = $\frac{5.85}{6}$ = .98 = about 1.0% production and this figure should rarely be exceeded although double i.e. 2.0% will be allowed in exceptional circumstances. This figure is not as good as that already being achieved here.

(b) Technical Features

METHODS OF MANUFACTURE

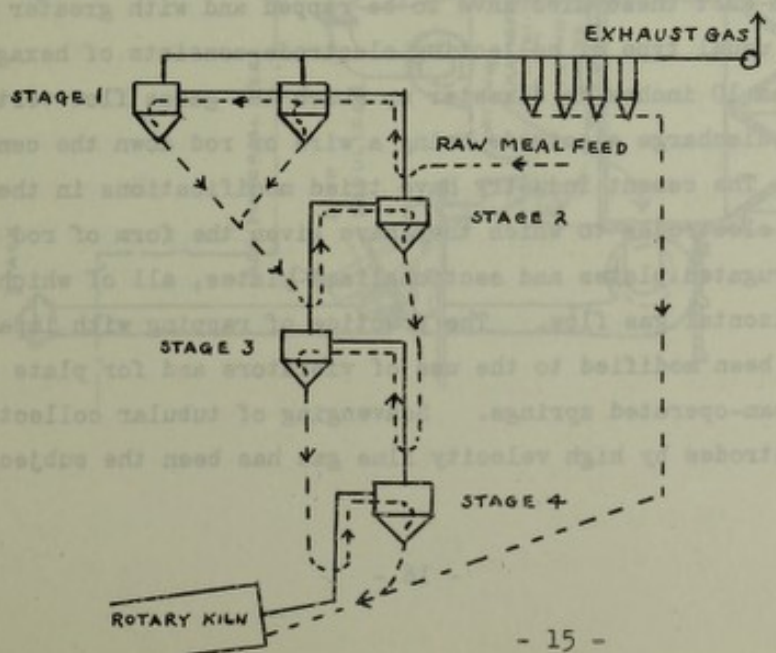
The way dust nuisance is created at the cement works and the trapping of this dust is the province of the engineer and the chemist whereas the observations which follow are the gleanings of an onlooker.

Kilns

The origin of the dust that affects the general public is in the kilns wherein the furnace creates cement clinker out of the raw materials. Cement can be manufactured in vertical kilns, now not often used, which are stationary and have a rotating grate or in rotating kilns slightly inclined to the horizontal. The rotary kilns use three methods by which to introduce the raw materials; the wet, the semi-dry and the dry. In the wet method the raw material enters in the form of a slurry containing 40% water; in the semi-dry method it enters as nodules containing 12% water.

Heat Exchange

The raw materials are cold and have to be roasted and therefore it is expedient for the heat of the flue gases to be utilised to give up some of their heat as they pass the entering raw materials and it so happens that methods of heat exchange are complementary to dust arrestment. In the wet method the cooler part of the kiln is festooned with chains which provide a curtain of slurry for the exchange of heat and trapping of dust. In the semi-dry method the nodules enter the kiln from a moving grate and the flue gases pass through the layer of nodules before the latter enter the kiln and are again passed through the bed of nodules at the cooler part of the grate where the raw materials enter (see diagram). These arrangements both exchange heat and trap dust. In one dry method the powdery raw material enters the first of a series of cyclones i.e. the last through which the flue gases escape and from the hopper of that cyclone it enters the inlet of the next cyclone and so on until from the hopper of the cyclone nearest the kiln the raw material enters the kiln together with the arrested dust of the flue gases and the heat obtained therefrom as shown here:-



The dry process allows more dust in the flue gases which leave the plant than does the wet rotary kiln fitted with chains but the fuel consumption is halved. The semi-dry process also consumes half the fuel used by the wet rotary kiln and furthermore passes less dust on but the particles of this dust are finer and more difficult to arrest (Burke 1957).

The amount of heat exchange requires consideration. Too rapid drying of raw material will increase the dust content of the flue gases; too rapid cooling of the flue gases will encourage trouble through condensation.

The wet process of cement manufacture is in use at Thames-side. After the last war a spray method of feeding wet slurry into the kilns used in Germany and said to produce less dust, was installed but it was given up as it increased rather than diminished the dust content of the flue gases. One plant using the semi-dry process is being installed.

METHODS OF DUST ARREST-MENT

The use of centrifugal force for dust arrestment presents the form of device in which there is least to go wrong. Dust laden gases enter at a tangent at the top of a cone, spin in a decreasing spiral down the inner side and escape upwards in the centre leaving

Cyclones

the separated dust to fall below. The faster the spinning the better the extraction and therefore for high efficiency numerous small cyclones are arranged in parallel. In the multi-cyclone the operative parts are tubular and not conical. This method of trapping separates off about 75% of the dust from the rotary kiln flue gas but the finer the dust the less effective is this method.

Electro-static Precipi-tators

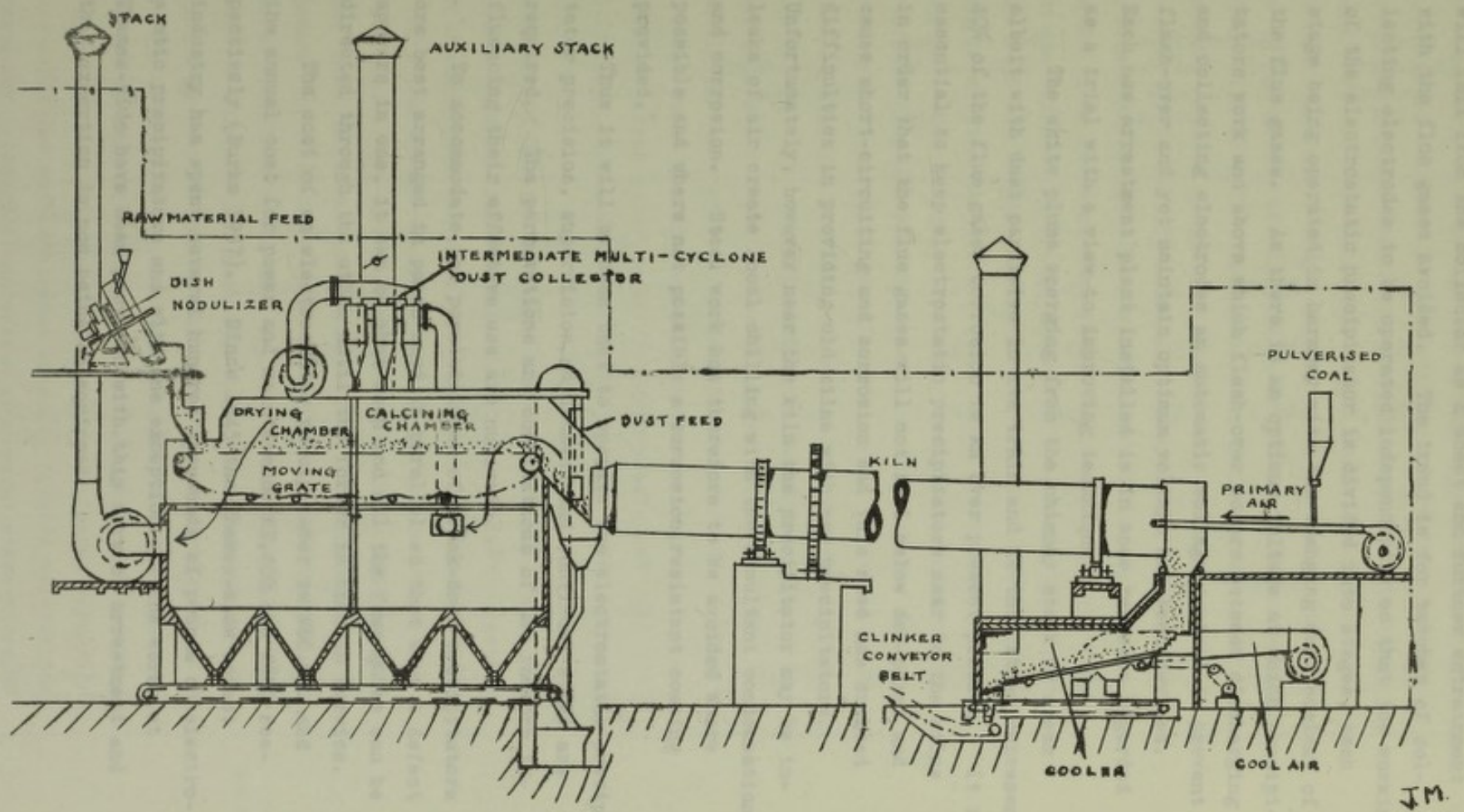
In electrostatic precipitators the flue gases pass between discharge electrodes carrying high voltage and collecting electrodes which are earthed and to which the dust migrates. The dust on the collecting electrodes has to be periodically released and this is usually done by rapping. To keep the discharge electrodes free from dust these also have to be rapped and with greater frequency. The usual type of collecting electrode consists of hexagonal tubes 10 inches in diameter up which the gases flow vertically, the discharge electrode being a wire or rod down the centre.

Modifi-cations

The cement industry have tried modifications in the collecting electrodes to which they have given the form of rod curtains, corrugated plates and sectionalised plates, all of which take a horizontal gas flow. The practice of rapping with impact hammers has been modified to the use of vibrators and for plate electrodes by cam-operated springs. Scavenging of tubular collecting electrodes by high velocity flue gas has been the subject of

THE SEMI-DRY PROCESS OF CEMENT MANUFACTURE

LEPOL PLANT (DIAGRAMMATIC)



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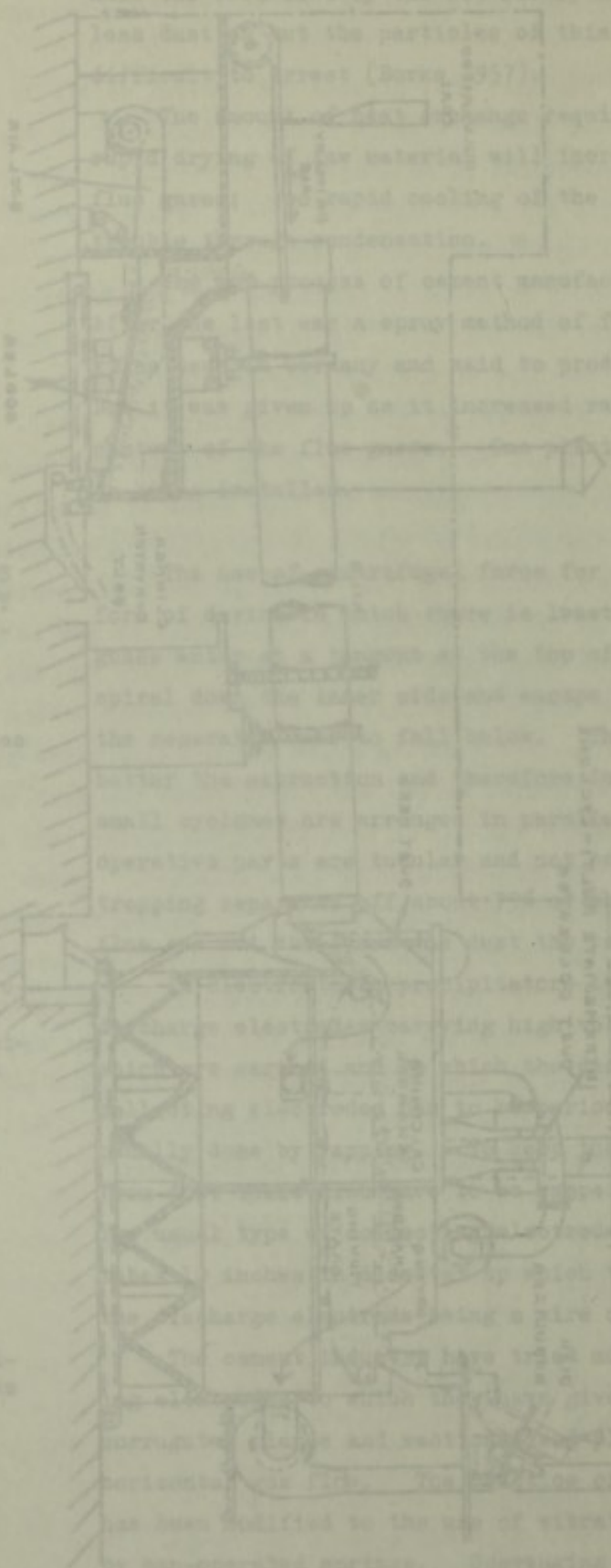

experiment and study. With rapping the rate has had to be studied so that it can be kept as low as possible in order that the dust will fall from the collector as a sheet and further entrainment with the flue gases avoided. The trend is for batches of collecting electrodes to be operated independently so that the working of the electrostatic precipitator is divided into stages, each stage being operated in harmony with the changing dust content of the flue gases. As there is an optimum voltage at which precipitators work and above which flash-over occurs between discharging and collecting electrodes an automatic voltage control to prevent flash-over and yet maintain optimum voltage has been devised. Each new arrestment plant installed is in some respects regarded as a trial with a view to improving technique.

Problems

The white plume emerging from the chimney stack is steam albeit with dust particles in its train and as this steam represents 40% of the flue gases corrosion is an ever present problem. It is essential to keep electrostatic precipitators near to the kilns in order that the flue gases will not fall below dew-point and cause short-circuiting and corrosion and this need has created difficulties in providing old kilns with new precipitators. Unfortunately, however near the kiln the precipitator may be in-leaks of air create local chilling with the resultant condensation and corrosion. Steel work has therefore to be avoided where possible and where not possible a corrosion resistant coating provided.

Thus it will be seen that to operate the electrostatic precipitator precision, supervision, adjustment and continual study are required. The permutations and combinations of the factors influencing their effective use are numerous.

To accommodate the possibilities of break-down precipitators are best arranged in pairs used in parallel so that when a defect appears in one, it can be shut down and all the flue gases can be directed through the other until the former is back in service.

Cost

The cost of an electrostatic precipitator is £60,000 and the annual cost for power and maintenance £2,400 and £600 respectively (Burke 1957). Since 1945 the Thames-side cement industry has spent several hundred thousands of pounds on electrostatic precipitators and with one exception all the works at Thames-side have been provided with this form of arrestment and that exception is now being so equipped.

Standard of dust Arrestment

In discussing the efficiency of arrestment plant percentages are quoted of the flue gas dust which can be arrested. These may be misleading as the percentage of dust arrestment varies with the dust burden and the size of the dust particles. Electrostatic precipitators require artificial draught and this causes more dust to be drawn out of the kilns into the flue gases than when the kilns are on natural draught. What matters is the amount of dust leaving the plant and its percentage by weight related to the cement clinker produced. This is more useful as a guide as it takes into account the amount of dust produced as well as the amount arrested. The table (Löbner 1954) shows that the semi-dry process of manufacture even if associated with only 75% dust arrestment, has the lowest dust emission in relation to the clinker produced. It produces less dust than certain rotary kilns equipped with precipitators arresting 95% of the dust burden, since its dust burden is appreciably lower. An arrestment plant of 75% efficiency has five times the "slip" of one with 95%.

In assessing the discharge of dust and grit from a chimney it is advisable to consider all the following together:

(a) The percentage escape ("slip") relative to the inlet quantity of suspended matter.

(b) The total weight of escape in, for example, lbs./day.

(c) The concentration of solid matter in the effluent gases in, for example, lbs. per million cubic feet.

(d) The size grading of the escaping dust. Sizes less than 0.020 mm. do not fall to ground. (Report Cmd.9322 1954.)

The 1947 Investigation Committee were of the opinion that an average arrestment of 95% by electrostatic precipitators was the best that in practice could then be hoped for, perhaps 98% is more appropriate now. The Committee on Air Pollution (1954) considered that even with precipitators working at full efficiency it is problematical whether dust emission from cement manufacture can be kept below a rate equivalent to 0.5% of the cement made.

Water Washing

"Regarding water washing, this is an excellent method of dust arrestment, but because of secondary difficulties we hesitate to recommend it. It was tried out at our request on a full scale at a works (not on Thames-side) and was efficient. The difficulty was that the specially designed washer was rapidly corroded and virtually dissolved away. On Thames-side a modified method was applied for several years to emissions from two kilns at the Kent Works in spite of serious corrosion troubles. The practice was stopped early in the war at the request of the Defence Authorities

DUST EMISSION AT CEMENT WORKS WITH DUST ARRESTORS
(After Ihlefeldt, Löbner 1954)

Type of Dust Arrestor		Type of Furnace		A	B		C		Dust arrested	Degree of dust arrestment as %
				Production	Dust content of raw flue gas		Dust content of de-dusted flue gas			
				kilogram/hour	kg/hour	% of A	kg/hour	% of A	kg/hour	
German	Presumable translation	German	Presumable translation						B-C	$\frac{B-C}{B} \times 100$
Zyklon	Cyclone	Schachtofen	Verticle kiln (dry-process)	6,772	146	2.2%	51	0.8%	95	65%
Rotex		Schachtofen	Verticle kiln (dry-process)	4,685	161	3.4%	43	0.9%	118	74%
Elektro-Entstaubung	Electrostatic precipitation	Drehofen, nass, mit Ketten und Einspritzung	Rotary kilns with chains and spray feed (wet process)	9,900	2,888	29.2%	148	1.5%	2,740	95%
Multi-aerodyn		Drehofen, nass, mit Kalzinator	Rotary kilns with calcinator (wet process)	15,000	2,100	14.0%	314	2.1%	1,786	85%
Abas-Doppel-Enstauber		Lepolofen	Lepol kiln (semi-dry process)	7,640	358	4.7%	89	1.2%	268	75%
Zyklon (Eigenbau)	Cyclone (Special type)	Lepolofen	Lepol kiln (semi-dry process)	9,225	500	5.4%	157	1.7%	343	69%

who objected to the conspicuous, dense, white plume of steam. During the war the wash towers fell into a state of decrepitude and it was then decided to replace them by electrical precipitators."

This statement was made by the Chief Inspector of Alkali etc., Works to the 1947 Investigation Committee. Is the difficulty of corrosion as great to-day? The Battersea Power Station has had corrosion difficulties in washing sulphur dioxide from its flue gases but the process is, so far as I know, still in operation.

DISPERSAL

Chimney height, chimney design, the number and position of chimneys in relation to buildings and hills determine the way the flue gases will be dispersed. The height of the stack, its diameter, the heat and velocity of the flue gases and their dust content, all determine what the maximum dust concentration on the ground will be and formulae using these factors are available for calculating this concentration.

The cement industry has aimed at increasing dispersion by increasing chimney height, presumably with a view to lowering the maximum ground concentration. The influence of chimney height on dispersal can perhaps be illustrated with the garden hose which is inclined upwards to water the lawn and is levelled to cleanse the path. Increasing chimney height receives approval but should it? Is there not too ready an assumption that effluvium containing dust should be treated in the same way as effluvium which is gaseous? The dust nuisance here is in the main due to dust particles large enough to be influenced by gravity and maximum concentration can only be reduced by increasing dispersion and spreading the nuisance over a greater area. For this size of particle what goes up must come down. Is there not a case for reversing this policy and requesting the industry to restrict dispersal? This could be done by lowering chimney height, increasing the number of chimneys and cooling the flue gases by water washing which would not only remove sulphur oxides but as we have seen, would be an effective method of dust removal.

The area neighbouring the cement works can be regarded as industrial and the development is in the form of a ribbon along the Dartford - Gravesend road. Decreased dispersion with water washing would mean that it would probably receive no more dust than at present. Elsewhere for about a mile around the cement works are open spaces, the river or barren chalk pits where dust will trouble no one and whereon it seems logical to concentrate the dust deposit.

The reason why this is not done may be that the dust emitted from the chimneys of the cement works contains not only large particles under the influence of gravity but also particles small enough to be permanently suspended in the air which only adhere to objects after being brought down by turbulence or by cold ground temperature, for instance in times of fog. For purposes of dispersal the larger particles should be treated as solids while the minute particles should be considered as a gas, thus with this variation in particle size the problem of dispersal is complex.

(c) Effects

DEPOSITED DUST

The Investigation Committee of 1947 carried out surveys which measured the dust deposit in the neighbourhood of the cement works and used its calcium content to indicate origin.

The standard practice for the analyses of the contents of deposit gauges is for the soluble calcium content to be estimated. This practice for the 23 deposit gauges of the Thames-side Joint Committee, however, is supplemented by an analysis of the total calcium content from which the amount of dust from cement works is estimated. The records of the Thames-side Committee therefore show the amount of dust from cement works that has fallen over Thames-side since 1954.

The noteworthy deposits of dust from cement works appear in the gauges within about three miles of the works. As percentages of deposits from other sources the following are approximate averages of six monthly deposits from April, 1954 to March, 1959:-

Gauge	Distance of nearest cement works	Ratio of dust from cement works to other deposits
Horns Cross	¼ mile	175%
Swanscombe	¼ mile	150%
Northfleet	¼ mile	125%
Dartford central	2½ miles	50%

The deposit in these industrial areas from sources other than cement works is about 100 tons per square mile every six months. Thus, at Horns Cross there is in addition 175 tons per square mile of dust from cement works every six months.

There are variations over this period but generally the trend is one of no change. However no figures of cement production are available and it may be that while cement production has gone up dust emission has remained stable.

SUSPENDED DUST

Suspended dust may be capable of adsorbing gaseous air pollutants most of which are the acid oxides of sulphur and being alkaline the dust here might have a neutralizing action. Deposited dust renders the contents of the deposit gauges alkaline and similarly suspended dust in a humid atmosphere may neutralize acid gaseous pollution. Whether this sort of action occurs in sufficient degree to be protective is a matter for conjecture but the only gauges we have whose readings may reflect this are the lead peroxide and volumetric gauges. The lead peroxide gauges do register lower readings in the cement making districts than elsewhere but this can be explained by these districts being more open. The volumetric gauge at Greenhithe shows a lower daily average than elsewhere but again this can be similarly explained.

HEALTH

Indirect Effect

On dry, still days the dust forms a haze which interferes with the penetration of sunlight but such a haze is limited to a defined area which changes with a breeze. The dry, drab greyness evident in the district is said to be depressing but generally this is cleaned away by rain. Indirectly, the dust interferes with ventilation as it compels the housewife to keep her windows shut.

All, including the cement industry, are agreed that the dust is annoying. However any nuisance is tolerated better if it is known that it is not the product of thoughtlessness and that everything possible has been and is being done to keep it down to a minimum. It is therefore essential that not only should the best practicable means be taken towards this end but that it should be seen by the public that this is being done. For this purpose words alone will not suffice - perhaps a permanent public exhibition giving technical information on the problem would be a worth while contribution to understanding.

Direct Effect

To estimate the effect on the lung one needs to get down to the physics, chemistry and biology of the interrelationship between the particles of dust and the minute air sacs, such as is the practice in studying industrial dust hazards. Such meticulous study is hardly within our resources.

One can theorize that the dust is harmful, one can theorize that it is beneficial.

Of the cement works flue dust 30% has a particle size of less than 5/1000 mm., and will therefore be suspended and it is this suspended dust which if biologically harmful is going to cause lung damage.

The dust may be a vehicle for the transmission of the organisms of infection. It is perhaps mildly caustic.

On the other hand, although silicates are present the amount of free silica in the dust is negligible. Presumably the dust is capable of neutralizing the harmful acid constituents of industrial and domestic pollution. The deposited particles which cause nuisance are too big to be taken into the lungs in respiration. The dust consists of chalk and clay, about 3:1 with some of the chalk calcined; this type of material has been used experimentally as a protective dust against lung disease.

By and large the dust seems to be inert and in insufficient quantity to have any direct effect on the health of the general population.

Recently, with the co-operation of the Thames-side cement industry it has been shown that chromic oxide in clay is oxidised at the furnace end of the cement kilns to hexavalent chromium and that this might cause allergic reactions in a small fraction of susceptible workers handling cement (Johnston 1958). It may be of interest to know if any significant amount of hexavalent chromium is present in the dust emitted with the flue gases.

Standardised mortality ratios for cancer of the lung and crude death rates for respiratory disease in the Thames-side area provide no indication that this dust is injurious to health but the number of deaths in the area is small for statistical analysis. The health records of the cement industry, I gather, are good and the records of mass-radiography both in the industry and the neighbouring general population show no undue incidence of respiratory disease.

The late Reverend Stanley Morgan said at the 1947 Conference of Local Authorities that in a survey of the problem around 1911 "We could not get enough evidence that there was any damage to health to the district from 'cement dust'. To put it pithily, the churchyards were against us and the burial register did not aid us."

That is about the position to-day.

SUMMARY

The problem of dust from cement works is discussed not with the purpose of attempting to show the way to a remedy but with a view to giving an idea of its nature.

REFERENCES

BURKE,E. MURRAY,J.J.L. and JOHNSON, K.R., (1957) Practical Aspects of Dust Control in the Cement Industry. Institute of Mechanical Engineers.

Committee on Air Pollution (1954) Report Cmd. 9322.

JOHNSTON,A.J.M. and CALNAN,C.D. (1958) Cement Dermatitis. The Transactions of the St. John's Hospital Dermatological Society Winter, 1958. 41.

LOBNER,A. (1953) Pap. to Industr. Hyg. Conf., Verh. dtsch. Ges. Arbeitsschutz, 1954. vol. 2.

Verein Deutscher Ingenieure Richtlinie 2094. 1959.

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ACKNOW-LEDGEMENTS

I wish to emphasise that the detailed day-to-day work of housing, water, drainage and food inspection is done by the Council's Public Health Inspectors.

All the members of this department have contributed to this report and contributions have been made by colleagues both here and elsewhere.

We wish to thank the Chairman and Members of the Public Health Committee for their interest and support during the year under review.

I am, Mr. Chairman, Ladies and Gentlemen,

Your obedient servant,

John H. Hudson.

Medical Officer of Health.

TABLE I - SOCIAL CONDITIONS

Area (acres) 1958	34,026
Population (Census 1931)	31,253
Population (Census 1951)	37,905
Mid-year home population 1958 (R.G.'s estimate)	47,660
Number of domestic & agricultural dwelling houses assessed to rates 31.3.58.	13,143
31.3.59.	13,991
Rateable value 31.3.59.	£544,759
Sum represented by 1d. rate 31.3.59.	£2,149

In the last eight years the area comparability factors for births (governed by the proportion of women aged 18-44 years) and for deaths (governed by the proportion of all age groups) have been as follows:

Year	1951	1952	1953	1954	1955	1956	1957	1958
Births	1.05	1.04	1.00	1.00	1.00	0.96	1.02	0.98
Deaths	1.00	1.00	0.99	0.99	0.99	1.08	1.01	1.06

The recent changes in these factors no doubt are the result of changes in the practice of assignment of institutional deaths, change of boundary in 1957, which lost us some 500 young families and the immigration of young families into this district. When local crude birth and death rates are multiplied by the appropriate area comparability factor they are comparable with the crude rate for England and Wales or with the corresponding adjusted rate for any other area.

POPULATION: In 1958 the estimated mid-year home population increased by 2,330 on the previous year. Increases in the population are due to natural causes, i.e. excess of births over deaths, and immigration, both being related to new houses built.

	1951	1952	1953	1954	1955	1956	1957	1958
Est. mid-year home population	37,520	38,250	38,610	39,110	41,290	43,940	45,330	47,660
Increase on previous year	650	730	360	500	2,180	2,650	1,390	2,330
Natural increase	149	143	187	170	222	323	362	448
Immigration	501	587	173	330	1,958	2,327	1,028	1,882
Houses built	223*	231	439	573*	847*	1,018*	380*	742

*Including 31, 35, 67, 219 and 46 houses built by Dartford Borough in 1951, 1954, 1955, 1956 and 1957 respectively. On 1.4.57. 486 houses went to the Borough with the change of boundary and in the table above these have been subtracted from the 866 houses built in the year 1957.

Social conditions for 1958 may be indicated by:

Cases dealt with by N.S.P.C.C.; Dartford Borough (about $\frac{2}{3}$) and Dartford Rural District (about $\frac{1}{3}$)	Neglect	27	Aid sought	5
	Ill-treatment	4	Children involved	127
	Moral danger	2	Prosecutions	-
	Beyond control	1		

Unemployed on 31st December, 1958, (Dartford Borough & Dartford Rural):
Men 337 Women 88

Illegitimate birth rate 1958 per thousand live births:

Dartford Rural District	Dartford Borough	England and Wales
31	29	49

TABLE II - BIRTHS & DEATHS, 1958.

	Males	Females	Persons
Live Births:			
Legitimate	482	430	912
Illegitimate	17	12	29
	499	442	941
Deaths from all causes:	264	229	493
Deaths from pregnancy, childbirth, abortion:		1	1
Still Births:			
Legitimate	7	9	16
Illegitimate	1	-	1
	8	9	17
Deaths - aged 0 to 6 days:			
Legitimate	8	6	14
Illegitimate	-	-	-
	8	6	14
Deaths - aged 7 to 27 days:			
Legitimate	1	1	2
Illegitimate	-	-	-
	1	1	2
Deaths - aged 28 to 364 days:			
Legitimate	3	2	5
Illegitimate	-	-	-
	3	2	5

Rates per 1,000 Home Population

Crude live birth rate Dartford R.D.	19.8
" " " " " " " adjusted by comparability factor	19.4
" " " " England & Wales	16.4
Crude death rate Dartford R.D.	10.3
" " " " " " adjusted by comparability factor	10.9
" " " " " " " for Stone House & Darenth Park and by comparability factor (pre-1953 method)	10.0
Crude death rate England & Wales	11.7

Rates per 1,000 Live and Still Births

Maternal death rate:	Dartford R.D. (based on 1 death)	between 0 & 1
	England & Wales	0.43
Still birth rate:	Dartford R.D.	17.8
	England & Wales	21.6
Perinatal death rate: (s.b. & deaths 0-6 days)	Dartford R.D.	32.4
	England & Wales	35.1

Rates per 1,000 Live Births

Neonatal death rate: (deaths 0-27 days)	Dartford R.D.	17.0
	England & Wales	16.2
Infant death rate: (deaths 0-364 days)	Dartford R.D.	22.4
	England & Wales	22.6

TABLE III - QUARTERLY DEATHS

Before 1953 the only deaths in Stone House and Darenth Park allotted to Dartford R.D. were those whose home addresses were either in Dartford R.D. or were unknown. For the years 1953 to 1957 all deaths of persons in these hospitals during those years were allotted to Dartford R.D. and this increased liability did not seem to be allowed for in the comparability factor. In 1958 the deaths of persons in long-stay hospitals were assigned to this district only if they had been resident there more than six months. If we are to follow the trend of deaths in Dartford R.D. since before 1953 we require to adjust our figures for deaths to bring them into line with the pre-1953 method:

	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Year 1958
Total deaths allotted to Rural District by Registrar General*	174	100	105	116	495
Less deaths in Mental Hospitals	23	9	10	11	53
Deaths excluding Mental Hospitals	151	91	95	105	442
Add average number of deaths in Mental Hospitals allotted to R.D. pre-1953, in view of home address not being known	2	2	2	2	8
Deaths by pre-1953 method	153	93	97	107	450

Quarterly number of deaths (pre-1953 method of allotting deaths)

Year	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Total
1951	144	96	90	97	427
1952	118	81	60	112	371
1953	124	76	66	86	352
1954	115	85	87	93	380
1955	110	91	79	86	366
1956	142	96	77	110	425
1957	122	83	95	132	432
1958	153	93	97	107	450

Quarterly death rates per 1,000 (pre-1953 method of calculating death rates)

Year	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Year
Dartford Rural District:					
1951	15.3	10.2	9.6	10.3	11.4
1952	12.3	8.5	6.3	11.7	9.7
1953	12.9	7.8	6.6	8.8	9.0
1954	11.7	8.7	8.9	9.5	9.7
1955	10.6	8.8	7.5	8.2	8.8
1956	13.9	9.4	7.5	10.8	10.5
1957	10.8	7.4	8.4	11.7	9.6
1958	13.6	8.3	8.7	9.6	10.0
England and Wales:					
1951	19.1	11.1	9.1	11.0	12.5
1952	13.4	10.6	8.9	12.4	11.3
1953	15.8	10.5	8.9	10.7	11.4
1954	14.0	10.6	9.3	11.4	11.3
1955	15.4	11.2	9.1	11.1	11.7
1956	15.3	10.8	9.3	11.3	11.7
1957	12.2	10.6	9.7	13.4	11.5
1958	14.7	11.0	9.3	11.7	11.7

*Compiled locally.

TABLE IV - DEATHS*

ALL AGES**

	All causes	Main causes	Other causes	Main Causes in Detail (440-468) Circulatory diseases	(140-205) Cancer	(330-334) Vascular dis.C.N.S.	(470-527) Respiratory diseases
1956	451	376	81	177	85	58	56
%	100%	82%	18%	38%	18%	13%	12%
1957	486	392	94	173	93	57	69
%	100%	81%	19%	36%	19%	12%	14%
1958	493**	401	92	178	86	61	76
%	100%	81%	19%	36%	18%	12%	15%
England & Wales							
1958	526,843	431,140	95,703	197,514	95,804	76,177	61,645
%	100%	82%	18%	38%	18%	14%	12%

DEATHS OF THOSE AGED 75 YEARS AND OVER

Quarters							
1st	72	64	8	30	4	10	20
2nd	44	37	7	17	7	5	8
3rd	36	33	3	16	5	8	4
4th	59	52	7	27	7	10	8
1958	211	186	25	90	23	33	40
%	100%	88%	12%	42%	11%	16%	19%
1957	197	172	25	100	23	22	27
%	100%	88%	12%	51%	12%	11%	14%
1956	199	173	26	93	15	32	33
%	100%	87%	13%	47%	8%	17%	17%

DEATHS AT THE AGES OF 65 TO 74, AND 75 AND OVER

	1955	1956	1957	1958
65 to 74	86 (22%)	117 (25%)	129 (27%)	123 (25%)
75 and over	187 (46%)	199 (44%)	197 (41%)	211 (43%)

DEATHS IN HOSPITAL AND AT HOME

	All Ages: Hospital	All Ages: Home	Aged 75 and over: Hospital	Aged 75 and over: Home
1955	217	188	79	109
1956	221	236	81	118
1957	249	236	74	123
1958	259	236	98	113

DEATHS BY SOCIAL CLASS

	1958		1957	1956	1955	1954
Class I	25	5%	4%	3%	3%	4%
Class II	75	15%	17%	17%	18%	16%
Class III	185	37%	34%	36%	38%	38%
Class IV	88	18%	22%	19%	20%	19%
Class V	72	15%	14%	18%	16%	16%
Unclassified & colonial service etc.	50	10%	9%	7%	5%	7%
	495	100%	100%	100%	100%	100%

*including Stone House and Darenth Park (for 1958 - only after 6 months' residence).

**from R.G.'s return (Table VI), local figure 495 (Table VII).

TABLE V - BIRTHS

BIRTH RATES

	Births	Birth rate (adjusted by comp. factor)	Birth rate (England & Wales)
1951	576	16.1	15.5
1952	514	13.9	15.3
1953	539	14.0	15.5
1954	586	15.0	15.2
1955	627	15.2	15.0
1956	770	16.8	15.6
1957	848	18.9	16.1
1958	941	19.4	16.4

BIRTHS CLASSIFIED ACCORDING TO PLACE OF EVENT

Classification by Registrar General

	1958	Percentage 1958	1957	1956
Born at home	308	33%	31%	28%
Born in hospital or nursing home	633	67%	69%	72%
	941	100%	100%	100%

Classification by County Medical Officer for area 6 of the Local Health Authority (Bexley, Crayford, Erith, Dartford Borough & Rural District)

	1952	1953	1954	1955	1956	1957	1958
Born at home	22%	20%	21%	20%	21%	22%	23%
Born in hospital or nursing home	78%	80%	79%	80%	79%	78%	77%

BIRTHS BY SOCIAL CLASS

Social Class	Legitimate births by social class of father	Illegitimate births by social class of mother	Total	Percentage 1958	1957	1956
I	86	-	86	9%	7%	5%
II	197	2	199	21%	19%	16%
III	444	10	454	49%	53%	51%
IV	88	10	98	10%	11%	13%
V	96	4	100	11%	10%	14%
Not stated	1	3	4	0%	0%	1%
	912	29	941	100%	100%	100%

TABLE VI - CAUSES OF DEATH ACCORDING TO SEX

1958.

Registrar General's Return.

	Male	Female	Persons	
All causes	264	229	493	
Tuberculosis, respiratory	2	1	3	
Tuberculosis, other	-	-	-	
Syphilitic disease	2	-	2	
Diphtheria	-	-	-	
Whooping cough	-	-	-	
Meningococcal infections	-	-	-	
Acute poliomyelitis	-	-	-	
Measles	-	-	-	
Other infective and parasitic diseases	1	-	1	
Malignant neoplasm, stomach	9	4	13	
Malignant neoplasm, lung, bronchus	9	2	11	
Malignant neoplasm, breast	-	8	8	
Malignant neoplasm, uterus	-	4	4	86
Other malignant and lymphatic neoplasms	22	26	48	
Leukaemia, aleukaemia	2	-	2	
Diabetes	-	1	1	
Vascular lesions of nervous system	32	29	61	61
Coronary disease, angina	52	28	80	
Hypertension with heart disease	2	3	5	178
Other heart disease	25	39	64	
Other circulatory disease	12	17	29	
Influenza	1	2	3	
Pneumonia	16	15	31	
Bronchitis	27	12	39	76
Other diseases of the respiratory system	2	1	3	
Ulcer of stomach and duodenum	4	2	6	
Gastritis, enteritis and diarrhoea	-	1	1	
Nephritis and nephrosis	-	1	1	
Hyperplasia of prostate	4	-	4	
Pregnancy, childbirth, abortion	-	1	1	
Congenital malformations	5	5	10	
Other defined and ill-defined diseases	21	23	44	
Motor vehicle accidents	6	1	7	
All other accidents	7	-	7	
Suicide	1	3	4	
Homicide and operations of war	-	-	-	

TABLE VII - CAUSES OF DEATH ACCORDING TO AGE, 1958

Compiled locally.

	All ages	Under 4 weeks	4 wks - 1 yr	1 - 2	2 - 5	5 - 15	15 - 25	25 - 35	35 - 45	45 - 55	55 - 65	65 - 75	75+
All causes	495	16	5	-	2	3	6	5	13	41	70	123	211
Tuberculosis, respiratory	3	-	-	-	-	-	-	1	-	1	-	-	1
Tuberculosis, other	-	-	-	-	-	-	-	-	-	-	-	-	-
Syphilitic disease	2	-	-	-	-	-	-	-	-	-	-	2	-
Diphtheria	-	-	-	-	-	-	-	-	-	-	-	-	-
Whooping cough	-	-	-	-	-	-	-	-	-	-	-	-	-
Meningococcal infections	-	-	-	-	-	-	-	-	-	-	-	-	-
Acute poliomyelitis	-	-	-	-	-	-	-	-	-	-	-	-	-
Measles	-	-	-	-	-	-	-	-	-	-	-	-	-
Other infective and parasitic diseases	1	-	-	-	-	-	-	-	-	1	-	-	-
Malignant neoplasm, stomach	11	-	-	-	-	-	-	-	-	1	5	2	3
Malignant neoplasm, lung, bronchus	11	-	-	-	-	-	-	-	-	2	5	3	1
Malignant neoplasm, breast	8	-	-	-	-	-	-	-	-	3	-	3	2
Malignant neoplasm, uterus	5	-	-	-	-	-	-	-	-	2	2	1	-
Other malignant and lymphatic neoplasms	48	-	-	-	-	-	-	-	3	7	9	13	16
Leukaemia, aleukaemia	2	-	-	-	-	-	-	-	-	1	-	-	1
Diabetes	1	-	-	-	-	-	-	1	-	-	-	-	-
Vascular lesions of nervous system	59	-	-	-	-	-	-	-	1	1	8	16	33
Coronary disease, angina	80	-	-	-	-	-	-	-	1	5	21	28	25
Hypertension with heart disease	8	-	-	-	-	-	-	-	-	2	1	2	3
Other heart disease	70	-	-	-	-	-	-	1	1	1	3	12	52
Other circulatory disease	23	-	-	-	-	-	-	-	2	1	4	6	10
Influenza	2	-	-	-	-	-	-	-	-	-	-	2	-
Pneumonia	31	1	-	-	-	1	-	-	-	1	2	6	20
Bronchitis	38	-	-	-	-	-	-	-	1	4	5	9	19
Other diseases of the respiratory system	3	-	-	-	-	-	-	-	1	1	-	-	1
Ulcer of stomach & duodenum	6	-	-	-	-	-	-	-	-	1	-	4	1
Gastritis, enteritis & diarrhoea	1	-	-	-	-	-	-	-	-	-	-	1	-
Nephritis & nephrosis	1	-	-	-	-	-	-	-	-	-	-	-	1
Hyperplasia of prostate	6	-	-	-	-	-	-	-	-	-	-	1	5
Pregnancy, childbirth, abortion	1	-	-	-	-	-	1	-	-	-	-	-	-
Congenital malformations	8	2	3	-	1	-	-	-	-	1	1	-	-
Other defined and ill-defined diseases	47	13	1	-	1	2	1	1	2	-	3	8	15
Motor vehicle accidents	7	-	-	-	-	-	1	-	-	2	1	3	-
All other accidents	8	-	1	-	-	-	2	-	1	2	-	-	2
Suicide	4	-	-	-	-	-	1	1	-	1	-	1	-
Homicide and operations of war	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE VIII - CAUSES OF DEATH

Ages 75 and over

	Total males & females	MALE						FEMALE					
		Total	75-79	80-84	85-89	90-94	95-99	Total	75-79	80-84	85-89	90-94	95-99
All causes	211	102	39	30	27	6	-	109	35	36	26	8	4
Tuberculosis, respiratory	1	1	1	-	-	-	-	-	-	-	-	-	-
Tuberculosis, other	-	-	-	-	-	-	-	-	-	-	-	-	-
Syphilitic disease	-	-	-	-	-	-	-	-	-	-	-	-	-
Diphtheria	-	-	-	-	-	-	-	-	-	-	-	-	-
Whooping cough	-	-	-	-	-	-	-	-	-	-	-	-	-
Meningococcal infections	-	-	-	-	-	-	-	-	-	-	-	-	-
Acute poliomyelitis	-	-	-	-	-	-	-	-	-	-	-	-	-
Measles	-	-	-	-	-	-	-	-	-	-	-	-	-
Other infective and parasitic diseases	-	-	-	-	-	-	-	-	-	-	-	-	-
Malignant neoplasm, stomach	3	3	1	-	2	-	-	-	-	-	-	-	-
Malignant neoplasm,lung,bronchus	1	1	-	-	1	-	-	-	-	-	-	-	-
Malignant neoplasm, breast	2	-	-	-	-	-	-	2	-	1	1	-	-
Malignant neoplasm, uterus	-	-	-	-	-	-	-	-	-	-	-	-	-
Other malignant and lymphatic neoplasms	16	6	3	1	2	-	-	10	4	4	1	1	-
Leukaemia and aleukaemia	1	1	1	-	-	-	-	-	-	-	-	-	-
Diabetes	-	-	-	-	-	-	-	-	-	-	-	-	-
Vascular lesions of nervous system	33	16	9	4	2	1	-	17	4	6	6	1	-
Coronary disease, angina	25	12	6	4	2	-	-	13	4	5	2	2	-
Hypertension with heart disease	3	-	-	-	-	-	-	3	3	-	-	-	-
Other heart disease	52	21	8	6	5	2	-	31	6	15	6	2	2
Other circulatory disease	10	3	-	1	2	-	-	7	4	1	1	1	-
Influenza	-	-	-	-	-	-	-	-	-	-	-	-	-
Pneumonia	20	11	2	4	3	2	-	9	4	2	2	1	-
Bronchitis	19	11	6	2	3	-	-	8	4	1	2	-	1
Other diseases of respiratory system	1	1	-	-	1	-	-	-	-	-	-	-	-
Ulcer of stomach & duodenum	1	-	-	-	-	-	-	1	-	-	1	-	-
Gastritis, enteritis & diarrhoea	-	-	-	-	-	-	-	-	-	-	-	-	-
Nephritis and nephrosis	1	-	-	-	-	-	-	1	1	-	-	-	-
Hyperplasia of prostate	5	5	1	2	2	-	-	-	-	-	-	-	-
Congenital malformations	-	-	-	-	-	-	-	-	-	-	-	-	-
Other defined and ill-defined diseases	15	8	1	4	2	1	-	7	1	1	4	-	1
Motor vehicle accidents	-	-	-	-	-	-	-	-	-	-	-	-	-
All other accidents	2	2	-	2	-	-	-	-	-	-	-	-	-
Suicide	-	-	-	-	-	-	-	-	-	-	-	-	-
Homicide and operations of war	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE IX - CAUSES OF DEATH ACCORDING TO SOCIAL CLASS

MALES	All classes	I	II	IIIa	IIIb	IIIc	IIId	IIIe	IVa	IVb	Va	Vb	X	981
All causes	266	14	36	1	11	10	-	74	31	19	7	40	22	1
Tuberculosis, respiratory	2	-	-	-	-	-	-	-	-	-	-	1	1	-
Syphilitic disease	2	-	-	-	-	-	-	2	-	-	-	-	-	-
Other infective & parasatic dis.	1	-	-	-	-	-	-	-	-	-	-	-	1	-
Malignant neoplasm, stomach	8	1	1	-	-	-	-	2	1	2	-	1	-	-
Malignant neoplasm, lung,bronchus	9	-	2	-	-	-	-	-	1	1	-	5	-	-
Other malignant and lymphatic neoplasms	22	1	3	-	1	1	-	3	3	1	1	6	2	-
Leukaemia & aleukaemia	2	-	1	-	-	-	-	1	-	-	-	-	-	-
Vascular lesions of nervous system	31	1	4	-	1	-	-	12	6	3	1	3	-	-
Coronary disease, angina	52	4	6	-	2	5	-	17	5	2	-	9	2	-
Hypertension with heart disease	3	1	1	-	-	-	-	1	-	-	-	-	-	-
Other heart disease	27	1	4	1	1	2	-	4	4	1	-	4	4	1
Other circulatory disease	10	1	-	-	-	-	-	5	-	3	-	-	1	-
Pneumonia	18	-	-	-	4	-	-	4	3	3	1	-	3	-
Bronchitis	26	1	2	-	2	1	-	9	5	-	2	2	2	-
Other diseases of respiratory system	2	-	-	-	-	-	-	-	-	-	-	2	-	-
Ulcer of stomach & duodenum	4	-	2	-	-	-	-	1	-	-	-	-	1	-
Hyperplasia of prostate	6	-	3	-	-	-	-	2	-	-	-	-	1	-
Congenital malformations	5	-	1	-	-	-	-	3	1	-	-	-	-	-
Other defined & ill-def. diseases	23	2	4	-	-	-	-	6	2	3	2	3	1	-
Motor vehicle accidents	6	1	-	-	-	1	-	-	-	-	-	1	3	-
All other accidents	6	-	2	-	-	-	-	1	-	-	-	3	-	-
Suicide	1	-	-	-	-	-	-	1	-	-	-	-	-	-
FEMALES														
All causes	229	11	39	-	10	9	-	70	18	20	5	20	26	1
Tuberculosis, respiratory	1	-	1	-	-	-	-	-	-	-	-	-	-	-
Malignant neoplasm, stomach	3	-	1	-	-	-	-	1	-	-	-	1	-	-
Malignant neoplasm,lung,bronchus	2	-	-	-	-	-	-	1	1	-	-	-	-	-
Malignant neoplasm, breast	8	-	1	-	-	1	-	4	1	-	-	-	-	1
Malignant neoplasm, uterus	5	-	-	-	-	-	-	1	-	-	1	1	2	-
Other malignant and lymphatic neoplasms	26	1	6	-	1	-	-	5	3	6	-	2	2	-
Diabetes	1	-	-	-	-	-	-	1	-	-	-	-	-	-
Vascular lesions of nervous system	28	2	6	-	1	-	-	8	2	1	-	4	4	-
Coronary disease, angina	28	-	7	-	1	1	-	15	-	2	1	1	-	-
Hypertension with heart disease	5	-	-	-	-	1	-	1	-	1	1	1	-	-
Other heart disease	43	1	7	-	2	4	-	13	1	4	-	4	7	-
Other circulatory disease	13	-	1	-	-	-	-	5	2	2	-	-	3	-
Influenza	2	1	-	-	-	-	-	-	-	-	-	-	1	-
Pneumonia	13	-	4	-	-	-	-	3	4	-	-	1	1	-
Bronchitis	12	1	2	-	1	-	-	2	1	-	-	1	4	-
Other diseases of respiratory system	1	-	-	-	1	-	-	-	-	-	-	-	-	-
Ulcer of stomach & duodenum	2	-	-	-	-	-	-	-	1	-	-	1	-	-
Gastritis, enteritis & diarrhoea	1	-	-	-	-	-	-	1	-	-	-	-	-	-
Nephritis & nephrosis	1	-	-	-	-	-	-	-	-	-	1	-	-	-
Pregnancy, childbirth, abortion	1	1	-	-	-	-	-	-	-	-	-	-	-	-
Congenital malformations	3	-	-	-	-	-	-	3	-	-	-	-	-	-
Other defined & ill-def. diseases	24	3	3	-	2	1	-	4	2	4	1	3	1	-
Motor vehicle accidents	1	-	-	-	-	1	-	-	-	-	-	-	-	-
All other accidents	2	-	-	-	-	-	-	1	-	-	-	-	1	-
Suicide	3	1	-	-	1	-	-	1	-	-	-	-	-	-

TABLE X - PREVALENCE OF INFECTIOUS DISEASES

Notifiable diseases (other than tuberculosis) during 1958:

Disease / General Population	Total	0-1	1-3	3-5	5-10	10-15	15-25	25-45	45-65+	Age ?
Measles	148	3	21	27	91	4	-	-	-	2
Whooping cough	37	2	7	9	17	1	-	1	-	-
Scarlet fever	11	-	1	1	8	1	-	-	-	-
Pneumonia	8	-	-	-	1	-	-	-	7	-
Poliomyelitis	-	-	-	-	-	-	-	-	-	-
Encephalitis	1	1	-	-	-	-	-	-	-	-
Dysentery	7	-	-	-	3	2	1	1	-	-
Food poisoning	21	-	-	-	-	-	5	5	11	-
Meningococcal infection	2	-	-	1	1	-	-	-	-	-
Paratyphoid B.	1	-	-	-	-	-	-	1	-	-
	236	6	29	38	121	8	6	8	18	2
Residential Institutions of more than 100 population										
Pneumonia	3	-	-	-	-	-	-	-	3	-
Food poisoning	2	-	-	-	-	-	-	-	2	-

Measles 1958

	Ash	Darenth	Eynsford	Farningham	Fawkham	Hartley	Horton Kirby	West Kingsdown	Longfield	Southfleet	Stone	Sutton-at-Hone	Swanley	Wilmington	TOTAL
January	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1
Feb./March	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
April	-	-	1	-	-	-	-	-	1	-	-	-	1	-	3
May	-	-	-	-	-	-	1	-	1	-	2	-	-	4	8
June	-	-	-	-	-	-	1	-	-	-	-	-	1	2	4
July	-	-	-	-	-	-	-	-	-	-	7	-	-	2	9
August	-	-	-	-	-	-	-	-	-	-	11	-	-	-	11
September	-	-	-	-	-	1	-	1	-	-	-	-	-	1	3
October	-	1	-	-	-	-	-	1	-	-	-	-	-	22	24
November	-	-	-	-	-	-	1	6	-	-	-	1	2	5	15
December	-	1	-	-	-	-	1	49	-	-	2	14	2	1	70
	-	2	2	-	-	1	4	57	2	-	22	15	6	37	148

	November	December	January	February	March	April	Total
1951-1952	-	-	-	-	2	3	5
1952-1953	26	210	284	164	147	61	892
1953-1954	-	-	-	-	-	-	-
1954-1955	1	1	5	4	43	76	130*
1955-1956	-	1	-	2	-	4	7
1956-1957	-	-	16	26	153	119	314*
1957-1958	-	-	1	-	-	3	4
1958-1959	15	70	113	106	58	32	394*

Non-notifiable diseases 1958

The following non-notifiable diseases were reported from the schools:

German measles	2
Chicken pox	16

*peak attained in a subsequent month.

TABLE XI - TUBERCULOSIS, 1958.

(a) RESPIRATORY

NOTIFICATIONS IN RECENT YEARS

1953	53
1954	27
1955	36
1956	29
1957	33
1958	25

NOTIFICATIONS IN 1958 BY AGE

	Total	0-1	1-5	5-10	10-15	15-20	20-25	25-35	35-45	45-55	55-65	65+
Males	17	-	-	-	-	1	2	5	3	2	2	2
Females	8	-	-	1	-	1	-	5	1	-	-	-
	25	-	-	1	-	2	2	10	4	2	2	2

Of the 25 cases notified 11 were infectious and the occupations of the infectious cases included four housewives, a soldier, a labourer, a cement worker and an engineering manager: 1 was retired and 2 were in institutions.

Two of the non-infectious cases were subsequently found to be not tuberculous and were removed from the register.

NUMBER OF CASES OF RESPIRATORY TUBERCULOSIS ON THE REGISTER

	Male	Female	Persons
Number on register at 31.12.52	173	114	287
-ditto- 31.12.53	201	127	328
-ditto- 31.12.54	211	129	340
-ditto- 31.12.55	228	144	372
-ditto- 31.12.56	245	165	410
-ditto- 31.12.57	265	181	446
-ditto- 31.12.58	252	175	427

CHANGES IN THE REGISTER IN 1958 WERE AS FOLLOWS:

Additions:	New notifications	25
	Came into district	30
	Restored to register (moved back into district)	1
		56
Removals:	Lost sight of	30
	Left district	14
	Died	6
	Died before 1958	5
	Recovered	20
		75

DEATHS

The cases removed from the register by death were as follows:-

Classified to tuberculosis: a female aged 35, sputum negative; a male aged 47, sputum negative; a male aged 76, sputum positive.

Classified to other causes: three males aged 42, 55 and 68, all sputum positive.

TABLE XI - TUBERCULOSIS, 1958.

(b) NON-RESPIRATORY

NOTIFICATIONS IN RECENT YEARS

1953	5
1954	5
1955	7
1956	1
1957	3
1958	4

The ages of the four new cases (3 males and 1 female) were 23, 24, 43 and 72. The organs affected were epididymis, cervical glands, kidney and elbow. The two uro-genital cases showed the organisms in the urine.

NUMBER OF CASES OF NON-RESPIRATORY TUBERCULOSIS ON THE REGISTER

	Male	Female	Persons
Number on register at 31.12.52	26	26	52
-ditto- 31.12.53	27	28	55
-ditto- 31.12.54	28	32	60
-ditto- 31.12.55	28	30	58
-ditto- 31.12.56	29	30	59
-ditto- 31.12.57	28	27	55
-ditto- 31.12.58	23	16	39

CHANGES IN THE REGISTER IN 1958 WERE AS FOLLOWS

Additions:	New notifications	4
	Came into district	-
	Restored to register (moved back into district)	1
		5
Removals:	Lost sight of	13
	Left district	1
	Died	-
	Recovered	7
		21

DEATHS

There was none.

TABLE XII - VACCINATIONS

(a) DIPHTHERIA

From the figures supplied by the County Medical Officer the following are derived:

INOCULATIONS DONE EACH YEAR:

	Age at 31st December	Primary Inoculations done in the year	Reinforcing Inoculations done in the year
1958	0 - 4 years	661	39
	5 -14 years	23	277
1957	0 - 4 years	528	20
	5 -14 years	25	275
1956	0 - 4 years	451	39
	5 -14 years	64	686
1955	0 - 4 years	396	18
	5 -14 years	19	270
1954	0 - 4 years	395	21
	5 -14 years	49	275

PERCENTAGE OF CHILDREN WITH EFFECTIVE IMMUNITY

Immunisation is effective for about five years and then requires to be reinforced. Hence -

December 31st	Age group	Children vaccinated at any time in their life	Children vaccinated in the last 5 years	Population Census 1951*	Percentage children immune
1958	0 - 4 years	2,026	2,026		64%
	5 -14 years	4,456	2,329		44%
	0 -14 years	6,482	4,355		51%
1957	0 - 4 years	1,726	1,726	3,175	55%
	5 -14 years	4,309	2,368	5,319	45%
	0 -14 years	6,035	4,094	8,494	47%
1956	0 - 4 years	1,586	1,586		50%
	5 -14 years	4,110	2,398		45%
	0 -14 years	5,696	3,984		47%
1955	0 - 4 years	1,527	1,527		48%
	5 -14 years	3,711	2,165		41%
	0 -14 years	5,238	3,692		43%

*In view of the changing birth rate and development of the district, these population figures for recent years are unreliable and are less than the true figures.

INFANT VACCINATION RATE

Percentage of those born in a given year who were vaccinated in that year or the next:

Year of birth	Number of live births	Year vaccinated	Number vaccinated	%	Total	%
1958	941	1958	140	15	?	?
		1959	?	?		
1957	848	1957	62	7	504	60
		1958	442	53		
1956	770	1956	69	9	439	57
		1957	370	48		
1955	627	1955	40	6	405	65
		1956	365	59		
1954	586	1954	41	7	344	59
		1955	303	52		

TABLE XII - continued

INFANT VACCINATION RATE (Continued)(Diphtheria)

Vaccination by age at date of vaccination:

	Number of live births	Number under 1 year of age, vaccinated	Percentage of births of previous year
1958	941	452	48%
1957	848	266	35%
1956	770	273	44%
1955	627	232	40%
1954	586		

COMPARISON WITH OTHER AREAS

	Dartford Rural Dist.	Dartford Borough	Kent A.C.	England & Wales
Percentage of those born in 1957 vaccinated in 1957 or 1958	60%	64%	60%	-
Percentage of births of previous year of those vaccinated at age of under 1 year	48%	56%	-	-
Percentage of children under 15 years vaccinated in the 5 years ended 31.12.1958	51%	51%	50%	-
Children under 5 years	64%	56%	54%	54%

(b) SMALLPOX

Numbers vaccinated:

		Age at December 31st Under 1	1 - 4	5 - 14
1958	Vaccinated	256	219	5
	Revaccinated	-	2	14
1957	Vaccinated	288	233	58
	Revaccinated	-	3	8
1956	Vaccinated	252	180	27
	Revaccinated	-	2	15
1955	Vaccinated	221	147	9
	Revaccinated	-	-	12
1954	Vaccinated	216	110	28
	Revaccinated	-	2	8
1953	Vaccinated	169	119	19
	Revaccinated	-	1	3

TABLE XII - continued

INFANT VACCINATION RATE (Continued)(Smallpox)

Percentage of those born in a given year who were vaccinated in that year or the next:

Year of birth	Number of live births	Year vaccinated	Number vaccinated	%	Total	%
1958	941	1958	256	27	?	?
		1959	?	?		
1957	848	1957	288	34	495	58
		1958	207	24		
1956	770	1956	252	33	457	60
		1957	205	27		
1955	627	1955	221	35	383	61
		1956	162	26		
1954	586	1954	216	37	343	59
		1955	127	22		
1953	539	1953	169	32	269	50
		1954	100	19		

Vaccination by age at date of vaccination:

	Number of live births	Number vaccinated by age at date of vaccination			Percentages of births of those vaccinated under one year
		Under 1	1 - 4	5 - 14	
1958	941	447	29	4	47%
1957	848	484	45	54	58%
1956	770	406	27	11	53%
1955	627	343	23	11	55%
1954	586	309	16	32	53%
1953	539	273	19	14	50%

VACCINATIONS DONE BY PRIVATE DOCTORS AND CLINICS

The analysis for 1958 is as follows:

Age Group	Vaccinated		Revaccinated	
	Private Doctors	Clinics	Private Doctors	Clinics
Under 1	253	194	-	-
1 - 4	17	12	2	-
5 - 14	4	-	14	-
Total under 15	274	206	16	-

COMPARISON WITH OTHER AREAS

	Dartford Rural Dist.	Dartford Borough	Kent A.C.	England & Wales
Percentage of those born in 1957 vaccinated in 1957 or 1958	58%	61%	60%	-
Percentage of births of those vaccinated in 1958 at age under 1 year	47%	52%	55%	45%

TABLE XII - continued

Smallpox (Continued)

REVACCINATION - At school age

The number of children due each year for revaccination in school life (assuming only one revaccination during that period) is roughly the number of infant vaccinations done five years previously and the percentage revaccinated is shown by the following calculations:

	Dartford Rural Dist.	Dartford Borough	Kent A.C.	England & Wales
Infant vaccinations done in 1953	273	380	13,845	231,200
Children aged 5 - 14 re-vaccinated	14	10	354	13,569
Percentage of possible number of those re-vaccinated	5%*	3%	3%	6%

*Correction for increase in school population through immigration and other errors would result in an even lower percentage.

(c) POLIOMYELITIS

The following table gives the numbers of children who received a course of injections against poliomyelitis during the year ended 31st December, 1958:

	Dartford Rural District		Dartford Borough	
Year of birth	Given two injections	Given third injection	Given two injections	Given third injection
1958	79	-	118	-
1957	538	18	497	18
1956	561	53	506	44
1955	547	35	486	47
1954	446	22	390	41
1953	415	24	377	40
1952	377	13	318	40
1951	357	16	333	37
1950	227	20	241	35
1949	221	16	230	44
1948	201	11	222	33
1947	256	13	227	37
1946	416	1	451	-
1945	405	2	370	1
1944	326	-	364	2
Others	627	7	942	22
Total	5,999	251	6,072	447

TABLE XII - continued

(d) WHOOPING COUGH

The following table gives the numbers of children who received a primary injection against whooping cough during the year ended 31st December, 1958:

Year of birth	Dartford Rural District	Dartford Borough
1958	275	229
1957	488	403
1956	80	57
1955	11	14
1954	12	10
1953	8	16
1952	2	5
1951	4	1
1950	1	-
1949	-	-
1948	-	-
1947	-	-
1946	-	-
1945	-	-
1944	-	-
Before 1944	-	3
Total	881	738

(e) TUBERCULOSIS

(Vaccinated with B.C.G.)

The following figures are kindly provided by the Chest Physician, Dartford:

	Dartford Rural District	Dartford Borough
Children under 15 years of age	87	99

It must be remembered, however, that some persons from those parts of the rural district adjacent to other urban areas attend other clinics and therefore these figures are not quite complete for the rural district. Furthermore, vaccination with B.C.G. is carried out by the School Health Service and these figures are not available.

TABLE XIII - ACCIDENTS IN THE HOME

Persons receiving in-patient treatment at the Dartford Group of Hospitals

Age	Falls	Burns & Scalds	Poisoning	Other	Total
1956					
0 - 4	2	3	1	3	9
5 - 64	3	-	1	-	4
65+	3(1 died)	-	-	1	4
	8	3	2	4	17
1957					
0 - 4	1	3	-	1	5
5 - 64	4(1 died)	1	1	5	11
65+	4(1 died)	1	-	-	5
	9	5	1	6	21
1958					
0 - 4	1	7	-	3	11
5 - 64	5	1	2	3	11
65+	4(2 died)	-	-	-	4
	10	8	2	6	26

Deaths at Home

1956					
65+	1	-	-	-	1
1957					
65+	1	-	-	1	2
1958					
0 - 4	-	-	-	1	1
5 - 64	1	-	-	-	1
65+	-	-	1	-	1

Length of stay in Hospital

	Under 1 week	1-	2-	3-	4-	8-	12-	13+	Total Cases
1956	4	4	3	3	-	2	1	-	17
1957	6	8	1	2	1	1	1	1	21
1958	5	7	2	1	5	1	1	4	26

It must be remembered that although the majority of the accidents in the home in Dartford Rural District are admitted to the Dartford Group of Hospitals, some cases at the Swanley part of the district tend to go to the Sidcup & Swanley Group and at the Southfleet part, they tend to go to the Gravesend and North Kent Hospital.

APPENDIX I - HOUSING

NEW HOUSES: The following dwellings have been completed in the last five years:-

	1954	1955	1956	1957	1958
By Dartford Rural District Council	224	158	106	182	110
By Dartford Borough Council	35	67	219	46	-
By private enterprise	314	622	693	638	632
	573	847	1,018	866	742

HOUSING PROVIDED BY COUNCIL: The effective waiting list of housing applicants at the end of March, 1959, numbered 1,077 (exclusive of engaged couples), the total registered applications for the year being 1,224. During the year ended March, 1959, 140 families were rehoused by the Council.

	Families Rehoused:		
	April-March 1956-57	April-March 1957-58	April-March 1958-59
Ash-cum-Ridley	1	4	3
Fawkham	5	1	-
Hartley	2	1	2
West Kingsdown	4	3	1
Longfield	8	5	5
Southfleet	3	4	3
Betsham	3	4	2
Bean	1	2	2
Darenth	9	24	17
Stone	34	36	27
Eynsford	10	5	1
Farningham	5	6	3
Horton Kirby	5	5	2
South Darenth	5	6	2
Sutton-at-Hone	7	7	7
Swanley	30	73	30
Crockenhill	2	16	-
Hextable	3	6	6
Wilmington	2	15	8
Hawley	-	4	1
Outside Rural District	13	24	13
	152	251	140

178 Council tenants were moved to accommodation more suitable to their requirements.

HOUSING PRIORITY ON MEDICAL GROUNDS: The following are the details of applications, supported by medical certificates, received during the year for priority in rehousing on medical grounds:

	Applications received	Some degree of priority recommended	No priority recommended
Tuberculosis	8	6	2
Other than tuberculosis	75	50	25
	83	56	27

IMPROVEMENTS: In 1958, 31 applications for improvement grants under the Housing Act, 1949, were received relating to 36 houses and a grant was made in each case. The lowest estimates for the improvement works contemplated summed up to £14,094. The grants approved totalled £5,319.

Improvement work with the aid of a grant completed in 1958 dealt with 29 houses. The total of the lowest estimates for the work was £11,259. The grants totalled £4,647.

REPAIRS: 99 dwellings were rendered fit as the result of informal action, 4 were rendered fit as a result of statutory notices. 9 statutory notices were served under the Public Health Act or Housing Acts. The following are the details of repairs initiated by the Council's Public Health Inspectors:

Floors repaired	14
Roofs repaired	47
Doors repaired or renewed	23
Water supply restored and pipes repaired	6
Windows repaired including sash cords etc.	44
New W.C. pans provided	10
Flushing cisterns repaired or renewed	6
Plaster work repaired	55
Rain-water pipes and gutters repaired or renewed	18
Dampness to walls abated	28
Damp proof courses provided	1
New dustbins provided	1
Chimney stacks repaired	8
Walls repaired externally	9
Fireplaces repaired or renewed	8
Yard paving repaired or relaid	3
Sub-floor ventilation provided	1
Sink waste pipes repaired	1
New sinks provided	1

RENT ACT, 1957: The following certificates have been received and issued:-

Applications received for Certificates of Disrepair	33
Notices issued to landlords (Form J)	35
Undertakings received from landlords (Form K)	22
Certificates of Disrepair issued	10
Undertakings complied with	1
Applications received for cancellation of Certificates of Disrepair (Form M)	3
Certificates of Disrepair cancelled	2
Certificates issued as to remedying defects (Form P)	1

DEMOLITION OR CLOSURE OF HOUSES

Clearance Areas

Clearance Orders in respect of Nos 1-8 and Nos 10-15, Ifield Terrace, Stone, (Clearance Areas Nos 2 and 3), were confirmed by the Minister in July, 1958. Compensation totalling £1,269. was paid by the Council in respect of three of the houses.

A Clearance Order was made by the Council in October, 1958, in respect of Nos 2-8, Bridge Cottages, Darenth, (Clearance Area No.4), and confirmed by the Minister in January, 1959.

DEMOLITION OR CLOSURE OF HOUSES (cont'd)

Houses demolished or closed or subject to undertakings under Section 16 of the Housing Act, 1957, are shown in the table, of which the following is a summary:-

Number of demolition orders issued		8
Number of closing orders issued		2
Number of undertakings not to be used for habitation		1
Number of houses demolished		13
Persons displaced:-	Families	12
	Adults	25
	Children	10

CARAVANS

The following are the details of licences issued during the year under Section 269, Public Health Act, 1936:

Number of annual licences granted authorising the use of moveable dwellings	277
Number of licences authorising persons to allow land to be used as sites for moveable dwellings	Nil
Number of applications to station and use moveable dwellings refused	1
Number of unlicensed caravans removed during the year	6

DEMOLITION OR CLOSURE OF INDIVIDUAL HOUSES, 1958 (Secs 16, 17 & 18)

Address	No. of Houses	Undertaking not to relet	Closing Order made	Demolition Order made	Month demolished	Persons Displaced Adults	Children	Families
2, Hillbrow, Green Court Road, Crockenhill.	1	-	-	11 Dec.56.	Aug.58.	-	-	-
169 & 171, High Rd., Wilmington.	2	-	-	16 July,57.	Dec.58.	6	6	2
1-5, Forge Cottages, Swanley.	5	-	-	9 Oct.57.	June,58.	10	2	5
1, Hedge Place Cotts., Stone.	1	-	-	13 June,57.	June,58.	2	-	1
2, Hedge Place Cotts., Stone.	1	-	8 July,55.	-	June,58.	-	-	-
2, Chalk Cottages, Bower Lane, Eynsford.	1	-	-	9 April,58.	May,58.	1	-	1
Paddock View, Hawley.	1	Demolished as a result of informal action			May,58.	-	-	-
Calfstock Cottage, Button Street, Swanley.	1	1955	-	-	April,58.	-	-	-
Well Cottage, Dene Bottom, Horton Kirby.	1	-	-	15 Jan.58.	-	1	-	1
1, Goldsmiths Cottage, Hartley Bottom.	1	15 Jan.58.	-	-	-	3	-	1
Cedar Lawn Cottage, Sutton-at-Hone.	1	-	-	9 April,58.	-	2	2	1
Ironworks Cottage, Eynsford.	1	-	-	13 March,58.	-	-	-	-
2, Ship Cottage, Green Street Green.	1	-	14 May,58.	-	-	-	-	-
1-3, Darenth House, Eynsford.	3	-	-	10 July,58.	-	-	-	-
4, Highcross Cottage, Westwood.	1	-	13 June,58.	-	-	-	-	-
17, Ashen Grove, West Kingsdown.	1	-	-	Oct.58.	-	-	-	-
The Hazels, West Kingsdown.	1	-	-	11 Dec.58.	-	-	-	-
9, Ifield Terrace, Stone.	1	-	Jan.56.	Nov.58.	-	-	-	-

APPENDIX II - WATER

Water supplies interest us in regard to the source of supply, accessibility and quantity and quality available to the population in the district. This district is also a gathering ground for water supplies to this part of Kent and we should keep ourselves informed of the possibilities of these becoming polluted.

SOURCES OF SUPPLY & ACCESSIBILITY

Piped supplies into houses

The position at 31/3/59 was approximately as follows:

	Parish	Houses	Totals
Metropolitan Water Board supply	Darenth	835	
	Crockenhill	435	
	Eynsford	496	
	Farningham	422	
	Horton Kirby	705	
	Southfleet	336	
	Stone	2,069	
	Sutton-at-Hone	905	
	Swanley	3,190	
	Wilmington	1,774	
			11,167
Mid Kent Water Company supply	Ash	286	
	Fawkham	169	
	Hartley	726	
	Longfield	570	
	Southfleet	194	
	West Kingsdown	770	
			2,715
Lullingstone Estate supply	Eynsford	65	
Houses on supply of Hospital	Darenth	8	
Clement House well	Sutton-at-Hone	9	
1 house supplied by laundry well, Barn End Lane	Wilmington	1	84
1 house supplied by well at A.P.C.M. clay pit, Bean	Stone	1	

Supplies not piped into houses

Domestic wells, Clement St. (see below re. quantity)	Sutton-at-Hone	11	
Rainwater tanks	West Kingsdown	7	25
	Darenth	1	
Standpipe (M.W.B.)	Horton Kirby	6	
			13,991

Piped supplies into hospitals

Metropolitan Water Board	Stone	Stone House Hospital (Pop. 500)
	Swanley	Westminster Aux. Hosp. (Parkwood) (Pop. 81)
Metropolitan Water Board and hospital well	Darenth	Darenth Park, Southern & Mabledon Hospitals (Pop. 2,600)

QUANTITY

Supplies by the Metropolitan Water Board and the Mid Kent Water Company for domestic purposes are abundant. The quantity supplied by the Lullingstone Park well and Clement House well is satisfactory. The supplies dependent on pump and/or bucket in certain wells in Clement Street, namely: Whiffens Cottages and Ayres Cottages, are insufficient, and the practice initiated in 1956, of taking M.W.B. water to these houses by road was continued during the whole of 1958, the cost for 1958-59 being £273.

The quantity available by rainwater tanks generally meets the householders' requirements but in exceptionally dry weather it may be that water is available from neighbours with main supplies. A cottage on rainwater in Farningham Parish was provided with a piped supply from M.W.B.

QUALITY

In the following analyses, with the exception of M.W.B., the number of E. coli type 1 per 100 ml. in the bacteriological analyses and albuminoid ammonia in parts per million in the chemical analyses are used to summarise the information provided by sampling.

Metropolitan Water Board

Bacteriological

Raw water - 2,929 samples taken
Treated water - 2,562 samples taken

Chemical

Raw water - 60 samples taken

} for results see following table.

Mid Kent Water Company - Hartley Pumping Station

Bacteriological

Raw water - 12 samples taken - results were 11 samples 0, 1 sample 1.

Treated water - 12 samples taken - results in each case 0.

Chemical

Raw water - 4 samples taken - results in each case 0.

Lullingstone Estate Well

Bacteriological

Treated water - 2 samples taken - results in each case 0.

Eight houses supplied from Darenth Park Hospital supply

No samples taken.

One house supplied from clay pits well, Stone (raw)

No samples taken.

Nine houses supplied from well at Clement House (raw)

No samples taken.

One house supplied by laundry well, Barn End Lane, Wilmington

No samples taken.

Eleven houses supplied by pump and/or bucket from wells in Clement St. (Raw)

No samples taken.

Eight houses supplied by rain water at West Kingsdown & Darenth

No samples taken.

Hospital well at Darenth Park

Bacteriological - 52 samples taken and analysed by the hospital laboratory. E.coli count not given but maximum coliform count 4.

Stone House

Bacteriological - 52 samples taken and analysed by the hospital laboratory. E.coli count not given but maximum coliform count 4.

Swimming Pools

There were two open air swimming pools available to the public in 1958. The practice is to sample each pool at the shallow and deep ends.

Manor House - 6 bacteriological samples taken. Results of 5 samples, 0: 1 sample at deep end, 1.

Woodlands - 4 bacteriological samples taken. Results, 0.

The following pools, not open to the public, were also sampled:-

North Kent Sun Club - 4 bacteriological samples taken. Results, 0.

Stanwell - 4 bacteriological samples taken. Results, 0.

The water of all the above pools was subject to treatment with chlorine.

BACTERIOLOGICAL RESULTS - METROPOLITAN WATER BOARD, FOR 1958

Borough of Dartford

Well	No. of samples	BEFORE TREATMENT						AFTER TREATMENT			
		Plate count per ml.		Coliform count		Escherichia coli count		Plate count per ml.		Coliform count	E.coli count
		20-24 hours at 37°C.	3 days at 22°C.	% samples negative in 100 ml.	Count per 100 ml.	% samples negative in 100 ml.	Count per 100 ml.	20-24 hours at 37°C.	3 days at 22°C.	% samples negative in 100 ml.	% samples negative in 100 ml.
Dartford	246	0.3	11.7	99.59	-	100		0.5	11.3	100	100
Wilmington No.1	161	0.7	71.1	86.96	0.6	97.52)	0.4	0.1	2.7	99.59	100
Wilmington No.2	226	0.5	39.8	72.12	1.6	87.61)					
Darenth	249	0.3	7.8	87.95	0.2	99.20)	0.1	0.1	193.5	100	100
Darenth borehole	214	0.1	92.0	88.79	0.7	96.73)					
Bexley	269	0.1	7.5	94.80	0.3	99.26		0.1	5.7	97.28	100

Rural District of Dartford

Horton Kirby	244	0.4	8.3	93.03	0.9	96.31	0.6	0.3	16.7	99.60	100
Eynsford	160	0.4	65.5	75.00	0.7	96.25	0.1	0.1	40.0	98.86	100
Eynsford borehole	138	0.1	45.7	93.48	0.2	99.28		0.03	11.4	100	100
Orpington	249	0.1	16.0	94.78	0.1	99.60		0.1	20.4	100	100
North Orpington	227	2.9	32.2	1.32	53.3	14.54	16.3	1.8	23.3	99.57	100
Lullingstone	200	0.1	4.3	100		100		0.1	6.6	97.09	100
Southfleet	105	0.01	8.6	51.43	2.1	100		0.04	7.2	100	100
Green Street Green	241	0.2	15.8	82.99	2.3	86.72	2.0	0.1	4.8	100	100

Urban District of Swanscombe

Southfleet	105	0.01	8.6	51.43	2.1	100		0.04	7.2	100	100
Green Street Green	241	0.2	15.8	82.99	2.3	86.72	2.0	0.1	4.8	100	100

CHEMICAL RESULTS - METROPOLITAN WATER BOARD, FOR 1958
(Milligrammes per litre)

Borough of Dartford

Well	No.of samples	Ammonia Nitrogen	Albuminoid Nitrogen	Nitrate Nitrogen	Chlorides as Chlorine	Oxygen absorbed in 4 hrs at 27°C.	Hard-ness (Total)	Hard-ness (non-carb.)	pH. Value	Conduc-tivity, reciprocal megohms
Dartford	4	.003	.020	4.6	20	0.08	274	44	7.3	525
Wilmington No.1	4	.011	.026	5.6	21	0.14	280	48	7.3	525
Wilmington No.2	4	.009	.024	7.3	22	0.13	294	60	7.3	550
Darenth	4	nil	.019	5.4	16	0.06	260	30	7.2	475
Darenth borehole	4	.002	.023	5.9	17	0.08	274	38	7.2	525
Bexley	4	.005	.020	5.6	17	0.15	302	64	7.2	550

Rural District of Dartford

Horton Kirby	4	.002	.018	5.0	17	0.12	262	42	7.3	500
Eynsford	2	.002	.030	4.8	17	0.08	268	40	7.3	475
Eynsford borehole	3	.003	.020	3.3	15	0.06	254	32	7.3	450
Orpington	4	nil	.025	6.9	15	0.05	272	36	7.2	525
North Orpington	4	nil	.018	5.2	14	0.07	260	20	7.3	500
Lullingstone	4	.002	.021	3.3	15	0.08	242	22	7.3	450
Southfleet	2	.005	.018	6.0	15	nil	286	30	7.2	550
Green St. Green	13	.004	.022	6.9	17	0.06	280	34	7.3	525

Urban District of Swanscombe

Southfleet	2	.005	.018	6.0	15	nil	286	30	7.2	550
Green St. Green	13	.004	.022	6.9	17	0.06	280	34	7.3	525

APPENDIX III - DRAINAGE

An account of the drainage and sewerage of this district is given in our previous reports.

106 dwellings built by the Council and 500 built by private enterprise were connected to the sewer. 4 dwellings built by the Council and 132 built by private enterprise were connected to cesspools.

The effluent from Stone Outfall Works was sampled by the Port of London Authority on three occasions and the one report received was unsatisfactory. Albuminoid ammonia 0.55, oxygen absorbed from acid permanganate in 3 hours was 9.10 in parts per 100,000. Odour offensive with sulphuretted hydrogen 24 hours after receipt of sample.

The following are the details of the work initiated by the Council's Public Health Inspectors during 1958:

Pail closets abolished and property connected to sewer	8
Pail closets abolished and property connected to cesspool	6
Cesspools abolished and property connected to sewer	9
Drainage relaid	1
Drains repaired	14
Drains cleared	35
Covers renewed to inspection chambers and cesspools	9
Water tests applied to drains	10
Smoke tests applied to drains	4

The Council, using their powers under Section 47 of the Public Health Act, 1936, contributed towards the cost of converting existing pail closets to water closets at the following properties:

	Total cost of work	Local Authority's contribution
1-8, Petham Court Cottages, Swanley.	£519	£200
1-4, Sunnybank Cottages and The General Stores, West Kingsdown.	£426	£212
	£945	£412

At the end of the year the sanitary accommodation and drainage was approximately as follows:

Dwellings with water closets discharging into the sewer	10,011
Dwellings with water closets discharging into septic tanks	180
Dwellings with water closets discharging into cesspools	3,767*
Dwellings provided with pail closets	30
Dwellings provided with privies	3
TOTAL (i.e. number of dwellings at 31/3/59)	13,991

*This figure is based on one we obtained some years ago from our knowledge of the district and study of the register of electors etc. To this figure cesspools built subsequently have been added and cesspools demolished have been subtracted. The Council's Engineer has a figure of 3,362 which is just as accurate.

MILK; Regulations require this Council to register (i) dairies not being dairy farms and (ii) distributors, i.e. dairymen other than dairy farmers. The Council also have the duty to grant or refuse to grant, dealers' licences to distributors authorising the use of a special designation in relation to milk sold from premises in this district. Those holding dealers' licences for trade from premises outside this district can be granted supplementary licences authorising them to use a designation in relation to milk sold in this district.

The following are the figures for registrations and licences during recent years:

	1955	1956	1957	1958
Dairies registered	2	6	6	Nil
Distributors registered	37	37	35	33
Dealers' licences for:				
Tuberculin tested milk	19	19	13	12
Pasteurised milk	21	21	15	14
Sterilised milk	29	28	20	21
Supplementary licences for:				
Tuberculin tested milk	7	6	6	6
Pasteurised milk	6	6	5	6
Sterilised milk	9	7	7	7
Number of visits to dairy premises by Council's Public Health Inspectors	12	4	22	20

Sampling for designation or infection tests:

12 samples were submitted to the County Laboratory for designation tests and none for infection tests.

Grade of Milk	Samples Satisfactory	Samples Unsatisfactory
Tuberculin tested	1	2
Tuberculin tested (Pasteurised)	3	-
Pasteurised	5	-
Sterilised	1	-
TOTALS	10	2

Sampling for Adulteration:

50 samples of milk were taken by the County Sampling Officers in Dartford Rural District and a report, kindly supplied by the County Chief Inspector, Weights and Measures, shows that with the exception of the following all these samples were genuine.

Sample submitted by a member of the public:

	Analysis	Action Taken
Pasteurised milk. (School milk)	Contained inside the bottle a second foil cap similar to the one closing it.	The dairy company concerned was notified and requested to take all necessary steps to avoid a recurrence of this type of complaint.

ICE CREAM:

Premises previously registered for the sale of ice cream	116
Premises previously registered for the manufacture of ice cream	Nil
Premises registered for the sale of ice cream in 1958	11
Premises registered for the manufacture of ice cream in 1958	Nil

5 samples were obtained and examined for cleanliness by the methylene blue test:

Grade I	3
Grade II	2
Grade III	-
Grade IV	-
	5

3 samples of ice cream taken by the County Sampling Officers were reported on as genuine, i.e., had a fat content of not less than 5% fat, 10% sugar not derived from milk and 7.5% milk solids other than fat.

MEAT:

	1955	1956	1957	1958
The number of slaughterman licensed	19	21	22	24
The number of slaughterhouses licensed	6	4	6	6

Although there were 6 slaughterhouses registered in 1958, only 5 were in use and by far the greatest amount of slaughtering is done at one slaughterhouse.

Number of Animals killed

Year	Cattle inc.Cows	Calves	Sheep	Pigs	Total
1954	231	178	416	797	1,622
1955	358	376	1,519	2,819	5,072
1956	638	436	1,983	5,231	8,288
1957	597	358	3,679	6,595	11,229
1958	509	256	1,428	5,383	7,576

By month, the number of animals killed and inspected in 1958 was:

Month	Cows	Heifers	Steers	Calves	Sheep	Pigs	Bulls
January	21	22	18	39	153	599	-
February	21	7	16	19	86	572	-
March	23	12	11	30	114	604	-
April	24	10	15	16	107	472	-
May	17	9	17	21	117	488	-
June	24	21	11	14	136	547	1
July & August	14	18	18	33	177	555	-
September	14	16	6	23	140	310	-
October	23	9	7	24	130	348	-
November	18	14	7	19	128	387	-
December	18	13	13	18	140	501	1
TOTALS	217	151	139	256	1,428	5,383	2

MEAT (continued)

The following are the details regarding meat inspection by the Council's Public Health Inspectors:

Summary of animals killed and carcases inspected:

Particulars	Cows	Heifers	Steers	Calves	Sheep	Pigs	Bulls
Number killed	217	151	139	256	1,428	5,383	2
Number inspected	217	151	139	256	1,428	5,383	2

(1) All diseases except Tuberculosis and Cysticercosis:

Whole carcase rejected	3	-	-	4	1	23	-
Carcase of which some part or organ was rejected	24	6	3	1	39	412	1
Percentage of number inspected with disease other than tuberculosis or cysticercosis	12.4%	3.9%	2.1%	1.9%	2.8%	8.08%	50%

(2) Tuberculosis only:

Whole carcase rejected	-	-	-	-	-	-	-
Carcase of which some part or organ was rejected	8	-	2	-	-	115	-
Percentage of number inspected	3.6%	-	1.4%	-	-	2.13%	-

(3) Cysticercosis:

Carcase of which some part or organ was rejected	-	-	-	-	-	-	-

The following items were rejected:

Diseases other than Tuberculosis

(a) Whole carcases rejected:

1 heifer carcase	Acute peritonitis due to abscesses of actinomycosis
3 cows	1 carcase - malignant neoplasms
	1 carcase - Johnes disease
	1 carcase - Bruised and badly bled
4 calves	1 carcase - calf diphtheria
	1 carcase - jaundice
	1 carcase - fevered due to injury
	1 carcase - foetus

(a) Whole carcases rejected (continued)

1 sheep	septicaemia
23 pigs	1 carcase - acute septic pleurisy and peritonitis
	4 carcases - pyaemia
	1 carcase - peritonitis and malignant tumour in stomach
	1 carcase - fevered and badly bled
	1 carcase - gangrenous pneumonia
	1 carcase - uraemia
	1 carcase - emaciation
	6 carcases - swine erysipelas
	3 carcases - moribund
	1 sow carcase - septicaemia
	1 sow carcase - drowned
	2 sow carcases - septic metritis

(b) Parts of carcases rejected:

25 Cows

8 livers	Cavernous angioma
6 livers	Distomatosis
5 livers	Abscesses
1 heart	Endocarditis
2 lungs	Pleurisy
1 lung	Pneumonia
1 diaphragm	Contamination by abscess
1 leg	Arthritis
5 lbs. beef	Bruising

398 Pigs

29 livers	Cirrhosis
5 livers	Peritonitis
2 livers	Abscesses
16 livers	Milk spot
1 liver	Badly bled
182 lungs	Pneumonia
54 lungs	Congestion
39 lungs	Pleurisy
1 pluck	Fevered
46 hearts	Pericarditis
1 heart	Valvular endocarditis
1 kidney	Abscesses
3 kidneys	Hydronephrosis
27 legs	Arthritis(14 pigs)
4 legs	Injuries
10 lb. pork	Bruising

4 Steers

2 livers	Abscesses
1 liver	Cirrhosis
1 bullock liver	Distomatosis

5 Heifers

1 liver	Cirrhosis
1 liver	Distomatosis
2 livers	Abscesses
1 animal (1 pluck, 1 liver, 30 lbs. beef)	Contamination with abscesses

1 Bull

1 liver	Abscesses

1 Calf

1 liver	Badly bled

37 Sheep

29 livers	Distomatosis
1 liver	Fatty change
2 hearts	Melanosis
4 hearts	Congestion
1 leg	injury

Tuberculosis

(a) Whole carcases rejected: None.

(b) Parts of carcases rejected:

8 Cows	8 lungs
2 Steers	1 pluck
	1 liver
115 Pigs	109 heads
	4 plucks
	1 liver
	1 mesentery

MEAT (continued)

Specimens from 4 carcases were submitted to the hospital pathological laboratory and the following are the positive findings:-

Calf: Section of lung shows granulomatous necrotic peri-bronchial areas, which have an advancing edge containing many slender bacilli. These are gram. negative, none branching and stain strongly by the periodic acid - Schiff method. The appearance is that of Calf Diphtheria - due to Bacillus Necrophorus.

Pig: Section of sub-maxillary lymph gland shows a granulomatous abscess. No tubercle bacilli or other pathogenic organism seen.

Cow: Lung and mesentery nodes - Scirrhus adenocarcinoma in lung and mesenteric lymph nodes. The nodular pattern suggests that they are secondaries from an unidentified site, probably intestinal tract.

Heifer: Section of gut, iliac lymph node, liver, kidney, spleen. Sections show granulomatous abscesses in liver and spleen containing masses of slender fungi - presumably actinomycosis.

The following items were voluntarily surrendered from shops etc.:

168 lbs. poultry,
530 lbs. meat,
104 lbs. liver,
3 cwt. sausage meal,
75 lbs. sausages,
31 bundles of sausage casing,
An assortment of hearts and kidneys.

OTHER FOODS:

31½ lbs. of fats, 26½ lbs. of sugar, sweets and biscuits, two 6 lb. tins of corned beef and 65 lbs. of beef - due to bone taint - were surrendered from shops and canteens as unfit for human consumption.

SAMPLING:

In addition to the 50 samples of milk and 3 samples of ice cream mentioned above, the County Sampling Officers took the following samples during 1958:

Drugs	11	
Spirits	6	
Other samples	52	
	69	All were genuine.

FOOD PREPARATION PREMISES

During 1958 a total of 212 visits were made to food premises and 27 notices issued against occupiers to comply with the requirements of the Food Hygiene Regulations, 1955.

FOOD PREPARATION PREMISES (continued)

The following action was initiated by the Council's Public Health Inspectors:

2 food premises	hot water provided.
1 food premises	wash-hand basins provided.
1 food premises	sinks for equipment renewed.
4 food premises	food rooms repaired and cleansed.
1 food premises	floor repaired.
5 food premises	sanitary accommodation labelled.
4 food premises	first aid material supplied.
4 food premises	towels, soap, nail brushes, provided.
2 food premises	ventilation improved.
1 food premises	dustbins provided.
1 food premises	drainage repaired.
1 food premises	water closets cleansed.
1 food premises	miscellaneous repairs.

APPENDIX V - VERMIN, ETC.

The following is a summary of the work carried out in 1958 by the Council's Rodent Operator:

	1957	1958
RODENTS:		
Number of complaints received	172	178
Infestations found:		
Rats, major	3	1
Rats, minor	138	132
Mice, major	-	-
Mice, minor	22	37
Infestations found as a result of a survey:		
Rats, major	-	1
Rats, minor	23	19
Mice, major	-	-
Mice, minor	5	-
Business premises treated (except agricultural)	17	26
Private dwellings treated	409	305
Agricultural properties surveyed	-	43
Agricultural properties treated	-	2
Total number of treatments:	426	333
Estimated kill, Ministry of Food formula:		
Rats	1,464	836
Dead bodies found:		
Rats	1,919	647
Mice	235	126
By traps or other means:		
Rats	323	69
Mice	5	-
Sewer treatment:		
Manholes tested	178	139
Infestations found	6	6
Infestations treated	6	6
OTHER VERMIN:		
Council houses disinfested of bed bugs	1	4
Private dwellings - ditto -	-	1
Council houses disinfested of fleas	5	5
Private dwellings - ditto -	4	1
Houses disinfested of ants	3	4
Houses disinfested of woodworm	-	3
Houses disinfested of beetles	1	3
Houses disinfested of swarms of flies	1	2
Houses disinfested of swarms of bees	-	3
Wasps nests destroyed	55	35
Houses disinfested of silver fish	-	1
Houses disinfested of cockroaches	1	1
Houses disinfested of earwigs	-	5
DISINFECTION:		
Houses, bedding, etc., disinfected after infectious disease	10	2

APPENDIX VI - FACTORIES and SHOPS

The following work was carried out by the Council's Public Health Inspectors:

1. INSPECTIONS UNDER PART I, FACTORIES ACT, 1937

Premises	Number on Register	Number of Inspections	Number of written Notices	Number of Occupiers Prosecuted
i) Factories in which Sections 1,2,3,4 and 6, are to be enforced by the Local Authority	9	7	-	-
ii) Factories not included in (i) in which s.7 is enforced by the Local Authority	107	58	7	-
iii) Other premises in which s.7 is enforced by Local Authority (excluding Out-workers' premises)	17	17	-	-
Totals:	133	82	7	Nil

2. PARTICULARS OF DEFECTS FOUND:

Particulars	Number of Defects Found	Defects Remedied	Referred to H.M. Inspector	Referred by H.M. Inspector	Number of Prosecutions
Want of cleanliness (s.1)	1	-	-	1	-
Overcrowding (s.2)	-	-	-	-	-
Unreasonable temperature (s.3)	-	-	-	-	-
Inadequate ventilation (s.4)	-	-	-	-	-
Ineffective drainage of floors (s.6)	-	-	-	-	-
Sanitary conveniences (s.7)					
(a) Insufficient	1	1	-	-	-
(b) Unsuitable or defective	2	1	-	1	-
(c) Not separate for the sexes	-	-	-	-	-
(d) Other offences against the Act (excluding Out-workers)	4	1	1	-	-
Totals:	8	*3	1	2	Nil

*Remainder remedied in 1959.

Outworkers:

(a)	Total number of outworkers notified to the Council by firms in the Dartford Rural District under Section 110 (1c) Factories Act, 1937	56
(b)	Total number of outworkers notified by Dartford Rural District Council to other Councils under Section 110 (2) Factories Act, 1937	6
(c)	Total number of outworkers notified to Dartford Rural District Council by other Councils, under Section 110 (2)	38
(d)	Total number of outworkers employed in Dartford Rural District	88
(e)	Total number of inspections of work-places under Section 111 (i) Factories Act, 1937	Nil
(f)	Scheduled occupations followed by out-workers in Dartford Rural District	
	Making of wearing apparel	24
	Making of boxes or other receptacles or parts thereof made wholly or partially of paper, cardboard, chip or similar material	62
	Making or filling of cosaques, Christmas crackers, Christmas stockings, or similar articles or parts of articles	2

Shops:

There are 209 shops in the rural area. The total number of inspections during the year by the Council's Public Health Inspectors of shops, other than food preparing premises, was 42.

PUBLIC HEALTH COMMITTEE

1958 - 59

Chairman: Mr. G.T. Jones

Vice-Chairman: Mr. F. Goodwin

Mr. A.C. Bush	Mr. E. Petty
Mr. K.C. Clinch	Mr. L.L. Reeves
Mr. B.D. Doig	Mr. G.J. Russell
Mr. M.H. Farage	Mr. R.C. Simmonds
Mr. M.G. Hepburn	Mr. F.T.C. Sims
Mr. E.G. Glover	Mr. C.F. Smith
Mr. P.J. Matthews	Mr. D.G. Sweetland
Mr. G. Mellor	Mr. F. Tanner
Mr. W.P. Page	Mr. L.A.W. Turner

PUBLIC HEALTH OFFICERS

Medical Officer of Health (Part Time)	J.H. HUDSON, B.Sc., M.B., M.R.C.S., D.T.M.& H., D.P.H.
Chief Public Health Inspector (to 1.3.58)	F. SUTCH, Certificate R.S.I., Certificate R.S.I., Meat and Other Foods.
Public Health Inspectors	J. MARTINDALE, Certificate R.S.I., & S.I.J.B., Certificate R.S.I., Meat and Other Foods.
	F.W. DRURY, Certificate R.S.I., & S.I.J.B., Certificate R.S.I., Meat and Other Foods.
(from 3.2.58)	D.O. KNIGHT, Certificate R.S.I., & S.I.J.B., Certificate R.S.I., Meat and Other Foods.
Clerical Assistant	A.M.T. COCKBURN.
Rodent Operator	F.S. MILLS