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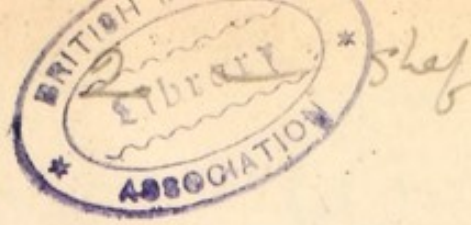
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THE URBAN DISTRICT COUNCIL

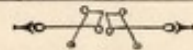
—OF—

QUARRY BANK.

ANNUAL REPORT

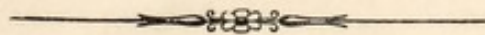
OF

The Medical Officer of Health,



FOR THE

Year Ending December 31st, 1897.



Stourbridge :—

Mark & Moody, "County Express" Offices,

1898.

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THE URBAN DISTRICT COUNCIL OF
QUARRY BANK.

ANNUAL REPORT
OF THE
Medical Officer of Health for the Year 1897.

MR. CHAIRMAN AND GENTLEMEN,

I have much pleasure in presenting to you the Annual Report for 1897. The death rate, especially that of children under one year old, is much below the average of the previous ten years, whilst the birth rate is almost identical with the average of that period. Among zymotic diseases the total number of deaths, viz. 4, and the zymotic death rate viz. 0.56 per 1000 per annum, are even more favourable. No epidemic of zymotic disease has occurred beyond an outbreak of Influenza in the latter part of the year, and a mild outbreak of Scarlet Fever in November and December. The question of the water supply has again been prominent, and as will be seen by the special report appended, the Council is striving to place the occurrence of an epidemic of water-borne diseases beyond the range of possibility, provided the public Water Company's supply remains uncontaminated. A memorandum on this point recently issued by the Local Government Board to District Councils, points out that the various Councils are responsible for the purity of all the water supplies in their district whether obtained through a Public Water Company or privately.

The system of contracting for the removal of night-soil has again proved very unsatisfactory, leading almost constantly to an accumulation much in excess of the maximum stipulated in the contract.

During the year plans of a model privy and ashpit have been submitted to the Council by the Surveyer and adopted, in accordance with which it is intended that all such new buildings shall be erected. The condition of existing ash-pits and privies still constitutes the most insanitary feature of the district.

The destruction of property owing to mining operations, predicted in the reports for 1895 and 1896, has unfortunately become an accomplished fact, and for this reason, the schemes for paving the footpaths and for constructing the internal sewerage both mentioned in the report for 1896 are being held in abeyance until the subsidences have ceased.

Vital Statistics.

Popula- tion.

The population in 1891 was 6,732, living in 1,292 houses, and estimating by the usual method, it should have been 7,060 by the middle of 1897.

Births.

During the year 267 births have been registered, of which 130 were of males and 137 of females, the birth-rate being therefore 37·81 per 1,000 per annum, against 230 births and a birth rate of 32·82 in 1896.

Deaths.

104 deaths were recorded during the year, 59 of males, and 45 of females, giving an annual death rate of 14·73 per 1,000. In 1896 the deaths numbered 123, 60 of males, and 63 of females, and the death rate was 17·55. From table III, it will be seen that the death rate is much below the mean of the previous 10 years.

Mortality Tables.

The following tables show an analysis of the Mortality returns :—

Table I.—AGES AT WHICH DEATH OCCURRED.

Under 1 year	...	...	28
1 and under 5 years	...	...	14
5 " 15 "	...	...	4
15 " 25 "	...	...	4
25 " 65 "	...	...	31
65 " and upwards	...	...	23
Total	...	...	<u>104</u>

DISEASES CAUSING DEATH.

Table II.—A—CONSTITUTIONAL DISEASES.

Chest Affections	...	21	Rheumatism	...	1
Phthisis	...	5	Old Age	...	7
Heart Disease	...	3	Premature Birth	...	3
Inquests :—			Debility from Birth	...	6
Injuries	... 1)	6	Wasting Diseases	...	11
Natural Causes	5)		Dentition & Complications	...	4
Cancer	...	7	Convulsions	...	1
*Nervous Diseases	...	6	Lead Poisoning	...	0
Kidney Diseases	...	2	Other Diseases	...	16
†Influenza	...	1			
Total, 100.					

B.—ZYMOTIC DISEASES,

Scarlet Fever	...	1	Whooping Cough	..	1
Enteric (Typhoid) Fever	...	0	Measles	...	0
Diarrhœa (including Gastro-Enteritis)	...	2	Puerperal Fever	...	0

Total 4. Total deaths, 104.

* Including Cerebral Hemorrhage and Apoplexies.

Following the Registrar General, Influenza is not included in the zymotic death rate.

Table III.

Year.	Estimated Population.	No. of Births.	Birth Rate.	No. of Deaths.	Death Rate.	Deaths among Infants.	Infle Death Rate	Zymotic Deaths.	Death Rate Zymotic.
	A	B	C	D	E	F	G	H	I
1886					15·09				2·17
1887					18 0				2·30
1888	7073	265	37·60	107	15·11	37	139	13	1·97
1889	7093	244	34·36	101	14·22	32	131	17	2·39
1890	7193	297	41·20	139	19·30	54	181	17	2·35
1891	6732	295	43·67	131	19·45	45	152	7	1·04
Cns.									
1892	6802	293	43·07	147	21·61	55	187	23	3·38
1893	6862	271	39·46	120	17·48	44	152	10	1·45
1894	7000	268	38·28	96	13·71	35	130	13	1·85
1895	7127	256	35·92	129	18·10	39	152	44	6·17
1896	7007	230	32·82	123	17·55	44	195	16	2·28
1897	7060	267	37·81	104	14·73	28	104	4	0·56
Mean.	6995	268	38·42	120	17·03	41	153	16·4	2·32

- Zymotic Death Rate.** 4 deaths were registered from Zymotic Diseases, giving a death rate of 0·56 per 1,000 per annum. From Table III this will be seen to be by far the lowest zymotic death rate during the past 12 years. The zymotic death rate in England and Wales in 1896 was 2·18, and for the County of Stafford 2·39.
- Enteric (or Typhoid) Fever. Scarlet Fever. Erysipelas.** No death occurred from Enteric Fever and only one from Scarlet Fever.
- No fatal case occurred.
- Measles. Whooping Cough.** A few cases of Measles occurred in April without any death, and a limited outbreak of Whooping Cough resulted fatally in one case only.
- Diarrhœa.** There has been a marked diminution in the number of deaths from this cause during the past two years. A few cases occurred in the latter part of July, more in August, with a falling off again in September.
- Influenza.** This did not appear till November, but by the middle of December it had become very prevalent. Only one death, that of a boy aged 3, was attributed directly to the disease. Pneumonia of a severe type was a frequent complication, and probably more than one of the five deaths registered from Pneumonia in December alone, were due to Influenza as a primary cause.
- Infantile Mortality.** Twenty-eight deaths have been registered under one year of age, or at the rate of 104·86 per 1000 births. This is the lowest rate recorded during the last ten years at least, and far below the mean of that period. The mean infantile death rate for England and Wales is about 146, for large towns in England 168, and for urban districts in Staffordshire 173, so that an infantile death rate of 104 is exceedingly favourable.

Table IV.

The causes of death during the first year of life were:—

Debility from Birth ...	6	Diarrhœa	2
Premature Birth ...	3	Whooping Cough ...	1
Dentition (and its complications)	3	Wasting Diseases ...	6
Acute Chest Diseases	5	Inquests, natural causes	2
			—
		Total	28

Nine of these occurred during the first month of life namely from :—

Debility at Birth	..	6
Premature Birth	...	2
Marasmus	... ..	1
		—
Total		9

In 1896 there were 44 deaths under one year of age, of which 15 were during the first month of life.

The infantile death rate is usually held to be the truest index of the sanitary status of a community, and in Table III it will be found that although it fluctuates directly with the general death rate, it does not do so always to the same degree. It is not easy to determine all the factors that have contributed to the present low rate, but in all probability the following are the principal :—

- (a) The almost entire absence of zymotic diseases ; the only instances represented in the infantile death roll being one from Whooping Cough and two from Diarrhœa.
- (b) Greater care in the feeding and nursing of infants possibly as a result of pamphlets treating with these subjects that have been distributed from house to house. No deaths occurred from Convulsions, three only from teething, and as before stated, two only from Diarrhœa, whereas in 1896 these three causes contributed 13 deaths.
- (c) Improvement in the water supply.
- (d) Accidental meteorological conditions &c., over which we have no control.

The results of an enquiry, conducted by the County Medical Officer of Health, into the effects of female factory labour on infant mortality in the county of Staffordshire, are so decisive and important that I cannot do better than quote them here as tabulated in his report.

Deaths in children under one year in three classes of artisan towns in Staffordshire :—

	Class I. Many women engaged in work.	Class II. Fewer women engaged in work.	Class III. Practically no women engaged in work.
10 years 1881—1890	195	166	152
8 „ 1889—1896	204	174	164

As the sanitary condition of towns has been gradually improving, Dr. Reid argues that the increase in infant mortality is due to the employment of mothers in factories, and the consequent neglect of their children, a view which is strikingly supported by the widely different death rates in the three classes of towns.

Improvident marriages and a want of knowledge of the most elementary principles of infant dieting and nursing also play an important part in raising the death rate among infants. The Council has recognised these facts and is trying by means of leaflets and a special course of lectures by a competent person to combat the ignorance that exists on these subjects.

Inquests. Six inquests have been held, the Coroner certifying the deaths as due in one case to injury, and in the remainder to natural causes.

Uncertifi'd Deaths. One death from Bronchitis has been returned as “not certified.”

Notification of Diseases.

Twenty-six cases of Infectious Diseases have been notified during the year, compared with 60 in 1896, and 373 in 1895. A tabulated list will be found appended to this report.

Scarlet Fever. A few cases of Scarlet Fever occurred in the early part of the year, but the months of January, June, July, August, and September were absolutely free. Towards the close of the year, cases broke out in fairly rapid succession, numbering seven cases in two months. There is little doubt that although some value must be attached to domestic isolation, disinfection, and a careful supervision of school attendance,

Cases 13
Deaths 1

the only reliable means of suppressing Scarlet Fever is prompt seclusion of the earlier cases in isolated cottages or hospitals. The question has been raised as to the advisability of using the hospital for this purpose, in the absence of smallpox, but the matter has not yet been definitely settled.

Table VI.

Showing dates and distribution of Scarlet and Enteric Fever cases during the year, with the probable cause of the latter.

Month.	Scarlet Fever.	Enteric Fever.	Locality of Enteric Fever Cases.	Probable cause of Enteric Fever Cases.
Jan. ..		2	New Street (in one house)	5 cases in same house in 1896
Feb. ..	3			
March ..				
April ..	1			
May ..	1			
June ..				
July ..				
August ..		1	Upper High Street	Stench from nightsoil removal.
Sept. ..		1	Amblecote Road	Drinking water from a spring (?) out of district.
Oct. ..	1	1	Cradley Forge	Well water and insanitary premises
Nov. ..	4			
Dec. ..	3			

The following streets were infected with Scarlet Fever :—

High Street	...	3	...	First Case. Feb. 11th.
Vine Street	...	1	...	Apr. 8th.
New Street	...	1	...	May 9th.
Church Street	...	2	...	Oct. 11th.
Birch Coppice	...	2	...	Feb. 2nd.
Mears Coppice	...	1	...	Feb. 26th.
Caledonia	...	1	...	Nov. 11th.
Amblecote Road	...	1	..	Nov. 24th.
Hill Street	...	1	...	Dec. 12th.

Five cases were reported, all in persons over five years of age. There were in addition, at the beginning of the year, five cases in the hospital reported in 1896, making a total of ten, all of whom recovered.

Enteric or Typhoid Fever.

Cases 5
Deaths 0

Two cases, viz., those reported in January, were removed to the isolation hospital. It is interesting to note that only one case occurred in the area affected by the great epidemic of 1895, viz., the case in Upper High Street. South Staffordshire water was in use, and the disease was attributed to the inhalation of effluvia from nightsoil which was being removed. One case occurring in Amblecote Road, was in all probability due to drinking water from a surface stream or spring in the neighbourhood where the man was employed.

I have on a previous occasion called the attention of the Council to a case occurring in New Street from a similar cause, and I cannot too strongly emphasise the danger of drinking unboiled water from all but the most unimpeachable sources.

Closely connected with the origin of Enteric Fever are the subjects of water supply and the disposal of excrement and refuse. The former will be found dealt with fully in the appended "Special Report." With regard to the latter very little progress can be recorded.

The employment of a contractor for night-soil removal has again been throughout the year the cause of much uneasiness, owing to the heavy arrears of work usually on hand. The difficulty of securing good tips within reasonable distance has no doubt harassed the contractor, but apart from this it is certain that the work would be better done under the direct control of the Council.

The improved model adopted during the year on which all new ashpits and privies are to be constructed, will tend to minimise the evils of the present system. As soon, however, as the long-delayed sewerage scheme has been completed it will be advisable to modify this model so as to allow water closets to be affixed to all new buildings, and as occasion arises to existing ones. The present privies and ashpits are in too many instances not only badly constructed, but very dilapidated, and although mining operations are an extenuating circumstance in many cases, they are by no means so in as many others.

The Smallpox Hospital has again, in the absence of **Epidemic Smallpox**, been used for Enteric Fever. The particulars for **Hospital.** Quarry Bank patients are :—

Remaining from 1896	...	...	5
Admitted in 1897	...	...	2
Died	...	...	0
Discharged cured	...	...	7
Remaining	..	...	0

The steam disinfector attached to the hospital has been in regular use for the treatment of clothes, bedding, &c., from cases of infectious diseases in the district.

One case of Diphtheria in Upper High Street was **Diphth'ria** reported. The attack was mild and soon recovered from. On the premises it was found that the upper part of the ashpit was converted into a fowl roost, a point of some interest in its bearing on the alleged occurrence of Diphtheria among fowls. The fowls seemed, however, in this case, all healthy.

The district has remained free from both these diseases. **Puerperal I regret that I have no figures on which to base a report of Fever. Smallpox.** the vaccination of the district.

Sanitary Notes.

Sewerage and drainage have been of a temporary nature **Drainage.** only, owing to the projected drainage works, and the subsidences of land from mining operations.

This subject has been referred to under the heading of **Middens and Ashpits.** Enteric Fever.

See "Special Report." **Water Supply.**

These have been inspected, and usually found to be clean. **Slaughter-houses, Dairies, & Cowsheds.** In connection with the horse-slaughtering establishment at Saltbrook End, complaints have once or twice been made of offensive effluvia, and these have been remedied by the removal of refuse at shorter intervals.

No complaints of exposure for sale of unsound food have **Inspection of Meat.** been brought to my notice during the year.

**Factory
and Work-
shops Act.**

No nuisances have been reported under this Act.

**Over-
crowding,
and House
Accommo-
dation.**

Twelve cases of overcrowding have been discovered, all but one of which were abated after notice. Two houses were condemned as unfit for habitation, but these by no means represent the number in this condition. On the area affected by mining operations many houses have been demolished, and still more are so ruined as to be rendered uninhabitable, whilst nearly every house has been damaged to a greater or less degree. A new street is being constructed from High Street to Coppice Lane, which will provide house accommodation for many that are dislodged. Apart from mining operations, absence of spouting and surface drainage renders many houses damp and unhealthy.

Appended you will find the statistical forms required by the Local Government Board and the County Council, together with a summary of work done in the Sanitary Inspector's Department, and a special report on the water supply.

In conclusion, I must thank the members of the Council for the ready help they have always given me in the performance of my duties in the district.

I beg to remain,

Your obedient Servant,

T. MAJOR TIBBETTS, M.B., D.P.H. (LONDON),

MEDICAL OFFICER OF HEALTH.

Feb. 14th, 1898.

TABLE A.—TABLE OF DEATHS during the Year 1897, in the Quarry Bank Urban District, classified according to Diseases, Ages, and Localities.

NAMES OF LOCALITIES adopted for the purpose of these Statistics; public institutions being shown as separate localities.	MORTALITY FROM ALL CAUSES, AT SUBJOINED AGES							MORTALITY FROM SUBJOINED CAUSES, DISTINGUISHING DEATHS OF CHILDREN UNDER FIVE YEARS OF AGE.																						
	At all Ages.	Under 1 year.	1 and under 5	5 and under 15	15 and under 25	25 and under 65	65 and upwards	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
																														Measles
Quarry Bank ...	104	28	14	4	4	4	23	1										1	2					8		1			29	42
TOTALS ...	104	28	14	4	4	4	23	1										1	2					8		1			29	42

Area and Population of the District or Division to which this return relates :—Area in acres, 983 ; Population (last census, 1891), 6732 ; estimated to middle of 1897, 7060.

Death Rates { General, 14.73 per 1000 population, estimated to middle of 1897.
 Infant (under one year of age), 104.86 per 1000 births registered.

Urban Sanitary District of Quarry Bank.

B. New cases of Infectious Sickness coming to the knowledge of the Medical Officer of Health during the year 1897, enumerating the Number of Houses Infected, the Total Number of Deaths, also the Number of Cases Treated and the Deaths that occurred in Infectious Hospitals.

	Smallpox.	Scarlatina.	Diphtheria.	Membranous Croup.	Enteric Fever.	Cholera.	Erysipelas.	Measles.	Whooping Cough.
Houses infected.....		12	1		4		7	No returns.	
Total cases reported among persons belonging to District	Under 5	8					1		
Total deaths reported among persons belonging to District	5 upwds	5	1		5		6	No returns.	
Cases treated in Hospital among persons belonging to District.....	Under 5	1							
Deaths occurring in Hospital among persons belonging to District	5 upwds								
	Under 5				2*				
	5 upwds								

Is "Notification of Infectious Diseases" Compulsory in the District? Yes. Since when? October, 1892.
 Is Measles included among the Diseases notified? No.
 Is Whooping Cough " " " " "
 Is an Isolation Hospital available for the District? Yes.

Area of District in acres, 983.

* 5 other cases of Enteric Fever were remaining in Hospital from 1896. Total, 7.

(Signed) T. M. TIBBETTS, M.O.H.

SUMMARY of SANITARY WORK done in the Inspector of Nuisances' Department during the year 1897, in the Urban Sanitary District of Quarry Bank.

				Inspections and Observations made.	Formal Notices by Authority.	Nuisances Abated after Notice.
Dwelling houses and Schools.	{	Foul Conditions ... ..	...	29	29	26
		Structural Defects ... ..	...	27	14	12
		Overcrowding ... ..	...	12	12	11
		Unfit for Habitation ... ..	...	3	3	2
		Lodging Houses ... ..	...	None	in dis-	trict.
		Dairies and Milkshops ... ..	...	15	0	0
		Cowsheds .. ..	...	15	0	0
		Bakehouses ... ..	...	14	2	2
		Slaughter-houses ... ..	...	12	1	1
		Canal Boats ... ..	...	None	in dis-	trict.
		Ashpits and Privies ... ..	...	600	0	0
		Deposits of Refuse and Manure ... ..	...	45	24	23
		House Drainage	{	Water Closets	4	0	0
Defective Traps ... ..	...			12	0	0
No Disconnection ... ..	...			16	4	4
Other Faults ... ..	...			0	0	0
Water Supply ... ..	...			300	130	125
Pigstyes ... ..	...			25	5	5
Animals improperly kept ... ..	...			0	0	0
Offensive Trades ... ..	...			26	3	3
Smoke Nuisances .. ..	...			3	2	1
Other Nuisances ... ..	...			45	20	20
						Nos.
Seizures of Unwholesome Food ... ..				...	...	0
Samples of Food taken for Analysis ... ..				...	...	0
,, ,, Found Adulterated ... ..				...	...	0
,, of Water taken for Analysis ... ..				...	...	10
,, ,, Condemned as unfit for use ... ..				...	...	9
Precautions against Infectious Disease.						
Lots of Infected Bedding Stoved or Destroyed ... ..				...	...	24
Houses Disinfected after Infectious Disease ... ..				...	...	24
Schools ditto ditto ... ..				...	...	2
Prosecutions for not Notifying Existence of Infectious Disease ... ..				...	...	0
Convictions ditto ditto ... ..				...	...	0
Prosecutions for Exposure of Infected Persons or Things ... ..				...	...	0
Convictions ditto ditto .. ..				...	...	0

(Signed) DAVID SIDAWAY,

Jan. 17th, 1898.

Inspector of Nuisances.

SUMMARY OF SANITARY WORK DONE IN THE IMPERIAL
HEALTH DEPARTMENT DURING THE YEAR 1891, IN THE
SANITARY DISTRICT OF QUANG BANG.

Year	Number of Inhabitants	Number of Deaths	Number of Cases of Dysentery	Number of Cases of Typhoid	Number of Cases of Cholera	Number of Cases of Malaria	Number of Cases of Smallpox	Number of Cases of Scarlet Fever	Number of Cases of Diphtheria	Number of Cases of Whooping Cough	Number of Cases of Measles	Number of Cases of Rubella	Number of Cases of Scarlatina	Number of Cases of Typhus	Number of Cases of Epidemic Typhus	Number of Cases of Epidemic Typhus	Number of Cases of Epidemic Typhus
1891	100,000	1,000	500	200	100	300	50	20	10	15	10	5	10	5	5	5	5
1890	95,000	900	450	180	90	280	45	18	8	12	8	4	8	4	4	4	4
1889	90,000	800	400	160	80	260	40	16	7	10	6	3	7	3	3	3	3
1888	85,000	700	350	140	70	240	35	14	6	8	4	2	6	2	2	2	2
1887	80,000	600	300	120	60	220	30	12	5	6	3	1	5	1	1	1	1
1886	75,000	500	250	100	50	200	25	10	4	4	2	1	4	1	1	1	1
1885	70,000	400	200	80	40	180	20	8	3	3	1	1	3	1	1	1	1
1884	65,000	300	150	60	30	160	15	6	2	2	1	1	2	1	1	1	1
1883	60,000	200	100	40	20	140	10	4	1	1	1	1	1	1	1	1	1
1882	55,000	150	75	30	15	120	7	3	1	1	1	1	1	1	1	1	1
1881	50,000	100	50	20	10	100	5	2	1	1	1	1	1	1	1	1	1

The following table shows the number of cases of the several diseases which have been reported to the Health Department during the year 1891, in the Sanitary District of Quang Bang. The number of deaths is also given. The number of cases of each disease is given in the first column, and the number of deaths in the second column. The number of cases of each disease is given in the first column, and the number of deaths in the second column.

Quarry Bank Urban District Council.

SPECIAL REPORT

On the WATER SUPPLY of Quarry Bank, by
the Medical Officer of Health.

(Presented to the Urban District Council, Dec. 14, 1897.)

Mr. Chairman and Gentlemen,

The water supply of your district falls under the following headings:—

I.—Public Water Supplies. { (1) South Staffordshire Water Co.
(2) Stourbridge Water Company.

II.—Well Waters.

III.—Rain Water. { (1) Collected from roofs.
(2) Collected from surface of land.

IV.—Brooks, streams and other sources.

I—PUBLIC WATER SUPPLIES.

(1)...THE SOUTH STAFFORDSHIRE WATER WORKS COMPANY supplies by far the greater part of your district, in which it has the sole right of Public Water Supply. The water comes immediately into your mains from the Kingswinford Pumping Station, and will be controlled by the Company's Springsmire Reservoir when it is completed.

At the present time it supplies 999 out of a total of about 1300 houses, (1292 at census, 1891.) In September 1896 the number supplied was 868, and in 1892 about 300.

The most recent extensions have been into the Saltwells or Birch Coppice, where until the middle of the present year the entire population occupying 84 houses was dependent on well, rain and stream waters, to Cradley Forge and Hammer Bank where 15 to 20 and to Dove's Hill where 12 houses have been connected. The whole of the central and densely populated portion of Quarry Bank is within easy reach of existing mains, and there is no reason why any houses should remain unconnected, but in the outlying hamlets the obstacles are serious. Briefly stated they are:—

- (a). The distance, in some cases considerable, from the present mains. The cost per yard of laying a 3-inch pipe averages, I am informed about 3/- and the Company's principle has been to secure 10% at least for 10 years of the outlay either by the rental of the houses or the guarantee of the Council.
 - (b) The grouping of the houses into small clusters or hamlets of 10 or more, at distances widely separated.
 - (c) The low rental of the houses and the peculiar nature of the tenancy, most of the houses in these hamlets consisting of so called "Cottage Property" held under the Earl of Dudley at scarcely more than a nominal rental, a fact which leads to difficulties as to ownership and liability. The South Staffordshire Water Company's Act does not allow of recovery of more than about 1/3 per quarter for houses of weekly rental not exceeding 2/- and about 1/11 per quarter for houses of a weekly rental not exceeding 3'. Most of the houses have rentals below these figures. Examples of the difficulties arising from these points will appear subsequently.
- (2). STOURBRIDGE WATER COMPANY supplies only the hamlet of Aston's Fold which adjoins their district and consists of about 10 houses. I presume this is with the sanction of the South Staffordshire Water Works Company.

II.—WELLS.

Three or four years ago these were the principal sources of water in Quarry Bank, even the central portion being then largely supplied by them. An extensive epidemic of Enteric Fever in 1895 and 1896 numbering 136 cases and 29 deaths and traced to polluted wells, brought the water question into prominence. This led immediately to the closing of about 100 wells, and during the present year this number has increased by 40 or 50 making a total of about 150 since the epidemic. In most cases the imperfect construction, shallowness, and insanitary surroundings of the

wells have been sufficient to condemn them, and this opinion has been substantiated in 65 cases by analyses. With two exceptions, the waters proved to be polluted with animal or sewage matter. It is difficult to represent in a summary form the extent of the pollution, but the following figures may assist in this direction.—

Averages of the amounts of polluting ingredients where the figures have been supplied on analysis.

SUBSTANCE.	Amount in parts per 100,000
Free Ammonia	0.0005 (23 analyses)
Albuminoid Ammonia	0.0032 (22 ,,)
Chlorine	16.7300 (25 ,,)
Nitrogen as Nitrates and Nitrites	2.0810 (4 ,,)
Total Solids	109.1000 (2 ,,)

The extremes for each ingredient were :

	LOWEST	HIGHEST
Free Ammonia	Nil	to 0.012
Albuminoid Ammonia	Nil	to 0.048
Chlorine	6.000	to 46.000
Nitrogen as Nitrates, &c. ...	1.375	to 2.700

WHITELEGGE gives the following table which will show the relative degree of pollution in parts per 100,000.

DATA	PURE WATER	UNSAFE	SUSPICIOUS	IMPURE
Free Ammonia	under 0.002	under 0.005	over 0.005	over 0.010
Albuminoid Ammonia	.. 0.005	.. 0.010	.. 0.010	.. 0.015
Chlorine ... ..	.. 1.500	.. 5.000	.. 5.000	.. 10.000
Total Solids ... ..	.. 10.000	.. 40.000	40 to 70.000	.. 70.000

Reference to these tables will show how extremely polluted many of the wells were at the time of analysis. It is important however to remember that not only actual pollution, but liability to pollution should be sufficient to condemn any water supply when a purer one can be readily substituted.

In no instance was it thought necessary to have the water examined bacteriologically.

The following localities having no tap water available are still dependent on wells, rain and streams :—

Dunn's Bank, consisting of	...	30 to 35 houses
Mearce Coppice	„	20 „
Ravensitch	„	12 „
The Dingle (portion of Caledonia) consisting of	10	„
Level Wood	„	17 „
Other scattered houses in district	„	30 „
	Total	<u>129</u> „

The following streets in the central portion of the district have a few houses still supplied by wells.

New Street	...	4 Wells.
Queen Street	...	6 „
Stour Hill	...	1 „
East Street	...	4 „
West Street	...	2 „
High Street	...	4 „
Maughan Street	...	5 „
Z Street	...	2 „
Mount Pleasant	...	8 „
Thorns Road	...	4 „
Amblecote Road	...	10 „
Oak Street	...	1 „
	Total	<u>51</u> „

The following figures illustrate the condition of the district as to water supply at the present time.

Total number of houses in district	...	1300 (about)
„ supplied by Tap Water		1010
		<u>290 (about)</u>

Of these in outlying districts (where tap water is not yet available) 130 „

In central portion of district (tap water available) 160 „

There are therefore about 160 houses in the central portion of the district with easy access to the mains that are yet dependent on well or rain, or are altogether without a supply.

It is to these houses that the attention of the Council should be chiefly directed, as the remedy is so easy of application.

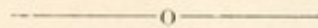
III—RAIN WATER.

- (1)—Collected from Roofs.—Several houses in the outlying parts e.g. Dunn's Bank and Mearce Coppice have no other supply than that collected from the roof. Rain water is admissible for use both in cleansing and drinking when obtained in sufficient quantity and from a pure atmosphere. Neither of these conditions holds good in Quarry Bank, the atmosphere being laden with dust and fumes from the neighbouring iron and brick works, and the quantity obtained from even the best class of houses being not nearly sufficient for domestic requirements. Wherever possible therefore rain water must be supplemented by other supplies, especially for drinking.
- (2)—Collected from the surface of Land. A few houses especially in the Dingle rely on the surface water gathered from the adjacent fields into roughly made cisterns or ponds, and use this for cleansing, if not for drinking and cooking. It is obvious that water so obtained is liable to all sorts of contamination.

IV—STREAMS, &c.

There are no streams or rivers in the neighbourhood having water fit for use even for cleansing purposes, but at Dunn's Bank, the supply is so limited at times that water is carried in buckets nearly a quarter of a mile from the notoriously polluted river Stour for house cleansing.

Lastly, in the outlying localities, and to a limited extent in the central portion, there are some houses with absolutely no water supply attached. These are being promptly dealt with by the Council whenever discovered.



SPECIAL LOCALITIES.

- (a) THE CENTRAL and principal portion of Quarry Bank extends from Cradley Forge on the South East to Mount Pleasant on the North West and from Bower Lane including West Street on the South West to the Brook (Sewer), running from Merry Hill to Cradley Pool on the North East.

Running from South East to North West, High Street divides this portion into two parts, a smaller one on the North East containing about 160 houses, and a larger one on the South West containing about 700 houses.

With the exception of one well in Oak Street the whole of the North Eastern part is now provided with South Staffordshire Water, but the South Western part has 46 wells as previously stated if we include Mount Pleasant, Thorns and Amblecote Road. High Street with about 180 houses has 4 wells in use. About 160 houses depend either on these 51 wells or on rain water, or have no water supply belonging to them.

- [b] CRADLEY FORGE and HAMMER BANK. Tap Water has been recently adopted by nearly all the inhabitants. A few use well water which has been condemned, and they are under notice for South Staffordshire Water to be laid on.
- [c] BIRCH COPPICE or SALTWELLS COPPICE includes 84 houses all recently connected to South Staffordshire Water Works mains.
- [d] LEVEL WOODS consists of 17 houses all supplied by well or surface water liable to pollution. The nearest South Staffordshire Water Main is in Mill Street, Brierley Hill. 380 yards of 3 inch pipe would be required to convey water to the houses at an outlay of £57 estimated at 3/- per yard. The house rentals are all low, e.g. £3 to £5 per year about, and the total annual water rate recoverable by South Staffordshire Water Company for these 17 houses at 1/3 per quarter per house would be £4 5s. I understand that until 10% [i.e. £5. 14] of the outlay is guaranteed either for ten years by the Council or by the increased rental of the houses that the South Staffordshire Water Company could not be required to convey the water to them. The Company is I am informed, now making certain concessions which may result in the water being soon laid on.
- [e] MEARCE COPPICE consists of about 20 houses. The nearest main is in Thorns Road, a distance of 260 yards from the nearest, and 500 yards from the furthest house. The same arguments as to low rental, &c. apply here as in the Level Woods. There are numerous so-called wells, but most of them are wisely rejected by the inhabitants as unfit for use. Seven of the houses have no water supply beyond rain water from the roofs collected in most cases in cisterns, but in one case in a tub. Four or five have surface wells which become dry in the summer. The remaining houses have the use of 3 wells which although rather superior to the others, are certainly open to suspicion of pollution.
- [f] ASTON'S FOLD consists of about 10 houses, all supplied by the Stourbridge Water Company.

- [g] THORNS ROAD and CALEDONIA. Thorns Road with the exception of a few houses supplied by 4 wells, and Caledonia with the exception of the Dingle are supplied by South Staffordshire Water Company throughout.

The DINGLE, a portion of Caledonia, consists of about 10 Cottages, 160 yards from the water main in the principal part of Caledonia. The present water supply is about the most miserable in the district. I could only find 2 wells, one of which must be from its surroundings, highly contaminated, and the other not above suspicion. I have already mentioned the practice of collecting surface water from the fields which is in use here. Here again, as the Rentals are very low, the South Staffordshire Water Company contends that to continue their mains would be unprofitable to them.

- [h] AMBLECOTE ROAD. A few houses are supplied with South Staffordshire Water. Most of the houses still using wells might be easily connected to the water main.

- [i] RAVENSITCH consists of 12 to 15 scattered cottages. The nearest main is in Amblecote Road, where it terminates about 500 yards from Ravensitch after giving off a pipe to Mousehall Farm which has South Staffordshire Water in use. The present water supply is precarious in quantity and doubtful in character, one or two shallow wells, a disused pit shaft, and in some cases rain water being the only practicable sources.

- [j] DUNN'S BANK is a rather scattered hamlet of 30 to 35 houses, 5 or 6 being modern villas, the remainder of the poor class common to the Earl of Dudley's "Cottage Property." The nearest water main is in West Street. 750 yards of 3 inch pipe is said to be required to convey the water, 150 yards of which must pass through a field at the option of the Earl of Dudley. The present water supply summarises all the doubtful types found in your district, shallow wells frequently too near to ashpits and cesspits, rain water from roof and land surface, and in times of drought water from the Stour polluted by sewage and manufacturing products. During the dryest seasons rain and well water fail, and there is a veritable water-famine, which was during the present year relieved somewhat by an order from the District Council for drinking water to be conveyed to them in their water cart.

The contention of the South Staffordshire Water Company has been that the amount of water required would not warrant the cost of laying the pipes and they required certain guarantees from the Council or from the Earl of Dudley before they would entertain the question. The inhabitants here as in other parts, are very anxious to have a public water supply, and the Council has done all that lay in its power to urge the matter with the Water Company.

It has long been felt in the district that considering the monopoly which the South Staffordshire Water Company has to supply your densely populated areas, they might reasonably be asked to waive their right of refusal in the more remote parts, and carry their water to such places as Dunn's Bank, Level Woods, Mearce Coppice and the Dingle where the distances to be covered are not altogether out of proportion to the demand, and the emergencies of the case are so great. The Council has been recently gratified by the concessions granted by the South Staffordshire Water Company in conveying their pipes to Birch Coppice, and I learn since commencing this report that overtures are being made by them in respect to Dunn's Bank and Level Woods which will probably lead to the water being taken to these places in the near future.

In conclusion, my thanks are due to your Sanitary Inspector, Mr. DAVID SIDAWAY, and to your Surveyor, Mr. J. T. ABBISS, for their ready help in preparing the materials for the report.

T. MAJOR TIBBETTS, M.B., D.P.H.

Medical Officer of Health.

CRADLEY HEATH,

Dec. 14th, 1897.