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PUBLIC HEALTH ACT,  
(11 & 12 Vict., Cap. 63.)

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R E P O R T

TO THE

GENERAL BOARD OF HEALTH

ON A

PRELIMINARY INQUIRY

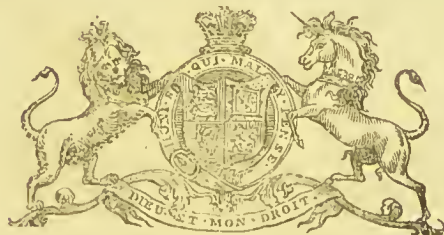
INTO THE SEWERAGE, DRAINAGE, AND SUPPLY OF  
WATER, AND THE SANITARY CONDITION  
OF THE INHABITANTS

OF THE TOWN OF

B A T T L E,

IN THE COUNTY OF SUSSEX.

By EDWARD CRESY, Esq. C.E.,  
SUPERINTENDING INSPECTOR.



L O N D O N .

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FOR HER MAJESTY'S STATIONERY OFFICE.  
1850

## NOTIFICATION.

THE General Board of Health hereby give notice, in terms of section 9th of the Public Health Act, that on or before the 18th day of February next, being a period of not less than one month from the date of the publication and deposit hereof, written statements may be forwarded to the Board with respect to any matter contained in or omitted from the accompanying Report on the Sewerage, Drainage, and Supply of Water, and the Sanitary Condition of the Inhabitants of the Town of BATTLE, in the County of Sussex, or with respect to any amendment to be proposed therein.

By order of the Board,

HENRY AUSTIN, *Secretary.*

*Gwydyr House, Whitehall,*

24th December, 1850.

## PUBLIC HEALTH ACT (11 & 12 Vict., cap. 63).

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*Report to the General Board of Health on a Preliminary Inquiry into the Sewerage, Drainage, and Supply of Water, and the Sanitary Condition of the Inhabitants of the Town of BATTLE, in the County of Sussex.* By EDWARD CRESY, Esq., Superintending Inspector.

MY LORDS AND GENTLEMEN,

A PETITION signed by fifty of the most respectable rated inhabitants of the parish of Battle, being considerably more than a tenth of those rated to the relief of the poor within the same parish, having been presented to your Honourable Board, praying that a Superintending Inspector might make inquiry and examination, with a view to the application of the said Act, &c., I had the honour to receive instructions to attend to the same. Due notices were therefore given, and the necessary advertisements inserted in the public journals. I opened the inquiry at the George Inn, at 10 o'clock, on Friday, the 7th June, 1850, and continued it for the six following days, during which time I have to acknowledge the assistance of the Rev. Mr. Whistler; Mr. Kell, the coroner; Mr. Underwood, surgeon; Mr. Edward W. H. Holland, surgeon to the Union; Mr. Wellar, Mr. Lansdell, Mr. Tell, Mr. James Laurence, Mr. Porter, Mr. Thomas Ticehurst, Mr. Young and Mr. Ellman, solicitors, Mr. Watts, surgeon, and several other of the most respectable inhabitants.

GEOLOGY.—Battle is situated on that anticlinal line of ridge, which commences at Hastings, a little to the east of the town, at Leeness Point, and continues in a series of undulatory ridges to Tonbridge Wells. The whole is composed of the alternating sands, sandstone, and clay, which form the central group of the Wealden Beds, and which are better known under the name of the Hastings Sands, as they consist of numerous beds of sand, sandstone, grit, fullers' earth, marl, shale, &c., &c., in descending order; the Horsted sands emerge from beneath the Weald clay, under them are the Tilgate beds, then the Worth sands, under the blue clay of the Tilgate beds, which at Worth, near Crawley, is quarried for building; this Worth sandstone occupies the middle of the cliff at Hastings.

Beneath the Worth stone are the Ashburnham beds, which are composed of alternations of sand, friable sandstone, shale, and clay; they are ferruginous, and contain rich, argillaceous iron ore, and large masses of lignite.

Under these beds are strata of shelly limestone, alternating with shales, layers of grit, in which are several specimens of carbonized vegetables.

The strike of the Hastings sands is not parallel to the anti-clinal ridge, but oblique to it, at an angle of about 44 degrees; the strata usually running from east to west, and dipping south.

This ridge, upon which the town of Battle is placed, has two natural drains: one by the river, north of the town, that takes its course by Sedlescombe, afterwards in an easterly direction to Brede, and is eventually discharged into the sea, near Winchelsea: this stream rises near Mountfield.

The other runs south by the powder-mills, Crowhurst, &c., and after being joined by several small streams, is with them discharged at Bulverhythe, on the western boundary of the town and port of Hastings.

CLIMATE, &c.—The winds for several miles more inland than Battle, carry with them saline particles, occasioned by the beating of the spray against the beach; and which not only affects vegetation, but absolutely penetrates brick walls, though covered with Roman cement or blue lias composition.

The old timbered houses, placed in low and sequestered situations, not so subject to this influence, preserve their durability, resisting the attack of the moisture brought by the winds from the coast. The climate generally may be considered mild and favourable to vegetation.

*The Hundred of Battle* extends over 9,480 acres; it comprises the greater part of the parishes of Watlington and Battle, and a small portion of the parish of Sedlescombe.

Staple and Baldslow bound it on the east, the hundred of Baldslow and Nenfield on the south, that of Netherfield on the west, and those of Netherfield and Henhurst on the north. As the hundred of Battle is a franchise, the inhabitants are not called upon to serve as jurymen; and the court-leet of the lord of the manor appoints the coroner and his officers.

The *Parish* contains 7,880 acres of land; it is bounded on the north by Watlington, on the west by Penshurst, Ashburnham, and Catsfield, on the south by Crowhurst, and on the east by Westfield.

Previous to the battle of Hastings, this parish formed a portion of the hundred of Hailesalted, and was called Hetheland, or Hethesfield. There are two manors, one called the borough of Senlac, or Sang Lac, from its comprising that part of the field of battle where the greatest slaughter took place:



the other, Telham or Tellman, where, as tradition says, William reckoned his forces.

The eastern termination of the principal street is called the Lake, and all ancient documents show it to be portions of the bloody lake alluded to.

After the victory over Harold and his Saxon forces, the monastery of St. Martin of Battaile was established and endowed by the Conqueror; and about the second year of his reign, Battaile began to assume its present dimensions.

Among the abbey charters, are thirteen granted by the Conqueror, nine by the son, William the Second, twenty-eight by Henry the First, two by Stephen, eight by Henry the Second, one by Richard the First, two by John, two by Henry the Third, and one by his brother, the Earl of Cornwall, about 1244. The privileges granted by these charters were the exemption from episcopal jurisdiction, freedom from all taxes and services, the right of free warren, treasure-trove, inquest, &c., and sanctuary in cases of murders and homicide: the abbot had also the power of pardoning any felon on his way to execution.

Besides the cartulary of the abbey, there is a chronicle, a register, and a liber in situ, which gives information upon several points connected with the town, the market, and the fair, which was held here for three days at St. Martin's tide.

At present, the parish authorities attend to the roads and water-courses, as the town has no local Act for its direction.

The gross rental of the parish is	£9,484 14
The nett, ditto	8,409 15

**ROADS AND STREETS.**—In the parish it is estimated, that there are 10 miles of public road, and, in general, a rate of 6*d.* in the pound is sufficient to maintain them in their present state.

It would be advisable in future, that before any new street or road were laid out for the purpose of building, that the level should be taken with greater regard to drainage, and of a width at least equal to the height of the houses intended to be carried up on one or both sides of it. In several of the gardens, at the backs of the houses in the principal street, or in the yards once appertaining to the inns, rows of cottages have been erected, or stables converted into dwellings where drainage would be difficult; and where, in consequence of the narrowness of the land, windows cannot be obtained in their rear for the purposes of ventilation, and the fronts approach each other so nearly as not to admit of a thoroughfare of sufficient width to obtain anything like a free circulation of air. There are, in too many instances, a perfect neglect in collecting the water which falls from the roofs, and in consequence of the alleys and streets not being paved, the whole runs on the

surface of a retentive soil, keeping it wet for a considerable time.

The footways, at present, are paved by the owners of the houses which abut upon them, consequently a variety of material is employed for the purpose, and no uniform width or level is maintained. Opposite the two or three principal shops, York squared paving, is laid down, and adjoining, probably is coarse stone, obtained from the forest ridge, precisely in the state it was brought from the quarry. Bricks and small pebbles are occasionally used, and in front of several of the small houses or cottages, there is no footway, properly speaking. The entire length of the high street is about 800 yards.

**SURFACE CLEANSING OF THE STREETS.**—There is no evidence that the streets or foot pavements are regularly swept, cleansed, or watered, and to effect the latter, which is the most important, would be difficult in the summer months, as there is a very scanty supply of the element required; each inhabitant maintains the footway in front of the premises he occupies as he pleases, which is swept at no particular time, or is it throughout maintained as it ought to be. The court-yards and alleys, though not numerous, are seldom cleansed, and are, consequently, in a very defective condition as regards the means of providing for the removal of decaying vegetable or animal refuse: the natural advantages of this town are considerable, and favourable to a low rate of mortality, but typhoid and other maladies have arisen here in consequence of putrescent matters having been retained too close to the dwellings of the poor, from the want of a proper supply of wholesome water, and thorough ventilation in some of the overcrowded habitations.

**PLACES FOR THE COLLECTION AND DEPOSIT OF DUST, SOIL, &c.**—There are no provisions for the removal of any offensive or noxious refuse from the houses and gardens of the poorer classes; all the decomposing and putrescent animal and vegetable matter which is brought out of the house is thrown into a pool, around which is engendered an atmosphere favourable to the production of febrile epidemics, and, though occasionally the domestic refuse is deposited some distance from the dwelling, and no immediate effects are discoverable, its constant influence is not less injurious to the health of those who occasionally come into contact with it, and more particularly the young, who are often left to amuse themselves for hours around one of these poisonous receptacles where malaria is generated, the principles of which are imperceptible to the senses, scattering its baneful effects amidst those who are not conscious of its existence, and rendering them by its lowering and depressing effects incapable of exerting themselves or repelling its morbid actions. There is no subject more important than that of pre-



vailing upon the proprietors of small tenements to make the necessary arrangements for the removal of all these pestilential impurities, which not only destroy the well-being of their tenants, but cause them to fall into habits of uncleanness and neglect of the premises, which it is their duty to maintain in a proper condition. Measles and small-pox in such situations seem to have created a location in many towns, which it is afterwards difficult to overcome or finally remove; and it is universally admitted that all epidemics are increased in intensity wherever the air is affected by such pestilential effluvia; how necessary it appears, then, for us to mitigate the evils which render our atmosphere insalubrious, although it is not always in our power to avoid the consequences which our variable climate may produce.

**GAS LIGHTING.**—The works for the manufacture of gas are situated eastward of the town. The inhabitants pay from 6s. to 14s. per 1,000 cubic feet, according to the quantity consumed. If 4,000,000 cubic feet, or three times the quantity now used, were required, the manufacturer stated he could supply it at the rate of 4s. per 1,000 cubic feet.

**PRESENT WATER SUPPLY.**—There was a deficiency of water throughout the whole of this district, at the time of the foundation of the Abbey; and the King was assured, that it would cost a considerable sum to obtain it in sufficient quantity; yet it is well-known that no such establishments were without so important an element for health and convenience. At the back of the present stable is a large tank or reservoir, which evidently, has been the source from whence the whole of the Abbey buildings, and probably the towns' people, formerly obtained their supply. Upon examination, which could only be partial in consequence of its being covered, there was no appearance of any pipe or conduits, by which it received any other water, than that from the roofs of the surrounding buildings; but there being a tradition that a pipe formerly conducted water from a farm at Loose, which lies upon higher ground than the Abbey, an examination was continued across the valley, and about a mile south of the town, we were led by the present occupier of Loose Farm, to a clear and limpid spring, over which are two vaulted coverings, the water standing 5 feet in depth; from one of these covered chambers, a 1½-inch lead pipe conducts the water up hill and down, for half a mile to Rose-hill; during the course, there are several stand-pipes or venters, placed in the most advantageous positions to produce a constant flow. The pipe passes through the ancient quarries, from whence the stone was dug for the construction of the Abbey, and where there appears to be a considerable quantity of water.

On Rose-hill, the 1½-inch pipe is discontinued; but a

branch, conducts the water at present into a house, now occupied by the ex-sovereign of Portugal, Don Miguel. This house was constructed by Mr. Worge, solicitor to the abbey, many years ago, and the probability is, he had permission from the owners of the estates to draw his supply from the main conduit pipe. At what time it was cut off from the Abbey is not known, nor is there any other circumstance remembered about it; but that it delivered water with sufficient force, to supply a fountain, in the time of Sir Anthony Browne and his successor, Sir Thomas Webster; which fountain most probably stood on the site of the reservoir alluded to. Rose-hill is considerably above the level of the high street of the town, and there can be little doubt, that an abundant supply of water was once derived from the sandstone rocks in and about Loose Farm.

On the hill at the north-west extremity of the town, where the two windmills are placed, there is a sufficient quantity of water, to constantly supply two covered reservoirs, whence the inhabitants fetch it, when their wells fail, as is frequently the case.

The well at the George Inn, and some others, also afford water throughout the year, for which many of the inhabitants pay.

In the visitation of the town, mention is made of most of the wells, and their variable depths; the crust of the forest ridge, is so much broken, as to give no decided or regular dip to the stratification; the cracks and fissures are so numerous, the rising and sinking so frequent, that but a limited area is afforded for a gathering-ground; and in all probability, each quarter of the town, has its peculiar supply, which would, in some degree, account for the variety of depths in the wells.

There are a few ponds in the neighbourhood of the town, supplied from the surface drainage, and which, at times of draught, are resorted to by the inhabitants. The "deep and dangerous," on the road to the Union house, is one of the largest.

The wells in general, from the imperfect state of their steining or from the kerb, being decayed, admit a considerable quantity of the surface water, sometimes highly charged with organic matter; this impure water does not reach the spring, by percolating the soil, which would render it clear and wholesome, and give it the oxygen it had been deprived of. Where a soil is composed of pervious strata, water passing through it becomes freed from most of the unhealthy ingredients it takes from the surface.

MORTALITY. — In the year 1841, it appears that the parish contained—

1504 males, among which were 761 under 20 years  
1535 females ditto 720 ditto

3039

Upwards of 20 years of age, 743 males and 765 females.

As the houses enumerated at the same period amounted to 522 inhabited, and 42 uninhabited, we may give 5·8 persons to each house, as an average number.

The registration district comprises Rye, Hastings, and Battle; the population of which, in 1841 was estimated at 38,673; the total deaths 629; total births 1,234. Or 1 in 61, was the proportion of deaths to the population of the whole district; 1 in 31 was the proportion of births to the population of the whole district; 1 in 10 was the proportion of deaths of infants under one year, to the births; 1 in 425 died from epidemic diseases.

The average age of all who died in the district was 32·1 years.

And the average age of all who died above 20 years was 55·1.

The following table exhibits the proportion per cent. of deaths, at each interval of death, to the total deaths:—

Under	1 year	19·1
„	5 „	35·1
„	15 „	42·1
„	20 „	45·7
Between	20 and 30 years	8·3
„	30 and 40 „	6·2
„	40 and 50 „	7·5
„	50 and 60 „	6·1
„	60 and 70 „	8·8
„	70 and 80 „	11·5
„	80 and 90 „	5·6

The number of births and deaths in the parish of Battle, from the 1st January, 1843, to the 31st December, 1849, was as follows:—

	1843	1844	1845	1846	1847	1848	1849
Births .	101	97	106	109	102	119	112
Deaths .	66	52	58	54	62	82	62

The average mortality for the last seven years, is  $62\frac{2}{7}$ , and taking the population at 3,040, which admits of no increase since the last census, and which is reported to be the fact, the deaths for the entire parish amount to about 20·5 in every 1,000 of the inhabitants annually, or 1 in 48, whilst the



proportion for the entire county was 1 in 54. The average proportion of births is 121 for the seven years, or one birth for each 25 of the entire population; whilst 1 in 34 was the proportion for the entire county.

The tendency to premature death, is not so great in the parish of Battle, as in other districts, and we have also a different development of the prolific qualities.

The deaths in Manchester were 1 in 28

The births in ditto 1 in 26

Whilst in Battle,

The deaths are 1 in 48

The births 1 in 34

The vice and misery of a manufacturing population have not found their way here, or the back courts with their scanty ventilation, would have increased both the mortality and the births, but there is no reason whatever, why Battle should not be brought up to the average standard of the county, by proper drainage and by an abundant supply of wholesome water, being provided for it.

The mean annual mortality for Sussex, as computed by Mr. Rickman, was as follows:—

1801 to 1811, one person in 50½

1811 to 1822, „ 64

1822 to 1831, „ 57½

HOUSES.—In the entire parish there are 562, 260 of which are in the town, and rated as follows:—

107 houses, rated at 5*l.* and under.

66 „ „ from 5*l.* to 10*l.*

31 „ „ from 10*l.* to 15*l.*

22 „ „ from 15*l.* to 20*l.*

13 „ „ from 20*l.* to 25*l.*

3 „ „ from 25*l.* to 30*l.*

18 „ „ from 30*l.* and upwards.

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260

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Houses in the country districts and cottages, amount to 302, making a total of 562.

That there has not been a very considerable increase in the houses of Battle, since the time that the abbey was founded, is evident on referring to the “*Liber in Situ*,” which has been thoroughly examined by Mr. John Vidler, who states that at that period there were 115 houses, arranged as now on each side of the present street. Thirty-one of these are described as on the western side; 55 on the north-east side, westward from the church, these constituted the middle borough; 15 on the same side of the road, eastward from the church; 14 on the opposite side, under the abbey walls.

The houses in general bear the marks of great antiquity; they are constructed of oak timber of the finest growth, without either nails or iron; they are put together in the same manner as the timbers of a vessel, and soft, or sap-wood, seems to have been carefully avoided; the roofs are true pitch, and covered with tile; the chimneys are spacious, and placed in the middle of the dwellings: although some of them have been modernized and new fronted, yet there is sufficient remaining to identify the account we find in the "*Liber in Situ*." Several of the foundations are thick, and formed of the sandstone of the neighbourhood; and another peculiarity is observable which, in some degree, accounts for the soundness of the timber, after an endurance of six or seven centuries, that is, no mortar or lime has been used for the plastering, but a finely-beat loam covers both sides of the laths, or wattle-work, which closes in the spaces between the timber. On the face of this wattle and dab lies a fine coat of plaster, applied only as an ornamental covering: the whole construction is precisely similar to what we see in Germany, and particularly in Saxony, at the present day.

The chimneys usually have three or four flues; their openings on the ground-floor are large and sufficient to thoroughly ventilate the whole apartment. The hearth, 7 or 8 feet long, and of half that dimension in width, allowed the inmates to gather round the embers, and as the fire was seldom quite extinct, the cold air descending the flue would be warmed before it could enter the dwelling; nor is it possible to exhibit more perfect examples of ventilation than do these old houses;—true that the large open fire-place is not consonant with our ideas of comfort, but on closing it up it would have been well to have remembered that a quantity of wholesomely warmed air was excluded as well as the means for escape of that already vitiated in the apartment.

The last houses, or those at the extremity of the streets, were almonries; one at the western part of the town, now used as a farm-house, has its original kitchen, pantry, staircase, and chambers above, in the same condition as they were centuries ago; and as these houses were built singly or in pairs, there was sufficient space between two blocks for the pavement of a watercourse, which received the droppings from the caves, and conducted the rain-water away from the foundations.

Behind the whole of the houses, on both sides of the principal street, with the exception of those abutting upon the abbey wall, was a considerable depth of ground, used as a garden, the southern and northern boundaries of which ran throughout the entire length of the town, parallel with their respective frontages. At the foot of these walls was a ditch, into which the pluvial waters were conducted originally to be



carried away, that on the south side to discharge at Bulverhythe, that on the north into the river at or near Winchelsea.

**DRAINAGE AT PRESENT.**—There is a total absence of any sewers to convey away what is discharged from the sinks or cesspools of the dwellings. Each house has in its back yard or garden a privy and bog-hole, besides a small cesspool, both of which are complained of as intolerable nuisances. The soil is not, however, sufficiently retentive to prevent the liquid matter from occasionally disappearing by percolation.

The wells and pumps scattered throughout the town are often neighbours to the pigsties and dungheaps, and the water contaminated by what runs from them.

In many situations the gardens have had holes sunk in them to form cesspools, and when filled others have been opened, so that the whole area in time has received the drainage. The value of the nightsoil is understood fully by the cottagers, who, invariably, within a few feet of their back doors, have an accumulation, to spread over their gardens at each successive crop, and where an opportunity is afforded them to throw a dam across one of the ditches, which will pen back the drainage; it is invariably done, much to the annoyance of an entire neighbourhood.

So great is the accumulation of matter in the ditches around the town, that it produces fevers of the most fatal kind, and last July so many of the inhabitants suffered from it, that Mr. Edward W. H. Holland, the surgeon to the Union, felt it his duty to address the Chairman of the Board of Guardians on the subject to the following effect:—

“It is an established axiom that the neglect of the natural laws regulating cleanliness, gives rise to infection, and experience shows that the violation of these laws proves a fruitful source of disease, affecting the innocent equally with the guilty. As the spread of civilization increases, so does the cultivation of the soil, enhancing the value of those uncombined gaseous products which emanate from various germinating ponds and viaducts of fæcal matter, expressly constructed for conveying noxious refuse into reservoirs, whose surface is exposed to the action of a powerful sun, which, by evaporation, disseminates typhus, and its various modifications, through the entire locality in which they are situated. If such be the case, I appeal to you, Sir, as Chairman of the Board of Guardians, a board alike economical and sanitary, to investigate the drainage and sewerage of Battle, a town abounding in filthy deposits, and exemplifying both, by past and present cases, a stupendous infraction both of a moral as well as natural law.”

From the above observations, which are by no means overcharged, it must be evident that there is an absolute necessity to provide house-drains and sinks of a proper quality throughout; and after each house has been provided with water, on the

constant supply system, then all cesspools may be superseded, and water closets adopted, pipe sewers, or underground conduits, conveying away all drainage to a point where it can no longer affect the salubrity of the district, or be penned up to the annoyance of any inhabitant as it is at present.

VISITATION THROUGHOUT THE TOWN.—At the south-east angle of the churchyard the ground has so accumulated from the number of interments that the surface is now nearly on a level with the meeting bar of the sash of Messrs. Ellman's house. Upon examining the rooms, which are now used as solicitor's offices, they indicated damp, and without an effectual drainage to discharge the soakage water from the churchyard these buildings cannot be rendered healthy.

Beyond Messrs. Ellman's offices is the dwelling-house of Mr. Frederick Ellman, and the pump in the rear is permitted to be used by the inhabitants of the cottages situated farther eastward.

Five cottages on the same side of the way, which are let for 2s. each per week, have only one badly-constructed privy for the use of all that inhabit them.

*The Lower Lake*, through which passes the road to Hastings, has several houses with drains running under them into the road, and often producing an atmosphere that is not only disagreeable but unhealthy. Several of the foundations have the mortar between the brick courses entirely washed out, and the overflowing of the surface drains frequently finds its way over the floors from the back to the front, saturating the entire area with sewage water.

*George King* inhabits a house which has a privy and pigsties at the back on ground higher than its foundations, and the overflows pass over the floors of his living rooms. Fever has seldom been long absent from this locality, and the wife and child have both died in consequence. Upon examination of the brick floors, the whole area was saturated by the soakage, and it will be necessary to take up the pavement, and remove the infected earth after the drainage is complete.

The cottages on the bank, at the side of the road, are all in a similar condition, and at times are inundated by the drainage in their rear. The pigsties and sinks pour all their surplus liquids through the houses into the high road, and wherever a surface drain has been provided, it is ineffective, allowing the overflows to sap the foundations.

On the opposite side of the road the prison is situated, in the midst of several cesspools, and without any properly constructed drains. Against the north wall is an open receptacle for two large pigsties and a privy, the owner of which, Mrs. Vidler, said that she never experienced any smell from them, but that the value of the sullage obtained was considerable,

and she would be sorry to be obliged to remove it. Here is the evidence of the mischief arising from allowing any open ponds to be made to intercept the drainage, which, situated in a neighbourhood of cottages, cannot but change the condition of the atmosphere, and often absolutely poison it, as was observed by several persons occupying the houses adjoining. The prison, though small, has several of these ponds of filth under its very walls. The natural drainage is towards the ponds of the Abbey Park, which formerly served for the supply of fish.

*The Old Workhouse* has been sold, and converted into several tenements. "Here," Mr. E. Holland observed, "Typhus fever had prevailed to an alarming extent. White, Matthews, and two children had died of typhus, as well as several other persons." An open ditch, which has no outlet, receives all that runs from a tan-yard on the opposite side of the road, which is frequently very offensive; in heavy rains this is disturbed and washed away over the adjoining low grounds.

*The National and Langton Schools*, lately constructed in Marl-lane, at a cost of about 800*l.*, comprises two rooms about 36 feet by 18 feet, with a master's house between them. At present there are 70 girls and 80 boys in attendance. At the back the premises are confined, which occasions the privies to be placed too close to the school-rooms; and as there is no supply of water, they are at times very offensive. At a short distance is a pond, the water of which is undrinkable, in consequence of several runs of foul matter into it.

*The Chequers Inn*, at the east end of the principal street, where the road turns off to Hastings, is an ancient establishment, though it has undergone several changes. On examining the water from a well in the washhouse it was found to be highly discoloured, and to contain a vast quantity of organic matter, which was poured into it from a cesspool or dunghheap on the outside of the building, and there are runs from the liquid matter of other collections on the premises into a pond in the garden, where a tile drain discharges it at a certain height into the ditches which lead to the ponds in the Abbey Park, passing in the rear of the prison already mentioned. Several houses abut almost upon the Abbey walls, between the Chequers and the gateway which conducts to the Abbey, in front of which is an open space, where the market was formerly held. The strong iron ring, secured to a large stone, and fixed to the ground, was used to tether the bull which was baited here for the amusement of the inhabitants.

*The old house*, called the *Almonry*, is near the Abbey wall, and only separated by a path to the powder-mills, now occupied by several tenants. The first family is Frank Butler's, behind which are two cottages, weather-boarded on the outside, occupied by Jenner and Hayward. They each pay 1*s.* 6*d.* per



week, and are badly ventilated, there being no windows in the rear. Pigsties and open cesspools close to the houses, discharging by fetid ditches into the George Meadow, are much complained of from the smells which arise.

Most of the families here obtain water from a well, close to the abbey wall, where it rises to within a few feet from the surface, at the present time not more than seven feet; the depth is very considerable: at the side is the public footpath.

*The Almonry* is an old timbered house, covered with tiles, and under that part of the roof which is in the occupation of James Jenner, several pigs are kept; and where Ashton Tongs has his rooms, both pigs and privy are highly offensive. The three families who reside here, Mr. E. Holland states, have all had fever; on examining the cellar, it was found to be in a dirty condition, a receptacle for filth of all kinds, and most offensive: how different the state of this old mansion when occupied by the steward of the wealthy Abbey, placed in the midst of a spacious well-cultivated garden, occupied by one family, and surrounded by a healthy atmosphere, instead of the pollution which now lies at the very threshold.

*The three cottages*, in the occupation of Bannister, Hayler, and Inskipp, have within a few feet of them open and fœtid cesspools, and the privies in a bad condition: there is an uncovered drain to carry off the surplus to the ditch in the George meadow.

*Kenward's yard*, formerly the New Inn, and an extensive establishment before the railway destroyed the ordinary traffic on this road; the stables and other buildings are now converted into cottages; five of them have no windows in the rear, and consequently no thorough ventilation.

The well which supplies these seven cottages is about 30 feet to water, and the supply is stated to be never failing.

In a house at the back, now occupied by Thomas Stevens, a privy adjoins the dwelling: the inhabitants have been frequently attacked with fever.

*Miss Freeland's* house has a privy abutting upon the seven cottages in Kenward's-yard, on which it acts very injuriously.

The well here is 25 feet to water, and within 5 feet of the privy; on examining the steining, it is evident that at times the foul water from the cesspool oozes through, and the water is not then in a state for domestic purposes.

*Mr. Kenward* has in his garden a spacious covered cesspool, that receives the drainage from several houses.

*Mr. Gausden*, the butcher, has a slaughter-house in the rear, which is much complained of; on one side is a copper, into which the offal is thrown to be boiled, and the stench which arises from the fumes that escape is an annoyance to the whole neighbourhood. Adjoining is a large sty, and several pigs

were feeding upon flesh. In front was a heap of foul and fœtid matter, 15 feet square or more, together producing an intolerable stench.

After and during heavy rains, much of the contents of this yard is diluted and carried away into the ditches of the meadow at the back of the George.

*Star Inn, Mr. Davis*, the new stable has at the end a dung-heap, which the neighbours say is very offensive to them at all times; the drainage from it passes into a cesspool in the garden of Mr. Gausden. The two privies, which adjoin a building formerly used as a bakehouse, are in a bad condition; some part of this property has its drainage conducted away by the public drain made across the high road, and through the passage between Mr. Ticehurst's and Mr. Flint's, whose houses are on the north side of the street.

*Mr. Dobell*, the pastry-cook and confectioner, has the premises adjoining the Star Inn: here the privy and cesspool are in a bad condition; the right of cleansing them is continued through premises belonging to Mr. Shaw, whose pump also supplies Mr. Dobell with water. When large houses are subdivided among two or several tenants, it is impossible without considerable change in the building to prevent such inconveniences.

*Mr. Shaw's* drains pass into the cesspool of the last-mentioned house; the cellar which fronts the street is made use of as a workshop occasionally. The drain is considerably above the level of the floor, and badly constructed; it leaks in several places before it enters the sewer, which crosses the road.

The foundations are composed of soft sandstone, and in consequence are never dry. The privies, which are at the backs of this and several adjoining houses, are emptied usually twice a-year, at the cost of 8s. or 10s. each time.

*The Lion Inn, W. Leney*, has its drainage conducted across the road; the privy is out of condition, and is a subject of complaint in the neighbourhood. The water is obtained from a well, 57 feet deep, and stands at this present time 24 feet from the surface.

In the garden is a large vault or storehouse for beer, and a brewery, the drainage from which is also across the road, under Mr. Burgess's house, on the north side of the street.

*Mr. Underwood*, the surgeon's house, has, besides its own drains, those of two others passing through it into an open passage which leads to the drain in front; these drains are occasionally very disagreeable.

*Mr. Lawrence's* house and premises are maintained in the most perfect order, and cleanliness prevails everywhere. The drains are covered, as are the cesspools into which they discharge.



*Messrs. Walker and Soanes*, smiths, premises drain also into a covered cesspool at the back, and properly constructed drains carry away all surplus waters into the open ditch of the George meadow.

*Mr. Gausden's*, the butcher. As there are several pigsties, heaps of dung and offal, of the most offensive kind, laying against the wall which separates these premises from the last-mentioned, the whole area around is polluted. The drains of several houses discharge into this common receptacle of filth, and add to the mischief complained of.

*Mr. Marchant* has a well at the back of his premises, which is 35 feet to water; and adjoining almost to the infant school, is a privy in a bad condition: it is frequently cleaned out, at the cost of 20s. annually.

*George Inn.* The well here is much resorted to, as having the character of containing the best water in the town; it is 54 feet deep, and 23 to water. From these premises the drains take two opposite directions, one towards the meadow at the back, the other crosses the road, and continues its course to the north side of the town.

*John Lester*, fly-keeper, has a school-room on his premises, which drain into the George-yard; the privy abuts upon the wash-house, and the expense of cleaning it out is about 20s. annually. The water which is pumped here is good, but of a hard quality.

*Mr. Rose Hilder's* drains discharge into those of George-yard.

*Mr. Johnston*, grocer, has a well 62 feet deep, and 32 to water; the drains of these premises pass into the George-yard; the privies are in a bad condition, and when the cesspools overflow, the wash is towards the George meadow at the back.

*Mr. Parks*, plumber, has at the back of his dwelling eight cottages, which have no openings at the back; three privies are used by the occupants. The drains and cesspool connected with them are much complained of, and upon examining their construction they were found very defective: in the house occupied by *Mrs. Burton*, six persons were attacked with fever. The yard, which once belonged to a carrier, who kept a considerable number of horses, lies very flat, and the drains are on the surface; at times the stench arising from them is unbearable to the 50 inhabitants of the place. Where so many families reside, it is of the utmost importance to provide them with every means to maintain the air and water in a healthy condition; and before cottages are suffered to be erected, or old stables converted into habitations, the entire soil should be removed for some depth, and drains laid below the foundations; these precautions are rarely observed, and the consequence is an ill-ventilated house, standing on an impure and unwhole-

some site, which it is afterwards difficult to remedy or improve.

*Mr. Taylor*, baker, drains through the adjoining premises just described, which adds to the inconvenience already complained of.

*Mrs. Hyland*, milliner's, house: the drains, after passing through the bakehouse, discharge into *Mr. Park's* cesspool, already described as so offensive.

Here are several houses which have been divided into small tenements, and which have one common, though imperfect surface-drain, always giving out unpleasant odours, and seldom in proper repair.

*Mr. Bean*, carpenter, has a deep well; there are two privies in a most offensive state, quite full.

*E. Mankelow Freeland*, butcher: at the back are five cottages and a slaughter-house, with several pigs, and privies in a most offensive state. These three-roomed cottages let for 2s. 9d. per week each, although they are contiguous to so much filth. Fever, of course, is rarely absent from such a neighbourhood.

*Mr. Flint's* house unoccupied; adjoining is *Mr. Ford's*, where the water in the well is not drinkable.

*Mr. Martin*, the solicitor's premises, drain into the ditch of Skipton-lane, where the two cottages belonging to *Mr. Flint* also drain.

The footpath, or Skipton-lane, has a ditch or channel on each side; that on the west receives the drainage of the old Almonry that was situated at this end of the town; the pigsties of *Mr. Eastern*, the shoemaker, also drain into one of these ditches. This is the last house on the south side of the main street; nearly the whole of those we have described on the same side of the way have their drainage in the direction of the meadow, at the back of the George, the watercourses of which run towards the Powder-mills, which eventually discharge at Bulverhythe.

Beyond the Almonry is Watch Oak, where there are four or five cottages on the bank, all of which are without surface-drains or water supply.

On the north side of the Lewes and London-road is a large house now subdivided, and the garden converted into a timber-yard, in which is a well 41 feet deep, of the same quality as that in the public well, below the meadow, in which the wind-mills are situated.

*Mr. Moore* and *J. Lansdell* occupy parts of the old mansion, and in consequence of the two privies and pigsties of the Wellington public-house abutting upon them, these tenants are frequently much inconvenienced. Through *Mr. Moore's* wash-house the whole of the drains pass to the high road, and when they overflow the cellar is under water.

*The Wellington* and *Mr. Inskipp's* premises drain across the road into the ditches of *Skipton lane*, and pass away to the southward.

*Mr. Elphick's*, *Mr. Ford's*, and *Mr. Walker's* premises have their privies and cesspools near the dwellings, and though frequently cleaned are very disagreeable.

*Mr. Dunn* has the house at the corner of the road to *Whatlington* and *Rye*, the privy of which is too close to the road.

*The blacksmith's forge* has a similar privy, which adjoins the dwelling of *Mr. Samuel Slatter*, and from its state is a most disagreeable nuisance. The whole of this district has been visited by fevers, and most of the houses about this corner of the road are deemed unhealthy.

The backs of the houses occupied by *Carrick* and *Holman*, glaziers, &c., are all in an improper and unhealthy condition; there are pigsties and privies adjoining, which not being maintained properly are very offensive.

*Mr. E. Pilbeam*, the baker, has no other water than what he fetches from the public well; the houses of this quarter have their natural drainage into the ditches, which join the river that discharges in the direction of *Rye*.

*Mr. Colgate*, the linendraper, has a drain across the road, and the several houses occupied by *Robertson*, *Richardson*, *Wren*, and *Miss Noakes*, have one common drain passing under the cellar of *Richardson's* house; this at times is very offensive and described as unbearable.

*Mrs. Homeward*, who lives in a weatherboarded house close to several of these open drains which pass near the foundations, has suffered much from low fever. Seven families make use of one privy here, and it is seldom maintained properly.

*The Baptist chapel* has a privy adjoining one angle of the school or vestry-room, it is quite full and very offensive. On the other side this privy adjoins the pantry of *Mr. Homeward's* house, who complained of the injury he sustained during warm weather.

*Zion Chapel* has at the back a pool of fetid water, and in front and back a small burial-ground.

*The Unitarian Chapel*: the only place for interments is in the front court adjoining the road.

The six cottages beyond have, at the top of the garden, a double well of good water, which is reputed to be softer than others in the town.

These, as well as *Mr. Kell's* house, which is nearest to the public well, all drain across the road into the ditch, which joins others that discharge in the direction of *Rye*.

Beyond, on the *Whatlington-road*, is *Cal-bec-hill*, where water stands in the well at six feet from the surface. All round the two windmills there is evidence of an abundant supply of



pure water within a few feet. By a cottage which belongs to Mr. Flint, the grocer, at the side of the road, is another well, where the water has only to be drawn eight feet.

*Mr. Robert Watts*, cottager, on the other side of the road, has a ditch within five feet of the back which, in consequence of a dam thrown across it to stop the sullage, is a considerable nuisance; the open foetid pool is constantly giving out disagreeable and poisonous emanations. The meadow which is, no doubt, benefited, belongs to Mr. Comfort.

*James Lansdale's* house, now divided into eight dwellings, is very much crowded, and surrounded with pigsties and privies in a bad state. There is no water supply.

Between this last mentioned and the High street, are about 15 houses, which are by no means in a good condition. At the back of Stephen Everest's house the gardens have considerable depth, and the privies and cesspools are removed farther away from the dwellings.

At *James Comfort's* garden commences the open, stagnant, and foetid ditch which bounds the gardens on the north side of the town, and which is justly complained of as productive of fever to all the inhabitants within its influence. It is not possible to point out a more disagreeable receptacle than this. Fever was prevailing in the five houses near Comfort's, which were occupied by Drury, Palmer, Sadler, Comfort, jun., and Glazier; the water, which is derived from a pump, is described as sometimes very bad. The drainage of the whole of the north side of the high street runs off in the direction of north and east, following in general the dip of the strata, which Mr. E. Holland states is north-east. The soil is marl and clay, of a very retentive character, and scarcely any percolation through it. All that runs upon the surface is consequently exposed to evaporation, and the smells which arise are driven by the winds towards the whole of the gardens and houses of the town.

*High-street.*—Mr. Sergeant's garden, is crossed by the offensive ditch, almost in the middle of its length; the well water is affected by it, or by the privy, which is close to the kerb.

The houses here all drain in this direction, and serve to augment the matter in progress along this open and disagreeable sewer; in Mr. Farra's garden the ditch has a sudden turn, and by a covered drain is continued to the termination of the garden, where it is again exposed at the bottom of Mr. Holland's garden. Here, a privy of the adjoining premises, belonging to Mr. Bunkar, is very offensive, draining through the brickwork. In such situations, where narrow slips of garden ground occur at the backs of the houses, or confined court-yards, it is scarcely practicable to make a wholesome and agreeable arrangement, without adopting a system of back

drainage, aided by an abundant supply of water. The privy cesspool, usually placed on the boundary-wall, cannot but be injurious to the neighbours, and though constantly cleaned, it is never free from smell, and at all times acts prejudicially upon the air, if it does not entirely poison it. The garden ceases to be a place, wherein to breathe a pure and wholesome atmosphere, nor can it be made what it ought to be, without means are provided, carrying away under ground all that possibly can contaminate either the soil or the water.

In several cases, defective drains pass from one house to another. Mr. Farra, Mr. Langley, and some others, have a common drain, under Mr. Denyer's house, which is a source of constant annoyance.

*Denyer's Yard*, comprises six or more small cottages, where pigsties abound; these with privies close to the dwellings, are injurious to the health of the occupants; the drainage is all on the surface, passing along the passages to the great black ditch already described.

*Mr. Burgess* has a drain under the back parlour of Mrs. Ray, then through Mr. E. Holland's, the surgeon, who at times cannot occupy his house; the drain passes under the kitchen, proceeds under Mr. Ward's premises, Mr. Tell's, and Mr. Wel-lar's. In addition to this imperfect drainage, one of the town sewers, the effluvia of which is described as intolerable, also passes under Mr. E. Holland's buildings, and this medical gentleman had four cases of typhus in his own family, which he attributed to the state of the drainage; every means he could devise had been practised, to cure the evil, but it is in vain, until some comprehensive plan can be adopted, to discharge thoroughly and uniformly the entire sewage of the town. Premises of several individuals are crossed with drains from houses on the opposite side of the street, and it is scarcely known what is discharged by them, or to whom the right of cleansing appertains.

In *Mr. Ward's* premises, the drain of so many houses is continued, and so near the surface, that he was obliged to make a separate outlet into the town ditch, and close up every aperture and communication with the original; the smell which proceeded from it being at all times so very offensive.

Upon examining this peculiar quarter of the town, occupied by some of the most respectable inhabitants, who are most desirous of maintaining a pure air around them, it was not astonishing to learn from Mr. E. Holland, that three daughters of Mr. Eldridge, three children of Mr. Burgess, the tinman, and three of Mr. Slatter's, in addition to his own four, were all attacked with typhus fever last year.

The back fronts of all these dwellings are within the influences of the ditch referred to. Besides these cases, Mr. G. King



had five of his family similarly attacked, and in Johnson's Yard, a whole family (Burton's) suffered from malignant typhus.

The drains from Mr. Robert Watts, Mr. Burgess, Mr. Ray, Mr. Ward, Mr. Till, Mr. Wellar, Mr. Slatter, and others, communicate with the town ditch, which passes through Mr. Wellar's passage, and at the privy of the last mentioned, the drains all meet, and at half way down Mr. Wellar's garden, proceed across Mr. Slatter's, by a culverted drain, into the ditch at the bottom, where all the fœtid matter is again exposed as far as Mr. Ticehurst's garden.

*Mr. Flint's* drains cross Mr. Ticehurst's, and again the town drain passes under two cottages, frequently discharging into the cellars, and at all times oozing out; three deaths from fever occurred here.

Twelve-inch earthen pipes have been made use of to drain part of Mr. Ticehurst's premises; but as there is no regular or sufficient supply of water, they are not very effective in their discharge. The houses occupied by Mr. Flint, Mr. Pemble, and Mr. Finden, make use of them, but they all complain of the bad state at times of this, their only outlet or discharge.

*Mr. Young*, the solicitor, occupies an ancient house on the side of the town, nearly opposite the Abbey gateway. Here was a case of typhus, during my inspection of the town, and upon examining the drains, one was observed to pass through the body of brickwork of one of the massive chimneys on the west side of the house. The foundations, in consequence, were always in a humid state.

The surface drains of Messrs. Sampson, Vidler, Halfmoon, Wright, Langly, and Martin, all discharge into the open ditch; those of Messrs. Seely and Parry, Battle Academy, do the same, and at Mr. Watts, the surgeon, the larder window is immediately over one of these drains, producing of course, very injurious effects, independently of great domestic inconvenience. These premises are maintained in the most perfect order, but no individual attention can obviate such annoyances. On the eastern side of the garden, a neighbour's privy, that abuts against the wall, threatens its demolition.

All the other houses between this and the Deanery-road, have their drainage towards the south, and into the same open ditch, which commences at the back of Comfort's house. Several persons, in its course, by endeavouring to arrest the matter it contains, to fertilize their gardens, have formed small ponds, or thrown a dam across it, which is highly injurious to the health of the town.

SLAUGHTER-HOUSES.—There are two or three in the town, the condition of which requires some amendment; they are in

the rear of the butchers' shops, and amidst dungheaps, privies, and several very offensive pigsties: the whole of the inhabitants within a limited distance of these establishments have just grounds of complaint, and the sight of the pigs feeding upon offal was sufficient to show the necessity for supervision which should prevent a practice so highly injurious to the health of the consumers of these animals. For so small a population one slaughterhouse with proper arrangements for killing the animals would be found sufficient; this on the outskirts of the town, where drainage and a water-supply could be rendered perfect, would be of great advantage to the butchers themselves, who would find their meat less readily affected by every change of atmosphere, if slaughtered and hung in a purer air. In the large continental towns where abattoirs have been for years established, proper rooms are provided for that purpose sufficiently distant from every chance of contamination, and the meat is not removed until it is required to be cut up for sale. A limited space is most injurious in an economical point of view, for the putrefaction that takes place in one piece of meat is immediately communicated to any that may be within its influence; the morbid virus acts upon the animal system as yeast upon liquids containing gluten and sugar: in a dry atmosphere the poisons remain a long time unchanged, but when humidity is present they are immediately decomposed and rendered noxious.

**BURIAL GROUNDS.**—The churchyard (in which stands St. Mary's church), is the chief burial place of the inhabitants, although there are three chapels which have small plots of land in which some interments have been permitted. St. Mary's church was founded about the commencement of the twelfth century, since which time probably not less than 20,000 interments have been made, and taking the area of the burial ground it has been used 20 times over during the last 750 years.

Mr. Rouse, the sexton, says he cannot open a grave in any part of the soil which has not been several times disturbed, and that he has a difficulty to avoid cutting through the remains of those previously deposited.

Two drains cross the churchyard in the direction of the dean's pond, at the south-west angle of the deanery, where typhus fever has occurred.

Beneath the chancel of the church is a spacious vault, in which there are 27 coffins principally belonging to the family of the Websters. It is said to have been constructed in 1780 for the reception of the body of Sir Whistler Webster, but afterwards several bodies were removed from Waltham Abbey church, which had been deposited there previous to 1716. It is a curious fact in the history of interments, that the body of



Harold was taken from the battle field to Waltham, to be buried in the Abbey he had founded, and that the proprietor of the estate where the battle was fought, and on which Harold lost his life, should have disinterred his family at Waltham and re-buried them here.

On examination of the registers of burials in the church, it appeared, that during the seven years ending Christmas 1849, there had been 287 funerals, whilst the deaths by the Registrar's account amounted to 436 for the same time. The baptisms also registered in the church for the same period were 539, whilst 746 had been registered by Mr. F. W. Ticehurst, the Superintendant-Registrar.

## REMEDIAL MEASURES PROPOSED.

**WATER-SUPPLY.**—To supply each of the 260 houses in the town with 100 gallons of water daily would require 26,000 gallons for the whole, or  $9\frac{1}{2}$  millions of gallons annually.

A reservoir, 500 feet in length, 50 feet wide and 10 feet deep, holding 38 days' consumption or more, would cost about 1,250*l.*, and the iron mains for distribution 350*l.*, altogether 1,600*l.*

In all probability, the entire quantity of water required could be gathered around the two windmills which are situated at a little distance north-west of the town, where there appears to be 50 acres of land that would constitute a good gathering ground; if it is found by boring that the present water-bearing stratum has one regular dip without any fault or fissure, the whole of the water might be collected at one spot, but should that not be the case, then several reservoirs of smaller dimensions might be formed instead of one large one: the stone quarried in the hill would be admirably adapted for their formation, either used with common mortar or puddled with clay.

	£.	s.	d.
Expenditure . . . . .	1,600	0	0

### *Income.*

260 houses upon an average paying 10 <i>s.</i> per annum	180	0	0
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### *Current Expenses.*

	£.	s.	d.
Interest on Capital . . . . .	94	13	4
Management and Repairs . . . . .	85	6	8
	<hr/>		
	180	0	0

**SEWERS FOR GENERAL USE.**—As the town of Battle is built upon a ridge of land, with a fall, both north and south, it will be necessary to provide two or three outfalls for the sewers, one in the direction of the meadow at the back of the George Inn, another in the meadows north of the church, and probably the third near the present gaol; but until an accurate survey

has been made, and the levels taken, it would be impossible to do more than suggest the sites where the sewage waters could be most economically and usefully received, or the probable cost of the sewers.

About 2,000 yards of tubular drain, varying in diameter from 6 inches to 12 inches, would suffice to collect at the backs of the houses whatever was discharged from the water closets or sinks, the cost of which, including the laying, would not amount to more than 1,000*l.*; and supposing this sum to be borrowed for the purpose, and repaid by equal instalments of principal and interest in 30 years, the average annual payment would not exceed 59*l.* 3*s.* 4*d.*, for which a rate of less than 6*d.* in the pound, upon the 260 houses, would pay.

The houses rated at 5*l.* per annum would have to pay a sewer-rate of 2*s.* 6*d.* annually, for the benefit of a perfect drainage; and when it is considered that the expenses attending the cleansing the cesspools and privies will cease, it must be admitted that there is really economy in maintaining the premises in a cleanly and healthy condition.

	£.	s.	d.
Drainage expenditure . . . . .	1,000	0	0
<i>Income:—</i>			
260 houses, 6 <i>d.</i> rate, would produce about .	75	0	0
<i>Current Expenses:—</i>			
	£.	s.	d.
Interest on capital . . . . .	59	3	4
Expenses and repairs . . . . .	15	16	8
Total . . .	£75	0	0

Tanks for the collection of sewage water, will, in all probability, be required, at no distant time. The main sewers should, therefore, be laid, so that reservoirs may be constructed to receive it when its value is duly known and appreciated.

Annually about 10,000,000 of gallons could be collected, or 250,000 tons, which, if suffered to remain 24 hours in a reservoir, would yield, by subsidence alone, 200 tons of solid matter, more valuable as a manure than guano, and equally portable.

By adding lime to the sewage water another 200 tons is obtained, which, at 20*s.* a-ton, would produce 400*l.*, conferring on agriculture a vast benefit, and producing a revenue, which, carefully administered, would defray the entire cost of collecting it and of water supply, so that no rate would be required for either sewers or water.

Another advantage derived from utilizing the sewage is, that after the valuable properties are taken out, the remaining water

may be suffered to pass away in open ditches, no smell or offensive property remaining in it.

The stone of the neighbourhood might be beneficially used for the construction of the manure tanks; the side and end walls, with the arch over, roughly constructed and puddled with clay at the back, would render it sufficiently retentive, and the cost of several such tanks would not amount to a large sum. It must always be remembered that the higher the culture of a district the greater must be the quantity of manure required, and that wherever there is any deficiency there the crops will be diminished.

The liquid excrements of man and animals supply the largest proportion of nitrogen, and the greatest increase in the growth of a crop of corn or hay is obtained exclusively from that element.

The tanks observed in the several gardens for the collection of sewage waters, and which are exposed to evaporation, are by no means so profitable as they might be if covered over. The ammonia is not retained, and as it is asserted that from every pound evaporated 60 pounds of wheat might be produced, it is truly lamentable that the subject should not be properly studied and understood.

All dung heaps, or receptacles of solid or liquid excrements, should not only be protected from the rain, but also from evaporation, as the first contain the insoluble, and the latter the soluble phosphates, as well as the potash.

When a crop is removed from the soil, the exact proportions or quantity of nitrogen it contains should be returned to the earth to furnish another. That nitrogen contained in the corn consumed in a town should be again collected and carried back to the farm that produced it. The urine of man contains four times as much nitrogen and phosphate as that of a horse, hence its importance in agriculture.

It has been admitted that the liquid and solid excrements of one individual will annually produce 16 pounds of nitrogen, or the quantity found in 800 lbs. of wheat; from the population of the parish of Battle nitrogen might, therefore, be annually obtained to yield what is contained in 5,000 quarters of wheat.

**WORKS TO BE PERFORMED BY THE OWNERS OF HOUSES.**—The main sewers having been laid down to collect what passes from the several houses in the rear, and to conduct it away from the town, it will be necessary that each owner or occupier should make such changes in his property as will enable him to benefit from what has been performed at the public expense. It will be requisite, in the first place, to fill up the cesspools wherever they exist, and in lieu of the present privy to substitute a four-inch pipe, a water-closet apparatus complete, with stool-cock, double trap with sink, a stoneware kitchen sink, a two-



inch pipe, and a leaden water supply and cocks, the cost of which has been found to vary from 3*l.* 10*s.* to 4*l.* per house.

Experience shows that no habitation can be healthy that is imperfectly drained, or which has, within a few yards of its foundations, collections of matter in a putrescent state, giving out to the air pestilential gases; also that fireplaces are requisite in every room where other means of ventilation are unprovided. Instead of its being a loss to the owners to put their houses into a sanitary condition, it will be found to produce higher rents and a better class of tenants; for, without doubt, where premises are in a condition to assure health and comfort, more persons will be found to hire them, and consequently a better rent will be obtained; the extra 2*d.* or 3*d.* per week demanded by an owner as a compensation for the expense of putting his premises in order would never be refused even by the poorest inhabitants of a town, who are already perfectly aware of the advantages they derive from the occupation of premises well supplied with water and provided with a perfect system of sewerage.

#### ABSTRACT OF EXPENDITURE AND INCOME.

##### *Expenditure—*

	£.	s.	d.
Water-works . . . . .	1,600	0	0
Sewers . . . . .	1,000	0	0
	<hr/>		
	£ 2,600	0	0

##### *Income—*

	£.	s.	d.
Water . . . . .	180	0	0
Sewers . . . . .	75	0	0
	<hr/>		
	£ 235	0	0

##### Deduct current expenses—

Water-works . . . . .	180	0	0
Sewers . . . . .	75	0	0
	<hr/>		
	£ 235	0	0

We may further add here that if the sewage water is ever disposed of to improve the land in the neighbourhood of the town, the value of it, after deducting the expenses of collecting it in tanks, and preparing it in a dry state, will be considerably more than 235*l.*, or quite sufficient to pay the current expenses.

#### RECOMMENDATIONS.

As the town of Battle is at present entirely devoid of proper sewers, and its sanitary condition complained of in consequence of the number of cesspools and nuisances scattered

along the rear fronts of all the houses, and it not being possible to introduce an economical system of main sewers to receive the drainage at the backs of the houses without the powers contained in the Public Health Act, I most earnestly recommend its immediate application to the whole parish of Battle.

2. That a Local Board, consisting of nine properly qualified persons, who are rated at above 20*l.* per annum be established.

3. That proper sewers for collecting the sewage water be laid down at the backs of the several houses in the town, and to lead it away to two or three convenient situations where it may, at a future time, be made available for agricultural purposes, and where the surplus water may be discharged easily.

4. That every owner or occupier of a house at once should empty, cleanse, and fill up all cesspools at present in existence, and be provided with tubular earthenware pipes, proper watercloset basin, sinks with the most efficient means to lead off all sullage and waste water into the main sewers.

5. That in future no houses or cottages shall be built on sites deemed unhealthy, or where the space around them is not sufficient to allow free ventilation and ample light.

6. To establish one general slaughter-house for the use of the butchers of the town.

7. To provide a piece of land for the interment of the dead, and to prevent any more graves being opened either in the church or burial-ground around it.

8. To provide gathering grounds for an abundant supply of pure and wholesome water, to construct reservoirs for its reception, and to lay down mains for its distribution throughout the town.

I have the honour to be,  
My Lords and Gentlemen,  
Your most obedient and faithful Servant,  
EDWARD CRESY,

*Superintendent Inspector.*

20th August, 1850.

