

**Dr. R.W. Johnstone's report to the Local Government Board on the sanitary circumstances and administration of the Rural District of Easington.**

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ON

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(NEW SERIES No. 20.)

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Dr. R. W. Johnstone's Report to the Local  
Government Board on the Sanitary Cir-  
cumstances and Administration of the  
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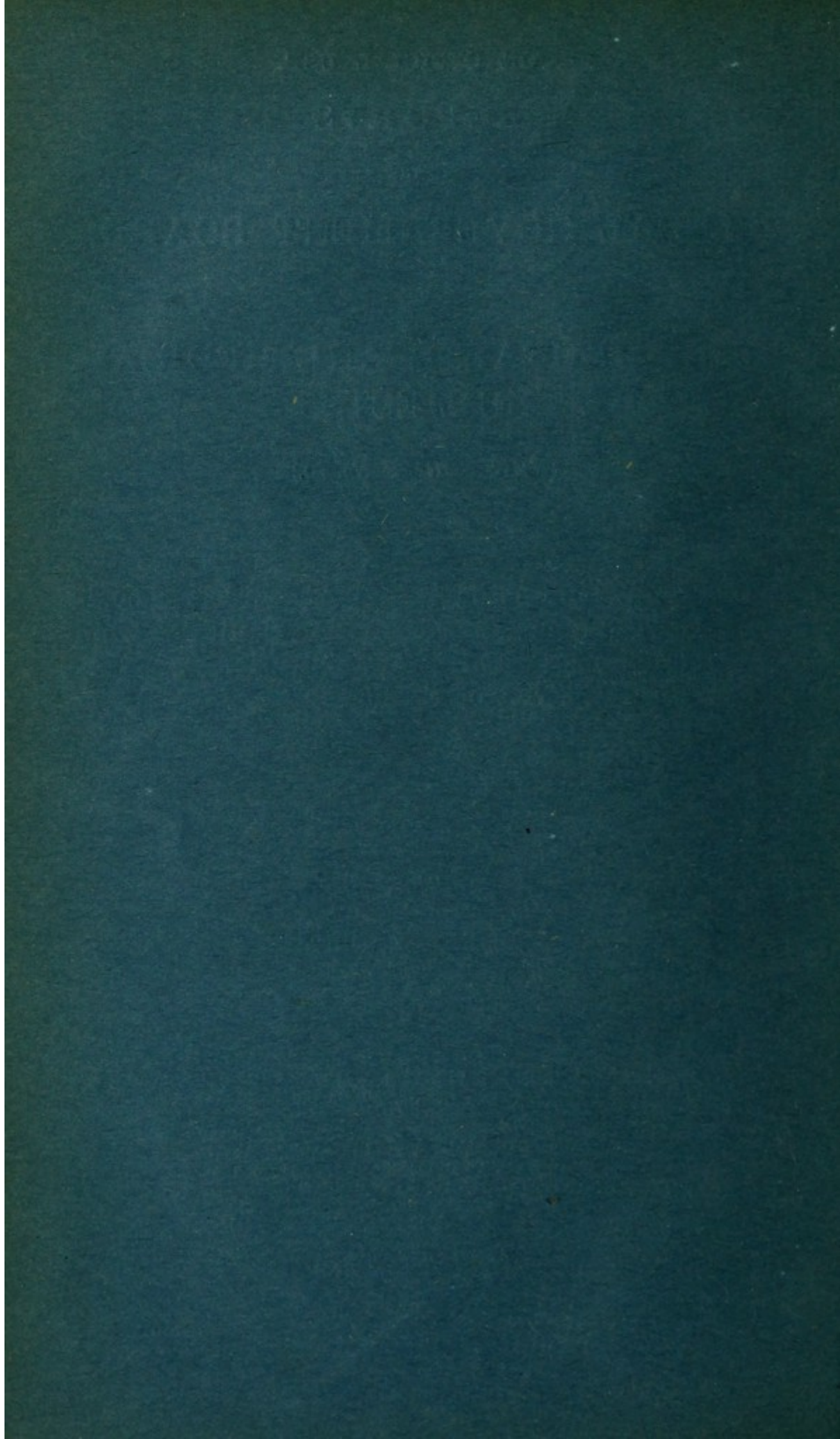
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# Dr. R. W. Johnstone's Report to the Local Government Board on the Sanitary Cir- cumstances and Administration of the Rural District of Easington.

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ARTHUR NEWSHOLME,  
Medical Officer,  
23rd November, 1909.

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For some years past the Board have been in receipt of communications from the county council of Durham, complaining that the rural district council of Easington was remiss in the administration of their district, particularly in the matter of housing of the working classes, and construction of sewers. With regard to the latter, the county council submitted to the Board a complaint under § 299 of the Public Health Act, 1875, that the rural district council of Easington had made default in providing the village of Wingate with sufficient sewers, and in maintaining existing sewers. In these circumstances the Board decided to have a detailed inspection of the sanitary circumstances and administration of the rural district, and I was directed to undertake the duty.

I visited the district on January 16th, 1909, and on subsequent occasions.

*Description of the rural district.*—The rural district of Easington, in the county of Durham, is coterminous with the Easington registration district and union, except that the urban district of Seaham Harbour is comprised within the two latter.

The district is bounded on the north by the Sunderland rural district, on the west by the Houghton-le-Spring and Durham rural districts, on the south by the Sedgfield and Hartlepool rural districts, and on the east by Seaham Harbour urban district and the sea.

Geologically, the district is for the most part on Boulder Clay overlying Magnesian Limestone, under which are the Coal Measures.

The population in 1891 was 36,782; in 1901, 40,562; and was estimated in January, 1909, from the number of inhabited houses, to be 54,544. In 1891 there were 6,861 inhabited houses; in 1901, 7,641; and in 1909, 10,371.

The area is 37,018 acres.

The assessable value is £178,686, and the loans outstanding £11,806 5s. 1d.

The principal industry is coal mining. The district contains ten large collieries, owned for the most part by separate companies. One of them, which has been opened at Horden within the last five years, largely accounts for the increase in population since the census of 1901. A new coal pit is being sunk at Easington, which is likely to become one of the most important in the county, and another is shortly to be commenced at Monk Hesledon.

In addition, there is a considerable agricultural population, and a number of workers are employed in limestone quarries.

The following table shows for each parish the area, valuation, population and number of inhabited houses.

TABLE I.

Parishes.	Area in Statute Acres.	Rateable Value of Land and Buildings.	Assessable Value.	Population (by multiplying number of inhabited houses by 5.26).	Number of Inhabited Houses.
1.	2.	3.	4.	5.	6.
		£	£		
Burdon ... ..	1,135	5,947	5,314	131	25
Castle Eden ... ..	1,949	13,883	13,194	1,930	367
Cold Hesledon ... ..	1,030	7,212	6,950	689	131
Dalton-le-Dale ... ..	812	6,297	6,020	431	82
Easington ... ..	5,073	14,752	13,167	1,983	377
Haswell ... ..	3,224	17,626	16,789	6,622	1,259
Hawthorn ... ..	1,520	6,317	5,818	447	85
Hutton Henry ... ..	2,017	5,875	5,286	3,492	664
Kelloe ... ..	1,596	6,434	6,141	936	178
Monk Hesledon ... ..	2,540	7,294	6,773	2,109	401
Murton East ... ..	1,496	15,122	14,631	7,311	1,390
Nesbitt .. ...	333	151	85	10	2
Seaham ... ..	1,525	15,094	14,657	5,359	1,019
Seaton-and-Slingley ... ..	1,392	6,892	6,401	410	78
Sheraton-with-Hulam ... ..	2,346	2,180	1,511	199	38
Shotton ... ..	3,707	24,351	23,693	10,162	1,932
Thornley ... ..	1,148	6,420	6,165	3,213	611
Wingate ... ..	4,175	26,676	26,091	9,110	1,732
	37,018	188,523	178,686	54,544	10,371

The following are the chief villages with their estimated populations.

Parish.	Village.	Population.
Easington ... ..	Easington ... ..	1,205 <sup>o</sup>
Haswell ... ..	Haswell ... ..	3,898
	South Hetton ... ..	2,724
Shotton ... ..	Shotton Colliery ... ..	4,907
	Horden Colliery ... ..	4,702
Castle Eden ... ..	Wingate (part of) ... ..	1,125
Murton ... ..	Murton ... ..	7,311
Thornley ... ..	Thornley ... ..	3,229
	Wingate (part of) ... ..	3,050
Wingate ... ..	Wheatley Hill ... ..	4,071
	Trimdon ... ..	1,804
Hutton Henry ... ..	Station Town ... ..	2,455
Monk Hesledon ... ..	Castle Eden Colliery ... ..	1,683
Seaham ... ..	Seaham ... ..	5,286

<sup>o</sup> Including the workhouse, 169.

*Health of the District.*—The following table was compiled for me by the county medical officer of health. It supplies a comparison between the birth rates, death rates, enteric and continued fever death rates, diarrhoea death rates and infant mortalities in Easington rural district, those of the administrative county of Durham, and those of the rural districts in the county of Durham during the 10 years 1898-1907.

TABLE II.

Year,	Administrative County of Durham.					Durham County Rural Districts.					Easington Rural District.				
	Rates per 1,000 Population.				Rate per 1,000 Births.	Rates per 1,000 Population.				Rate per 1,000 Births.	Rates per 1,000 Population.				Rate per 1,000 Births.
	Birth-rate.	Death-rate from all Causes.	Enteric and Fevers Death-rate.	Diarrhoea Death-rate.	Infant Mortality.	Birth-rate.	Death-rate from all Causes.	Enteric and Fevers Death-rate.	Diarrhoea Death-rate.	Infant Mortality.	Birth-rate.	Death-rate from all Causes.	Enteric and Fevers Death-rate.	Diarrhoea Death-rate.	Infant Mortality.
1898	...	18.3	0.27	1.15	179	36.3	18.3	0.33	1.12	179	36.5	18.5	0.58	1.35	172
1899	...	18.8	0.29	0.99	179	34.3	18.0	0.30	0.82	174	34.9	19.1	0.20	2.64	201
1900	...	18.6	0.18	0.59	167	34.3	17.8	0.19	0.53	169	35.5	18.3	0.10	0.55	166
1901	...	19.0	0.27	1.43	177	36.7	18.4	0.29	1.46	176	40.3	20.7	0.39	1.60	188
1902	...	16.7	0.14	0.31	139	35.7	16.4	0.15	0.26	139	37.9	18.6	0.18	0.29	169
1903	...	17.7	0.12	0.73	161	36.7	17.8	0.13	0.67	161	37.1	18.4	0.13	0.43	165
1904	...	18.3	0.15	0.95	162	37.0	18.1	0.13	1.05	166	37.1	18.1	0.26	0.77	172
1905	...	17.4	0.20	0.90	159	35.2	17.7	0.21	0.85	164	34.8	18.8	0.38	0.65	174
1906	...	17.5	0.22	1.41	157	36.5	17.9	0.24	1.47	163	36.7	18.8	0.26	2.05	174
1907	...	17.0	0.10	0.59	136	36.2	17.4	0.08	0.59	138	34.5	17.5	0.09	0.53	162
Mean 1898-1907	35.3	17.9	0.19	0.90	162	35.9	17.8	0.20	0.88	163	36.5	18.7	0.26	1.09	174

It will be seen that in all particulars, Easington rural district compares unfavourably with the other two areas.\* It is pointed out by the county medical officer of health, that this comparison would be still more unfavourable were it not for the fact that the populations of the administrative county and of the rural districts in the county, are considerably underestimated, based as they are upon the increase between the censuses of 1891 and 1901, whereas the populations of Easington rural district from which the above table is calculated are those estimated from year to year by Dr. Arthur (medical officer of health to the Easington rural district council), from his knowledge of the increase of population in his district. Thus the estimated population of Easington rural district, based on the rate of increase in the inter-censal period 1891-1901 was, in 1907, 43,120, but Dr. Arthur's estimate was 52,336. The death rate for 1907 for the whole county, if calculated on the population, as estimated by the District Medical Officers of Health throughout the county instead of on the population estimated from the increase between 1891 and 1901 would be only 16·1 as against 17·0 in the above table.

In the following table certain mean rates for England and Wales during the period 1898-1907 are contrasted with the mean rates given in Table II. for the Easington rural district, and the rural districts of the administrative county of Durham.

TABLE III.

*Showing the mean death rates from all causes, the mean "fever" death rates, the diarrhoea death rates, and the infant mortality for the period 1898-1907 in England and Wales, less the great and other large towns, as well as in the Easington rural district, and in the rural districts of the administrative county of Durham.*

	For the period 1898-1907.			
	Mean Death Rate.			Mean Infantile Mortality per 1,000 Births.
	All causes.	"Fever."	Diarrhoea.	
England and Wales, less the great and other large towns.	15·6	0·13	0·45	124
Easington rural district ... ..	18·6	0·25	1·08	174
The rural districts of the administrative county of Durham.	17·7	0·20	0·88	162

Here again the comparison is wholly unfavourable to the rural district of Easington.

The excessive infantile mortality is chiefly due to diarrhoea, and steps should be taken by the district council to deal with it. Such steps should include the adoption of the Notification of Births Act, and the making of arrangements under the supervision of the Medical Officer of Health for the education of mothers by every means by which it is possible to reach them.

\* Easington rural district is included in both the other areas.

## SANITARY CIRCUMSTANCES.

*Houses.*—The great majority of houses are colliery cottages; cottages, that is to say, which are owned by the colliery companies and let to the colliers rent free as part of their wages. When there is no colliery house available, an allowance in money is made by the company, but this is seldom sufficient to pay the rent, and has the further disadvantage of ceasing when work is stopped by disputes or strikes.

Most of these dwellings are rated under £8 a year, the colliery companies paying the rates for houses owned by them.

The new houses, such as those at Horden and in part of New Seaham, are very good, but a great many old dwellings exist, of which large numbers are dilapidated, damp, and faulty in construction. In places like Castle Eden Colliery, and Haswell, where the colliery has been shut down, the houses are allowed to fall into disrepair, many of them being even broken up and sold for the materials, although the majority continue to be occupied.

As a rule, dwellings are constructed of brick, but there are a great many built of limestone rubble, which weathers poorly, and allows the mortar to drop out, leaving great cavities in the walls through which wind and damp can penetrate. Damp-proof courses are absent, except in the newest houses, and eave-spouting is frequently absent or faulty, so that practically all the very old dwellings, and a large proportion of those 20 years old and older, are unwholesome on account of damp. Absence of pavement either in front or behind, or in some instances both in front and behind houses, further contributes to dampness of walls and interior by allowing the foundations to become sodden with wet.

Back-to-back houses still exist in parts of the district, and new cottages are being built in which the evils of the back-to-back system obtain upon the first floor. These new houses are constructed with a passage to the back house separate from the entrance to the front house. The back house has its first floor bedrooms looking to the front, and the front house bedrooms on the same floor look to the back. Each house has a back yard, so that through ventilation of a sort may be obtained on the ground floor, though not upon the first floor.

Almost everywhere there is ample air space around the houses. Usually there is a wide front street and back street. In the centre of the latter the privy middens or ash closets are situated when they are not placed within the house yard. In some villages there are gardens behind the houses, but this is unusual.

Although overcrowding upon area is not a feature of the district, overcrowding of persons in houses is not infrequent. This arises generally from insufficiency of houses in the vicinity of collieries, and from the custom of taking in lodgers. Besides this it is the custom of the mining companies to give the best houses to their petty officials and to the men who have been longest with them, so that the new-comer may have to put up with a very small and inferior house while he is waiting for a better one. Speaking generally, the colliers keep the inside of their houses with great neatness and cleanliness. It is only when the dwelling itself is so



damp and dilapidated as to dishearten the occupier that an unclean interior is found.

The internal construction of many of the older houses leaves much to be desired. In the worst cases the floors are constructed of quarls (a local tile) laid in ashes, affording a damp and uneven surface; the roofs of pantries are without ceilings; and there is no staircase, access being obtained to the upper floor by means of a ladder passing through a hole in the ceiling of the room below. It is in the construction and arrangement of the upper or bedroom floors that faults liable to have a deleterious effect upon the health of the occupier are most evident. The bedrooms are constructed almost entirely within the slope of the roof. Sometimes the wall plate is only a few feet from the floor, and the window, upon which the apartment depends for light and ventilation, is necessarily limited to this height. The ridge of the roof may be anything from six feet to nine feet from the floor; but the space above the wall plate is of little use for ventilation; it acts rather as a trap for spent air charged with organic particles given out by those who have breathed it. Moreover, the spent air from the room below is afforded ready access by way of the hole in the floor, and this tends to make the atmosphere in the attics exceedingly foul and close. The attic as a rule is without any ceiling, and the walls are often dilapidated. Sometimes there are two rooms on the upper floor, one opening out of the other, one lighted by the window at floor level, and the other by a skylight which does not open. The provision of staircases, ceilings and dormer windows in such houses as these would go far to remedy the worst of these defects and the cost would not be prohibitive. The dormer windows would, however, require to be carried up to the ceiling level and to be free from obstructive beams.

I append a few examples of the worst housing conditions observed in the district.

In Hesledon, formerly known as Castle Eden Colliery, the first dwelling I inspected had two rooms on the ground floor, and two attics on the floor above. The roof was leaky, and the rainwater reached the bedroom on the ground floor after passing through the floor of the attic. The attics opened off each other, they were without ceilings, and one of them was lit only by a piece of glass let into the slates; the wall plate was three and a-half feet above the floor. The walls were damp, the wooden eavesputting faulty and the down spouting broken. At the back of the house, the tile pavement was dilapidated with many tiles missing, at the front there was no pavement. The street had never been made up, and the slops were carried untreated to a stream by means of an open channel. Rent 1s. 6d. per week.

In John Street, Thornley, back to back houses were observed. Doors had been made communicating between the back and front house, but these were blocked and the two dwellings occupied by separate families. Number 7, rented at 2s. a week, was occupied by two adults and three children. On the ground floor was one room and a pantry, while a step ladder led through an opening in the ceiling to the attic above. The top of the attic window was three and a-half feet above the floor, and the wall plate four feet.

The dwelling smelt close and unwholesome. There was an open privy midden with two privies which served eight houses. One of these privies had neither door nor roof, the inside being in a condition of unspeakable filth, while the midden was dilapidated and without a covering. The back street had not been made up.

At Cardwell Terrace Easington, the contents of privy middens have to be removed through the houses, the back yard pavements are dilapidated, and in one yard a square hole without trap or gully communicated with the house drain. Another dwelling in Easington occupied by L———r and rented at 3s. 6d. a week, had a kitchen below and an attic above with a leaky roof, and dilapidated ceiling. The attic was about 14 feet square with a low window, and the occupants of the house were five adults (one of whom was bedridden and slept in the kitchen) and one child. The privy was filthy and in want of repair.

At 135, Humble Lane, Wingate, there were two rooms below, and an attic above reached by a step ladder. The walls and floors of the rooms below were damp, the attic had no ceiling and the top of the window was three feet, the wall plate four feet, and the ridge seven feet above the floor. The plaster had become detached from the walls in places. Two adults and six children lived in this dwelling. There was no eavesputing in front, and only about 10 feet of wooden spouting at the back. In the back street the open channels were blocked by ice and filth causing large puddles of slop water.

At 164, Humble Lane, Wingate, four children and five adults lived in a dwelling, comprising a kitchen and pantry on the ground floor, and an attic above. The brick floor was dilapidated, there was no ceiling, and a step ladder led to the attic. There was no pavement and no eavesputing in front, and the back was paved with broken quarls.

In Pickering Street, Wingate, there are houses built of rubble in which the material has weathered so badly that a pencil could in places be thrust six inches into the wall from the outside.

There are houses in Sinkers' Row, Wingate, built over semi-underground stables. In the stables was an untrapped gulley used for slop water. Here four privies have to serve the needs of 19 families. One of the tenants described his house to me as "not damp, but wet." There are holes in the rubble walls large enough for birds to nest in.

At Haswell there are about 50 back to back houses. One of these at Long Row was rented at 2s. a week. It had a kitchen and pantry on the ground floor, the former with damp walls. The bedroom had no fireplace, and the walls were dilapidated and damp. It was inhabited by three adults.

Such instances could be multiplied, and although it must be understood that these are not typical of the district as a whole, yet they show the urgent necessity for detailed routine inspection of the district with a view to securing the detection, and abatement of unhealthy conditions in dwellings.

*Excrement and house refuse disposal*—For the most part this is effected by privy middens. The latter are usually without roofs and are of large size. They are not often over full but many are dilapidated and some of the privies are, from this cause, quite unfit for

use. Generally a privy has to serve two houses but instances were seen where four or more houses used the same privy. Of late years many of the privy middens have been converted into ash closets.\* The latter erected in Easington rural district have receptacles from 6 to 12 cubic feet in capacity, lined with cement, with small doors or iron shutters opening on to the back street for the removal of the contents. There are very few water closets in the district. The privy middens or ash closets are usually situated in the centre of the back street, some little distance from the dwelling, but in the newer dwellings where ash closets or water closets are the rule they are situated in the back yard close to the dwelling.

The district council contract for the removal of privy midden and closet contents throughout the district with the exception of the parishes of Burdon, Hawthorn, Nesbit, Seaton and Sheraton-with-Hulam. There are 29 contractors who employ their own workmen, but the inspector of nuisances superintends the work. The expenses of scavenging are levied as special expenses upon the parishes benefited.

*Sewers and sewage disposal.*—I am informed by Dr. Arthur, the medical officer of health, that he knows of about 28,000 yards of old sewers and drains laid before 1902 and he says there may be more, but many of them have fallen into disuse, or been altered, or relaid, and I was not able to get any definite account of them. In the following table are given the number of yards of sewer laid in each parish between 1902 and 1908, and the means adopted for disposing of the sewage.

TABLE IV.

*Showing the number of yards of sewer laid from 1902 to 1908 (inclusive) in each township, and the means adopted for disposing of the sewage.*

Townships.	Yards of Sewer.	Sewage Disposal.
Easington ... ..	1,630	Partly to settling tanks and thence to the Thorpe Burn, and partly direct to Thorpe Burn.
Haswell ... ..	2,440	Double settling tank and single bacterial filter with automatic distributor.
Shotton ... ..	3,570	Double settling tanks and double bacterial filter with automatic distributor and storm water bed.
Castle Eden ... ..	1,530	Two plants, each consisting of settling tank and bacterial filter with automatic distributor.
Murton (includes Cold Hesledon).	5,335	Double settling tanks and double bacterial filters with automatic distributors.

\* I was informed that pail closets were not suitable owing to the large amount of ashes which have to be disposed of, but I have doubts whether the greater cleanliness of pail closets does not more than compensate for the more frequent attention they require as compared with the ash closets.

Townships.	Yards of Sewers.	Sewage Disposal.
Wingate ... ..	5,167	Sewage partly pumped from Wheatley Hill to Thornley disposal works, and partly discharged direct to Hesledon Burn. Trimdon sewage is disposed of by a settling tank and bacterial filter bed with automatic distributor.
Thornley ... ..	393	Double settling tanks and single bacterial filter with automatic distributor, and a storm water filter bed.
Hutton Henry ...	1,920	Hutton Henry village discharges direct to open ditches. Station Town discharges direct to Hesledon Burn.
Monk Hesledon ...	350	Discharged direct into Hesledon Burn.
Seaham ... ..	120	Discharged into 12 ins. x 15 ins. sewer direct to the sea.
Kelloe ... ..	150	Discharged into open ditches and partly into a sewer belonging to the Durham Rural District Council.

The sewers enumerated above vary in diameter from 6 inches to 18 inches, but there are besides, in some of the villages (*e.g.* Kelloe and Hutton Henry) anciently laid pipes which convey slop water to open ditches, and in others (*e.g.* Hesledon, Wingate, Murton and South Hutton) open channels which convey sewage direct to water-courses or ditches.

At Haswell sewage disposal works I found the screen across the inflow to the settling tanks completely blocked up by rubbish, causing the whole of the sewage to discharge through the storm water overflow into the brook.

At Shotton, there was considerable "ponding" on one of the filters. The effluent was very cloudy, but without smeli. The storm water filter bed was completely silted over near the inflow, while the distal end looked as if it had never been used, showing that the distribution of storm water was very uneven.

At the Thornley sewage disposal works, the filter showed considerable "ponding," the arms of the distributor were burst in several places. I was unable to obtain a specimen of the effluent but there have been many complaints of offensive effluvium arising from the works. The storm water filter bed showed the same signs of uneven distribution as were observed at Shotton. The plant here is not capable of dealing with the amount of sewage coming to it, and new works at Wheatley Hill are to be undertaken.

At the Trimdon works there is no alternative settling tank, and sewage is therefore allowed to flow direct to the brook for one day every week, while the settling tank is being cleared of sludge. The brook showed heavy traces of black sludge along its course for about half a mile.

There is serious fouling of watercourses in the district by untreated sewage. At Wingate for instance, where there are about 30 water-closets, the sewage of some 7,000 persons inhabiting

Wingate (including Station Town, and part of Castle Eden), is discharged direct into a small brook. Further down its course this stream is known as Hesledon Burn, and it receives the untreated sewage of Hesledon (Castle Eden Colliery). At Wingate it is already coloured a deep orange by a quantity of water impregnated with oxide of iron, which is pumped into it from a neighbouring coal mine. It is locally held that this oxide of iron water renders the sewage innocuous, but I do not think there is much justification for this belief. Undoubtedly, by its colour and opacity, it prevents the pollution of the brook being as apparent as it would otherwise be, but beyond diluting the sewage and perhaps in a degree promoting sedimentation, it is difficult to see what beneficial action it can have.

The system of conveying away sewage by means of open channels, has been the occasion of correspondence between the county council and the rural district council, particularly in connection with Wingate. These open channels are generally made of shaped tiles, and are usually carried down the back streets in a double line, one channel outside the back of each row of houses. Very often the back street is of great width, containing the privy middens in the centre, and it sometimes happens that the open channels are a considerable distance from the back doors of the houses. In such circumstances, slops are often thrown outside the doors with, no doubt, the pious hope that they will eventually reach the channel. I observed at Wingate a street where frozen slops outside the doors of houses at a distance of about 18 feet from the channel indicated that the inhabitants did not take the trouble to carry their slops as far as the channel. Again, in frosty weather, the sewage becomes frozen in the channels, blocking them, and causing large pools of sewage to collect at intervals. Instances of this were seen at Wingate, at Murton, and at South Hetton. At the last named place, the open channels on either side of Clarence Street discharged on to the surface of the road crossing the street at the foot of the slope, causing an offensive collection of mud and sewage. Apart, however, from the disadvantages of open channels which may arise from faulty laying, insufficient cleansing, or from frost, the system itself is open to condemnation from a health point of view. House sewage is always liable to risk of specific pollution, and if such contaminated sewage is allowed to flow in open channels past whole rows of houses through back streets which constitute the usual playground of the children, it is inevitable that danger to health should arise. This danger is still greater when house slops are thrown on the ground at the back doors, and the surface soil around the houses is constantly fouled.

Open channels are found in the following places ;—

For surface water only, at Easington, Shotton, Castle Eden, the new part of Murton, Thornley, the new part of Wingate, Wheatley Hill, Trimdon, Station Town, and Seaham.

For slop water at Haswell, South Hetton, Hawthorn, Burdon, Dalton-le-Dale, Cold Hesledon, Kelloe, old parts of Murton and Wingate, Hutton Henry, South Wingate, Monk Hesledon, and Seaton with Slingly.

Even in the best sewered villages such as Wheatley Hill, slops

and more rarely night soil are sometimes thrown by careless people into the channel provided for surface water, or on the ground.

*Roads and back streets.*—There are in the district 97·9 miles of district roads, 12·25 miles of main roads, and 3·60 miles of roads repairable *ratione tenuræ* by the tenants of adjoining land.

As a general rule, only through routes in colliery villages are repaired by the district council. This leaves the bulk of the roads and streets on which the houses face to be repaired by the owners. In many instances the front streets have never been made up, there are no footpaths, and the condition of things is very bad in wet weather. But it is in the back streets that the conditions are most serious. They are hardly ever made up, beyond the laying down of some ashes over the rough clay, and in wet weather they are usually quagmires. In most colliery villages the back streets serve as the means of access to the houses, both for their occupants and for tradesmen delivering goods, and form, in addition, the children's playground; there also are generally situated the privy middens, during the scavenging of which the ground around is liable to frequent fouling. The front streets are devoted to clothes lines for hanging out washing, and save for this are usually a desert so far as human use or occupation is concerned. It is, in fact, evident that as regards the health and comfort of the inhabitants, the paving, channelling, and making up of the back streets is much more important than that of the front ones. From a rough calculation made for me by the medical officer of health, it appears that there are some 15 miles of back streets in the rural district, practically none of which are properly made up or paved.

*Water Supply.*—Nearly all villages have a water supply provided either by a public company or by a colliery company. Practically all these supplies are derived from the magnesian limestone by pumpings from borings in that formation. In Seaton village there is a supply derived from a spring.

The following table gives some particulars as to these supplies :—

TABLE IV.

Village.	Supplied by	Pumping Stations.	Mains Owned by
Seaham ... ..	Sunderland and South Shields Water Company.	Seaham, Dalton, North Dalton.	Company.
Murton ... ..	" "	Dalton ...	"
Shotton Colliery	" "	Shotton ...	"
Easington ...	" "	Dalton ...	District Council.
Hawthorn ...	" "	Thorpe, Shotton	Company.
Cold Hesledon...	" "	Dalton ...	"
Dalton-le-Dale...	" "	Dalton, North Dalton.	"
Burdon ... ..	" "	Shotton, Thorpe, Seaton.	"
Haswell ... ..	Haswell Water Company.	... ..	"
Haswell Moor ...	" "	... ..	"

Village.	Supplied by	Pumping Stations.	Mains Owned by
Wingate ...	Wingate Water Company.	... ..	Company.
Station Town ...	" "	... ..	District Council.
Hutton Henry...	" "	... ..	" "
South Wingate ..	" "	... ..	" "
Castle Eden Colliery.	" "	... ..	" "
Monk Hesledon..	" "	... ..	" "
Castle Eden ...	" "	... ..	Private.
South Hetton ...	South Hetton Colliery	... ..	Company.
Thornley ...	Thornley Colliery	... ..	"
Wheatley Hill...	" "	... ..	"
Trimdon ...	Trimdon Colliery	... ..	"
Kelloe ...	Kelloe Colliery	... ..	"
High Wheatley Hill.	" "	... ..	District Council.
Wingate Lane ...	" "	... ..	" "
Horden... ..	Horden Colliery Company.	... ..	Company.
Seaton Village ...	A well fed by a spring	... ..	Private.

As a rule, water is distributed by means of standpipes in the streets, but in Wingate village there is a tap in each house, although there is no sink, the idea being that sinks lead to waste of water.

The occupier of a house not owned by a colliery company pays water rate in proportion to the valuation of his house, and he can have a tap on his premises if he cares to incur the expense of making the connection and laying the pipe. In colliery-owned houses all the rates are paid by the colliery company.

There have been frequent complaints to the Board of scarcity of water at Hutton Henry. It is supplied by the Wingate and District Water Company, which obtains its water from Wingate Colliery, but the difference in levels between the service reservoir at Wingate and the service tanks at Hutton Henry is too small to keep the latter properly supplied. This scarcity of water is a serious danger to health, and may lead to outbreaks of disease through persons in need of water resorting to questionable sources of supply. I am informed that the district council have taken the matter in hand.

*Isolation Hospitals.*—The rural district council have an isolation hospital at Thorpe, about a mile south of Easington, and the Easington and Sedgfield Joint Small-pox Hospital Board has a hospital in the township of Thornley, near the old Thornley Hall. The isolation hospital at Thorpe is a building of corrugated iron lined with wood. It has two ward blocks, the first containing two wards, 30 ft. by 20 ft., a nurses' bedroom, kitchen, caretakers' room (for a man and wife who act as porter and cook), scullery, surgery, bath, hand lavatory, and a single bed ward 10 ft. by 7 ft., besides two nurses' bedrooms and one sitting-room. The second ward block has two wards 20 ft. by 20 ft. (each with an annexe containing water-closet and movable bath), a kitchen, two nurses' bedrooms, nurses' cloak room, lavatory, bath, and water-closet.

There is a laundry block with washhouse and ironing-room, a mortuary, and an ambulance shed with modern ambulance.

The water supply is from the district council's main at Easington. The hospital drains to a cesspool.

The ward blocks are draughty, and in stormy weather damp. There are no hospital sinks, although enteric cases are admitted. There is no drying-room to the laundry, and the mortuary window is on the south-western side.

The hospital site is said to be about 4 acres in extent. It is enclosed by an open fence 5 ft. high except on the side next the road, where there is a 6 ft. 6 ins. close fence.

The small-pox hospital is a permanent building. The site has an area of 3 acres, and is enclosed by a close fence 6 ft. 6 ins. in height. The administrative block contains four nurses' bedrooms, caretaker's sitting-room and bedroom, medical officer's room, bathroom, and water-closet. The ward block has two wards, each 12,028 cubic feet in capacity, and each with a sanitary annexe containing hospital sink, movable bath, and water-closet. There is a duty-room between the wards. There is a mortuary, a washhouse, and an ambulance shed with modern ambulance. The water supply is from the Weardale Steel, Coal & Coke Co.'s pumping stations at Wheatley Hill Colliery. The hospital drains to a cesspool in the grounds. Nuisance is sometimes occasioned by the overflowing of the cesspool, the land being heavy clay.

*Disinfection.*—There is no disinfector at the small-pox hospital, but there is a small chamber used as an incinerator for the destruction of infectious matter. At the Thorpe Isolation Hospital there is a small single-ended Thresh's steam disinfector, but it is dilapidated and leaks. Houses are disinfected by compressed liquid sulphurous acid, or by means of a formalin lamp. Clothing is immersed in Izal solution or in solution of corrosive sublimate, but there are no means of dealing with bedding and articles unsuitable for immersion.

*Slaughterhouses* are not registered, and I am unable to say how many are in the district. I visited nine, of which three were unobjectionable; in the others dilapidated floors, filth consisting of decaying entrails and scraps of flesh, and lack of whitewash were the principal faults observed. One slaughterhouse opened direct into a living room.

*Bakehouses.*—Those which I visited did not call for condemnation. None of them are underground.

There are no offensive trades.

*Common lodging houses.*—There are two in the district, of which I saw one. The keeper of this house was not sure how many lodgers he was allowed to take. No copy of the byelaws was hung up on the premises, nor were there any placards stating the maximum number of lodgers allowed in each room. There were two bedrooms for lodgers, each containing eight beds, and measuring roughly 12 ft. by 15 ft. The bedclothes were in a filthy condition. The keeper and his wife have a second bed in their room for a married couple, so that it would appear that 20 persons are accommodated when the house is full. The one privy midden which served the whole house was both dirty and dilapidated.



## SANITARY ADMINISTRATION.

*Adoptive acts and sections of acts in force in the district :—*

- 23rd June, 1876.—Urban powers under Sections 42, 44, 157 and 158, Public Health Act, 1875, granted for parishes of Castle Eden, East Murton, Haswell, Monk Hesledon, Seaham, Shotton, Thornley and Wingate. Came into operation 10th July, 1876.
- 4th January, 1889.—Urban powers under Sections 42, 44, 157 and 158, Public Health Act, 1875, granted for parishes of Cold Hesledon, Hutton Henry and Kelloe. Came into operation 28th January, 1889.
- Rural district council minute, 2nd March, 1893.—Infectious Diseases (Notification) Act, 1889. Adopted. Came into force 5th April, 1893.
- 30th April, 1895.—Urban powers under Sections 42, 44, 157 and 158, Public Health Act, 1875, granted for parishes of Burdnon, Dalton-le-Dale, Easington, Hawthorn, Nesbitt, Seaton-and-Slingley and Sheraton-with-Hulam. Came into operation 27th May, 1895.
- 14th November, 1895.—Lighting and Watching Act, 1833. Adopted for Haswell Parish.
- 31st December, 1896.—Section 42, Public Health Act, 1875, in respect of every parish in the district.
- 7th October, 1903.—Private Street Works Act, 1892, granted for Thornley Parish. Came into operation 2nd November, 1903.
- 27th February, 1905.—Section 39, Public Health Act, 1875. Seaham Parish (Urinal).
- 9th September, 1905. Section 66, Public Health Act, 1875. Seaham Parish.
- 6th October, 1905.—Section 39, Public Health Act, 1875 (Urinal) Wingate Parish. (Wheatley Hill).
- 9th April, 1908.—Section 39, Public Health Act, 1875 (Urinal), Murton Parish.
- 13th August, 1908.—Part III of the Public Acts (Amendment) Act, 1890, adopted.
- 5th September, 1908.—Private Street Works Act, 1892, granted for Haswell, Hutton Henry, Thornley and Wingate Parishes. Came into operation, 28th September, 1908.

*Byelaws in force in the district :—*

Subject.	Allowed by the Board on
New streets and buildings ... ..	July 23rd, 1909.
Common lodging houses ... ..	July 18th, 1901.
Nuisances ... ..	July 18th, 1901.
Cleansing of footways and pavements :	
Removal of house refuse : Cleansing	
of earth closets, privies, ashpits, and	
cesspools ... ..	July 12th, 1909.

Regulations under the Dairies, Cowsheds, and Milkshops Order, 1885, were made on January 13th, 1887.

*The district council* consists of 30 members, who meet every four weeks, with special meetings occasionally in the alternate fortnights. The sanitary committee, consisting of the whole council, meets every four weeks. The medical officer of health, the sanitary surveyor, and the inspector of nuisances attend all meetings of the sanitary committee and of the council.

*The Clerk to the rural district council* is Mr. J. M. Longden. He was appointed on March 7th, 1901, and receives £255 a year (including office staff, and legal work).

*The medical officer of health* is Dr. James Arthur, L.R.C.P., L.R.C.S.Ed., D.P.H. He was appointed on June 7th, 1883, and now receives £280 a year. He is in general practice. Dr. Arthur has a good knowledge of his district, and is quite competent to advise his council in matters of sanitary administration and reform. It is, however, to be desired that he will in future press his views upon his council with greater insistence. Owing to the claims of his practice, and the large area and population of the rural district, it is difficult for Dr. Arthur to devote sufficient attention to detailed inspections. There would be distinct advantage in raising the salary of the medical officer of health sufficiently to admit of the employment of a whole time man, who might at the same time undertake similar duties in the neighbouring urban district of Seaham Harbour.

*The inspector of nuisances*, Mr. W. Emery, was appointed on February 8th, 1900. He receives a salary of £170 a year. Mr. Emery is an associate of the Royal Sanitary Institute. He is an active and intelligent officer, but, owing to the size and population of the district, he is unable to devote sufficient attention to the details of his work. No one man is capable of carrying out the duties of inspector of nuisances with regard to a population of over 50,000 persons spread over an area of nearly 40,000 acres. There is urgent need for increase of staff. Routine systematic inspection cannot be properly carried out by one inspector. To be satisfactorily equipped, a district such as this should have three inspectors of nuisances.

*The sanitary surveyor*, Mr. G. Waterhouse, was appointed on October 8th, 1908, and receives a salary of £250 a year. He does not possess any sanitary qualification except his past experience as a civil engineer. He makes out all plans, specifications and estimates required by the council, and sees them carried out. He reports on plans for new buildings and inspects the buildings, and he is responsible for the construction, maintenance, and repair of all works belonging to the council.

In general it does not appear that the council have been inactive in the sanitary administration of their district. They have devoted considerable attention to the water supply, sewerage, excrement disposal and housing of their district. In connection with the housing question, it must, however, be mentioned that the county council have found it necessary to bring considerable pressure to bear upon the district council in order to obtain the remedy of grave sanitary faults in the housing of the working classes. Thus in the period 1893 to 1908 (inclusive), the county council have dealt,

under the Housing of the Working Classes Act, 1890, with 802 houses in the rural district of Easington, with the result that 348 were closed, 225 were made properly habitable, and 178 were improved, while 51 were still being dealt with at the time of my visit. The following table was compiled for me by the medical officer of health, and it records the action taken by the rural district council and the progress made in housing accommodation during the period 1902 to 1908.

TABLE V.

*Showing the number of new houses built, the number of old houses improved, the number of old houses demolished, the number of houses closed by magistrate's order, and the number of privy middens converted into ash closets for each township in the rural district during the period 1902 to 1908 (inclusive):—*

Township.	New houses built.	Old houses improved.	Old houses demolished.	Houses closed by Magistrates' order.	Privy middens converted into ash closets.
Easington ... ..	7	3	—	1	—
Haswell ... ..	94	11	—	—	23
Shotton ... ..	1,364	283	—	159	368
Castle Eden ... ..	83	4	10	—	16
Hawthorn ... ..	3	—	1	—	—
Dalton-le-Dale ... ..	35	—	—	—	—
Burdon ... ..	2	—	—	—	—
Murton ... ..	201	11	—	—	46
Thornley ... ..	92	29	54	11	45
Wingate ... ..	396	50	12	—	173
Hutton Henry ... ..	33	18	—	—	14
Seaham ... ..	170	64	—	—	448
Seaton ... ..	34	—	—	—	13
Monk Hesledon ... ..	—	—	—	—	—
Cold Hesledon ... ..	—	—	—	—	—
Kelloe ... ..	—	—	—	—	—
Nesbitt ... ..	—	—	—	—	—
Sheraton-with-Hulam ... ..	—	—	—	—	—
Total ... ..	2,514	473	77	171	1,146

In addition to the above, 552 statutory notices under the Housing of the Working Classes Act were issued, and were followed by repair, or voluntary closure, or are still under consideration.

In spite, however, of the work accomplished by the county council and the district council, the amount of house property showing grave sanitary defects remains very large. It will be necessary for the Council to maintain pressure upon the owners of old and unsanitary property, and care will have to be taken that reconstruction and improvements are carried out in such a way as to obviate at least the graver defects which have been alluded to in this report.

I am indebted to Mr. Longden, the clerk to the rural district council, for facts and figures courteously supplied me; to Dr. Arthur, medical officer of health, for his guidance in inspecting

the district, and for much information concerning it ; to Mr. Emery and Mr. Waterhouse for facts with reference to their own departments ; and to Dr. Hill, medical officer of health to the county council of Durham, for his company during part of my inspection, and for comparative statistics and other information.

*Recommendations.*

- I.—The council should at once make arrangements for the sanitary inspection of the district, by appointing at least one additional certificated inspector of nuisances. Systematic house to house inspections should be carried out by the sanitary staff, and proper records kept for future use.
- II.—The council should devote further attention to the housing of the working classes, with a view to eliminating from their district such insanitary conditions as those mentioned in this report.
- III.—They should provide a steam disinfecter.
- IV.—They should remedy the defects pointed out at the Isolation Hospital, particularly with regard to the provision of hospital sinks.
- V.—Attention should be given to the condition of the roads in the villages, and in this connection it should be remembered that the back streets, from a health point of view, are much more important than the front ones.
- VI.—Slaughter houses should be registered and regularly inspected.
- VII.—The council should adopt such sections of Parts II., III., IV. and V. of the Public Health Acts (Amendment) Act, 1907, as the circumstances of their district require.
- VIII.—The council should take measures to deal with the excessive infantile mortality. These measures should include the adoption of the Notification of Births Act, and the making of arrangements proper for the education of mothers and those who have charge of infants.
- IX.—The council should take steps to prevent the pollution of watercourses in their district by enforcing their powers under the Rivers Pollution Prevention Act, 1876.

R. W. JOHNSTONE.





