[Report 1937] / Medical Officer of Health, Winsford U.D.C.

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ANNUAL REPORT

and

Vital Statistics

FOR THE YEAR 1937

FOR THE URBAN DISTRICT

of

WINSFORD

Prepared by

The Medical Officer of Health for the District.

In accordance with instructions from the Ministry of Health.

"TIMES" Printing Works, Macclesfield. Tel. 3125-6

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Public Health Officers.

(a) *Medical.*

Medical Officer of Health.

Lionel James Picton, M.A., B.M., B.Ch., Oxon., L.R.C.P., M.R.C.S.,	O.B.E.,	Salary 100 guineas	Part Time. Salary under P.H. Acts (50%). Contribution is also M.O. and Public Vaccinator, Church Hulme District, Congleton Union.

Pathologist.

The Laboratory of Public Health, York Place, Manchester,	Paid by fee.

The following other doctors are employed by the County Council within the District:—

Medical Officers for Cheshire County Ante-Natal Scheme.

The Medical Practitioners of the area. Fee 10/6 per uninsured case. 2/6 insured cases.

Medical Officer of Cheshire County Child Welfare Centre. Weaver Street, Winsford.

Dr. Robert Okell, Over, Winsford.

Consulting Medical Officers for Cheshire County Ante-Natal Scheme. Also for Puerperal Pyrexia.

J. Gardiner Wigley, F.R.C.S.	40, King Street, Chester. (*Tel.* Chester 938).
W. R. Addis, M.B., F.C.O.G.	2 St. John Street, Manchester 3. (*Tel.* Blackfriars 0435) and Westbourne, Wilmslow Road, Manchester 14. (*Tel* Rusholme 1907).
C. Philip Brentnall, M.D.	14, St. John Street, Manchester. *Tel.* Blackfriars 9984); and "Riversdale," Fielden Park, West Didsbury. (*Tel.* Didsbury 3762).
Gordon Fitzgerald, M.D.	Northern Assurance Buildings, Albert Square, Manchester. (*Tel.* Blackfriars 6458-9).
E. A. Gerrard, M.D., M.C.O.G.	26, St. John Street, Manchester 3. (*Tel.* Blackfriars 0079); and 4, Rowsley Avenue, Manchester 20. (*Tel.* Didsbury 2681).
F. H. Lacey, M.D.	16, St. John Street, Manchester. (*Tels.* Blackfriars 1500 and Didsbury 3092).

J. W. A. Hunter, M.D.	12, St. John Street, Manchester. (*Tels.* Blackfriars 3287 and Rusholme 2020).
Percy Malpas, F.R.C.S.	31, Rodney Street, Liverpool, and 2, Menlove Gardens, Wavertree. (*Tel.* Royal 4670. After 6 p.m., Wavertree 27).
A. Leyland Robinson, F.R.C.S.	57, Rodney Street, Liverpool. (*Tel.* Royal 61).
W. E. C. Thomas.	Bank House, Stalybridge. (*Tel.* Stalybridge 2481).
T. H. Richmond, F.R.C.S.	3, The Villas, off London Road, Stoke-on-Trent. (*Tel.* Hanley 48341).

District Tuberculosis Officer.

Alec Fleming, M.B., Ch.B. (Manch.) D.P.H.	11, Woodvale Road, Knutsford. (*Winsford is a part only of his district*).

Public Assistance District Medical Officers.

For Over District, comprising part of Over; also Little Budworth, Darnhall and Marton:

For Wharton District, comprising part of Over; also Wharton, Clive, Eaton and Moulton.

W. N. Leak, M.A., M.D., B.Ch. (Cantab.), L.R.C.P., M.R.C.S.

Medical Superintendent, Joint Isolation Hospital, Davenham.

Dr. Geo. Okell, J.P.

Public Vaccinator.

Dr. W. N. Leak.

School M.O.

W. I. McIvor, B.A., M.B., Ch.B., D.P.H.	The Demesne, Crewe Road, Wistaston (*Winsford is a part only of his district*).

School Ophthalmic Surgeon.

Cyril Jacobs, M.C., M.D.	30, S. Ann Street, Manchester.

(*b*) *Health Officers other than doctors.*

Surveyor and Water Engineer. W.U.D.

Peter Heaton, P.A.S.I., Chartered Surveyor.	A whole time officer.

Chief Sanitary Inspector. W.U.D.

W. W. White, Cert. of R.S.I.	(a) Council Offices, Russell St., £280 rising to £300 per annum by annual increments of £10. *Tel.* 2212 Winsford. (b) 216, Townfields Road, Winsford. *Tel.* 2355, Winford.

Additional Sanitary Inspector. From 1st January, 1938.

Mr. Stanley Shone.	£240 rising by annual increments of £7 to a maximum of £275 per annum.	

Since the resignation of the Veterinary Surgeon the meat inspection has been by the Sanitary Inspectors.

Veterinary Surgeon for Meat Inspection, W.U.D.

Until 30th November, 1937.

T. L. May, M.R.C.V.S.	Salary £60.	Now [1938] Newton Fields, Croxton Lane, Middlewich. Tel. 127. **A part time officer.**

Public Analysts.

S. Ernest Melling, F.C.I., F.C.S.	The Cliff, Higher Broughton, Manchester.
W. H. Roberts, MSc., F.I.C.	The Thompson Yates Laboratory, the University, Liverpool.
The Laboratory of Public Health,	York Place, Manchester.

The following are employed by the County Council.

School Dentist.

Mr. S. W. S. Sheasby, L.D.S.	Woodhead, Broughton Lane, Wistaston, Crewe.

District Veterinary Officer—Winsford.

J. H. Patterson, M.R.C.V.S.	Oak Wood, Beech Road, Hartford. *Tel.* Northwich 1015.

County Sanitary Officer.

F. Humphries, A.R.S.I.	24 Shavington Avenue, Newton, Chester.

Ministry of Agriculture.

Divisional Veterinary Officer.

A. L. Mullen, M.R.C.V.S., D.V.S.M.	Animal Health Department, Old Government House, Dee Hills Park, Chester. (*Tel.* Chester 3067).

(*c*) *Midwives*:—

County Inspector of Midwives.

Dr. Jean R. Shaw, M.B., Ch.B., D.P.H., 24 Nicholas Street, Chester. *Tel.* Chester 2305.

List of Midwives in Winsford.

Nurse Barber, 347, Station Road, Wharton.
,, Smith, 151, Dingle Lane, Winsford.
(Compensated 1938 and no longer in practice).
,, Court, 117, Delamere Street, Over.
,, Orme, 19, Swanlow Lane, Hollin Bank, Over.
,, Miss Welsh, Queen's Nurse, 92, Weaver Street, Winsford.
,, Miss Whyte, Queen's Nurse, 92, Weaver Street, Winsford.
,, Miss Bell, County trained, 92, Weaver Street, Winsford.
,, Mrs. Bayes, County trained, 11 Regent Street, Moulton.

Preface: Air Raid Precautions and Trees.

There is no heading for A.R.P. in the schedule on which an M.O.H. is told to report, but that preoccupation has taken precedence of everything else lately; and I have been asked to make a statement of the condition of our preparations up to the date of writing, September, 1938.

When the Council first received instructions to prepare an A.R.P. scheme the matter seemed technical and its requirements manifold. A technical committee to include all the officials was formed. It held numerous meetings. It consulted the Gas Engineer and the officers of the Electrical Supply Company and it drafted a complete scheme. This the Council sent to the County Council, which approved it but required it made out in detail.

Soon, however, the position was changed entirely. The County Council became the authority for all A.R.P. except for Fire. Responsibility for that remained with the Council under the Home Office. But the Chief Constable, who is the County A.R.P. chief, has the right and has exercised it to request this Council's co-operation.

The County authorities have taken the John Street Fustian Factory and are converting it into (a) a store for gas masks for a large mid-Cheshire district, (b) a first-aid POST for men and women, (c) a decontamination centre, (d) lecture rooms for A.R.P.

There are to be two additional "First Aid *Points*," at the Wharton C. of E. School and at Meadow Bank Council School. For the "POST" in John Street the staff required numbers 90 persons. The staff at each "*Point*" numbers 4 persons.

The mobile ambulance parties scheduled are 4, each of 4 men with 2 in reserve and with two ambulances per party. Each ambulance is to have two women drivers and one woman attendant. Each party is further to have one car with a woman driver.

The total First Aid personnel is therefore 152 men and women. The St. John Ambulance Brigade and B.R.C.S., being on call for service otherwise, are not to be counted amongst this 152.

Road Repair and Decontamination of places, Rescue and Demolition gangs and Repair gangs for water mains are the responsibility of the Surveyor. So is the preparation of a bridge of barges, were the town bridge destroyed. The nucleus of these services is the Surveyor's present body of roadmen which will be augmented from builders' employees, etc.

Some 90 Auxiliary Firemen will be required to bring the fire staff to 100. The Home Office will provide a new type of trailer engine and extra lengths of hose and other fire fighting equipment.

The air raid wardens required for each locality, some 250 in all, are being selected by the police.

Popular lectures have been given, also courses of First Aid and Nursing and gas instruction; and numbers of volunteers have been enrolled and part trained.

Experiments have been made with buzzers as warning signals.

On 27th September the recruiting campaign for A.R.P. Services is to open in earnest at a public meeting.

Land suitable for trenches has been mapped and inspected by Home Office officials.

TREES.

A.R.P. have come to stay. Air attack will remain a permanent possibility. Trees are a real protection, hiding fugitives and trenches. They are a screen against aimed machine gun fire; and mustard "gas" falling upon them is largely caught by the leaves so that relatively little reaches persons beneath.

If planted in numbers in October, 1938, little trees would do something to screen trenches if skilfully placed. The general planting of all available land, including the Dockyard, Wharton slopes, the river banks, and the great areas of unoccupied land on both sides of the Weaver in Meadow Bank would be a move both wise in view of the permanent need of A.R.P. and also extremely attractive and salubrious in itself.

Is all this practicable? Perfectly! Mr. Jabez Threadgold, a chauffeur to the Salt Union who used to live in the house between the two belts of trees (Manchester Poplars), which clothe the slopes near the Salt Union Office, struck thousands of cuttings and planted the whole plantation at no cost other than his spare time.

What he has done others can do. It has been said planting would be ruined by children. On the contrary, let each school child in Winsford plant a little tree this autumn with his name on the label and there will be a rivalry to foster them which will at one stroke create a great afforestation movement.

Winsford Urban District Health Report for 1937.

The numbered references in the text refer to the acknowledgements at the end of the book.

Mr. Chairman and Gentlemen,—I have the honour to present my Twenty-First Annual Report, wherein I am to set out (a) the information asked for in the usual schedule by the Ministry of Health, ordinarily not repeating the matter of previous reports, except where attention should be called to old defects not yet remedied, but limiting the record to alterations and developments; (b) noteworthy conditions prejudicial to health not dealt with in special reports; (c) action to arouse interest in prevention and early treatment of ill health; and (d) a summary of special reports.

SECTION A.

Area (in acres)	7,094
of which more than 100 are covered by water.	
Registrar-General's estimate of resident population, mid-1937	11,140
Last year's estimate was	11,189
I know of no migration to explain the reduction; and fear it means that the natural replenishment of population has failed. The omens, as I have stressed in earlier reports, pointed to this and now the actual decline seems to be setting in.	
Comparability factor	1.00
Number of inhabited houses (end of 1937) according to Rate Books	3,255
(being an increase of 100, including 150 new houses).	
Number of houses demolished	50
Rateable Value 1 Ap. 1938	£45,411
Sum represented by a penny rate	£175
The rateable value per head of the 1931 Census population was	£4/0/0
The rateable value per acre is	£6/8/0
The rates levied in 1937-38 were	10/6
There were 98 marriages.	

SOCIAL CONDITIONS, including the chief industries and the extent of unemployment:—

No one, however slow witted, could go on for years on end being M.O.H. of a district of a few thousands population without realising that, aside from zymotic disease, the immense complexity of the problems involved boil down to three—just to these: food, work and houses. Food is easily first in importance; but work is a primary need as it provides the other two. Therefore, for public health, employment

is the first, though food is the chief, consideration. Houses and all that goes with them, access by road, access of air, light, water, drainage—in a word "environment"—for all their tremendous significance come third to the other two.

I will speak of the first, employment, and begin with Winsford's staple, salt. 1. 2. The salt mine, that 14 acre cavern at Meadow Bank, gives the best hint obtainable of Winsford's wealth in this mineral. The pillars, 30 feet square that support the lofty roof look as solid as granite; but it is the solution of similar salt in the subterranean streams that provides the brine which the industry is constantly pumping, and from which the enormous weights of salt distributed annually from Winsford are derived. In 1887, the peak year of the English Salt trade, more than 2,000,000 tons of evaporated salt were produced, and a large proportion of it was from Winsford. The organisation of the trade has been in this wise. The Celts poured the water of the natural saline springs on red hot charcoal and used the resultant crystals. The Romans during the first century evaporated the spring brine in lead pans over hypocausts, their customary method of heating both baths and floors. In principle the present pan method is exactly that of the Romans. The pans are larger, about 60 ft. x 25 ft. x 2 ft. The fuel, much to the detriment of our atmosphere, is a low-grade coal instead of their smokeless charcoal; but the principle has gone on unchanged. John Blackburn, of Orford Hall, built pans on the South Shore at Liverpool about 1690, carried rock salt in boats down the river and, dissolving 15 tons of it in 45 tons of river water, produced 13 tons (250 tons a week) of fine white "Liverpool Salt." That trade name, still used, and "Salthouse Lane" and "Orford Street" in Liverpool recall this beginning of the export Salt trade. 3. John Blackburn's son, Blackburn of Hale, by obtaining powers from Parliament in 1720 to canalise the Weaver, laid the foundations of the prosperity of our town: the fine salt was made at Winsford instead of Liverpool; and the river, now navigable by 200 ton barges, conveyed the product, instead of the rock salt, to the port.

Many of Winsford's customers, last century and to some extent in this, are in a stage of civilisation in which salt is rare and coveted, is even an article of barter. In primitive conditions the meat of 9 months of the year is salted. Doomsday Book mentions that in six counties 727 salt works paid rent to the feudal lords. 4 The making of salt in those days ranked only third in importance after agriculture and fishing. All that ancient importance of salt is modified in the modern world. The domestic refrigerator, the canning industry, the competition of crude solar salt, the frigorifico, and above all the economic nationalism which has curtailed the entry of our salt into America and China and of our salted herrings to the Baltic littoral have cut down the demand for salt. Yet despite all adversities salt remains an essential. 80,000 tons of it went down the Weaver in 1937!

Organisation has done much to hold this modest degree of prosperity. The trade needed it. These are the stages. The taxes had been capricious: in 1805 £30 a ton excise duty payable in Cheshire [to pay for the war], but a £30 a ton draw-back payable at Liverpool if the salt were for export. [If the salt got damp going down the river the revenue suffered!] In 1823 the duty fell to £4 a ton and was shortly abolished. Had it not been, the Alkali trade, using the salt dry, as at first it did, never could have developed. The trade in the untaxed salt expanded. About 100 firms were in competition. In 1888 the competition was such that 64 of them thought there would be wisdom in combination and they formed the Salt Union, the first of such mergers. The moment was unfortunate. The Le Blanc process, which consumed large quantities of salt, was superseded by the ammonia-soda process; and at the same time MacKinley blocked the entry of salt to the U.S.A. Cheapening salt was the only policy to meet these blows; and in 1905 a departure from the Roman method, the Vacuum process, was installed at Winsford. It could turn out 2,000 tons a week.

Production having been cheapened, by this and other means, in 1915 the Salt Manufacturing Association was formed to improve marketing, and some moderate prosperity arrived. In September of 1937, the year under review, the Salt Union joined the I.C.I.

That great company, broad based as it is upon the scientific civilization of a substantial area of the world, is capacious enough and foresighted enough to have a settled and mutually beneficial policy in regard to its workmen. In the benefits of that policy the 1,500 employees of the Salt Union are now little by little coming to share. The benefits may not be spectacular but they tend towards security. And after all security is priceless. The first step was a modest rise in wages of 1/-, then a second rise of 3/- came later. A change of still greater though less obvious significance has been introduced: wage anomalies which admitted of various rates being paid for work of the same class are done away. One kind of work receives one rate of pay. In the trade fluctuations of modern conditions the tendency of some employers is to keep their older and tried men and in times of work shortage to drop the newer comers. The I.C.I. have a policy which, in time, may be more favourable. It is a contributory pension scheme which, in the Salt Union, will be in operation before the end of the year of writing. The older men at a fixed age will come on pension and the younger end of the list will feel a corresponding increase of security. The outstanding need of this town is children—witness the fast emptying schools—and men in secure occupation will be happy in the satisfaction of normal family life and not think of children as an unjustifiable adventure.

In the I.C.I. system there is yet another advantageous scheme which is almost due for introduction here. It is that a faithful and

competent man, a good timekeeper who has pulled his weight, will in due time be placed on the staff grade. It is a grade which carries this privilege, that the pay is continuous. Not only is there a week's holiday with pay—that all the men have—but the staff men get their pay right through, irrespective of Christmas and bank holidays and other interruptions.

The final stroke of organization is the formation, in June, 1938, of the I.C.I. Salt group, comprising the Salt Union and five other firms. With the opportunities for marketing and management which this opens, the stability of the industry, vital to Winsford, is more secure. Its trade, despite all, is still far flung. It still sells salt to Japan for salmon curing, to Canada, Australia, New Zealand, Scandinavia, Denmark, Africa, especially West Africa and the West Indies. And its methods are modern. Its vacuum table salt will 'run'; Falk's salt (the name takes us back 70 years) has not lost its savour but is marketed in neat cartons at the astonishing price of 2d. for a pound; solid cubes of salt, each an exact teaspoonful, permit ready and accurate measurement; packet gravy salt has a great sale; and from a medical point of view the most interesting is "Salodine," an iodised salt the use of which should be widespread in inland households. In regions where goitre is endemic "the administration of iodine to children and to pregnant women has greatly reduced the incidence of simple goitre. In such areas the use of iodised salt is convenient and effective, Sodium iodide or potassium iodide being added to table salt in the proportion of 1 in 200,000. A daily dose of 0.1 mgm. (1/600th grain) of iodide is generally regarded as suitable." 5.

I understand that in Salodine there is precisely 1 part of sodium iodide in 200,000 and that the iodide is dissolved and sprayed upon the salt so that it is uniformly incorporated with it. Such details suggest that the firm is alert and organised for efficiency.

As to the future of the trade my recital of the past would be valueless if it did not suggest caution in the presence of the record of vicissitudes; but one fear there was when the I.C.I. took over which has no justification at all: it was this, that the trade might be arbitrarily located elsewhere. There is no such plan. On the contrary there is a move to concentrate all the brine pan work here, incomplete so far, as one continues to operate at Leftwich.

It is not my purpose to be exhaustive, merely to touch on changes; so that the other old established salt firm, Messieurs Hamlett, (which also makes an iodised salt), the ancient industry of fustian cutting which still survives and the employment afforded by our 90 dairy farms call for no special review. But there are several recent developments of industry which bid fair to assist the prosperity of the town.

NEW CLOTHING FACTORY.

The firm of Messieurs P. Hartley Ltd., makers of ladies' garments, are proposing to move their business in September to this town. They have secured the long disused Well Street Factory of the United Velvet Cutters Association. They hope to employ 40 to 50 hands, mostly women and girls. The products of this firm consist of dresses and blouses.

NEW FACTORY FOR THE MANUFACTURE OF COLOURED STONE.

A beginning is to be made by Messieurs Aerostone Ltd., on a river side plot of land (1,696 spuare yards) on the Dockyard, leased from the Council. A synthetic resin process is to be used to produce coloured stone. There is room for much hope in these small beginnings.

Turning to an established industry, the Silica Factory of MESSIEURS COLIN STEWART, LIMITED, Wharton Lodge Works, it is note-worthy that since their establishment no compensation claim for silicosis and no death from silicosis has occurred. On account of this freedom from industrial disease, the enterprise small as it is, deserves a review in some detail. From 15 to 20 men are employed. Their wages average £2 6s. 0d., for the lowest grade men to £3 6s. 0d., for fitters etc. The products of the firm are silica materials used for polishing glass etc., "silica snow"; an ingredient in scouring soap, abrasive silica; pumice substitute; a powder for the manufacture of polishing blocks, "British Tripoli Powder," yellow or pink, gritless and free from scratch; chromium abrasive used for chromium plating; metal polish earths, "British Polishing Chalk," which competes with the German article; a form of silica, imported, I believe, from Milos, a soft earth of a brilliant white colour and volcanic origin, marketed under the name of "Milowite" as i. an "extender" in paint manufacture; ii, when finely levigated, for the manufacture of lake pigments for which its transparency combined with remarkable fineness render it invaluable where great brilliance of colour is required; iii, as a filler for the rubber industry; and iv. it could be used for ceramics, needing no calcination, burning white after firing and, with leadless glazes, shewing less tendency than when flint is employed to *crazing*. Finally amongst others, one further product, merchanted but not manufactured by this small factory must be mentioned, "Bentonite," a natural clay, well known and of scattered origin [Cumberland, China, Canada are mentioned.] Fort Benton in the plains of Wyoming U.S.A. is the chief source of the clay. Mined in soapy lumps and steam dried, it is a white powder with a slightly green tinge. It is a hydrous silicate of alumina. The U.S. geological survey speaks of it as having "the greatest efficiency for absorption that nature seems ever to have devised." The largest use is as a bonding agent for burned sand in the foundry trades; but for making bitumous paint it is invaluable. The Bentonite surrounds the bitumen globules in the suspension forming a protective sheath against coalescence: as the water dries off

Ref p. 66

the Bentonite particles are "wetted" by the bitumen and their pores are filled up, thus rendering the process irreversible. It, like Milowite, can be used for ceramics, reducing porosity, reducing cracking and crazing and resulting in a sounder body with a better ring. Tiles have sharper edges. There is no end to its uses, to clarify vinegar and honey, to emulsify poultry mash [5 lbs. Betonite, 95 lbs. dry food, 300 water make a jellied mash] as a base for ointments, and even to thicken the barium meal employed to examine the human stomach by X-Rays.

In reply to my enquiry whether it has any other application to human medicine, the Guy's Physician, Dr. Nathan Mutch tells me "I know of course that it has been eaten here and there in the States; but I do not think it has ever emerged beyond the folklore phase of pharmacy."

Now considering the dread of silicosis which the word silica conjures up, exploited, not unfairly, in a recent "best-seller" novel, it is notable that silicosis has not been reported as occurring here. The first thing any one would think of when reading the account I have given of the factory's products would be their effect on the workpeople who produce them. Some of the products of the firm are of the type most incriminated by the experts. "The most rapid development of silicosis (in from 2 to 3 years) has been found" in workers in scouring powders containing a mixture of crushed flint and alkaline soap. 7 Yet the claim is confidently made that silicosis has hardly occurred here. Why? Is it because the methods of prevention employed are so good? The Johannesburg Silicosis Conference [1930] named the possible methods: the use of water, exhaust draught applied at or near the point of origin of the dust, that is to say the vacuum cleaner principle, dust traps, masks, ventilation, etc. Messieurs. Colin Stewart of course use them all. Water does not catch and remove the finest and most harmful particles however: the vacuum cleaner principle is the most valuable item, and here that is an essential part of the new grinding mill, the dust of the ground silica being the objective of the whole operation. None of these, however, is the secret.

"The more free silica a stone contains" said Legge, 8 "the more harmful will it be"; and the congress aforesaid laid down that silicosis was due to the inhalation of silicon dioxide and to produce it "silica must react in the lungs in a chemically uncombined state." Yet all the thousands of tons of silicon dioxide here have not resulted in any severe case of this dread disease, and Messieurs. Colin Stewart Ltd., are in a position to supply a likely reason. The reason has been published; the experience of these works give some support to it. The reason, put baldly, is that the silica used at the works is free from sericite. The work on the subject was by a very competent geologist, Mr. William R. Jones, 9 and briefly it amounts to this, that he holds the Johannesburg

Conference [1930] was wrong and that sericite, and not silicon dioxide, as that Conference decided, is ordinarily the cause of silicosis. He says sericite is a hydrated silicate of aluminium and potassium, "secondary white mica", and that it is present in all rocks capable of causing silicosis (but see below to the contrary) as minute fibres of the identical size and form that are found in silicotic lungs. These fibres are easy to identify microscopically by the use of transmitted polarised light. They are not recognisable by the method of examining Konimeter dust-spots by opaque illumination, as practised until recently in South Africa. Mr. Jones has examined the minerals handled by the Winsford Company by the former method and certifies that they do not contain sericite.

There have long been two schools of thought about the way silica damages the lung—by the sharp particles wounding it or by their dissolving and poisoning it. Mr. Jones points out that the miriad of sharp sericite needles found in silicotic lungs well may act mechanically causing more wounds than quartz particles; or, by exposing "a far greater surface to volume for any chemical action", are more subject to solution, and so to cause poisoning, than quartz.

The tremendous facts wherewith Mr. Jones supports his theory are that no quartz-bearing rocks he has investigated cause silicosis except those which contain the fibrous and dust forming sericite. South Wales Coalfields have it—and cause silicosis. Scottish Coal Fields have not got it and he states, have not produced a single authenticated case of silicosis—nor, I repeat has this little factory at Winsford.

But further experience and watchfulness are required. The firm has had 3 of its workmen examined by Dr. Robert Okell. His clinical and X-Ray examination revealed no certain silicosis in two, but in the third who had been working at the factory for the longest there was a distinct fibrosis and the characteristic spotted mottling. In a film I took of a man who had been employed there 15 years I also found fibrosis. Yet in neither case were there symptoms. The men remained in apparent health. It should be stated that materials of the factory come from anywhere and are not limited to silicous earths from Mediterranean islands. Sand from Chelford, near at hand, brick earths and pottery throw-outs are employed in great quantity. That *all* should be free from sericite is not to be expected. And this brings me to a final word on the one unprotected operation of the factory. The pottery waste is wet-ground. The shards of cups, plates, tiles, become a thick liquid of the colour and consistency of cream. It is run on the kilns in layers 6 in. deep and dried to a crust which crumbles in the fingers. This is shovelled out and bagged by three men. They do not wear the masks provided and so far have not suffered.

The Home Office authorities' view is expressed by Dr. J. C. Bridge, C.B.E., H.M. Senior Medical Inspector of Factories, in a letter: "I think there is no justification for holding the view that silica materials in which sericite is not present are harmless; for example, in flint crushing, in which sericite does not exist, many cases of silicosis occur."

Dr. J. M. Davidson, H.M. Medical Inspector of Factories informs me that the prevalence of silicosis in South Wales and its absence in the Scottish mines is in his opinion to be attributed to the "hard heads" of silicious rock that are encountered in the former.

It would seem that, at most, the absence of sericite is a beneficial factor; but it does not secure the complete immunity of the workers from damage to the lungs.

There is a pleasant feature of this small factory that calls for mention. In its degree it makes use of Winsford's river to import its materials. Those from Milos, Milosilia or Milo Flint, and flint from France come by boat to Winsford. And felspar, the use of which is to be developed shortly, is to be imported from Norway and Sweden and to come up the river.

Messieurs Bradbury's (Winsford) Ltd., Manufacturing Clothiers, a family business, opened their present factory in 1936. 10 They employ 180 hands, 90 per cent. of them girls. The work is done in one large airy room. The air space is more than double the 400 cubic feet per head requirement. The daylight given by the north lighted roof is almost equalled at sundown by the artificial lighting by 80 holophane lights. Their glass lined shades, directing beams so as to cross several feet above the working surface, produce an even diffusion of light of the strength of 9 foot-candles. Full day-light on a bright summer day is reckoned as 10 foot candles. Indoor lighting is commonly 4 to 5. In using a sewing machine with dark cloths first rate lighting is called for and here it is provided. There are 150 sewing machines, each actuated by an electric motor. They are grouped along-side of 3 conveyor belts. The belts are in permanent positions. The sewing machines can be moved to where they are wanted beside the belts and plugged into current. The foreman adjusts the belts to such a speed as brings the work to hand as the previous job is done. The girls on the belts are paid by time and twice daily get 10 minutes paid time for rest.

Ref p. 64

The product of the factory is boys' outer clothing. Large stocks of cloths are carried, of quality from 30 per cent. to 100 per cent. wool. Yorkshire is the chief source of the cloth. Harris Tweed is also employed. The floor is swept absolutely clear of every thread and fragment each morning and treated with a chemical disinfectant.

The industry is subject to the Trades Board and is of course supervised by the Ministry of Labour.

The Bacon Factory. 11.

The erection of a Bacon Factory was mentioned on Page 2 of my last year's Report. The undertakers are the Co-operative Wholesale Society, Limited, and their purpose is to produce a Wiltshire Cut Side of bacon in competition with foreign imports.

The site is eleven acres in Wharton on the East of the Bostock Road. A railway siding upon the estate is connected with the L.M. & S. Railway Company's system. The ground floor space provided under cover occupies about 60,000 square feet.

The system of working is that the pigs arriving by lorry or rail enter the lairage which has accommodation for some 600 to 700 pigs. They can be kept there, if necessary, but the usual procedure is to slaughter them immediately they arrive.

Each farmer is allotted a number, and an ear-tag bearing it is attached to each of his pigs.

From the lairage the animals pass into a small chamber—the stunning-pen—where a butcher, by the application of an electrical spring headgear, stuns them.

The implement (See Illustration A) is as follows:—

> Two springs clip at the sides of the head, and one on the forehead in the manner of a three-pronged fork. Each spring is armed with a copper brush which penetrates the hairs. The current is 70 v. and unconsciousness is instantaneous.

A chain-hook is then attached to one hind leg, and the pig is raised by a spiral hoist on to an overhead rail. A butcher then "sticks" it in the neck, severing the carotid artery. Then, conveyed on the rail, it enters the bleeding passage where it remains for some seconds till the bulk of the blood has flowed. The floor of this passage slopes each way to a centre gulley through which the blood passes to a reservoir and thence to a machine which, within four hours, delivers what was blood as a dark, ruddy-brown powder, dried and sterilised, of an approximate protein content of 85 per cent., and which is used as an ingredient of cattle-foods.

Passing along the line, the carcases enter the main killing passage where a shield automatically (See Illustration B) takes them, pig by pig, from the rail and places them in the scalding tank. From the tank they are lifted by a cradle, two at a time, into the de-hairing machine. The bristles find a ready market. Again the carcases are spiral-hoisted to the overhead rail, and thus enter the Singeing Furnace (See Illustration C) in this wise: each is enclosed in turn in an enormous bivalve shell with firebrick lining. Thereupon flames and smoke issue from the bivalve which presently disgorges the singed carcase.

From this, still hanging on the rail, the charred epidermis is vigorously scraped with broad flat-bladed knives, and the carcase then reaches the expert butcher who disembowels it. The skilled stroke of the knife, the eventration of the gut, including the fat-end, and the display of the whole upon a table occupy a few seconds. The gall bladder is removed, emptied and consigned to the Digester, soon to be mentioned.

To return to the entrails now spread out upon the table, the rapid identification of the mesenteric glands and their incision constitute an essential element in meat inspection. If passed as sound, the gut is pushed through an open hatch into the Entrails Department; if unsound the Inspector's attention is called and a cut is made upon one leg of the carcase as a symbol of the defect. The carcase passes down the line to the next skilled butcher who removes the pluck, the viscera of the chest together with the liver. The pluck is then hooked upon a rack at which an Inspector stands. The bronchial glands opened by his knife give instant information: if unsound the carcase is again marked. The head and neck then receive the attention of a second Inspector, the glands again being a tell-tale. A further conventional mark on a limb records any adverse finding.

Three paces down the line stands the fourth skilled butcher. He draws the hanging carcase over a sloped 'horse' (railing) and, using a knife and a steel, separates the muscles of the back from the spines of the vertebrae.

The gambrel that suspends the pig next passes over a section of the rail which operates the weighing machine. The attendant marks or stamps the ear-tag number on a card. Nine entries can be made per card, but one card relates to one farmer (one ear-tag number) only. The machine does the rest, stamping the card with the weight of each carcase. That, of course, is the warm dead weight.

The weighing is the last operation of the killing passage, and the carcase is pushed along the rail into the large hanging room.

From entering the Stunning-pen to the weighing occupies twenty minutes or less, and the speed is of great advantage to the farmer, for he is paid on weight, and shrinkage (involving loss of weight) is very rapid. The regulations allow the curer to deduct full shrinkage up to two hours after killing, but by weighing at the point they do, the factory deals generously with the feeder.

The Wiltshire Cut Bacon which is the main object of the establishment has caught the taste of a large part of England. The Danes, years ago, exploited this taste by providing for it inexpensive bacon of uniform quality, and so captured the market. To regain it, the C.W.S. is using at Winsford the successful methods used in their Danish Factories.

For the type of bacon aimed at a particular sort of pig is needed—lighter than the normal produce of Cheshire. The optimum dead weight

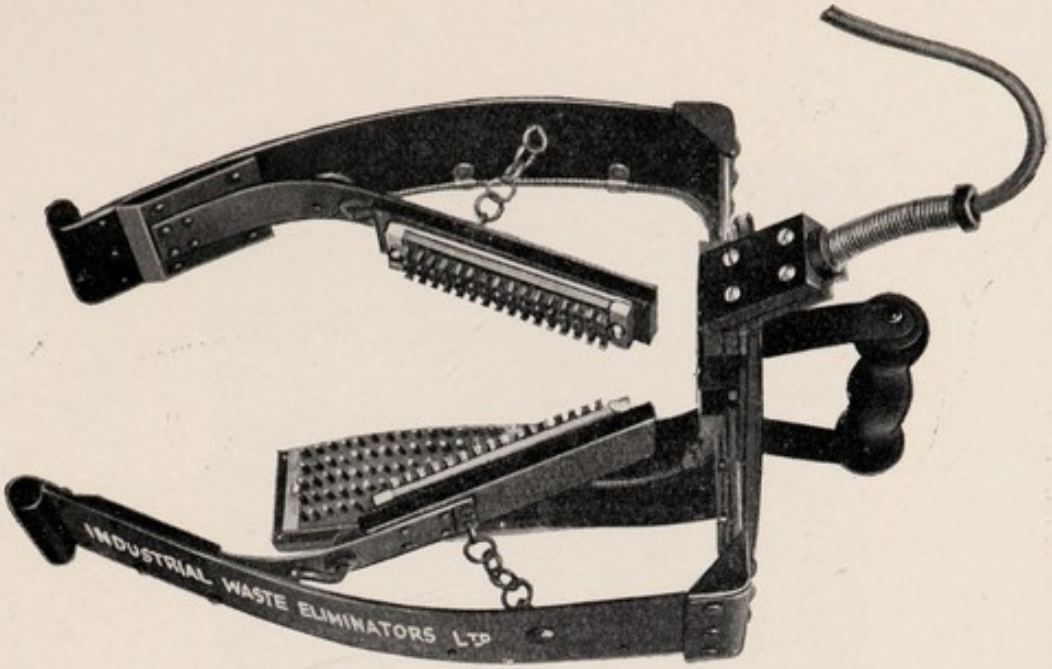

Illustration "A"

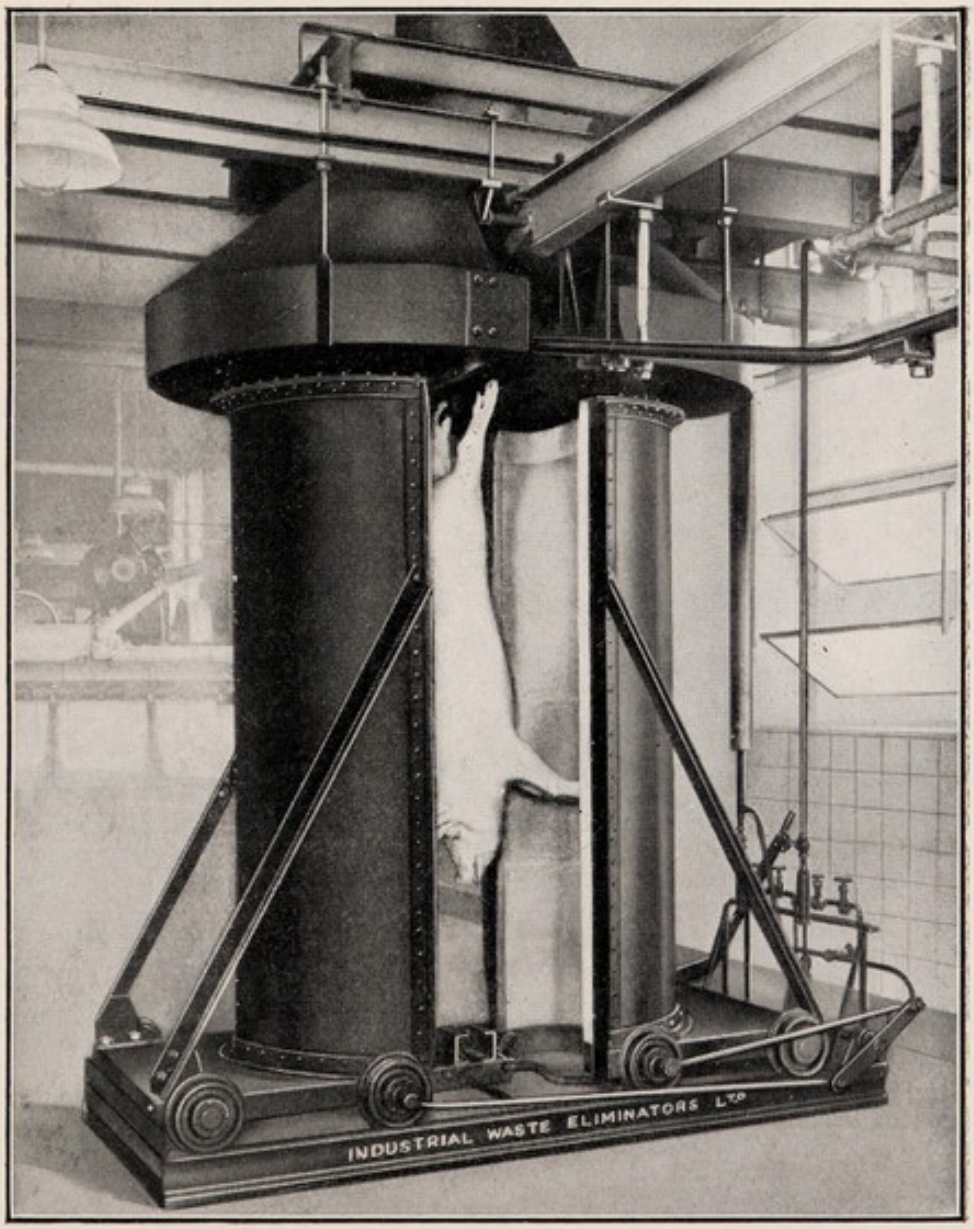

Illustration "C"

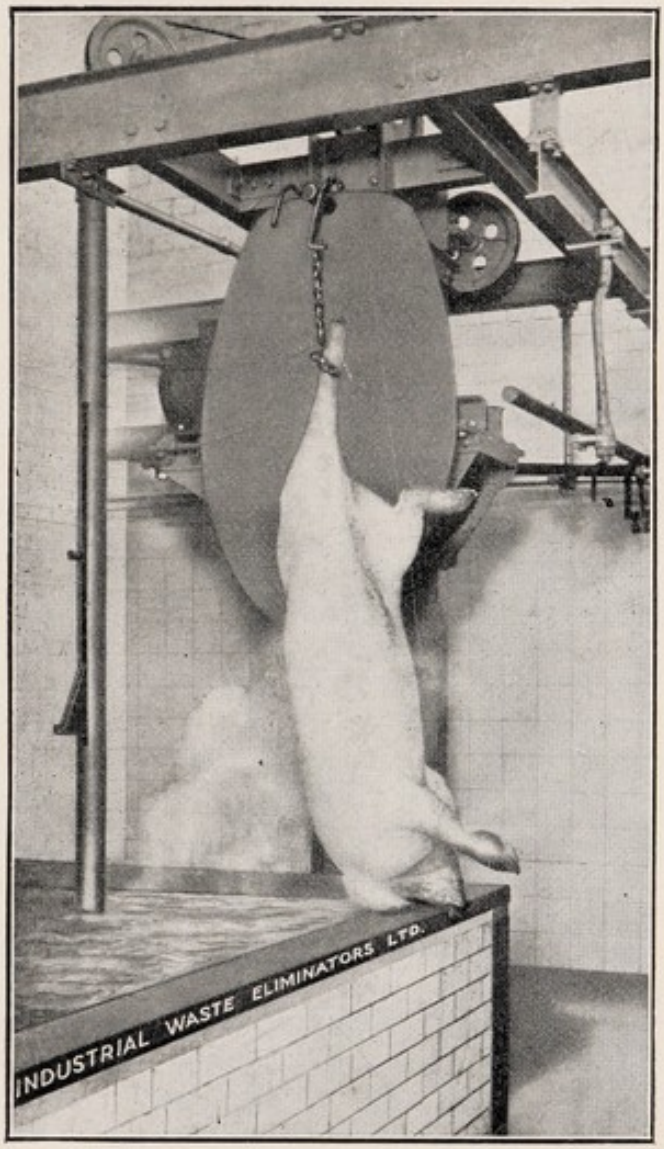

ILLUSTRATION "B"

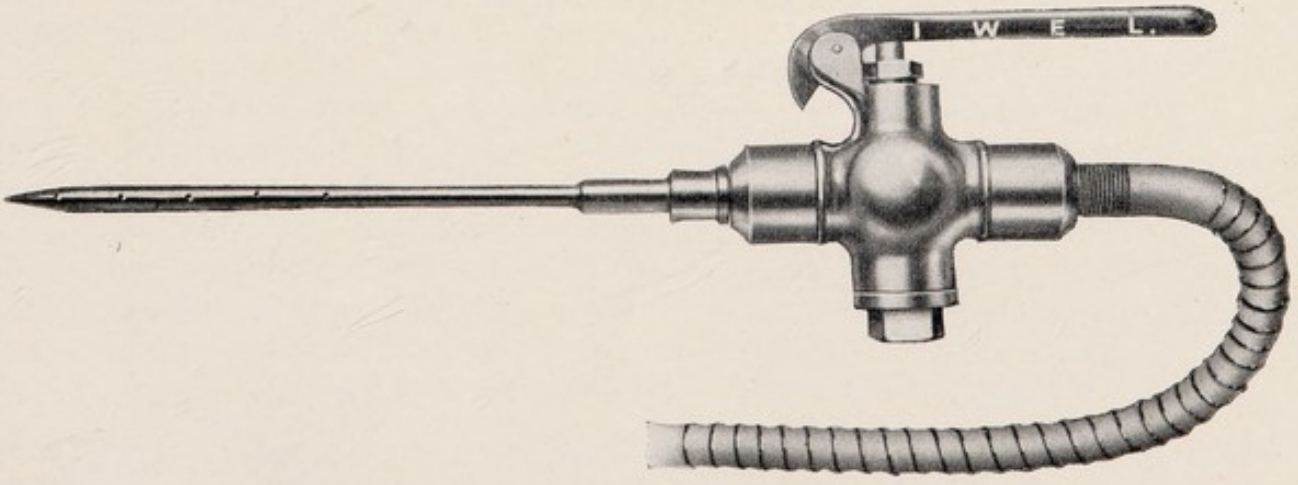

ILLUSTRATION "D"

is from 6-score 15-lbs. to 8-score 7-lbs. Animals within that range command the best prices. They are preferred white, and must be alive.

Sows and boars, and pigs under 6-scores 15-lbs. or over 9-scores are not suitable for the weight classification of the Wiltshire Cut.

It is not only weight that matters but also the conformation of the body. The Danes use their native Landrace pig. The modern Danish Landrace has been evolved from the native Landrace Stock crossed by English Large White boars. The cross is now an established variety producing the ideal Wiltshire Cut side. Moreover the Landrace sows are good mothers, less prolific, perhaps than the Large White, but, because less unwieldly, bringing more to weaning. The average litter at weaning is said to number 10.

If this type of pig be so suitable why not import it here?

Mr. H. Goude, of Melton Constable, supplies a part of the answer in a recent letter to "The Times." [Breeding Bacon Pigs. 18/7/38]. He describes how administrative difficulties have defeated his endeavour "to import a few sows and boars from Denmark." He does not mention difficulties across the water—in obtaining these same sows and boars. But difficulties are made to be overcome and if our curing industry wants this type of animal it is the opportunity and almost the obligation of our animal husbandry exponents either to buy or breed it. Bakewell in the 18th century "doubled the weight of the carcase of mutton at Smithfield" in his 50 years of farming. The right type of pig for a particular commercial purpose is a far lesser problem.

If the farmers of our own neighbourhood are to supply the type of pig required for the Bacon Factory, the attempt to breed a long, low, lean pig—at any rate in those respects of the Landrace type, may be worth consideration.

The Large White—Wessex Saddle-back cross has been advocated, but such experiences as the following, related in the Journal of the Ministry of Agriculture, [12] supply some guidance:—

> " 'In the earliest years of a certain herd Middle White boars and Large Black, Large White, and Wessex Saddle-back sows were employed; but when a bacon contract was first undertaken late in 1933, the dual purpose type of pig produced by such breeding was no longer suitable, and some very bad grading tickets were returned. During the last three years (ending 31st March, 1936) a change has gradually been brought about in the conformation of the pigs by the use of Large White boars on a rather lengthy type of Large White—Middle White cross."

The litter average of the herd mentioned, on a four year period (one year prior to the breeding change), was 8.75 pigs weaned (163 litters). It may be added as a matter of interest that the cost of rearing a pig to weaning was just over 16/-.

The Factory being now established in Winsford and constituting a regular market, at our very doors, for pigs of a certain type, it is clearly desirable in all interests that our home breeders should "feed" it with that type.

We have licensed the Factory to kill an average of 1,500 pigs per week and that is the quota granted to the Factory by the Bacon Development Board. Up to now the weekly kill has only once exceeded 1,000, and the average so far will have been about 600. The contribution of the neighbourhood has never exceeded about 400. Far more are wanted, and there is no doubt that Cheshire, and even Mid-Cheshire could keep the Factory employed to the hilt. The saving on carriage to a near market would benefit the feeder, and, if he breed the type asked for, he will command the highest price. The larger the throughput the more employment the Factory will give.

The carcases, after a night in the Hanging Hall are "trimmed out" and become Wiltshire Cut sides, which then pass to the cooling chambers. At a very definite, desired temperature the side is injected with "pickle," that is, a certain kind of brine, the chief constituents of which are bought locally. The brine is introduced at a number of points in each side by a "needle" (See Illustration D) as large as a wooden skewer, attached to a force-pump. The brine causes the laking of the hæmoglobin and the attractive pink tinge of the bacon consequent upon that change.

The resultant "Wiltshire Cut" is a whole side of rather lean bacon weighing from 56 to 68-lbs. It has nowadays a great sale throughout this country, though the Midlands have still a fondness for the shoulder-belly type of cure.

There is, of course, a larger aspect to the whole matter. We in England are not producing things which we have unrivalled facilities to produce. Admitting that trade is exchange in that we must buy from our customers, there is no reason why we should import more than we can pay for, as we did in 1937.

The country's adverse balance (when the invisible exports are deducted from the visible adverse trade balance) was £35 million (and likely to be more in 1938) and yet we are importing, from America, bacon, hams, shoulders, 'fresh pork,' lard, sausage casings, and, from the Argentine, enormous weights of similar goods—about £60 million worth of goods in 1937, mostly food, whilst from Denmark we bought in 1937 more than £36 millions worth of food, much of it being this same Wiltshire Cut Bacon, whilst Denmark, in exchange, took only some £17 millions worth of our products. Unless this kind of thing comes home to the heart and conscience of our people in the small localities, and they put their backs into getting the proportion right, poverty and unemployment, and the drab disaster thereof will follow.

Anyone who has ever "put away a pig" knows that there is a great deal more to be done than mere bacon curing. The many activities that occupy the house-wife fall, in the Factory, to the Small-goods Department. The trotters or feet are cleaned and pickled and find a ready market in Manchester or Liverpool. The hodge or maw (stomach) is salted and sold as tripe. The small gut becomes sausage casings and is filled with minced pork, yeastless rusk and the usual spices. The large gut, including the "bung-end" or Caecum, is cooked and sold to tripe shops as "chitterlings." The last 58½ inches of the large gut (in terms of human anatomy the descending and Sigmoid colon and the rectum) are sold to form the casing of salami sausage. They have a special value for this on account of the layer of fat, within the visceral pelvic fascia, which surrounds the lower ends. At this point a difficult meat inspection problem may be mentioned. The lymphatic glands of this region, the pararectal and superior haemorrhoidal chain of them, occasionally give rise to anxiety. It is the function of lymphatics to pass on, to the system, fat derived from the food; but these glands also arrest substances which should not pass on, amongst other things pigment; and if the pig has been eating coal, for instance, the last 8 inches or so of the fat-end may be studded with the coal-blackened glands. In man these glands vary in number from 10 to 60: [13] I imagine that pigs may have similar numbers. If so, it is easy to understand the purchasers of perfectly healthy fat-ends returning them under the impression that the spots are disease. Large numbers of a herd may present the same harmless, but unsightly feature. (This has occurred here, and was fully investigated).

The heart and liver are in demand in London, also the lungs from which faggots are made; but the skirting or diaphragm goes to the German butchers in Liverpool who sell it as pie meat or use it to stuff sausage. The chief output of the Small Goods Department, however, is the brawn made from the head-meat, the pork pies, sausage rolls and Cornish pasties.

A feature of the factory is the Titan Lard Machine which produces a refined neutral lard in the astonishingly brief period of *six minutes*.

It will be seen that the Factory is not narrowly specialised; and to the list of its range of products smoked bacon must be added. Green bacon is placed in the two upper storeys of a chamber, 35′ high by 13′ by 10′, holding approximately 150 sides of bacon. Oak Sawdust placed on the bottom floor is lighted and sufficient draught is caused by the louvres at the top of the chamber to permit smouldering and the production of a dense smoke. The smoking period is approximately thirty hours.

The bones are taken to the Dry Rendering Plant or Melter, a steam jacketed affair, where they are cooked and sterilised, the product—"greaves" (pronounced "graves")—is then put into a hydraulic press of 300 tons. The fats are expressed: the residue is a cake, which is ground in a grinder or Disintegrator and becomes Meat and Bone-meal.

Anything of a black edible nature (as previously referred to in the entrails) is dealt with in the same plant, and also anything of an edible nature which is other than saleable—such as a length of gut which has been punctured in the butchering. This meal finds extensive use in modern Pig, Cattle and Poultry feeding rations. The value of the dried blood for the same has been mentioned above. The fat is marketed as Hog Fat.

The manure which is removed from the gut is sold to local farmers.

Condemned carcases, plucks and meat are dealt with in the inedible plant, that is, a Melter like the other, except in this, that the steam is directly applied, and not in a jacket surrounding the material. The Hog Fat produced from this is sold to soap-boilers, and the residue, "In-edible Greaves," is sold invoiced "For Fertilising Purposes Only."

It will be appreciated that the fear that the Bacon Factory would cause sewage disposal problems through the outflow into the sewers of organic waste is not likely to eventuate.

It does not pay to buy any organic matter and throw it away (which it may be cynical—though it is true—to say is the whole principle of "modern sanitation") and the designer of the Bacon Factory does not do so. But to make sure, there are certain safeguards agreed with our Surveyor, who writes:—

"The first of these safeguards is the obvious one of ensuring that all effluent from the Factory passes through proper settlement tanks before the effluent leaving the tanks gains access to the sewer. These settlement tanks have three chambers in each with baffle walls and submerged over-flows. They also act as grease traps by cooling any hot liquid containing grease in solution causing the grease to coalesce. A comparatively innocuous effluent leaves these tanks and the agreement with the Bacon Factory specifies the number of parts per hundred thusand of solid matter which must not be exceeded in the effluent reaching the sewers. The system appears to date to work well."

Fat collected from the drains is sold as in-edible.

I think this Factory may become a considerable asset to Winsford. At present the employment afforded is modest (about 70), but the enterprise is not yet fully under way.

Not only so, but the killing passage and equipment are capable of dealing easily with one and a half times the present number of pigs slaughtered, (that is, the Factory could deal with 2,000 pigs per week)

and there is ample land to the rear of the Factory on which the present cooling and processing rooms could be duplicated. Thus there may be here the germ of a large industry.

The duty of the Council is to inspect the meat killed at the Bacon Factory. [See Section D: Summary of Special Report on Meat Inspection].

When the enterprises which I have mentioned have more fully developed it is to be hoped that Winsford will *permanently* be lifted out of the part-time employment slough. Of that I now must speak:—

MONTHLY RECORD OF UNEMPLOYED PERSONS
signing the Register at Winsford.

Month. 1937.	Number on Register. 1937.	Number on Register. 1936. Wholly Unemployed.	Number on Register. 1936. Short Time.	Amount of Direct Payments. 1937. £	Amount of Direct Payments. 1936. £
Jan.	699	466	415	1812	3481
					5 pay days
Feb.	722	457	277	1730	2636
Mar.	674	441	263	2186	2614
April	621	380	227	2566	2508
				5 pay days	
May	600	401	289	1968	2823
					5 pay days
June	521	349	329	1938	2191
July	539	316	221	2300	2503
				5 pay days	5 pay days
Aug.	560	354	230	1888	1917
Sept.	526	319	230	1923	1947
Oct.	565	365	231	2559	2418
				5 pay days	5 pay days
Nov.	603	370	268	2171	1929
Dec.	623	421	279	2324	2674

J. BULLMAN.

Taking December as a specimen month, 17.7 per cent of the insured persons in Winsford were unemployed, 18.1 males and 16.1 females. The average for England in that month was 10.7, for Great Britain 11.8. For Cheshire it was 15.3. The figures vary in comparable districts,—Irlam 3.6, Congleton 22.7, Nantwich 19.6, Crewe, 10.8, Middlewich 10.6, Sandbach in December was only 8.3.

The Relieving Officer has kindly provided the following figures of Poor Relief:—

WINSFORD URBAN DISTRICT.

Year ended 31st December, 1937.

Number of Persons who received Poor Law Relief (Ordinary)	494
Number of these aged 70 years and upwards	52
Number under 16 years of age	175
Number admitted to Northwich Institution from Winsford	5
Number of Children Boarded Out by the Guardians Committee in Winsford	—

The amount paid in Poor Law Relief (Ordinary) was £3,923 15s. 3d. which was £2,265 2s. 6d. more than 10 years previously.

FRED MOORE,
Relieving Officer.

The above constitutes my attempt to deal with the second of my three preoccupations, "food, work, and houses." It is the Ministry that prescribes the arrangement of these reports and the other two, "food" and "houses" are spoken of in their appointed place.

Vital Statistics.

		Total	M.	F.
Live Births:	Legitimate	143	54	89
	Illegitimate	6	3	3
	Totals	149	57	92

Note—That there were 10 less births than in 1936.

Birth rate per 1,000 of the estimated resident population	13.4
Birth rate for the County of Cheshire	14.2
Birth rate for England and Wales	14.9

		Total	M.	F.
Still Births:	Legitimate	7	4	3
	Illegitimate	Not known.		
	Totals known	7	4	3

Marriages 89

In 1936 there were 111 marriages.

	Total	M.	F.
Deaths	151	78	73

Death rate per 1,000 at the estimated resident population	13.6
Death rate of the County of Cheshire	12.2
Death rate of England and Wales	12.4

Deaths from puerperal causes and rates per 1,000 live and still births. (Headings 29 & 30 of the Registrar General's short list):—

No. 29 Puerperal Sepsis	1
Rate	6.6
No. 30 Other Puerperal Causes	Nil.
Rate	Nil.
Total Maternal Mortality	1
Rate	6.6

(It will be noted that the enormous mortality of 6.6. is a mathematical abstraction based on the single death that occurred.)

Though maternity work is no longer our direct responsibility, in view of the fact that the Ante-natal Scheme, which this Council originated, is now operative throughout the County, the following figures are of interest:—

Cheshire Puerperal Mortality.

	From sepsis.	From other puerperal causes.	Total.
1932	1.14	3.21	4.35
1933	1.27	3.28	4.55
1934	1.41	2.72	4.13
1935	1.49	2.49	3.98
1936	0.97	3.96	4.93
1937	1.58	1.86	3.44

It used to be doubted whether it was *possible* to lower the figure; but had the sepsis rate of 1936 coincided with the "other puerperal causes" rate of 1937—a contingency not unlikely—a low total would have been achieved. Meanwhile the total for Cheshire is still above that for England and Wales, 3.11.

General List of Causes of Death in 1937:—

	M.	F.
"Other" Liver diseases	1	1
"Other" digestive diseases	1	4
Acute and Chronic Nephritis	2	2
Puerperal Sepsis		1
Other puerperal diseases	—	Nil
Congenital debility, premature birth	5	3
Senility	4	6
Suicide	1	1
Other violence	1	—
Other defined diseases	10	5
Ill defined or not known diseases	1	—
Diabetes	4	2
Cerebral Haemorrhage	1	4
Heart diseases	21	20
Aneurysm	Nil	Nil

Other Circulatory diseases	5	2
Bronchitis	2	2
Pneumonia (all forms)	5	2
Other respiratory diseases	1	1
Peptic ulcer	Nil	Nil
Diarrhoea under 2 years	Nil	1
Appendicitis	Nil	Nil
Cirrhosis of liver	Nil	Nil
Typhoid and paratyphoid fevers	Nil	1
Measles	Nil	Nil
Scarlet Fever	Nil	Nil
Whooping Cough	Nil	Nil
Diphtheria	Nil	Nil
Influenza	1	2
Encephalitis lethargica	1	1
Cerebro-spinal fever	Nil	Nil
Tuberculosis of respiratory system	4	Nil
Other tuberculosis	—	1
Syphilis, G.P.I. and Tabes Dorsalis	Nil	Nil
Cancer	7	12

Deaths of infants under one year of age:—

Actual numbers:—

	Males.	Females.
Legitimate	8	3
Illegitimate	—	1

The Winsford infantile death rates of recent years may be compared in the following table:—

Birth Rate per 1,000 of the population.	Year.	Infantile death rate per 1,000 live births.
30.1	1895	
30.2	1905	
26.7	1910	84
	1911	147
	1912	102
	1913	145
	1914	104
23.1	1915	111
	1916	84
	1917	141
	1918	109
	1919	95
24.3	1920	110
	1921	97
	1922	100
20.9	1923	68
	1924	65
22.4	1925	62
17.3	1926	57
17.8	1927	64
15.9	1928	61
15.4	1929	63
15.8	1930	68
12.9	1931	48
15.2	1932	66
13.8	1933	86
16.06	1934	52
13.1	1935	113
15.0	1936	42
13.4	1937	81
	Rates for County of Cheshire.	
14.2	1937	51

This Council's responsibility for maternity and child welfare terminated after 1931. The authority for both is the County Council, the M.O.H. of which notes that the highest infant mortality rates were in Stalybridge 83, Winsford 81, Tintwistle 77, Macclesfield 72, Middlewich 70 and the lowest in Disley Nil, Knutsford 14, Hale 17, Sandbach 18.

PARTICULARS of unusual or excessive mortality .... Nil.

CAUSES of sickness or invalidity which have been specially noteworthy:—

During the autumn and winter there has been a mild but widespread epidemic of jaundice, mostly amongst children. Dr. Robert Okell, Dr. Sutherland and Dr. Leak have kindly given me useful memoranda:—

MEMORANDUM ON THE OUTBREAK OF EPIDEMIC JAUNDICE AT WINSFORD IN 1937 BY DR. LEAK.

Cases of Jaundice first began to occur with unusual frequency in the early part of July. The peak was probably towards the end of August and there are still, October 11th, cases occurring with some frequency.

Clinically the cases present the following picture. There is frequently a period of a week or so of general malaise with no definite symptoms. Then the child may have some abdominal pain, headache and one or two attacks of vomiting. A purge is usually given for this and a day or two later the child is brought up to see the doctor. By this time the mother may possibly have noticed that the urine is dark coloured and the stools rather pale. There is usually a slight icteric tinge to the conjunctiva which may only be visible in the fornices and may never extend to the limbus. There is almost always a peculiar ochreish tinge observable on the abdominal wall, even though signs of jaundice may not be visible elsewhere. The tongue is usually slightly coated and may be slightly raw at the edges. More often than not there is no fever to be found, and I have never observed a higher temperature than 101.0°F. and as a rule it is not over 100.0°F. On abdominal palpation there is nothing definite to be made out in most cases, apart from the following points. There is occasionally slight tenderness on deep pressure in the right iliac fossa and nearly always some in the left iliac fossa as if the descending colon were tender. I have several times found deep tenderness also over the head of the pancreas or duodenum. Hyperaesthesia is almost always absent except over the middle of the left iliac fossa and occasionally over the appendix area. In the L.I.F. it is almost constantly present in the early stages of the disease. I have not been able to feel the spleen enlarged, and I do not think that I have definitely felt the liver enlarged either. I have never observed tenderness over that organ nor over the gall bladder. Constipation does not seem to be marked, nor have any patients complained of itching, etc.

The degree of jaundice is, as a rule, slight and the attack is mild. Anorexia usually lasts from six to ten days, but the child actually takes a surprisingly long time to recover completely. As a matter of fact most of the children are sent back to school in about three weeks—against orders—but mothers will usually volunteer the information that it has taken her child at least four weeks before it is itself again. I have not noticed any sequels of importance.

As regards the infectivity of the malady, I have had cases in which one child in the house has been attacked with the second child falling sick with the illness about a fortnight afterwards. On the other hand I know of one house in which the three children were all taken ill at

the same time. The fourth child—aged about 14 months—has not been attacked so far, and this agrees with my impression that children under two years old escape (or at least I have not seen them as far as I can remember) while it is uncommon over the age of 12, though I have seen cases up to the age of 14. It has been very prevalent indeed in children from 5 to 10 years old, quite a large proportion of children of this age having been attacked, at a rough guess I should say from 10 to 15 per cent. However, many cases are not brought to the doctor, but an examination of school records or questioning of the children or their mothers would give fairly suggestive statistics.

Being a mild disease no heroic measures of treatment are called for, nor is experiment justified. Warmth, rest, fat free diet, a simple bismuth mixture and saline aperient each morning have helped to keep patients and parents comfortable, followed by Parrish's food or its equivalent during convalescence.

Naturally from the clinical standpoint it is impossible to give any opinion as to the source of the infection or of the infecting organism. It bears all the marks of being an epidemic infection and not a disease due to dietary indiscretions or vagaries.

W. N. LEAK, M.D.

In the British Medical Journal of 24th September, 1938, Dr. Leak chronicles further experiences:—

"In one class of 37 children no fewer than 15 were absent 'because of epidemic jaundice,' when the school opened in August." Only once was he "able to palpate the liver and that with difficulty. . . . All cases except one, while the epidemic was in full swing, were of the same type. The exception was a girl of 12 . . . and her condition corresponded exactly with the usual type of non-epidemic catarrhal jaundice and liver enlarged to 3 finger-breadths below the costal margin."

He tested for Ligat's reflex (hyperæsthesia of the abdominal wall on gently pinching the skin, 14) and found it "in the appendicular area of every case that had not had the appendix removed" and also on the opposite side of the mid line" not unusual in cases of appendicitis. "With numbers of cases passing through my hands," he continues, "I noticed that the left sided reflex had a most unusual and exact distribution. It began at the level of the umbilicus about half way between the linea alba and the linea semi-lunaris, and it descended vertically nearly halfway to Ponpart's ligament. Very seldom did it rise above the level of the umbilicus, and it was definitely a line, about $\frac{1}{4}$" to $\frac{1}{2}$" wide, and not an oval or circular area. I have examined hundreds of abdomens both before and since, but I cannot recall ever having found a Ligat's reflex with such a distribution in any but a case of epidemic jaundice. In the case of ordinary catarrhal jaundice which I have mentioned both the appendicular and left sided reflex were significantly absent."

Since the epidemic subsided he has seen three sickness cases in which this peculiar distribution of the reflex was present.

1. Child, aged 12, Temp. 102.0°F., "bilious attack," mild chronic appendicitis. Urine contained trace bile. "Next morning there was an icteric conjunctival tinge. In forty-eight hours the bile had disappeared from the urine, the reflex had gone also, and the girl was practically well again."

2. Adult male with the typical symptoms and the two reflexes, and

3. Fourteen days later his sister, aged 26, with both reflexes present, and "she became a typical case of epidemic jaundice."

He further observes "if these observations are confirmed by the experience of other investigations in other epidemics it would appear that we have here a simple clinical sign which will definitely distinguish between two types of catarrhal jaundice, indeed a sign which is probably pathogromonic for the epidemic variety. If this is so it should materially aid the investigation of the epidemiology of the disease, and lead to distinguishing as such what might otherwise pass as more or less ordinary 'bilious attacks,' as in the girl I have just mentioned. I do not know what abdominal organ this very circumscribed reflex refers to, but it is clear that its presence does denote an inflammation of some organ which is a constant feature of the disease."

October 12th, 1937.

Dear Dr. Picton,

RE INFECTIVE CATARRHAL JAUNDICE.

I have had about 10 cases of this since late July of this year. Ages vary from 10—24.

Onset preceded by vomiting, little or no temperature and one or two of them had diarrhoea. In most of them the jaundice was only mild. One had it severely.

Convalescence and recovery were in all cases complete. The liver was enlarged in them all to varying degrees. This was not accompanied by any haemorrhages, petechial or otherwise.

3 occurred within an area of 30 square yards, so it must be infectious.

Yours truly,

J. S. SUTHERLAND.

Dr. Okell's cases were numerous, ages mostly from 4 to 8, but two were young men of 24, one a driver of a motor lorry, the other a visitor to the district. Neither worked in sewers. Both were sharply ill, markedly jaundiced and several of Dr. Okell's child cases were deeply jaundiced. The eyes shewed the jaundice first: then it spread to the whole body. Itching of the skin was not a marked symptom. Neither

the liver nor the spleen were felt to be enlarged, but in many the liver was tender. In his experience the cases were sporadic. He had no family epidemy. There was no evidence of the incubation period. The prodromal period, malaise prior to jaundice, was four days.

Jaundice is a sign of disease but not itself a disease. What was this disease? Clearly, as Dr. Sutherland says, it was infectious and not the spontaneously arising catarrhal jaundice of common experience.

15 It used to be thought that jaundice was bile in the blood; but it is now known that bile-pigment is always in the blood. It used to be thought that bile is made in the liver; but it is now known that bile pigment is made in the spleen and in the marrow of the bones and that it is carried by the blood to the liver which receives it ready made and puts it out into the bile. A very little of the bile pigment is made in the liver. Bile pigment is the same thing as the colouring matter of blood, less the iron containing ingredients (haemosiderin). Now as the blood corpuscles which carry the colour of the blood are, like every other constituent of the body, constantly undergoing destruction and renewal, the materials of that demolition have to be carried away by the blood. The body is economic and keeps the valuable iron portion and uses it again; but as I have said the remainder is carried through the liver and removed as bile pigment. That is the normal procedure; but when, in disease, far too many blood corpuscles are destroyed and excessive pigment comes to the liver, more than it can remove, it does its best and removes as much as ever, (nay more, for the stools are darker than usual); but the excess passes directly from the radicles of the portal vein into the hepatic veins, in other words stays in the blood, and is carried all over the body, staining the whites of the eyes and the skin—purely a pigment jaundice. The urine in this sort of jaundice contains no bile (acholuric jaundice). The blood destructive diseases that cause that type are from various poisonous agents including the cause, whatever it may be, of pernicious anaemia.

An entirely different type of jaundice arises from gall stones and other diseased conditions obstructing the tubes which lead the bile from the liver into the intestine. Whether the obstruction blocks the roots, branches or trunk of this system of tubes, jaundice results; for not the bile pigment only but all the constituents of the bile are retained and the blood must perforce carry them. Not only is jaundice caused by the pigment, but the bile acids cause an intolerable itching of the skin and they slow the pulse rate; another ingredient (cholesterol) causes peculiar yellowish, sometimes thickened patches in the eyelids, etc., and the general effect on the blood is that it fails to clot when it should and bleedings under the skin, both like flea bites (petechial) and bruise-like (purpura), and oozing of blood, from the gums and elsewhere, result. Dr. Sutherland notes that there were no petechial haemorrhages in his cases, and none of the accounts of this Winsford outbreak mentions itching as severe.

There is a third kind of jaundice besides the blood destructive (hæmolytic) and obstructive kinds, namely, the infective. The essential cause of this is that infection damages the actual cells of the liver or of the bile ducts or both. The cells cannot do their work. So, as in the first kind, some of the pigment cannot be removed from the blood and therefore is carried on in it to stain the skin; and also, as in the second kind, the ducts cannot lead the bile to the intestine, this time because they themselves are blocked by their own swollen walls. Some of the bile, tense in the tubes, ruptures into the blood stream and is carried all over the body. What infections cause this kind? "A chill to the liver" is the current phrase for the commonest; but that cannot very well be the cause here, for that is an individual affair and could not cause an epidemic. The other two are: (i) a spiral animal parasite discovered in 1914 by Inada and Ido in Japan (*Leptospira icterohaemorrhagiae*). [16] It is carried by rats and transmitted by their urine and is the cause of Weil's disease in sewer workers, miners and soldiers on campaign [Weil described an outbreak in 1886; but Napoleon's surgeon, Larry had described an outbreak in the Egyptian Campaign of 1812]. And (ii) the unknown cause, believed to be a virus, of epidemics of catarrhal jaundice. There is reason to think this presumed virus finds harborage in the nose and throat. A considerable epidemic took place in Sweden in 1925 and 1926. [16] Chiefly a disease of children, it is characterised by jaundice and constipation. The incubation period is put down as from 3 to 5 weeks. The onset is sudden with vomiting and headache, possibly sore throat. The face and conjunctivae are suffused; occasionally there is severe abdominal pain. Jaundice occurs in from one to four days and lasts 1 to 3 weeks. Malaise in invariable. The liver is enlarged and the spleen may be. The pulse is slow. There may be bile in the stools *or not*, that is they may be clay coloured. Nose bleeding is common and nettle rash may occur. The blood shews at first a *slight* increase in the number of white cells, quickly followed by a fall to less than the normal number and a relative increase of the large mono-nuclear cells. Recovery is good but amongst the relatively rare adult cases death has occurred from acute yellow atrophy of the liver.

Of the varied kinds of jaundice I have mentioned, our Winsford brand seems to be most like the last. How to get closer to the truth was the problem. Dr. Robert Okell supplied me with two samples of blood, one from a child and one from one of his men patients; and these a pathologist, well known for his work on jaundice, examined. The point was to distinguish between i. Weil's disease, the *Leptospira* infection, and ii. the infective [presumed virus caused] catarrhal jaundice. The test used, I believe, was that a 5 day culture of the Leptospira was mixed on a slide with some of a Winsford patient's blood serum and viewed with dark ground illumination under the microscope. If the patient have Weil's disease the parasites will run into clumps: if they do not, he has not Weil's disease. They did not. That is good negative evidence,

Thus we do not seem to be much nearer the cause of our epidemic; but we know at least that it is not likely to be due to sewers or to rats.

Treatment has been mentioned. I have one common-place and one guess to add: in the words of McNee, [17] of Glasgow, "the liver is damaged in obstructive jaundice and in all types of toxic and infective jaundice. Glucose must be given to all such patients to prevent extension of the damage; it is, in fact, the one essential drug in hepatic jaundice." Honey contains glucose and will do very well. The guess arises out of an experiment recorded by the physiologists in which, on ligature of the common bile-duct of a dog, the thyroid swelled up. To a dog miserable with febrile jaundice I accordingly administered thyroid. As the improvement was dramatic in that cannine case I have ever since given thyroid to my jaundiced patients and, as I think, with benefit.

Finally Prevention? If the cause of such an epidemic be indeed a throat virus, a gargle of Permanganate of Potash or Condy's Fluid to be used twice daily by contacts is reasonable.

ANY conditions of occupation or environment which appear to have had a prejudicial effect on health:

Silicosis is reviewed above.

ANY evidence, statistical or otherwise, that unemployment has exercised any significant influence on the health or physique of children or adults:

See 1934 Report p.p. 14 to 20.

SECTION B.—General Provision of Health Services.

(i) *Officers*—see front of volume.

(ii) Changes in services

(a) *Laboratory facilities.* No change.

Use of facilities for examination of Pathological and Bacteriological specimens:

	Swabs for Diphtheria		Tissue for Pus. Cancer		Specimens of Blood for Enteric Fever.		Specimens of Sputum for Tubercle.		Cows' Milk for Tubercle.		Typing for Pneumonia.
	—	+	—	+	—	+	—	+	—	+	
By the University of Manchester Public Health Lab., York Place	11	1	—	8	2 (faeces)	—	—	—	—	—	—
By the Elliott Memorial Lab., Chester Royal Infirmary....	4	—	—	—	—	—	—	—	—	—	—
Samples taken at Davenham Hospital	5	6	—	—	—	—	—	—	—	—	—
By the Laboratory of the County M.O.H.	—	—	—	—	—	—	19	—	—	—	—

(b) *Ambulance facilities*:

For ordinary patients: As in 1934 Report, p. 22.

For fever patients: The Davenham Fever Hospital sends its own motor ambulance. The provision for the removal of the bedding to the autoclave in the isolation hospital for sterilizing is still the man with a cart and a cart sheet. Elsewhere fever hospital ambulances are complete with a metal lined compartment over the wings adequate to receive mattress and bedding used by the patient at his home. In earlier years I made a recommendation that this course should be adopted here, and it was received sympathetically, but I think it has been overlooked. It is possible that our present "system" may occasionally be responsible for a "return case."

(c) *Nursing in the home.*

As in 1936 Report p. 8.

(d) *Treatment Centres and Clinics.*

This is a County Council matter. The Winsford Council's former Child Welfare Centre, the old parsonage in Weaver Street, is in full use for the County Council as a Welfare Centre and for similar purposes.

(e) HOSPITALS: *Public*:

There is none in the district; but the Council is a constituent of the Davenham Fever Hospital Joint Board. The Medical Officer, Dr. Geo. Okell, reports the admission of 162 cases, including 69 from Winsford. 57 of the Winsford cases were Scarlet fever, 5 Diphtheria, 1 Typhoid, 1 Puerperal fever, 1 Tuberculous Laryngitis, 3 Erysipelas, 1 Pneumonia. The Typhoid died. He records a small ward outbreak of mild chicken pox.

Financial adjustments of the contributions to the maintenance of this hospital have lately been under consideration; and, at the request of this Council, have been the subject of a Ministry of Health enquiry, a circumstance which has focussed attention on the zymotic disease figures. These are

Which are:—

Year 1934.	Population.	Scarlet Fever.	Diphtheria.	Enteric Fever	Pneumonia.	Puerperal Fever.	Puerperal Pyrexia.	Erysipelas.	Total.	Principal Zymotic Disease Death Rate.
Winsford U.D.C.	10,770	21	11	—	20	1	4	4	61	0.19
Middlewich U.D.C.	5,474	6	—	—	11	3	1	—	21	0.36
Northwich U.D.C.	18,230	9	5	1	6	—	2	6	29	0.10
Northwich R.D.C.	27,630	56	13	—	23	3	5	8	108	0.14
								County Rate		0.22
Year 1935.										
Winsford U.D.C.	10,750	35	4	—	31	1	2	9	82	0.19
Middlewich U.D.C.	5,478	20	—	1	8	—	—	2	31	0.55
Northwich U.D.C.	18,200	15	5	—	5	—	—	3	28	0.22
Northwich R.D.C.	27,980	68	3	2	26	—	2	1	102	0.18
								County Rate		0.18
Year 1936.										
Winsford U.D.C.	11,189	44	11	—	18	1	1	10	85	0.09
Middlewich U.D.C.	5,931	1	—	—	13	1	—	2	17	0.34
Northwich U.D.C.	19,884	13	4	—	18	1	2	6	44	0.41
Northwich R.D.C.	27,858	41	13	1	6	1	5	8	75	0.29
								County Rate		0.30
Year 1937.										
Winsford U.D.C.	11,140	52	5	1	17	—	3	6	84	0.18
Middlewich U.D.C.	5,992	1	—	—	15	1	1	1	19	0.17
Northwich U.D.C.	19,510	18	9	—	10	1	3	12	53	0.07
Northwich R.D.C.	28,390	53	15	1	9	1	4	4	87	0.07
								County Rate		0.21

That is to say in the last 4 years Winsford with its 11,000 people has had 312 notifications of zymotic disease, whilst the Northwich rural and urban districts and Middlewich together, a joint population of 53,400, have had 614 notifications only. I think that although measles is not included in the figures, the fact that it is notifiable in Winsford is the key of the discrepancy. Measles has been notifiable for a generation in Winsford and as a result Winsford parents know that every rash must receive immediate attention and a doctor therefore sees almost every suspect. This gives the Council far better control over infectious diseases and many mild or doubtful rashes which would otherwise be missed come to be diagnosed and notified. This substantially raises the Scarlet Fever *notification* rate in Winsford; but that the incidence rate is not higher than in comparable areas is shown by a comparison of the zymotic disease *death* rates:—

In 1934, '35, '36 and '37: Winsford 0.19, 0.19, 0.09 and 0.18, compared with county rates: 0.22, 0.18, 0.30 and 0.21.

The favourable Winsford zymotic disease death rate is evidence of the life saving effect of the administrative action of the Council.

Dr. Okell remarks the mildness of Scarlet Fever. It has so low a mortality that it occurs to him "that possibly these cases could be treated at home if isolation could be provided, especially as there is now on the market an anti-toxin which cuts short the disease" and reduces the complications. He demonstrates this by the following interesting results of the 40 doses of this antitoxin [10.0cc per dose] which he employed in the Hospital:—

Complications in Scarlet Fever.

Non Serum Cases.

Albuminuria 4, Rhinorrhoea 5, Otorrhoea 6, Adenitis 8, Impetigo 1.

Serum Cases.

Septic Sores 1, Rhinorrhoea 3, Otorrhoea 1, Adenitis 4, Cardiac Weakness 2.

Amongst the Diphtheria cases, he records "there were no deaths, which I think was a remarkable fact; and although the mortality has often been low, it is the first time since the Hospital has been opened that we have been able to record this fact."

Voluntary:

Albert Infirmary: The extension of the Infirmary is described on pp. 10 and 11 of my 1936 Report. This hospital dealt with 783 patients in 1937, with 24 deaths. The operations performed numbered 675. On the average 21 beds were occupied and cost £3 7s. 8d. per occupier, per week. Average stay of patient 9.8 days. Total cost £3,695. Total income derived from subscriptions endowments, "1d. a week

scheme," the féte, entertainments, the activities of the ladies' "Linen League" and of Mr. Bratt's committee, together with some maintenance and private ward fees—£3,880. The patients from Winsford itself numbered 376 and 19 private ward patients, road accident patients, 25 of them, required 551 patient-days and cost £218. Of this sum the hospital was repaid £56. The "1d. a week scheme" patients admitted —that is persons who pay a penny per week when they are well that covers the contingency of their needing hospital treatment—were 262.

But it is impossible to compute in figures the value of this hospital to Winsford: it is indeed incalculable. The place is a warm hearth for the house-hold of the community; and if charity find the fuel, it is a charity none disdains. Moreover it is attractive, not least to doctors. A surgeon can work here! That fact, silently decade by decade, ensures the neighbourhood access to skill.

The County Council, since the Local Government Act 1922, has been responsible for—

i. The Northwich Institution (old "Poor Law Hospital");
ii. Poor Law Medical Out-Relief (Dr. Leak is M.O.);
iii. Institutional provision for the care of Mental Defectives (to be more and more completely at the Cheshire Joint Board's Institution, Cranage Hall, Holmes Chapel, as that project is developed).

Maternity and Child Welfare.

i. Midwifery and Maternity Services.
ii. Institutional Provision for Mothers.
iii. Health Visitors.
iv. Child Life Protection.
v. Orthopaedic Treatment.

Of the responsibility of all these the Council divested itself in 1931, and they are now administered by the County Council. I am often in touch with the County M.O.H. in relation to them.

Nursing Homes: Were there any, the County Council would be the supervising authority; but there is none.

SECTION C.—Sanitary Circumstances.

Water.

I am indebted to Mr. Heaton, the water engineer, for this report on water:

"The usual programme of mains renewals and extensions has continued during the past year. In particular, a new main has been laid along Rilshaw Lane to link up with building developments in that area which have reduced the pre-existing low pressure to a useless point. The new main is connected to the high pressure system and the supply is now again satisfactory."

Water Supply.

"No new source has been taken during the past year; but the newly added sources at Abbot's Moss, reported last year, were found to be giving trouble from a peaty taste in the water. This was traced to the spring water gathered from the upper part of the wood and steps have been taken to by-pass this supply and to use only the water at the lower end of the wood which was perfectly satisfactory. The result is that we have now no taste whatever in the raw water from this area. The whole of the water, however, as reported last year, is well chlorinated as a safeguard."

"I should like to add that we have occasionally during the past year received the usual complaints from the neighbouring Council which, on examination and analysis, have been proved to be illfounded and attributable to lack of flushing in the mains or other circumstances over which this Council have no control. In this connection I would refer to the analyses set out below. This water was described by the Rural Council as "repulsive," whereas the analysis by the County Analyst and checked by the Public Health Laboratory shows the water as perfectly satisfactory."

COPY.

COUNTY COUNCIL OF CHESTER.

REPORT upon a Sample of Water received from Northwich Rural District Council (per Inspector J. S. Carrie).
Number 693.
Description: Sample of water taken at Daleford's Cottage, Marton.
Date and Hour collected. 9.5.38. 10.40 a.m.
Date received. Same day.

PHYSICAL CHARACTERS: A clear and colourless water, free from odour and containing traces of light brownish colour sediment.

ANALYTICAL RETURNS: (Results expressed in parts per 100,000).

Total saline matter in solution	16.8
Non-volatile (mineral) solids	11.6
Loss on ignition (organic and volatile matter)	5.2
Matters in suspension	traces
Nature of suspension	light brown
Total hardness	11.5
Temporary hardness	5.8
Permanent hardness	5.7
Combined chlorine	1.8
Toxic metals	nil.
Ammoniacal nitrogen	nil.
Albuminoid nitrogen	0.005
Nitrous nitrogen (nitrites)	nil.
Nitric nitrogen (nitrates)	0.28
Oxygen absorbed in 3 hours @ 26.7°	0.15

BACTERIOLOGICAL EXAMINATION:

Per cubic centimetre.

Number of organisms developing on:—

(a) Agar-agar media at 20°C. Total 20

Liquefying .... —

(b) Agar-agar media at 37°C.

B.Coli (presumptive test):—

Absent in 5 separate portions of 20.0 cubic centimetres. i.e. 100 c.cs. in all.

Present in —.

Opinion.

Water of a very satisfactory degree of organic purity and of wholesome potable quality as determined by the supplementary bacteriological examination.

(Signed) S. ERNEST MELLING,
County Analyst,
12th May, 1938.

COPY.

UNIVERSITY OF MANCHESTER.

DEPARTMENT OF BACTERIOLOGY AND PREVENTIVE MEDICINE.

Public Health Laboratory,
York Place,
Manchester 13.

WATER—BACTERIOLOGICAL EXAMINATION.

AUTHORITY: Northwich R.D.C. Lab. Ref. No. W.B. 12316.
Sample collected by J. S. Carrie. W.C.B. No. —.
Date of collection 9.5.38. Date of arrival, 9.5.38.

Description of Sample: House tap.
Cottage at rear of Daleford, Marton, Cheshire.

Aerobic micro-organisms growing in yeastrel agar. No of colonies per c.c. of water.

in 3 days at 22°C	1400
in 2 days at 37°C	27

Bacteria associated with Sewage or faecal pollution. Quantity of water in which these bacteria were:—

	found	not found.
Bacterium coli	—	100 c.c.

Probable number of coli-aerogenes bacteria per 100 c.c. of water. From McCrady's Tables, Ministry of Health, 1934 0

The total counts are somewhat high, otherwise these results may be considered satisfactory.

Date: 12.5.38.

(Signed) C. SHAW.

Although of course the Oakmere supply has not been used, nevertheless, it has been analysed as a matter of routine and the results are given below.

Copy.

COUNTY COUNCIL OF CHESTER.

Report upon a sample of Water received from Winsford Urban District Council., per Peter Heaton, Esq.

Number (if any) 1.

Description. Sample of Water from Oakmere.

Date and Hour of collection. 9.9.37. 11-0 a.m. Date received same day.

Physical Characters. A clean water with faint yellowish cast, free from odour, and containing traces of greyish-coloured flocculent suspended matter.

pH ..... 5.1.

Analytical Returns. (Results expressed in parts per 100,000).

Total saline matter in solution	8.4
Non-volatile (mineral) solids	6.4
Loss on ignition (organic and volatile matter)	2.0
Matters in suspension	traces
Nature of suspension	greyish flocculent.
Total hardness	2.5
Temporary hardness	—
Permanent hardness	2.5
Combined chlorine	1.8
Toxic metals	nil.
Ammoniacal nitrogen	nil.

Albuminoid nitrogen	0.009
Nitrous nitrogen (Nitrites)	nil.
Nitric nitrogen (Nitrates)	0.04
Oxygen absorbed in 3 hours at 26.7°C	0.08

Bacteriological Examination. Per cubic centimetre.

Number of organisms developing on:—

(a) Agar-agar media at 20°C.	Total	15
	Liquefying	0
(b) Agar-agar media at 37°C.		0

B. Coli (presumptive test):—

Absent in 1.0, 5.0 and 10.0 cubic centimetres.

Present in 3 portions of 20.0 cubic centimetres.

OPINION.

Having regard to all the circumstances, both the results of organic analysis and the bacteriological findings are satisfactory.

(Signed)

S. ERNEST MELLLING,
County Analyst.

13th September, 1937.

COPY.

COUNTY COUNCIL OF CHESTER.

Report upon a Sample of Water received from Winsford Urban District Council, per Peter Heaton, Esq.

Number (if any) 2.

Description, Sample of Oakmere water (filtered) from tower.

Date and hour collected. 9.9.37. 11-0 a.m. Date received, same day.

Physical Character. A clear water with faint yellowish cast, free from odour and deposit.
pH., ... 6.6.

Analytical Returns. (Results expressed in parts per 100,000).

Total saline matter in solution	10.4
Non-volatile (mineral) solids	7.9
Loss on ignition (organic and volatile matter)	2.5
Matters in suspension	nil.
Nature of suspension	—
Total hardness	4.0
Temporary hardness	1.2
Permanent hardness	2.8
Combined chlorine	1.8
Toxic metals	nil.
Ammoniacal nitrogen	0.006
Albuminoid nitrogen	0.006
Nitrous nitrogen (nitrites)	nil.
Nitric nitrogen (nitrates)	0.04
Oxygen absorbed in 3 hours at 26.7°C.	0.04

Bacteriological Examination. Per cubic centimetre.

Number of organisms developing on:—

(a) Agar-agar media at 20°C. Total 10

Liquefying ....

(b) Agar-agar media at 37°C. 0

B. Coli (presumptive test):—

Absent in 1.0, 5.0 and 10.0 and 3 portions of 20.0 cubic centimetres

Present in.

OPINION.

The results indicate a wholesome organic quality and a sound bacteriological condition. Attention is called to the reaction (pH) of the water, which is very slightly on the acid side of neutrality; this should be adjusted to avoid plumbo-solvent action.

13th September, 1937.

(Signed)
S. ERNEST MELLING,
County Analyst.

"A sample of water analysed from the gravity supply and taken from the Council Offices (No. 3 below) gave an indifferent result, but that as is shown by subsequent analysis has not been repeated. It will be seen that Sample No. 2 water (see below) derived 5 months later from the same source as No. 3, gives a very satisfactory analysis."

COPY.

COUNTY COUNCIL OF CHESTER.

Report upon a Sample of Water received from Winsford Urban District Council, per Peter Heaton, Esq.

Number (if any) 3.

Description, Sample of Springs (gravity) supply, taken from Council Offices.

Date and Hour Collected. 9/9/37. 9-30 a.m.

Date received, same day.

Bacteriological Examination. Per cubic centimetre.

Number of organisms developing on:—

(a) Agar-agar media 20°C, Total 100

Liquefying .... —

(b) Agar-agar media at 37°C. 3

B. Coli. (presumptive test):—

Absent in 1.0; 5.0 and 10.0 cubic centimetres.

Present in 3 portions of 20.0 cubic centimetres.

Opinion.

Some surface contamination is evident and the water is at the moment and in a bacteriological sense, on the border-line.

(Signed)
S. ERNEST MELLING,
County Analyst.

13th September, 1937.

"A general analysis of the whole of the water supplies throughout the Council's District was carried out during the past year. There are seven private supplies in the area, the rest of the District being supplied from the Council's mains. I give below description of the samples which include also the Council's own supplies and from this, it will be seen, that Nos. 5, 7, and 8 were found to be unsatisfactory. These supplies were shut down. In the case of No. 7 the house has since been supplied from the Council's mains. No. 8 is about to be connected to the Council's mains and No. 5 supply has since been improved and is about to be re-analysed.

COPY.

MELLING AND ARDERN,
Analytical and Consulting Chemists.

The Cliff,
Higher Broughton,
Manchester, 7.
25th February, 1938.

BACTERIOLOGICAL REPORT upon nine samples of Water submitted by the Winsford Urban District Council of February, 22nd, 1938.

The samples were taken either by the Engineer and Surveyor of the Council or an assistant, on the above date, and at the times stated below, and were delivered personally to this laboratory within three hours of collection by Mr. Peter Heaton.

Description of samples:

No. 1. Domestic tap, 185 Delamere Street, Winsford, 10-30 a.m. Shays Brook; Pump Supply; Chlorinated.

No. 2. Office tap, Borough Surveyor's Department, Winsford 10-0 a.m. Gravity supply from all springs; chlorinated.

No. 3. Service-tap in Dairy, Knight's Grange Farm, Winsford, 10-30 a.m.

No. 4. Service-tap, Spring Bank Cottage, 10-0 a.m. Surface well supply.

No. 5. Service-tap, Gale Green, 10-15 a.m. Surface well.

No. 6. Service-tap, Bark House Cottage, Grange Lane, 10-45 a.m. Spring supply.

No. 7. Service-tap, Bradford Mill House, Meadowbank, 11-0 a.m. Spring (piped) supply.

No. 8. Service-tap, Blue Bell Inn, Swanlow, 9-45 a.m.

No. 9. Service-tap, Bostock Road Farm, Winsford, 9-0 a.m.

	Number of organisms developing on Agar-agar media, per cubic centimetre.			
	in 3 days. @ 20°C		in 24 hours. @ 37°C.	
No. 1	100	....	0	
No. 2	15	....	1	
No. 3	10	....	0	
No. 4	300	....	5	
No. 5	600	....	42	
No. 6	20	....	0	
No. 7	250	....	2	
No. 8	400	....	30	
No. 9	4	....	0	

B. Coli (*presumptive*).

No. 1. Absent in 1.0, 5.0, 10 and 3 portions of 20.0 cubic centimetres, i.e., 76.0 c.cs in all.

No. 2. As No. 1.

No. 3. As No. 1.

No. 4. As No. 1.

No. 5. Present in 1.0 cubic centimetre and upwards.

No. 6. As No. 1.

No. 7. Absent in 1.0, 5.0, 10.0 and two portions of 20.0 cubic centimetres. Present in a further portion of 2.0 cubic centimetres.

No. 8. Absent in 1.0 cubic centimetre.

Present in 5.0 cubic centimetres and upwards.

No. 9. As No. 1.

OPINION.

Nos. 1 and 2. Neither water is sterile, but both are free from coliform organisms and are perfectly wholesome. The presence of a trace of residual ("free") chlorine is exceedingly doubtful and the question of a very slight increase in "chlorination" might, justifiably be considered.

Nos. 3, 6 and 9. Are of unquestionable potable quality and No. 9 in fact, is the best of the series.

No. 4. Affords some slight evidence of surface infiltration—vide the higher "counts" as compared with the foregoing samples—but organisms associated with sewage or allied contamination are absent in the volumes shown, and, in its present state, the supply is of wholesome quality.

Nos. 5 and 8. Both these supplies—and particularly the former, afford strong evidence of sewage or like infiltration and, in my opinion, they are unfit for potable use.

No. 7. One would not care to say, that, at the moment, this supply has suffered organic contamination to such an extent as to preclude its use for general domestic purposes, but it might conceivably become—at any time—a border-line case and as such, would give rise to considerable doubt as to the desirability of its continued use as a potable supply.

(Signed)

S. ERNEST MELLING,
County Analyst.

In view of the anxiety anent contamination of the springs, in January 1938 I reported on the necessity of chlorinating all the water supplies of the Council. The Engineer also referred to this in his report, and stated that the necessary steps were being taken to chlorinate the water supplies against any possibility of accidental or intermittent pollution. The Council thereupon resolved that the responsible officials be given authority to have chlorinated all the Council's water supplies from whatever source the supply is derived.

Of the future Mr. Heaton remarks:—

"The measures advocated by the Council for the rationalization and co-operation of the various water supplies in Mid-Cheshire would appear about to meet with some success. It will be remembered that the Council have for some years past pointed out the overlapping of the water functions by the various Mid-Cheshire authorities owing to the fact that an unnecessary number of water supplies exist for the population served; but a Conference of Mid-Cheshire Local Authorities at Crewe during the past month has resolved to adopt the principle of bulk supply by water board or boards for the area."

The following Resolutions were passed unanimously by Representatives of the Crewe Borough Council, Middlewich, Nantwich, Sandbach and Winsford Urban District Councils, and the Nantwich, Northwich and Tarvin Rural District Councils, at a Conference held on the 21st of July, 1938:

(i) "That the following Local Authorities should in collaboration with each other, formulate a policy designed to lead to the creation of one or more Statutory Joint Water Boards for the purpose of utilising existing or potential sources of water supply available in their districts:—

Crewe Borough Council.
Middlewich Urban District Council.
Nantwich Urban District Council.

Winsford Urban District Council.
Sandbach Urban District Council.
Nantwich Rural District Council.
Northwich Rural District Council.
Tarvin Rural District Council.

(ii) That the aforesaid Authorities shall be responsible for 50% of the cost of the preparation of a draft Bill and the necessary Reports upon the basis of the rateable values of their respective districts, subject to the Cheshire County Council accepting responsibility for the remaining 50%, and that in the event of a Bill for the formation of a Joint Water Board or Joint Water Boards being promoted by all or any of the said Authorities, such cost be treated as part of the cost of promoting the Bill, provided that in the event of any one or more of the said Authorities deciding not to proceed further after consideration of such draft Bill and Reports, their liability or liabilities shall be limited to their rateable proportion or proportions of the aforesaid 50% of the cost of the preparation of the draft Bill and Reports."

So the matter stands to date.

Drainage and Sewerage.

Mr. Heaton writes:—

"The Sewage Disposal Works remain in an efficient condition."

"Considerable sewerage developments are in hand at the moment including the re-sewering of the Wharton area, the necessity for which is brought about largely by subsidence from brine pumping, and the construction of new sewage works and sewerage system for the Meadowbank area. The sewerage system in the Easterly part of the area at Stanthorne is extended from time to time as building developments take place."

In 1938 the sewerage of Meadow Bank is in course of execution.

Rivers and Streams: Action to check pollution.

The last mentioned enterprise is the out-standing recent action. In my 1934 Report I advised that, in a town plan, those districts which are to be sewered should be marked out from those which are not. It had never been done. Since then the tendency seems to be to aim at the eventual sewering of the whole area. As all water you pollute should be reasonably cleansed before it reaches a water course, and as cleansing is very difficult and, even if imperfect, extremely costly, in the interests of health and the ratepayers pockets the whole matter should be planned ahead. I *advise* that this should be undertaken by *Fir Grove*.

Closet Accommodation.

Particulars of conversion from conservancy systems, and where closets on the conservancy system remain in populous and closely built areas, number converted to the water-carriage system during recent years, and number of each type remaining at the end of 1937.

	1919 to 1929.	1930.	1931.	1932.	1933.	1934.	1935.	1936.	1937.
Cess-pool privies converted to water closets	407	62	84	84	52	43	26	17	7
Pail Closets converted to W.Cs.	16	3	5	2	3	18	20	8	45
Cess-pool privies converted to Pail closets	13	5	2	4	2	4	5	Nil	Nil

At the end of 1937 these were the number of closets in the District:

Cesspool Privies (actual number)	350
Peat-pail Closets (actual number)	487
Water Closets (estimated number)	2,905

The last figure includes 140 Water Closets in 132 new properties, 88 of which were new houses erected by the Council.

Public Cleansing: [See 1934 Report, p. 34.] The procedure is substantially the same. The hunger of the sewage works for ash bin refuse seems to increase.

The Cesspools, proper, 15 in number. See page 16, 1936 Report. No change has to be recorded.

Sanitary Inspection: A classified statement of the number of premises visited, the defects or nuisances discovered and the action and result of action taken in regard to these, being *the Report of the Sanitary Inspector,* Mr. White, *under article 27 of the Sanitary Officers (outside London) Regulations* 1935, *or Article 19 of the Sanitary Officers Order,* 1926.

A Nature of Inspections made.		B Number of Notices served		C Results of Services of Notices			
	Number.	Statutory	Informal	Notice complied with	Remaining in hand	Prosecutions Instituted	 Pending
1. Dwelling Houses (general inspection)	452	9	112	117	4	....	....
2. Cellar Dwellings ,, ,, (Nil)	....	....	....	....	....	....	....
3. Back-to-Back Houses (11, all occupied)	15	....	2	2	....	....	....
4. Tents, Vans, Sheds, etc. (3 in regular use, others in Travelling Shows)	8	....	....	....	....	....	....
5. Courts, Yards, Passages	14	....	3	3	....	....	....
6. Privy Middens (Nil), Earth Closets (Nil), Peat Pails (487), Cesspool Privies (350)	270	....	66	54	12	....	....
7. Cesspools (15)	9	....	....	....	....	....	....
8. House Drainage	216	2	65	67	....	....	....
9. Ditches, Watercourses, etc.	8	....	2	2	....	....	....
10. Offensive Accumulations	24	....	2	....	....	....	....
11. The Keeping of Animals (P.H.A. 1875, S.91 (3)	5	....	1	1	....	....	....
12. Offensive Trades (1 Tripe Dresser, 23 Fried Fish Shops, 2 Wet Fish Shops)	104	....	....	....	....	....	....
13. (a) Slaughterhouses (Public) (Nil)	....	....	....	....	....	....	....
,, (Private) 3 Regd., 12 Licensed	45	....	6	6	....	....	
(b) Other places where food is produced or sold	36	....	2	2	....	....	....
14. Piggeries	3	....	1	1	....	....	....
15. (a) Dairies (3) (b) Shippons (92)	105	....	2	2	....	....	....
(c) Milk Shops (13)	17	....	1	1	....	....	....
16. (a) Factories (40)	42	....	3	3	....	....	....
(b) Workshops (98)	38	....	....	....	....	....	....
(c) Workplaces, Quays, etc. (12)	7	....	....	....	....	....	....
(d) Outworkers' Premises (Nil)	....	....	....	....	....	....	....
17. Bakehouses (Overground) (16)	33	....	2	1	1	....	....
18. Common Lodging Houses (Nil)	....	....	....	....	....	....	....
19. Houses let in Lodgings (3)	10	....	....	....	....	....	....
20. Smoke Observations	6	....	2	2	....	....	....
21. River Boats (2 being barges registered here. About 50 others ply the river)	2	....	....	....	....	....	....
22. Infectious Disease Inquiries and Revisits	97	....	....	....	....	....	....
23. Miscellaneous	....	....	....	....	....	....	....
Totals	1566	11	272	264	17	....	....

W. Walter White, Cert. R.S.I., Sanitary Inspector.

Shops Act, 1934.

No action regarding this was found necessary.

Nuisances. No prosecution was instituted.

Smoke Abatement.

6 observations have been made. Two informal notices were served.

Domestic Chimney Firing.

6 house occupiers were prosecuted under the Town's Police Clauses Act, 1847, Section 31. The cases are:— In July an occupier in Station Road and another in High Street were each fined 2/6. In October an occupier in High Street was fined 5/- and another in Wharton Road 2/6. In November an occupier in Delamere Street was fined 5/- and another in Wharton Road was fined 2/6.

Swimming Bath. [See p. 18, 1935 Report.]

	1935.	1936.	1937.
No. of swimmers	31,947	16,497	15,169
No. of school-children attending in classes:—			
Winsford and Middlewich	—	6,032	5,800
Davenham and Moulton	—	801	884
No. of Spectators: Adults	11,405	5,257	5,249
Children	1,201	849	565

Finance:—			
Expenditure, including loan charge	1935-6.	1936-7.	1937-8.
of £250 annually	£1,354	£837	£804
Income	£1,042	£540	£541
Cost on Rates	£312	£297	£263
That is:—	2d. Rate.	1.8d. Rate.	1.6d. Rate.

This is the circulation of the water:— From the intake at deepest part of the deep end the water is pumped to the filter. After filtration it is chlorinated and passes to the fountain and in falling from jet to basin it is aerated. It is then carried, in a pipe in the partition which separates the big bath from the children's bath, to the shallow end of the big bath where it terminates in three inflow pipes. The whole of the water, amounting to 130,000 gallons, passes through the system in six hours; roughly a filtration rate of 20,000 gallons an hour. The children's bath, 6,000 gallons, has an independent circulation, similar except that the water is warmed. It's filtration takes from 10 to 20 minutes and is carried out as often as necessary, but at least daily.

In the big bath:

At shallow end the chlorine is kept about	0.4
at the deep end	0.1
The brine strength is shewn by sp. gr.	1021
and pH	7.5

(neutral being 6.97)

The temperature is of course according to the weather.

Eradication of bed-bugs.

This statement refers to the 18 months from January, 1937:—

	(i) Found infested.		(ii) Disinfested.
(a) No. of Council Houses	3	....	3
(b) No. of other ,, ...	13	....	13

Methods employed:

Spraying with Cyllin mixed with Izal and Formalin. In two of the houses the rooms were then sealed and fumigated with burning sulphur.

This authority carried out the work, not a contractor.

Measures taken by way of supervision or education of tenants to prevent infestation or re-infestation after cleansing:—exhortation.

Schools.

In the year of writing the County M.O.H. invited the Education Committee's attention to the following defects in schools, with suggested remedies:—

Dierden Street School: Repair roof of sanitary conveniences and limewash walls. Renew defective pointing to door and window openings. Replace obsolete firegrates with modern type of grates. Install gas or electric lighting (both services available).—[These should be remedied. In regard to the artificial lighting I do not think we have any power to say it shall be gas or electricity.]

Wharton Infants: Replace obsolete firegrates in Infants' Department with modern type of firegrates. The grates need repair, so this seems reasonable.

Over, St. John's: Render impervious walls of boys' sanitary convenience.—[To be done].

Whitegate: Provide flushing for boys' convenience and remove porous stone divisions. Replace defective firegrates with modern type. Renew worn stone steps. Convert disused estate office adjoining into a dining room which would also be used for drying wet clothing.—[The Clerk of this (Winsford) Council has written to the County Council re the conversion of pails to water carriage suggesting that in the Surveyor's opinion the site is suitable for a small filtration plant which should be installed by the County. As the firegrates are old and in need

of repair the county suggestion is reasonable, also the stone steps. The suggestion of the estate office is a matter for the County Architect or the school managers].

Darnhall Council School: Convert pail closets to water closets on completion of Council's main drainage scheme for Darnhall area. Provide arrangements for flushing boys' convenience.—[The Clerk has written suggesting that the site is suitable for the County to install a small sewage plant and convert to water carriage].

All the schools have the Winsford town water supply, except Whitegate School, which has that of the Northwich Urban District.

"*Memo., on Closure of and Exclusion from School*, 1927."

The list of closures is:—

Date.			School.	Disease.
14/ 1/37	to	25/ 1/37	.... Whitegate C.E.	Influenza.
15/ 1/37	to	25/ 1/37	.... Dierden Street	Influenza.
20/ 1/37	to	30/ 1/37	.... Wharton C.E.	Influenza
21/ 1/37	to	30/ 1/37	Darnhall Mixed and Infants	Influenza.
15/ 6/37	to	26/ 6/37	Darnhall Mixed and Infants	Scarlet Fever.
13/12/37	to	23/12/37	.... Meadow Bank	Scarlet Fever.

SECTION D.—Housing.

1.—*Inspection of Dwelling-houses during the year.*

(1) (a) Total number of dwelling-houses inspected for housing defects (under Public Health and Housing Acts) 302
(b) Number of inspections made for the purpose 452
(2) (a) Number of dwelling-houses (included under Sub-head (1) above) which were inspected and recorded under the Housing Consolidated Regulations, 1925 108
(b) Number of inspections made for the purpose 210
(3) Number of dwelling-houses found to be in a state so dangerous or injurious to health as to be unfit for human habitation 10
(4) Number of dwelling-houses (exclusive of those referred to under the preceding sub-head) found not to be in all respects reasonably fit for human habitation 121

II.—*Remedy of Defects during the year without Service of Formal Notices*:—

Number of defective dwelling-houses rendered fit in consequence of informal action by the Local Authority or their officers 117

III.—*Action under Statutory Powers during the year*:—

(a) Proceedings under Sections 9, 10 and 16 of the Housing Act, 1936.

(1) Number of dwelling-houses in respect of which notices were served requiring repairs .... Nil.
(2) Number of dwelling-houses which were rendered fit after service of formal notices .... Nil.
(a) By owners .... Nil.
(b) By Local Authority in default of owners .... Nil.

(b) Proceedings under Public Health Acts:—

(1) Number of dwelling-houses in respect of which notices were requiring defects to be remedied 9
(2) Number of dwelling-houses in which defects were remedied after service of formal notices:—
(a) By owners 9
(b) By Local Authority in default of owners .... Nil.

(c) Proceedings under Sections 11 and 13 of the Housing Act, 1936:—

(1) Number of dwelling-houses in respect of which Demolition Orders were made .... Nil.
(2) Number of dwelling-houses demolished in pursuance of Demolition Orders 12

(d) Proceedings under Section 12 of the Housing Act, 1936.

(1) Number of separate tenements or underground rooms in respect of which Closing Orders were made 1

(2) Number of separate tenements or underground rooms in respect of which Closing Orders were determined, the tenement or room having been rendered fit 1

IV.—*Housing Act*, 1936.—*Part iv.—Overcrowding*:—

(a) (i) Number of dwellings overcrowded at the end of the year 19

(ii) Number of families dwelling therein 20

(iii) Number of persons dwelling therein 117

(b) Number of new cases of overcrowding reported during the year 2

(c) (i) Number of cases of overcrowding relieved during the year 48

(ii) Number of persons concerned in such cases 401

(d) Particulars of any cases in which dwelling-houses have again become overcrowded after the Local Authority have taken steps for the Abatement of Overcrowding .... Nil.

(e) Any other particulars with respect to overcrowding conditions upon which the Medical Officer of Health may consider it desirable to report:— .... Nil.

SECTION E.—Inspection and Supervision of Food.

(a) *Milk Supply—*
Milk and Dairies.

Of the 17 accredited farmers, five, starred in this list, are additions during the year.

LIST OF "ACCREDITED" FARMS IN THE WINSFORD URBAN DISTRICT.

Booth, C., Woodford Lodge, Woodford Lane, Over.
Brooks, C., Poplars Farm, Crook Lane, Wharton, Winsford.
Broster, F., Marton Bank Farm, Marton, Winsford.
*Curzon, E., Wharton Lorge Farm, Winsford.
Dood, N., Church Hill Farm, Over, Winsford.
*Ellis, W., Mill Lane Farm, Mill Lane, Whitegate.
Gregory, T., Oak House, Swanlow Lane, Over, Winsford.
Hanley, W., Brook House, Over, Winsford.
*Hopley, J., Bark House Farm, Grange Lane, Over, Winsford.
Hopley, E., Knight's Grange, Grange Lane, Over, Winsford.
Jackson, T., Hebden Farm, Over, Winsford.
Newlall, S., Home Farm, Station Road, Wharton.
*Oswell, E. F., Woodford Hall, Over, Winsford.
Owen, J., Old Farm, Swanlow Lane, Over, Winsford.
Platt, H. C., The Clive, Rilshaw Lane, Winsford.
Platt, T. W., Ways Green Farm, Over, Winsford.
Sherwin, Mrs. Rose, Littler Grange, Over, Winsford.
Sumner, A., Clive Green, Clive, Winsford.
Yearsley, E., Geneva Road, Over, Winsford.
Yearsley, A., Pool Farm, Whitegate, Winsford.
*Yearsley, R., Catsclough, Over, Winsford.

Woodford Hall, Over.

(a) Shippon—Tying for 18 cows, new concrete floors and standings, already fixed. New standings and new windows.

(b) Shippon similar to above.
And new dairy.

Bark House Farm.

(a) Shippon—Tying for 18 cows, new concrete floors and standings and new concrete feeding troughs. Loft above raised 2 feet and retimbered.

(b) Shippon—Tying for 23 cows (particulars as above).

(c) Shippon—Tying for 24. This shippon, built three years ago, already complied with the Accredited standards.

The three shippons were previously supplied with water bowls—and a new dairy is provided.

Mill Lane Farm, Whitegate.

(a) Shippon—Tying for 36 cows, new concrete floors, standings and feeding troughs. New windows and roof ventilation provided.

(b) Shippon—Tying for 8 cows, particulars as above.
New dairy provided.

Water bowls were already provided.

R. Yearsley, Catsclough, Over.

(a) Shippon—Tying for 20 cows. The shippon was reconditioned some six years ago and was not in need of any alterations for the granting of an Accredited Licence.

E. Curzon, Wharton Road, Winsford.

(a) Shippon—Tying for 12 cows. New concrete floors and standings.

(b) Shippon—Tying for 4 cows.
Water bowls were already installed.
New dairy has been provided.

Winsford is to be congratulated on this growing list of producers of milk which is not only clean and from healthy cattle but is vouched for as such by responsible authority. Assurance of the quality of milk is a great factor in encouraging its freer use. There are now 2,689 such farms in Cheshire.

The Milk Board has been making interesting tests on some 6,000 school children in England and Scotland by giving additional nourishment of different kinds and amounts, to some a biscuit a day, to some ⅓ pint pasteurised milk, to some ⅔ pint pasteurised milk, to some ⅔ pint raw milk. When I last heard the progress of the report the whole test was incomplete but after a year the superiority of the children with the milk, and of those with the larger amount of it was obvious. It is customary for school doctors to put children into four nutritional grades:—

1. Excellent nutrition.
2. Good nutrition.
3. Below normal nutrition.
4. Bad nutrition.

Amongst the 6,099 children tested there were numbers of all these groups and after the year the "excellent" group had increased: shewing that it pays to feed better. But that the kind and amount of the addition makes a big difference is shewn by this table:

Increases in numbers of children having excellent nutrition, i.e., Grade I.

Feeding Group.	Number of children in groups.	Percentages.
BOYS:		
1. Biscuit	802	4.0
2. ⅓ pint pasteurised milk	821	4.1
3. ⅔ pint pasteurised milk	838	6.4
4. ⅔ pint raw milk	834	7.1
GIRLS:		
1. Biscuit	681	5.9
2. ⅓ pint pasteurised milk	719	2.7
3. ⅔ pint pasteurised milk	715	8.6
4. ⅔ pint raw milk	689	10.6

My profession have rather frightened the public by our talk of tuberculous cattle and many parents have a doubt of the safety of the generous use of milk in their households. Hence the vogue of heating milk as a safeguard. But though heating may kill some germs it stales the milk. To say, as medical authorities have announced—and copied from book to book—"There is no significant difference between pasteurised milk and raw milk"—is to speak on incomplete examination of the problem. Even the officially recognised test for "efficient" pasteurisation is that the milk shall have lost one of its natural ferments [enzymes]. [18] * When other kinds of food are in question freshness is constantly extolled as essential. Why of all things should milk be advocated stale? Are not its enzymes "significant"? Is not assimilable calcium "significant"? Is not the above Table shewing the rise in the "excellently nourished" children significant?

But raw milk advocates—and I am one—must put their house in order: such a list as the accredited farms of Winsford is evidence they are doing it. Their milk is good and "clean got."

Everyone now knows that there exists an even closer system of supervision than that of accredited milk—the "T.T." or tubercle tested designation. The quality and cleanliness of the milk may be no better, but the safeguards are these: that every bull and cow must be submitted to a tuberculin test every few [2 to 6] months and the calves reared on the farm before 12 months; and in addition each animal has a veterinary examination every 6 months. Further, there must be not more than 200,000 bacteria per millilitre and no coliform bacillus in 1/100th millilitre—but that is no more than is required of the accredited milk.

* *The enzyme, phosphatase, a constant constituent of raw milk completely destroyed by efficient pasteurisation.*

There are about 20 T.T. herds in Cheshire, and though at present there is none in Winsford I hope that the farm that led the way in getting the grade A licence in former days will now take the lead again and qualify for the "T.T."

The nearest T.T. herds to Winsford are:—
Bennion, S., Yew Tree Farm, Batchton, Sandbach.
Kettell, R. J., Oak Tree Farm, Warmingham, Crewe.
Whitehall Farm, Ltd., Warmingham, near Crewe.
Matson, R.L., Yew Tree Farm, Tetton, Middlewich.

Garget Outfit.

No application has been received for our garget outfit.

(b) *Meat and other Foods*:

CARCASES INSPECTED AND CONDEMNED.

	Cattle excluding Cows.	Cows.	Calves.	Sheep and Lambs.	Pigs.
Number killed (if known)	—	—	—	—	—
Number inspected	396	198	23	1,839	8,933
All diseases except Tuberculosis.					
Whole carcases condemned	—	1	1	1	3
Carcases of which some part or organ was condemned	8	13	—	98	394
Percentage of the number inspected affected with disease other than Tuberculosis	2.02%	7.84%	4.35%	5.38%	4.44%
Tuberculosis only.					
Whole carcases condemned	—	2	—	—	10
Carcases of which some part or organ was condemned	11	18	—	—	1,144
Percentage of the number inspected affected with Tuberculosis	2.77%	10.10%	—	—	12.91%

Slaughterhouses.

There is one addition to list set out on page 25 of 1936 report, the Co-operative Wholesale Society's Bacon Factory, opened 2nd September.

Six infringements of the regulations were remedied on informal notice.

Meat Shops not provided with slaughter-houses on the premises. As last year, there are eleven.

Fish.

No complaints during the year. The 2 wet fish shops remain as before.

Places where food is prepared:

Tripe Dresser. One, very satisfactory.

Fish and Chip Shops. The 23 shops remain satisfactory.

Ice Cream. See p. 50 1934 Report, but there are 10 vendors instead of 9.

Bakehouses. 16 in regular use. 2 complaints were dealt with.

(c) *Adulteration, etc.*

A County Council matter. Mr. Stacey Hallard, the chief inspector of the County Weights and Measures Department at Chester Castle, has kindly reported on the work his department has done, in Winsford in 1937, as follows:—

Name of Article.	No. Submitted for analysis.
Arrowroot	1
Baking Powder	1
Brawn	1
Cheese, Cheshire	1
Eucalyptus Oil	1
Fish Paste	1
Iodine, Tincture of	1
Milk	11
Mustard	1
Pepper	1
Sausages	1
Sulphur, Flowers of	1
Sultanas	1
Suet, Shredded	1
Sweets	2
Tartaric Acid	1
Tomato Sauce	1
Total	28

In no case was a sample found to be adulterated or not up to the required standard.

FOOD AND DRUGS (ADULTERATION) ACT, 1928.

"All the samples were submitted to the Public Analyst for analysis and in each case he has reported them to be genuine. The milks were particularly tested to detect the presence of added water, colouring matter, or presevative and also to ascertain if any of the milk-fat had been abstracted.

The fact that all the samples have passed the tests shows a very satisfactory position."

(d) *Chemical and Bacteriological examination of Food*:

Our council has purchased a microscope and outfit for the use of the sanitary inspeceors in examining meat.

Though *systematic* testing of milk is no longer our responsibility, the Council has a resolution on record that my department should take any nceessary samples. No occasion has arisen this year to do so. Nor has any other food sample been sent to York Place.

(e) *Nutrition.*

The Ministry asks me:— "Have any steps been taken to increase the knowledge of the public on the subject and bring to their minds the importance of adequate nutrition especially for children, by means of lectures, films, etc?" And I am also instructed to give "particulars of any special investigation which has been made on the subject of nutrition."

In 1936 I addressed the Townswomen's Guild on the matter, and in December of that year at a meeting at the Council Offices a few ladies undertook to conduct an enquiry into the dietary actually taken by sundry households. This enquiry took place in the year under review; but the 15 reports that the ladies made, and the comments upon them by Dr. Kelly, the secretary of the Imperial Bureau of Animal Nutrition in Aberdeen, are printed in detail on pp. 29 to 57 of my Report for last year. It will be remembered that the incomes of these households were grouped thus—:

Income per Individual per Week*

Group	I.	II	III.	IV.	V.	VI.
Amount	Under 10/-	10/- to 15/-	15/- to 20/-	20/- to 30/-	30/- to 45/-	over 45/-

* This means the total household income from all sources divided by the number of persons in the household.

It will also be remembered that Dr. Kelly requested 20 reports at least on each group.

In view of our preoccupation with A.R.P. I have not asked for those to be made: yet without them there is no accurate demonstrable ground for criticism of the food habits of the town. That scientific type of enquiry must await a more convenient season. But, as "a man may spend all his time in philosophy without finding sufficient cause to be honest," so *practical* advice in diet, based on the new facts which medical research has disclosed, should not await any enquiry into pre-

sent habits. That they are imperfect is common knowledge. Here then are certain points† which should be known to every man and woman in the town:—

"In countries of the most diverse social structure and general plane of living appreciable sections of the population are, for one reason or another, failing to secure enough of the foods which the modern science of nutrition regards as essential for health and efficiency." [19]

Two examples of this:—i. a middle aged lady of a wealthy family in Liverpool, a brilliant and intellectual woman, was profoundly ill with a disease which puzzled the doctors. After a very detailed study of her case they concluded her illness was nutritional anaemia. The food she chose to eat was short of iron. Though this had brought her to death's door, her restoration, once this defect was remedied, was phenominally rapid. [20]

ii. At the beginning of this report I put "*food*" first, before "*work*" and "*houses*", in order of importance. The second example will uphold that order. In 1927 people who lived in the slum area of Stockton-on-Tees known as Housewife Lane were rehoused in the Mount Pleasant Housing Estate. Those in the Riverside area, an equal slum, remained. Here is the result:

		Death rates per 1,000.	
	Stockton-on-Tees as a whole.	Housewife Lane Area	Riverside Area.
1923-7	12.32	22.91	26.10
		House-rents 4/8d.	House-rents 4/7¾d.
		Mount Pleasant	
1928-32	12.07	33.55	22.78
		House-rents 9/-	House-rents 4/10¾d.

It was that 9/- that did it! Any advantage from up-to-date housing was worse than lost through there being 4/4 less for food. [21]

So much for i. *the quality of food*: despite her wealth, iron was wanting in the rich woman's; and, ii. *quantity of food*: the reduction of four shillings-worth producing, be it remembered, not only the raised death rate but surely, too, a widespread ill-health rate.

Here is a suggestive fact:— 50 typists in a Liverpool office lost 5.5% of working days during the winter through illness. They took to drinking ½ a pint of milk every morning and their sickness absence dropped to 2.5%. [22]

Next this: "The reason for considering mothers as a class apart is that, when there is a scarcity of food, the mother, who is the distributor, gives first to her husband and children and takes what is left for her-

† These statements are from authoritative sources. There is no doubt about them. I print them in my Report on the principle, advocated in *former* instructions from the Ministry, that a Medical Officer might see fit to use his Report for conveying nutritional information.

self."[23] Now a pregnant woman needs an ordinary amount of food—true;—but half as much protein again as before pregnancy—milk, as much as a quart a day, cheese, herrings for instance should be stressed, and cod liver oil. And, in addition to her extra protein requirement, she needs fresh salads and greens, and iron foods such as eggs and spinach and some liver. These, if they have to be bought over the counter, cost her more than she can afford, when the rest are catered for. The next generation suffers for her unselfishness.

She needs above all whole meal—and almost never gets it. This is a grave evil. The womb depends, for the secure implantation of the future child, upon a substance which occurs in a number of foods, pasture fed butter (but not in stall fed butter!), in lettuce and many other leaves but, most richly of all, in the germ of wheat. As the millers carefully extract every scrap of germ from the white flour, the mother-to-be gets none from this best and cheapest source of the substance in question. The miller does this thing for two business reasons (a) because the public has an out of date idea that white bread is the purest and (b) because if the flour has germ in it, it will not keep. All that is needed is that the germ should not be removed from the wheat but the whole ground together and then baked at once. This means fresh supplies to the baker 2 or 3 times a week, which presented no difficulty in the old stone mill days and surely should present none in these of mechanised transport. If the mothers of this land got their due of wheat germ with the invaluable wheat germ-oil which it contains there is no doubt that the terrible miscarriage rate would soon be at least halved.

There is also this consideration: there were 87,000 children less on the school registers of the country on 31st March, 1938, than on 31st March, 1937. I have already pointed to the omens in Winsford. The population problem is upon us and what people eat conditions it. If the 23 million hundredweight of home-grown millable wheat produced in '37—'38 were ground and used as whole meal for the people's food, more would be accomplished by that stroke for the fecundity of our people than by any other physical means.

And it should never be forgotten that right food disposes to right thinking.

I have had a local baker to prepare bread—which he finds sells very freely—of whole meal 2 parts, raw* germ 1 part. The extended use of it shows a useful effect hardly anticipated, that those who take it can generally give up all laxative medicines. There is no secret in it and no other ingredient than those mentioned, other than salt, yeast and water.

(f) *Shell fish* (*Molluscan*).

I have not heard that the Swan mussels (*Anodon*) from our rivers and ponds are used to make soup as no doubt they might be. (This heading is doubtless for districts on the coast).

* *The germ must be* **raw**. *That 'preserved' from 'going bad' by superheated steam, as employed in various proprietary foods, does not serve the purpose.*

SECTION F.—Prevalence of, and Control over, Infectious and other Diseases.

Infective *Jaundice* I have dealt with the above (pp. 20—25).

There was nothing remarkable about the 5 Diphtheria cases. There has been no cerebro-spinal fever notified. To the mildness of the scarlet fever I have already adverted, and there have been 3 puerperal pyrexia cases but no fatality from it. Amongst the 18 pneumonias, which were scattered amongst all the months except February, March and December, there were 4 deaths. Neither malaria nor dysentery occurred.

I have discussed above action taken to replace hospital treatment of scarlet fever by home treatment. I think that, should grave measles occur, hospital treatment should not be ruled out.

Influenzal prevalence has been light.

The schoolmasters and mistresses notify me of any school epidemics and the closures are largely based on their intimations or what I see at my visits.

Diphtheria Immunisation materials are provided to the doctors gratuitously for their patients and I have advised the Council to pay 6/- a case for the prophylactic treatment. That treatment is still given at the Davenham Hospital to scarlet fever convalescents.

Measles serum has not been employed at the municipal cost.

NOTIFIABLE DISEASES (Other than Tuberculosis) during the Year, 1937.

Disease.	Total Cases Notified.	Cases admitted to Hospital.	Total Deaths.
Smallpox	Nil.	—	—
Scarlet Fever	53	53	—
Diphtheria	5	5	—
Enteric Fever (including Para-typhoid)	1	—	—
Puerperal Fever	Nil.	—	—
Puerperal Pyrexia	3	1	—
Pneumonia	18	2	4
Ophthalmia Neonatorum	Nil.	—	—
Other Diseases generally notifiable (specify disease: Erysipelas)	5	3	1
Encephalitis Lethargica	Nil.	—	—
Other Diseases notifiable locally Measles	3	—	—

MONTHLY INCIDENCE OF DISEASES.

	Smallpox.	Scarlet Fever.	Diphtheria.	Enteric Fever (including Para-Typhoid).	Puerperal Fever.	Puerperal Pyrexia.	Pneumonia.	Encephalitis Lethargica	Ophthalmia Neonatorum	Erysipelas.	Measles.	Tuberculosis of Lungs.	Other Tuberculous Diseases.
January	....	7	3	....	....	....	4	....	....	....	2	1	....
February	....	8	....	....	....	1	....	....	....	....	....	....	1
March	....	9	....	....	....	....	....	....	....	....	....	1	....
April	....	5	....	....	....	....	3	....	....	....	....	....	2
May	....	4	....	....	....	....	3	....	....	1	....	1	....
June	....	4	1	....	....	....	....	....	....	....	....	1	1
July	....	3	....	....	....	....	2	....	....	....	....	....	1
August	....	1	....	1	....	....	2	....	....	....	....	....	2
September	....	3	....	....	....	....	1	....	....	1	1	....	....
October	....	2	....	....	....	....	2	....	....	....	....	....	1
November	....	4	....	....	....	2	1	....	....	2	....	....	1
December	....	3	1	....	....	....	....	....	....	1	....	....	....

Cancer: The County Council M.O.H. reports on this.

Our facilities for diagnosis treatment are stated on p 64 of my 1934 Report.

Prevention of Blindness.

Public Health Act, 1925 *and Section* 176 *of P.H. Act*, 1936.

No action.

Tuberculosis.

P.H. Regulations 1925 *re persons suffering from Tubercle employed in mills, trade, or Section* 62 *P.H. Act* 1925, *or Section* 172 *P.H. Act*, 1936 *re compulsory removal to hospital.*

No action.

Tuberculosis.

New cases of Tuberculosis and all deaths in 1937.

Age Periods.	New Cases.				Deaths.			
	Pulmonary.		Non-Pulmonary.		Pulmonary.		Non-Pulmonary.	
	M	F	M	F	M	F	M	F
0	....	....	....	....	....	....	....	....
1	....	....	....	....	....	....	....	....
5	....	....	1	2	....	....	....	....
10	2	....	1	1	....	....	....	....
15	1	....	1	....	....	....	....	....
20	....	....	....	1	....	....	....	....
25	1	....	....	....	1	....	....	....
35	....	1	....	1	3	....	....	1
45	....	....	....	....	....	....	....	....
55	....	....	....	....	....	....	....	....
65 and upwards....	1	....	....	....	....	....	....	....
Totals	5	1	3	5	4	....	....	1

All the deaths occurred in cases that had been notified.

Our Tuberculosis Register shows the year's turnover as follows:—

	On the books at the beginning of 1937.		Written off as cured.		New Cases.		Died.		Left District.		On the books at end of 1937	
	M	F	M	F	M	F	M	F	M	F	M	F
Tuberculosis of the Lungs	16	16	—	—	5	1	4	—	2	—	13	11
Tuberculosis of other parts of the body	21	19	1	1	3	5	—	1	—	—	25	22

Total on books at beginning of 1937 72

Total on books at end of 1937 71

NOTEWORTHY CONDITIONS prejudicial to the health of the area not adequately dealt with in Special Reports of M.O.H.:
Nil.

SPECIAL ACTION taken to arouse public interest in the prevention of ill health: Nothing not already mentioned.

AN IMPORTANT SPECIAL REPORT:—

WINSFORD URBAN DISTRICT COUNCIL.

Health Department,
Council Offices,
Winsford.
1st July, 1938.

REPORT ON MEAT INSPECTION IN WINSFORD.

There are and have been for the last quarter of a century from 10 to 15 private slaughter houses; each has a shop associated with it. The present number of slaughter houses is 12. There are also several other meat shops without slaughter houses. One slaughter house does a wholesale as well as a retail trade and one (the Winsford Co-operative Society) slaughter house provides the butcher's department of that Society.

In 1936 the slaughtering in the above was as follows:—

Cattle	992
Sheep	2,817
Pigs	1,549

Besides these slaughter houses there is now the C.W.S. Bacon Factory licenced to kill 1,500 pigs a week. It is understood that this is an average figure, taking the year round; so that some weeks 1,600 or more pigs may be killed. Hitherto the killing has been always under the 1,500 mark; I understand however, that the factory is likely to kill, soon, well up to the licenced figure.

Butchers have to give to my Department notice of the times they intend to slaughter. This may be done in two ways:—

(a) Times of individual slaughter.

(b) Times of usual slaughter.

Both methods are used. Thus my department knows when slaughtering is to take place either on special occasions or on routine days and hours. An inspector employed by the Council can then be present if feasible.

For full meat inspection an inspector should see the animal:—

(a) On the hoof so as to detect disease or damage which can best be recognised in the live animal, and

(b) At the moment of killing and during the dressing of the carcase. But by the courtesy of the butchers the carcase and organs are kept for 3 hours or more for the inspection by our officials.

The Council *must* arrange for "b" to be done and the memo, on meat inspection states that "a" is also *desirable*.

It will be perceived therefore that the inspection of meat at the place where it is killed, quite irrespective of its destination, whether that is in the district for the retail trade or whether the meat is to be sold wholesale outside the district, falls to the duty of the local Health authority. No exception appears to be contemplated even in the case of a large commercial undertaking situated in a small District but conducting its trading operations wholesale throughout the whole country or even by export. The responsibility for the meat inspection appears to lie in all cases with the local health authority, that is the Urban District Council.

How has the Council carried out these duties hitherto?

In the time of my predecessor the Sanitary Inspector did what he could to carry out the duties, but the sale of inferior and even diseased meat was in those days so prevalent and profitable that he was dissatisfied with the results of his efforts. His condemnations were often challenged and he suggested to me that condemnations by a Veterinary Surgeon would be accepted as authoritative. At the same time the work of ordinary Sanitary Inspection had grown so much in other directions that there was not time enough for it and meat inspection as well. At that time we had a health visitor who did parts of the work that now fall to the Sanitary Inspector. It will be evident to the Council that even at that day the Sanitary Inspector, even with the assistance of the health visitor, could find no time for the meat inspection of the private slaughter houses which was all we had in those days.

I advised the Council to appoint a Veterinary Surgeon and Mr. Bibby, M.R.C.V.S., became Meat Inspector.

It is only necessary to justify that step taken by the Council to recall the astonishing record of condemnations of diseased meat which followed.

On his death, Mr. Taylor, M.R.C.V.S., held the appointment till his County Council appointment and Mr. May followed until the opening of the Bacon Factory made it necessary to re-open the question of how the now greatly enlarged requirements of meat inspection should be met.

I had a conversation with the County Medical Officer of Health on the question and the Council took his advice and appointed an additional Sanitary Inspector, whole time, instead of a part time officer.

As the Council will recall, the decision taken was that Mr. White, the Chief Sanitary Inspector, who is a qualified meat inspector, should, with the assistance of his deputy, Mr. Shone, undertake the whole meat inspection of the town including that of the Bacon Factory.

This is now the system in operation. Is it satisfactory from every point of view?

I will answer the question,

(a) from the point of view of meat inspection, and

(b) from the point of view of the time of the officers which the inspection oucupies.

(a) From the point of view of meat inspection. The answer is that the inspection of the Bacon Factory is satisfactory. The officers are doing the work well and I am satisfied that on the system upon which they now work their condemnations are on the one hand eliminative of diseased food and on the other are just. On that point, by far the most important so far as the Bacon Factory is at present concerned, I need say little more, except as regards two subjects.

(1) Inspection of the hoof. The Memorandum regards this as desirable—which it obviously is. It is not imposed upon the Council as an absolute duty. The requirement is substantially met at present by the stock man employed by the C.W.S. calling the attention of the inspectors to any animal he notes to be ill or injured. In practice, inasmuch as I understand the stockman to be a very competent servant of the Company, this works satisfactorily; especially as in the few cases in which the pigs arrive diseased, it is usually obvious and agreed that they must not be dressed for human consumption.

Still, cases of doubt may occasionally occur and to meet the need I recommend that Mr. White should be empowered to call in a Veterinary Surgeon to give an opinion in any such case; the Veterinary Surgeon to be paid by fee per case at a rate to be agreed. That arrangement would be seldom called into use but the mere fact that it had been made would meet a theoretical objection to the present system.

That deals with inspection of the hoof; but I should add that if a Veterinary Surgeon be appointed by the Council to be on call for such a duty, he might very properly be used a little further. Cases arise in which food products consigned by the Society to customers are criticised by the customers. An

illustration will illuminate the point. Certain products were consigned to a food factory which returned them with the intimation that an official of that factory and the local sanitary inspector of the district condemned them as diseased on account of a peculiar appearance. These products on their return here were submitted to a private Veterinary Surgeon who passed them as sound and who explained the peculiar appearance and its cause which was quite consistent with the health of the part.

It seems to me very desirable that our Inspectors should have the official support of a Veterinary Surgeon selected by the Council in any such case, should they feel it to be desirable. Again the same Veterinary Surgeon might meet a difficulty with which I understand the C.W.S. may be faced. The Society sometimes exports its products to countries which require them to be accompanied by the certificate of a Veterinary Surgeon. That certificate is no direct responsibility of the Council, but inasmuch as the inspection of the same food certainly is the Council's responsibility, it is desirable that the Veterinary Surgeon should be acting under the Council's authority.

I have made inquiries from the Ministry of Agriculture County Official as to whether that Ministry's Veterinary Surgeon could do this work. The answer is in the negative. Of course however, the County Veterinary Surgeons are responsible for the epizootic diseases (that is animal infectious diseases).

(2) The second point I must mention is in regard to the inspection of the gut. When killing is going on at a moderate rate, our two inspectors now work in a way which copes with all essentials; but occasionally now (and I am told, that quite often in the near future), the speed with which the carcases follow one another along the line makes it very desirable that a third inspector should be examining the guts. When I mention that the main preoccupation of one inspector is the plucks and of the other is the heads, and that the butchers who eviscerate the animals have to be relied on to draw their attention to disease in the abdominal glands, it will be obvious that when working at speed the inspectorial "comb," so to speak, which eliminates all instances of disease, requires three members not two.

In the above remarks I have dealt with the Bacon Factory and I postpone the slaughter houses till I have answered question "b".

(b) Is our present system satisfactory from the point of view of the proportion of the working time of our inspections which it occupies?

In my opinion it sometimes occupies, of necessity, too much of the time of our chief Sanitary Inspector. Before the advent of the Bacon Factory his duties were a full time occupation without any meat inspection at all. I have mentioned how Mr. Hickson found them so, even with the help of a health visitor who is not now available. With the plethora of recent health legislation those duties have now increased.

Were a second deputy Sanitary Inspector with meat inspector's qualifications to be appointed Mr. White would be relieved, for his other and still more important ordinary duties. If the pressure at the Bacon Factory develop and if the Bacon Board have not by that time elaborated its own system of Bacon Factory inspection, that appointment must be considered.

I now turn to the inspection of the meat in the slaughter houses of the town.

My remarks about the personal competence of our inspectors apply equally to this department of their duty; but in as much as it is obvious that two men cannot be present in a dozen places at once, the inspectors can seldom be present throughout killing as they are in the Bacon Factory.

I have noted with sympathy and agreement the views expressed in the Council that the same care should be taken in inspecting the work of the slaughter houses as is taken at the Bacon Factory; but it is neither possible nor is it necessary for the inspectors to be present at killing time in all the smaller places.

It will be pertinently asked why not necessary if it be necessary at the larger place? The answer is that the chief point in the presence of an inspector at the time of killing is that the possible condemnation of the whole carcase depends often on disease being found in two or three separate organs. As these organs are removed and examined the carcase from which they are removed is hanging up. The discovery of disease, in one organ only, justifies the condemnation of that organ: the discovery in several organs may justify the condemnation of the whole carcase.

Now if there be dozens of carcases and heaps of organs detached it is impossible to say which group of organs belonged to which carcase: the inspeceor *must* be on the spot when they are removed.

The slaughter of a single animal or even of say 2 pigs, 3 sheep and an ox in a small slaughter house presents a much simpler problem. The carcases, plucks and guts are all known to the butcher: their identity is not confused.

The Inspector arriving an hour or two later makes his examination quite satisfactorily in the presence of all the factors in the problem.

It would of course be ideal if he saw the animal

(a) alive
(b) killed
(c) during dressing

That however is an ideal only possible if the town were to have a single public abbatoir.

But that ideal is not necessary and I am content that, given time, (that is, man-power), the Inspection of our slaughter houses can well be done as it is now.

The Bacon Factory must, I assume, be regarded at present as in the stage of going through its initiation troubles. The present inspection system meets the case generally; but for the full development contemplated, possibly the near future, my conclusion is that an additional Sanitary Inspector with Meat Certificates would meet the case.

The inspection of the bacon factory and of the Slaughter Houses should continue under the responsibility of the chief Sanitary Inspector but he would be relieved of most of the detailed personal work.

During rush hours at the factory he might well lend a hand, so that the very desirable presence of a third inspector to examine the guts as the carcases come along the line, would be secured.

The general supervision of the factory, too, calls for much care.

For the moment the Council may well be advised to mark time and wait developments, but to be prepared to take action so soon as they eventuate.

ANNUAL REPORT OF THE MEDICAL OFFICER OF HEALTH FOR THE YEAR 1937, for the Urban District of Winsford, in the County of Chester, on the administration of the Factory and Workshop Act, 1901, in connection with Factories, Workshops and Workplaces.

FACTORY AND WORKSHOP ACT, 1901.
1 Edw. 7. C 22. S. 14 (11).

No application for a certificate that a factory was provided with means of escape from fire has been received

We have no outworkers on the list and no application has been received during the year.

HOME OFFICE FORM 572.

1.—INSPECTION OF FACTORIES, WORKSHOPS & WORKPLACES including Inspections made by Sanitary Inspectors or Inspectors of Nuisances.

Premises. (1)	Number of		
	Inspections. (2)	Written Notices. (3)	Occupiers prosecuted. (4)
Factories .... (Including Factory Laundries)	42	3	....
Workshops .... (Including Workshop Laundries)	38	....	....
Workplaces .... Other than Outworkers' premises)	7	....	....
Total	157	3	....

DEFECTS FOUND.

Particulars.	Number of Defects			Number of offences in respect of which Prosecutions were instituted
	Found	Remedied	Referred to H.M. Inspector	
(1)	(2)	(3)	(4)	(5)
Nuisances under the Public Health Acts:				
Want of cleanliness	2	2	....	....
Want of ventilation	....	....	....	....
Overcrowding	....	....	....	....
Want of drainage of floors	....	....	....	....
Other nuisances	....	....	....	....
Sanitary Accommodation — insufficient	1	Nil.		
Sanitary Accommodation — unsuitable or defective	....	....	....	....
Sanitary Accommodation — not separate for sexes	....	....	....	....
Offences under the Factory and Workshop Acts:—				
Illegal occupation of underground bakehouse (s. 101)	....	....	....	....
Other offences .... (Excluding offences relating to outwork and offences under the Sections mentioned in the Schedule to the Ministry of Health (Factories and Workshops Transfer of Powers) Order, 1921).	....	....	....	....
Total	3	3	....	....

I beg finally to express my sincere thanks, to the chairman of the Council, Mr. Reg. Barton, J.P., the chairman of the Health Committee, Mr. Jas. Fowler, and other members for interest; and particularly I acknowledge the generous assistance I have had from the officials, not only my own staff, Mr. White and Mr. Shone; but also from the Surveyor, Mr. Peter Heaton, and last, and by no means least, from the Clerk, Mr. Henry Molyneux.

Your obedient servant,

LIONEL JAS. PICTON.

ACKNOWLEDGMENTS AND REFERENCES

Other than those in the text.

The figures refer to the small figures in the text.

The late Mr. Parker of Over 1

Mr. J. L. Deuchar, chairman I.C.I. Salt Group, Etc. 2

Mr. R. Morris, Managing Director of the Salt Union who kindly read the proof of the Salt Section. 2

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Mr. Pimblott of Bradbury's (Winsford) Ltd. 10

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