Preface

In presenting this Thesis for the degree of B.Sc. in the Department of Public Health, the indulgence of the Examiners is requested. These notes were originally intended to form the basis of a thorough sketch of the District examined, some illness having prevented this plan from being carried out, so that they are now presented in their present form, without the Diagram and Maps which were to have illustrated the text.

The Statistics have been calculated from the returns of the local papers and such like sources, and as they extend over portions of different years are only approximate, but illustrate the points touched on near enough for the purpose of comparison.

For the sake of simplicity, this paper has been arranged under the following heads:

1. Districts
2. Population
3. Life
4. Water supply
5. Vital Statistics
6. Drainage
7. Removal of Dust
8. Dissears
9. Registration of Disease
10. Vaccination & Revaccination
11. Inspector and Remarks
12. Examples of sanitary inspection made

The subscriber to further the interests and study of sanitary science, with it is to be hoped, excuse the many faulty and crude ideas in this imperfect sketch.
Sanitary Notes in a London Suburb—
The following are a series of notes taken during the last 18 months in a portion of the North West District of London.
The intention was at first to gain a complete sanitary report of the whole portion of the District examined, showing the drainage and parts being at present built on, marked out on large maps—The difficulties however thrown in the way of obtaining any plan at all of the drainage were so great that, that part of the report had reluctantly to be abandoned—Since then the whole drainage system has been placed under review, and plans will shortly be sent in, for one combined system which is to unite the whole district into one as far as drainage is concerned. The many objections to any such plan from petty local interests and jealousies, can be more easily imagined than described, so that such a combination although urgently needed is often delayed indefinitely—Great pressure has however of late been put on the representatives to that an early
solution of the difficulty is expedited.

The District is divided into Urban and Rural.

The Urban portion is comprised of two distinct Sanitary Districts (which will be called W and H respectively), each provided over by their own local authorities and working independently of one another. The Rural portion is comprised of the two Districts already mentioned and a third independent authority of which however little notice will be taken in the sketch, it being an outlying District and one almost entirely Rural and connected but little with these former.

The population of District W may be estimated at about 19,000 and that of District H at about 16,000 making a total of about 35,000. The Urban portion, comprising the Districts W and H contains about two-thirds of the entire population making in all a total of about 24,000.

The Rural portion containing the remaining 11,000 inhabitants, has scattered about several small villages, and on the outskirts of private homes, large mansions standing on their own grounds, together with the
The average number of farm-houses and their accompanying stable, out-houses, and labourers’ cottages. This portion of the District lies at a much greater height than the urban portion and is considered to be one of the healthiest parts of the Metropolis.

The soil is one almost the entire District a stiff clay, which in some places extends to a depth of over 17 feet; this fact renders the lower portion of the District (which is chiefly comprised in the Urban District) very damp and consequently changes the character of the diseases of this part, more especially as the population of this portion of the District cannot be less than about 12,000 and includes nearly all the poorer and working classes.

The Water Supply is fairly good. It is supplied chiefly by the W—M— Water Company and is filtered by the Company at their Works before delivery. During heavy and continued rains however, the water is frequently supplied in only a partially purified state, being in fact quite muddy and containing many impurities,
so that at such times a second filtration is needed before it can be used for drinking purposes. The chief defect arises, however, from the way in which the water is stored after its delivery by the Company. One can hardly credit the fact that in this city, where, as Dr. Sanitary Lectures are being delivered at short intervals, the papers meanwhile writing continually on the subject, that houses are being erected every day, with the water cisterns in direct communication with the sewers and water closets. The overflow pipes being open unscrewed pipes directly communicating either with the soil-pipe or the sewer and the cistern containing the drinking water also supplying the closets by means of the ordinary plugs. This state of matters is not, as one would imagine, confined to the poorer class of houses, but is even to be seen in some of the best houses in the district. An illustration will perhaps give a better idea of the culpable ignorance of Landlords and Builders on this subject, see Nos 1, 2 and 4 of Sanitary Inspections at the end, pages 21, 25 and 31. These being good examples of the common mode in which the water
water is contaminated, and are taken from
numerous cases in different parts of the district.
The plan of placing a cistern under the floor
of the upper rooms in a house, cannot be too
strongly condemned; not only is the cistern
liable to contamination from dust and
other matters passing through the floor,
but it is a matter of frequent occurrence
to find mice drowned in the water and allowed
to remain there till perfectly putrid, and then
the cistern from any cause be nearly supplied
the putrid remains are carried down the
pipe, the reason being that at the first
joint or bend, they completely choke up the
pipe. So far from this being rare, I have
known it to occur no less than three or four
times during a single year. These rooms also
being and as sleeping rooms for servants or
children they are thus exposed to the bad
odours proceeding from the contaminated water
as well as the sewer gas passing up the un-
trapped overflow pipe. It is a question
worth of consideration as to whether, in
delicate children and peculiarly susceptible
persons, the presence of a mass of water
contaminated
contaminated by organic and other matters in their sleeping rooms may not render them more susceptible if not in some cases quicker to disease.

The Vital Statistics can only be given roughly as not having access to the materials for an absolutely correct statement only an approximation can be given. The following are the results obtained:

- Birth rate about 45.00 per 1000
- General Death rate about 21.501 per 1000
- Death rate of children under 5 years old is however very high being about 45.50 per cent of the total number. This may be accounted for in various ways, the great influx of the working and poorer classes from other parts of the Metropolis, together with the prevalence of Pneumonia, Scarlet Fever, Infantile diarrhoea etc during the period examined.

The Drainage of the urban district is connected with that of the Metropolitan system, while that of the rural portion is almost entirely into open ditches and cesspools. The latter are chiefly found where building is going on. A few of houses
is perhaps being built in a new road, there is no system of drainage connecting it with a common sewer, so to save trouble unincemented cesspools are simply built, and the houses either sold or let; the unfortunate tenant of course knowing nothing of these arrangements, no plan of the drainage being procurable. The liquid portion flows through the brickwork leaving the main solid portion to accumulate indefinitely, or until the drainage of the road is examined, in account of the frequent complaints made by the owners and tenants. The fact of building a cesspool is known but not always gone through, it having been discovered lately, when laying a new drain in a street, which has for some years been partly neglected, and which was thought to be properly secured and connected with the main drain. That the drain from a row of four houses, merely passed into holes dug in the clay, with no attempt to provide a more efficient outlet, and when it is stated that in the adjoining street it has also very lately been discovered that the sewer has a fall of three feet. The wrong way
...from the main sewer, some idea may be formed of the terrible state of neglect that may occur when there is no responsible person to inspect and see that all drains and sewers are properly constructed. Surveyors have since then been appointed, but owing to the impossibility of continually watching all the buildings in course of erection, they have to trust to the plans of the architect, which however are often altered and modified. The workmen also do not or will not understand that drain pipes must be laid firmly and be properly jointed. As an instance of this a personal friend has been obliged to have his house drain lifted some three or four times, and in no instance has it been properly laid and cemented. The first time there was a fall of some two feet into his cellar, and since then there have been accumulations at various points in the garden through which the drain runs. The whole drainage of the

District is now as has been before mentioned under

period, and it is to be hoped that all the new buildings will then have to conform to the General plan, in the meantime however,
These evils are rapidly accumulating, and becoming every day more and more difficult to cope with.

The Removal of Dust is undertaken by contractors now working under the Sanitary Authorities, and under the inspection of the District Surveyor and Inspector of Nuisances. The Dust carts are however allowed to become full, and the contents are in many cases so putrid as to be easily smelled at some distance. The Dust carts are supposed to go round once a week, but they cannot be always got to do so, and disregard the ticket in the window marked with the letter D which is their signal. The dust in this accumulates for a month or even six weeks, the servants continually neglecting to put the ticket in the window on the day appointed or the Dustmen neglecting to attend to it; meanwhile the whole house is pervaded with the smell from the putrid mass, the dust box being always placed close to the room and usually next the kitchen. The Dustmen also expect to have "beer money" given them each time they come, and should any person refuse to pay this enforced tax, he or she is allowed to wait.
wait week after week for the removal of the dust and when by a complaint lodged with the Inspector they are forced to remove it, they make every thing as disagreeable as possible and leave the whole place in the greatest possible state of filth. This is no overdrawn picture, but what occurs every day, and shows the want of a thorough inspection and control over such important matters. The mistress of a house cannot prevent the servants from throwing vegetable and animal refuse into their pits and the consequence is that they are sure to be sooner or later a nuisance and injurious to the health and sanitary state of the District.

The Diseases most fatal have been those of the Respiratory system, which are about 21 per cent of the total. This might have been expected from the state of the soil, and the manner in which the greater proportion of the inhabitants live. The foul air arising from imperfect ventilation, overcrowding, etc., as well as the constant exposure to damp and cold, and the depression of the powers from imperfect nourishment, all taking their part in the production of these as well as other diseases. The death among children alone from Diarrhoea and Dysentery.
amount to about 7 per cent; this mortality was chiefly among children not more than a few months old and occurred chiefly during the Summer and Autumn months. Many of the cases also registered as "Convulsion" may I think be claimed under this heading also, and would very nearly double the percentage, as it is within my knowledge that cases which had suffered from Diarrhoea for some time, the infant finally dying in convulsion, but claimed as convulsion only and registered as such.

The Register General's remarks on this point in a late report, strike me as at the time as worthy of note. The Districts under the heading of Scurvy and Wasting amount to nearly 9 per cent. Showing the debilitated class we have to deal with.

About 20 per cent of the deaths were from Typhoid Fever, Scarlet Fever, Diphtheria and Typhoid Diarrhoea, and Dysentery and Erysipelas.

About 4 per cent of these being from Typhoid Fever, not including many that were removed out of the District to the Hospitals. The state of the drainage as already reported, and seen by the Inspectors at the end of their paper, would hardly account for a much larger death rate.
than this, which it is to be noted is merely, the
Death rate, and not the number of the cases
occurring in the district, while I know from personal
observation to have been very numerous. The same
may be said of Scarlet Fever which had in one portion
of the district a mortality of about 1 in 15. (The
Death rate being about 4.5 per cent) while
from observations made it was in many parts
seen less. The presence of several cases of Diphtheria
and Ophthalmia also point to serious sanitary
objects. Measles was also exceedingly prevalent
but strange to say no deaths were for some time
registered under this heading, the fatal cases
possibly being included under those of the
Respiratory system. This leads naturally
To the all important subject of
The Registration of Diseases, compulsory in
most cases as well as fatal
Or no reliable statistics can be obtained. But
The question immediately arises, who is liable? It
seems more rational to put all registration
on the same footing. Those who are liable for the
Registration of Births & Deaths should also be
liable for the Registration of Diseases. The
contagious and infectious diseases are of course
of
of primary importance and it is with reference to these that measures should be immediately taken, as every day new cases are propagated by the utter carelessness and want of precaution on the part of those affected. During the last year case after case of smallpox has occurred which has never been reported to the Sanitary Authorities (the medical men also I am sorry to say often encouraging this neglect) mean while the relations and friends attend to their business as usual, taking no precautions as to disinfection, although visiting the patient or living in the house, and so spread the disease far and wide. Some of the poor always waiting for a medical man, till the last moment. The room the patient lies in, being often the one room of the family, where the children and friends all assemble, what wonder is it that the disease spreads with such rapidity and violence. Cases like this occur every day, for instance a young lad was having caught the disease but lightly travelled from the other side of the city and finally walked into the consulting room of a medical friends with the smallpox eruption well marked on his face.
and forehead. The Public Institutions are also not blameless. The friends of patients suffering from Smallpox being allowed to visit them in the Hospitals, no precautions as to disinfection being enforced. They of course return home by the usual conveyances, and to expose hundreds of their fellow passengers to the chance of infection. An case also occurred in which a nurse was sent home from one of the Hospitals, taking in Smallpox patients, having as she stated had all her things disinfected and clean things given her, and not allowed near the patients for some time before her departure. The girl slept with her mother who had not been re-vaccinated. Happily for that the mother very shortly developed the disease and sent for a Medical man only when compelled to do so by the owner of the house they lodged in, and soon there never said anything about her daughter having been a nurse to Smallpox patients. It was only by inquiries questioning that the fact was at last discovered. The mother then volunteered the statement that she noticed that her daughter's hair had a peculiar smell, so that she could
not slept with her again, tell it had been washed, all her clothes having been clean and thoroughly disinfected. This seems to have been the source of contamination. Another mode of propagating disease which could not happen if compulsory registration were in force is by sending bedding to the cleaners without stating for what cause they are disinfected, or as occurred in the following case giving a wrong disease. A Dyer and Cleaner's boy was sent to a house to fetch some bedding. The reason given was that the children who had used the bedding had had diphtheria. The boy took the bedding to the shop and in a few days began to feel ill and finally developed an extremely severe attack of smallpox to which he very nearly fell a victim. This may possibly not have been the source of infection but it was the only one which would correspond with the attack. The boy when convalescent stated that the smell from the bedding made him feel sick soon while carrying it.

Next but quite as important were Vaccination and Revaccination which should also be insisted
involved on - The strong feeling on this subject and consequent evasion of the law is much greater than is generally credited. During a little more than a week's private inquiry on the subject, I found no less than ten children who had never been vaccinated, and on questioning the parents as to how they had managed to evade the Vaccination Officers, I found that their plan was directly. They received a notice, they moved away from the place where the notice was posted. In one family in which there were three children unvaccinated, the eldest being 10 years old. I found that the parents had moved with each child and had with the last come all the way from the North of England to escape the visit of the Vaccination Officer. With a wandering population like this, the only means of knowing whether vaccination has been performed or not is to have some system of certificates, as for instance, the School Board requiring a certificate with every child that it has been vaccinated. Such a certificate to be retained by the parents and the absence of such a certificate considered.
considered a proof that the child has not been vaccinated, and the operation to be performed forthwith. The certificate then filled up and delivered to the parents. Re-vaccination being also marked on the certificate at the proper interval.

A system of systematic inspection is now being carried on by the sanitary authorities in district W which must in time remove many of the sanitary defects observed, but the remainder of the large district is still left without any regular sanitary inspection. The sanitary authorities are at a distance and arrange matters so as to do as little as possible to interfere with "vested rights". The system, one whilst the numerous fires are built in perhaps what calls for most notice, the dwelling houses of the calmer and care-taker, inhabiting these places, are placed over the stables, and the smell from the horses, open drains and heaps of manure is really beyond description, how such long habits can reconcile them to it is a mystery. The stables are sometimes let to butchers who...
Keep pigs, sheep and other animals in them, for slaughter. These stables are
the worst, as they are cleaned but seldom;
and the heaps of manure and refuse allowed
to accumulate until they are obliged for want
of room to remove them. At one visit to a case of
this kind, the smell was so strong that it positively
turned the stomach and brought on pitching. The
stable was crowded with sheep, and had not been cleaned
out for six weeks, this being during the warm
summer weather. Also this stable a large family
lived, the mother having only just been confined.
The point was that the poor woman suffered for some
time from blood poisoning and was with difficulty
and after a long convalescence restored to health.
The odour from the dung heaps which are placed
under the windows effectuallyprevent any pure
air from entering these dwellings. The want of
a surveyor directed and assisted by the sanitary
authorities to watch the construction of stables, and
all other buildings, is self evident; the difficulty
being to get a thoroughly efficient man for the
miserable pittance that is usually offered both
to the surveyors and the sanitary officers. Until
more enlightened views are held by these gentlemen.
Who have the sanitary charge of our cities and villages, or until sanitary appointments are made entirely by the Government, and independent of local authority, it is to be feared that little progress will be made, however of late more interest is being taken in these matters, which are of vital importance to the well being of the nation at large, so that we can but look forward with the hope that in a few years hygiene will be taught in all our public schools and colleges and a knowledge of its principles diffused throughout all classes of society. In the meantime it rests with medical men to point the way, and by constantly bringing before their patients and friends the sanitary defects they discern lead them to correct and prevent their future occurrence.

The following are a few examples of inspections made, which have been referred to in the text, and which are shortly given for the sake of reference.

No. 1.
Sanitary inspection of a house the rent of which was £100 per annum, and situated in one of the best streets. The children and family generally having been there for many years.
been in badhealth and continually suffering from some malady, having had in turn Mela
Zaal, Tonsillitis, Diphtheritic sore Throat, Low
Fever, Diarrhoea etc. etc. They were at last obliged
5 to move to the seaside, and a sanitary inspection of
the house recommended to be made.
Report No. 04 - 05 - 73 June 1773
The house is four storied, the basement being
very little below the level of the road. The third
floor, i.e. the top flat, was the first inspected, and
contained the nurseries and servants' rooms.
Under the floor of the room which had been and
as a nursery, was found the cistern which
supplied the closets on the second and third
floors and by means of taps on a side from
each floor the bedrooms. The water in the
5 cistern was greasy and dirty looking, the
5 cistern being filled with the debris from the
floor, and having a coating of a greasy sort of
muck, the cistern not having been cleaned out
since the present family arrived. The water
smelt bad and had a nasty musty, sickly
5 taste; the overflow pipe was an iron and a half
zinc pipe, having an up draught which could
be felt with the wet hand, and was almost strong
5 smell

Example
enough to blow out a candle applied to its mouth.
The smell was that of a sewer, and in one of the
devices being used below because of gas or air were
seen issuing from the supply pipe and a sickly
odor perceived. The second floor contained
the bedrooms, a water closet being on the landing
and a sink supplied by a pipe from the cistern above.
The sink was connected with the closet pan and when
the closet was used a smell was also perceived from
this pipe. The water from the tap not only supplied
the pipes in the bedrooms but also had at times
been used for drinking purposes.
The arrangements on the first floor were similar
to those on the second. The basement containing
the kitchen, scullery, buttery, pantry and room
was next examined. A disagreeable smell pervaded
this part of the house, becoming stronger as you
entered the scullery which opened into the kitchen
and was paved with stone flags. On the right
hand side was the large State cistern which
supplied the drinking water and a self-acting
boiler in the kitchen, on the left was a servant's
W.C. and pot-packs, while opposite the door was a
sink as seen in the diagram. The water in the
cistern was clear and as far as could be discovered
by
by taste and smell, fit for drinking purposes. The overflow pipe however was in direct communication with the drain, it could be traced till it passed through the stone floor beneath the sink, a candle applied with orifice showed that a strong updraught was present. The sink had merely one of the common bell traps which however seemed not seldom and as it was placed on a ledge beside the sink leaving the pipe open, there also there was a strong updraught. On examining the space below the sink another bell trap was discovered in the stone floor, this was firmly fixed in its place, but also showed an updraught which had a sickly smell. The W.C. on the left-hand was next examined, the small landing you at first entered was fitted with shelves and used for keeping the pots and kitchen utensils on. The door of the W.C. was pierced with holes at the top for ventilating purposes. The smell on entering it was disagreeable in the extreme, it being one of the common open pan closets. The closet was supplied by a small cistern above and had a small window placed in the wall, about 12 inches square, which had how ever been carefully stopped up with a bag of straw. In the Butler's pantry there was also a sink
sink, which was in the same state as that in the
scullery. From the court-yard it was seen that
the soil pipes from the closets on the first and
second floors pierced the wall and led directly into
the sewer. They were without any ventilating
pipe and no overflow pipe could be discovered.
This is not a solitary example all the houses in
the road being built on the same plan and the proof
that the sanitary state of the house alone was the
cause of all the sickness, it may be noted that since
these defects have been remedied, according to the
recommendations in the report, the family has
had no serious illness, nor cannot of course say
that all the sickness they had previously suffered
from be directly caused by the sewer gas in the
house, for there can be little doubt, but that owing
to the low state of the system produced by this sewage
poisoning they were more susceptible to the attack
of such diseases, and when attacked were in much
greater danger and convalescence much more
protracted than would have otherwise been the case.

No 2. Inspector of the — E. — Villa, a semi-

Attached villa consisting of a basement
about 6 feet below the level of the road and two flat
with an attic consisting of a single large room
and
and as a servant's room, under the floor of which was a zinc cistern which supplied the closets on the second floor and basement together with the bath and a small sink in closet. The overflow pipe was traced downward and found (after being joined by the waste from the bath and sink in closet) to enter the soil pipe (see diagram a-a) having only a slight dip to act as a trap, while however each time the closet was used became untrapped and consequently useless, there being at three times a strong updraught of sewer air, not only from the overflow pipe of the cistern beneath the floor but also from the bath and closet sink. The first floor containing nothing of importance the basement was next examined. The plan on the next page will show more easily than can be described the arrangement of the soil pipe, W.C. and the scullery with its cistern and sink. The overflow pipe of the cistern was an open untrapped pipe leading directly into the drain beneath, and had a strong updraught. The sink had also an untrapped pipe leading into the drain beneath, and at intervals when the closets were used the smell was very strong. The servant's W.C. was an open pan flushed by water from the cistern in the attic. It had
had bottom a very bad smell which owing to the cement below being cracked and not carefully joined pervaded the lobby and room adjoining from the outside it could be seen (Diagram A) that the overflow pipe of the bath, cothen and closet sink all joined the soil pipe at the point this was found first by pouring water down their respective pipes and hearing it run down the soil pipe. The Rain pipe also was connected with the soil pipe by the pipe running beneath the lower lobby window see Diagram (B) of (p.) so that when the windows (W) were opened the stores proceeding from the soil pipe and drains entered the house.

Previous to the family entering the house it was subsequently discovered that the former tenants had also been in bad health, and that finally one member of the family had died from Typhoid Fever, no notice was however taken of this fact in this house. The tenant, especially sleeping in the attic where the attic was placed suffered continually from Headache, sickness, diarrhœa, sore throat, etc. The whole family also suffering in a mild degree from the same symptoms. Since the improvements marked in red in Diagram (p.) have been made, there has
has been no return of these troubles and the bad
smells hitherto so prevalent have disappeared.
When first these smells were noticed and a complaint
made to the agent, he refused to do anything,
although written to continually on the subject,
and only gave in when compelled by an order from
the Local Board to put the house in a sanitary
state forthwith. I may remark in passing
that no plan of any kind showing the drainage
could be obtained, and the agent stated that none
existed. Explanation of Diagram: (p)
(1) is the new overflow pipe of cistern with a pipe
leading into the hopper of Rain pipe at (b).
The outfall of Bath and Close sink being
disconnected from the soil pipe at (d) and
carried under the window W by two pipes, to the
hopper at (b) and the original pipe at (d)
being carried up to the chimney (ch) B and
as a ventilating pipe (c). The Rain pipe
(r) was disconnected from the soil pipe at (r) and
and carried down over the rain trap at (g).
The overflow pipe of the lower cistern was also
 disconnected and ended in an open pipe along
the sides the waste pipe of which is carefully
trapped. The Closet was also put in through
repair
repair and the water supply which had been stopped (by a mouse in the pipe) renewed.

Samples varying in a slight degree from the above could be multiplied indefinitely and could serve no other purpose than to vitiate the leading defects with instead be shortly enumerated.

No. 3.

A large house, one of a row of such, examined at being the home of a surveyor in the District, where children had suffered from Typhoid Fever and finally Scarlet Fever with Dysentery, sore Throats which were the cause of their death and nearly three of the tenant as well, the house had been thoroughly (according to the owner's statement) overhauled and all the drains stopped and vented. The drainage of the whole street passed into a brick sewer which ran through a field at the end of the road, and finally emptied itself into one of the Metropolitan system of sewers. The ventilating shaft had been placed in this field and covered by the ordinary iron grating. On examination it was found that the house pipes were fairly trapped as ventilating pipes had however been fixed to the soil pipes. The syphon trap on the house drain
The drain in the garden being thought sufficient to prevent the entrance of sewer gas, the possibility of an accumulation between the pipe and the house being totally ignored. After the death of the children and the recovery of the father, this drain was ordered to be examined in spite of his assurances that it had so lately been thoroughly well laid and trapped, the bad smells having during the time rather increased than diminished although carbolic acid and other disinfectants were freely used. The result of this examination was that the whole drain was found 48 inches choked with a semi-fluid slimy mass, the liquid portion having soaked through the joints into the basement of the house and the soil around about. The cause of this was not difficult to discover, as on examining the trap placed in the yard adjoining it was found that during the building operations going on round about, "some person unknown" had taken away the iron grating and in preventing drainage had placed a cartload of rubbish into the opening thus left, the purpose being of
course the drain was almost completely stopped up. The pieces of this wood had been rather more serious had the houses passed about been filled. The houses almost deserted, the inhabitants having from time to time left on account of some illness, and the bad smells which had commenced after the sewer draining the Cemetery, close at hand, was connected with the main drain of this portion of the District.

No. 4. N street one of a street of houses all built on the same plane. The children having for some time suffered from sore throat, nervous affection, traveler's eye, etc., an examination of the room was requested. The usual faults in its imperfectly trapped up, were discovered but from the smell proceeding from the room in the basement unby the children attention was directed to the drain which passed along the passage adjoining, it was found to have been imperfectly laid, the pieces were that the soil underneath the passage and one corner of the room was saturated with the liquid.
part of the sewage. The cistern supplying the drinking water was found to be outside, over a closet which it supplied with water by means of an ordinary plug, worked by a crank. In the closet being used bottles of gas which had a bad smell were seen issuing from the pipe and the overflow pipe which had an upspout, and was connected with the drain below, also showed the presence of bad smelling gases.

Wm. A. Verellen Blincoln