Dr. Blaxall's report to the Local Government Board upon a wide-spread epidemic of scarlatina in the urban sanitary district of Lower Brixham (Devonshire), and upon the general sanitary condition of the town / [F.H. Blaxall].

Dr. Blaxall's Report to the Local Government Board upon a wide-spread Epidemic of Scarlatina in the Urban Sanitary District of Lower Brixham (Devonshire), and upon the General Sanitary Condition of the Town.

George Buchanan,
Medical Department,
March 8th, 1889.

The parish of Brixham, situated on the south side of Torbay, contains the small towns of Higher and Lower Brixham, which so far as continuity of streets is concerned might be regarded as one town, but for "sanitary purposes" the two parts of the parish are under separate jurisdiction, Higher Brixham being under the Totnes Rural Sanitary Authority, and Lower Brixham under a local board constituted in 1862.

Lower Brixham, with which this report is concerned, covers an area of some 399 acres, situated partly at the shore end of a deep narrow valley that extends in a south-westerly direction from the sea up to Churston, and partly in a second valley that goes southward up to Higher Brixham, the two valleys intersecting each other about the middle of the town of Lower Brixham. The hills at the shore end of the Churston valley rise to an elevation of 160 feet above sea-level, and their summits are about 480 yards apart. At the low level near the quays the dwellings stand thickly packed in courts, alleys, narrow lanes, or streets, but on the slopes of the hills they are built in zig-zag streets, tier upon tier, until the summits are reached. Two small streams enter the town, one from each valley. The geological formation is limestone, the rock frequently cropping up to the surface.

Lower Brixham is the principal seat of the Torbay fisheries, and is provided with artificial harbours and quays partially protected from the force of the sea by a breakwater. It possesses numerous trawlers and other fishing boats which bring their cargoes here, and the landing of the fish on the quays, together with the selling, cleansing, packing, and despatching of it presents a strikingly animated scene.

In 1881 the population was enumerated at 5,366, and is now estimated to have increased to some 5,800 or 6,000 persons. Nearly all the men and growing lads are engaged in the fishing trade.

Upon arrival at Brixham I called upon the chairman of the Authority, and put myself in communication with the several officers, medical practitioners, and head teachers of the various schools. The medical practitioners courteously supplied me with lists of cases of scarlatina that had come under their notice, and the teachers with lists of children who left school through sickness during the two months that intervened between the time of re-opening of the schools on the 3rd of September after the summer holidays, and the time of closing of them again on the 2nd of November on account of the prevalence of scarlatina. The returns showed that a very large number of families had been invaded with scarlatina, and that scarcely any part of the town had altogether escaped.

I propose to report, first, on the sanitary conditions under which the people live.

Sanitary Circumstances.

Sewerage and Drainage.—Some years ago the Authority carried out a system of sewerage, laying down Jenning's patent glazed pipes of various calibre in the several streets, and connecting them with the main sewer, which is constructed of brick, egg-shaped, and measures 5 feet by 3 feet 4 inches. This sewer receives the water of the two streams already mentioned, at their junction in the centre of the town near the Local Board Office, and is then led along the back of Middle Street, past the gasworks, to a place outside the quay on the sea shore, where it discharges above low-water mark, the outlet

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being exposed for two hours or so when the tide is out. The outlet is not provided with a flap-valve, hence the wind coming from certain quarters blows direct up the sewers. As the tide rises the water also gains an entrance, flowing up the sewer to the low-lying parts of the town, and so damming back the sewage. Further, during heavy rainfall the storm water courses down the steep streets in considerable volume, and rushes into the sewers with great velocity, causing flooding of the lower parts of the town, and to remedy this evil relief sewers have recently been laid to carry off part of the storm water. I am informed that the joints of the sewers as originally laid were secured with clay, and became so leaky as to necessitate the relaying of certain of the sewers: also that one of the sewers, that in Fore Street, had to be taken up on account of faulty gradient, when the Authority substituted a new sewer laid down Fore Street and Bank Lane to the main sewer.

King Street sewer is provided with a flushing tank with a discharge the full bore of the sewer. Other sewers are flushed by means of hoses attached to hydrants, but these do not effectually fulfil the purpose, as the volume of water so discharged into the sewers is small, and hitherto this flushing could only be carried on for sewers below a certain elevation, as the town water supply would not reach the top of the town. The ventilation of tide-locked sewers is always a matter of considerable importance, but it has been almost altogether neglected here, for apparently only three 4-inch shafts have been provided for the purpose. True, certain of the rain-water pipes pass to the sewers; these, however, add but little to the efficiency of the ventilation, for when most needed to relieve air pressure during the times of rainfall, they are employed in carrying water into the sewers. The street grids are as a rule trapped, but the traps are often forced, as evidenced by the complaints I received of stinks emanating from them both at the high and low levels. Where grids are untrapped, as at Browses Court (low level) and Sea View (high level), I noticed quite a volume of foul air escaping, much to the discomfort of residents in the neighbourhood. The faulty character of the house drainage is also an element of considerable danger to health, the sink pipes and drains very commonly going direct into the sewers, thus affording a passage for the conveyance of the sewer air into the dwellings. Complaints of intolerable stinks in houses were general. Bell traps are much used, and were not infrequently found off or broken. At places I found drain-inlets untrapped, and at Sea View, behind Braddick's house, I observed an exaggerated nuisance from this condition.

I am told that improvements have been made in house drainage by laying down glazed pipes where the construction of drains has been found faulty; but it would seem likely that drains of defective construction still exist. Thus in a court leading from Higher Street I observed a closet drain, apparently simply a channel in the rock covered over with tiles, causing considerable nuisance to the occupants of a cottage, owing to the tiles being broken.

Closets.—The closet accommodation of the town is of a most unsatisfactory character. Where closets are placed in suitable positions in yards they are seldom provided with water for flushing, and consequent blockage of drains with accumulated excrement is frequent. But a greater evil exists in the most unseemly positions in which the closet pans are occasionally placed, sometimes in the window sill of a living room where the family live, cook, and take their meals, or in a pantry where food is kept, or in a bed-room, or again under the staircase, in the cellar or washhouse, and so forth; these make-shift closets being unprovided with water for flushing and being often without means of air or light. Many dwellings have no closet accommodation at all, and have neither available ground space outside nor any suitable position within the dwelling to admit of closet provision. Here the families are supposed to keep the excrement in vessels till it is fetched away. This is professedly done by means of metal carts sent round daily to collect house refuse. But in some instances the excrement is thrown on to the street grids, creating revolting nuisance. A few cess-pit privies came under observation, which might at little cost be converted into pail closets.

Water Supply.—In 1871 the Authority provided the district with a water supply derived from springs situated in Higher Brixham, in the immediate vicinity of the celebrated spring known as "Lady Well," which for many years was remarkable for the ebbing and flowing of the water at regular

intervals, until some cutting work carried out in the rock put a stop to this phenomenon. The water is now derived from two reservoirs, said to be capable of holding 419,958 gallons, and fed by pipes driven underground. From these reservoirs the water is led in iron pipes to the town, and there distributed to dwellings and stand pipes situated at such levels as the water will reach, the source not being sufficiently high to enable the water to be carried to the highest parts of the town. Measures have recently been taken to improve the supply to higher levels by providing an iron reservoir, into which water will be pumped up, and thence distributed to the town by gravitation. The supply is on the continuous system, and is said to be plentiful and wholesome. I could see no reason to suspect the quality of the water at its source, but I found evidence of exposure to pollution at four places in the course of its distribution, where water-pipes were in direct communication with closet-pans. Again, in some dwellings where there are closet-cisterns, water is drawn from these nominally for lavatory purposes, but probably also for drinking. Dwellings situated above the level supplied by town water, and some few of those situated at lower levels, are at present dependent upon rain-water collected from the roofs in tanks, and this is used for drinking as well as for domestic purposes. This water was often complained of as being thick and black, which is likely enough to be the case, considering the extent to which the roofs of town dwellings are exposed to smoke deposit. Some of the overflow pipes from rain-water tanks apparently went direct to drains. Some 30 to 40 families derive their drinking water from a private source belonging to Mr. Fogwell. The water is collected in a small reservoir situated in his garden on the New Road, Churston Valley, by means of pipes which are said to bring water down from two wells situated above the level of the reservoir; the supply being conveyed from the reservoir in pipes to the several dwellings. A small stream runs close alongside the reservoir, and if polluted by sewage, as it is said to be, cannot fail to endanger the purity of this water supply. The surface of the water in the reservoir was covered with a thick green scum, giving it a repugnant appearance, and quite explaining the general complaints I received of the quantity of insects the water contained. In three or four places I found families using water derived from wells sunk in dangerous proximity to drains and sewers. The "Greenwood Well," on the road to Higher Brixham, is much used by people in its vicinity. This water appears at the surface close to the stream which passes from Higher to Lower Brixham, and is said to be polluted with drainage, &c.

House Accommodation.—Many comfortable tidy-looking and cleanly dwellings came under notice, but others, notably those already referred to as closely packed together in courts and alleys, stand back-to-back, and besides being rendered unwholesome by the escape into them of sewer-air from closet-pans or drains, they are in a dirty, neglected state. Some few are dilapidated, whilst others suffer from dampness. Certain yards are well paved with concrete or cement, but others with pebbles, the interstices between which retain the wet. And further, these yards and other confined spaces around the dwellings are polluted by excremental matters, fish offal, and other refuse thrown on the sewer gratings, &c. There are no common lodging-houses in this district.

Refuse Removal.—Fixed receptacles for fish refuse are provided on the quay, and it is said that they are systematically cleared out, and the quays washed down after fish sales. The Authority carry out street sweeping and scavenging, but the configuration of the town, together with the domestic habits which I have described, throw difficulties in the way of the work being effectually done. House refuse is removed by contract daily in covered metal carts provided for the purpose.

There are two slaughter-houses in the district, both removed from dwellings, but they are not registered, nor, in regard to construction and management, can they be considered satisfactory. Just outside the one at Ranscombe I observed a large accumulation of blood, garbage, and manure covering an area of some 30 feet by 15 feet. Pigs and other animals are not generally kept, but in the few instances met with they were in unwholesome relation to dwellings.

The Authority possess byelaws of old date (1865) relating to the prevention of nuisances, cleansing of foot-paths, regulation of slaughter-houses, common lodging-houses, and construction of new streets, but they have not been enforced.

There are several milk shops in the town, but the Act which came into operation in 1886 for the registering of dairies, &c. has been disregarded, for milk shops have neither been registered nor inspected. So far as I could learn there are no cows kept in the district, but all the milk is brought in from the surrounding country, and is said to be sold within an hour or two of its arrival. When kept it usually stands in the shop. In two or three instances I saw milk for sale standing in the near vicinity of drain inlets.

Isolation of Infection.—The Authority have made no infectious hospital provision, although the Board have frequently brought the importance of the subject under their notice, nor have they provided means for disinfecting infected articles of clothing, bedding, &c.

Scarlatina Prevalence.

Scarlatina was present in and around this district some months previous to its assuming epidemic proportions in September last, one death having been registered from scarlatina as far back as April as occurring in a farm-house near Higher Brixham, the disease continuing to hang about that house for some time. Shortly afterwards a mild case occurred in a child residing in Lower Brixham. The precise date of this attack is not known, as the case escaped detection until the child died of dropsy in July. Another case followed in Higher Brixham in the beginning of July in a family who had recently removed here from the vicinity of the infected farm-house. On the 10th of July the Medical Officer of Health reported to the Sanitary Authority as follows:—"The present sanitary condition of the town is very good, with "the exception of a slight outbreak of scarlatina of a mild character; no other "zymotic disease has been brought under my notice."

About the third or fourth week in July there was a fresh introduction of the disease into Lower Brixham by the arrival of an infected person from Plymouth, and a little later on (end of July) a further introduction by an infected family arriving from South Wales; subsequent spread of the disease from this family was distinctly traced to three separate families living in their neighbourhood. I found a popular disposition prevailing to assign the origin of the epidemic to this last introduction, but it took place, as has been said, only after scarlatina had been hanging about the district for some months.

Altogether I made inquiry and inspection of some 300 dwellings, and found that out of these 180 had been invaded with scarlatina, 8 prior to the opening of the schools on the 3rd September after the summer holidays, and 172 subsequently. In all there were 351 cases and 43 deaths up to the end of December. The disease is still present in the town. The infected houses are scattered about the district; some standing at high and some at low levels, and being usually in groups of from three to six or more. For example, (1) Middle Street, where seven or eight dwellings standing together were invaded; (2) Cumbers Court, consisting of three dwellings all invaded; (3) Mount Pleasant Road, seven or eight infected dwellings standing in a terrace; and so in other places.

There was no evidence to throw suspicion upon sewer air or other excremental conditions within or around dwellings, as having been the means of spreading the fever; nor did milk or any other article of diet appear to have been concerned in its spread, but the whole inquiry has gone to show that this spread was effected by personal intercommunication between infected and healthy, the schools playing a prominent part in the dissemination.

There are five Board or National schools in Lower Brixham, and two in Higher Brixham. They were all closed on August 3rd for the summer holidays, and re-opened on September 3rd. This re-opening of the schools was followed by a marked and continued increase in the spread of the disease until November 3rd, when, by advice of the medical officer of health, they were again closed.

Besides the above there were the Sunday and certain "Dames' Schools," which undoubtedly were factors in spreading the disease.

The subjoined Tables are prepared to show (A.) the total number of families invaded and the dates at which they became invaded, with the number of first attacks in families that occurred in school-going children, side by side with the number of such attacks in non-school-going children and others; and (B.) the total number of cases and deaths in children of each year of age up to 15 years.

TABLE A.

No. of Families invaded with Scarlatina.		Number of First Attacks amongst		Weekly Sequence of First Attacks in Families from the 1st September to the 29th December.																Number of First Cases in which the precise Date of Attack is not known.	Total.
				Week ending																	
				September.				October.				November.				December.					
Before the 1st of September.	After the 1st of September.	School Children.	Other Children and Persons.	8	15	22	29	6	13	20	27	3	10	17	24	1	8	15	22	29	
8	172	87	85	5	4	4	12	8	17	25	27	13	19	4	4	5	3	4	2	9	7	172

TABLE B.

Number of Cases and Deaths at the given Yearly Ages.																										Total Cases.	Total Deaths.
0-1.		1-2.		2-3.		3-4.		4-5.		5-6.		6-7.		7-8.		8-9.		9-10.		10-11.		11-12.		12-13.		13-14.		14-15.		15 and over.			
Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.		
14	3	28	7	41	10	64	6	31	3	34	4	23	4	22	2	19	1	17	1	13	1	7	—	10	—	1	—	1	—	26	1	351	45

It will be seen, by reference to Table A, that prior to the 1st of September (and so prior to the opening of the schools on September 3rd) eight families were invaded; that there were 25 fresh attacks during the month of September and 77 during October. Then there was observed a decline in the first week of November, followed by a certain increase in the second week ending November 10th. This appeared to be due, as will be presently explained, to a large gathering of people for a public ceremony. From November 10th there was a notable diminution in the weekly number of families attacked, and this reached a minimum (2) in the last week but one of December, rising again to nine families freshly invaded during the last week of the year. This last rise possibly finds explanation in the greater intercommunication between families and friends at Christmas-tide.

During the nine weeks (September 3rd to November 2nd) that the schools were open, 115 families were invaded, against 50 in the succeeding eight weeks, when they were closed, this latter period including the exceptionally high number in the week ending the 10th November above referred to.

Within three days of the re-opening of the schools on September 3rd, three children returned home from school ill with scarlatina. It follows that they had attended there when incubating the disease, and they were in all probability the means of introducing the disease into the schools. From this time scarlatina continued to spread amongst school-going children; and 87 persons had to tell the tale of the first attacks in their families being in the persons of children who "returned from school ill" with the complaint.

Evidence went to show that the infection was kept up in the schools by children from infected families continuing to go to school up to the time of being themselves attacked, or, until the schools were closed; and again by

children convalescing from the disease returning to school when in the desquamating stage.

In this way the disease spread from infected to healthy children in the schools, and was carried by them to their respective homes, each newly-infected child and family becoming in turn a fresh centre of infection to their immediate neighbours and others with whom they came in contact. Thus there is no difficulty in accounting for the wide-spread nature of the epidemic, as well as for the scattered *groups* of dwellings that were invaded, as already mentioned. I witnessed many examples of reckless exposure of infected persons. In one house three members of the family suffering from scarlatina were seated in the same room with a lad who, having just come in for his dinner, was about to return to his shop where he would serve customers. In a second house a neighbour's child had come in to play with a little one convalescing from the disease; while in several other dwellings I saw infected children occupying the general living room frequented by neighbours and others. Again, eye-witnesses spoke of children in the streets peeling the skin off their fingers to see who could get the largest flake. I heard also of the infected dead being frequently kept in the houses from three to seven days awaiting burial, the children and neighbours in some instances going in to view the body, and attending the funerals in large numbers. I met with repeated instances in which attacks followed within a few days of such exposure to infection, notably so one case in which a child was taken to see the dead body of its little friend, and three or four days afterwards was attacked with scarlatina, and died within the fortnight; subsequently the three remaining children suffered from scarlatina, and the mother from sorethroat, while the father suffered from erysipelas.

With regard to the public ceremony to which the increase of cases during the week ending the 10th of November has been referred, this took place on November 5th, on the occasion of laying a memorial stone on the spot where the Prince of Orange landed, and a large concourse of persons was thus brought together. Many persons stated that the first time of their children going out after their illness was to witness this ceremony; others that their children were well when they went to see the stone laid; but four or five days afterwards they were "down with the fever." There can be little doubt that this assembling of infected and healthy persons was instrumental in spreading the disease.

A certain predisposition to contract the disease seemed apparent in several families, it being no unusual thing to find near relatives attacked with the disease, while others equally exposed escaped the infection.

Further, it transpired that some persons and families invaded during the present epidemic had suffered from the disease four years ago when scarlatina was prevailing in Brixham. One family, in which five cases and three deaths have occurred during the recent epidemic, had three cases and one death on the former occasion, the two survivors being now attacked for the second time.

Many other instances of second attacks came under observation during this inquiry.

Reference to the Tables A. and B. shows a total of 180 families invaded, with 351 cases and 43 deaths. Multiple cases of definite scarlatina, from two to six in number, were observed in 94 of the families, to say nothing of cases of suspicious sorethroat. But medical practitioners spoke of bad and trouble-some sorethroats as being of frequent occurrence in families that had been invaded by eruptive scarlatina; so probably there was more disease of a scarlatinal nature in the district than is expressed by the above figures.

Multiple deaths, too, took place in some invaded families; one family losing three, and two others losing two of their members. As regards the fatality of the disease among persons attacked, it is to be recorded that in the closely packed and generally unwholesome dwellings of the lower parts of the town, an excessive mortality took place. No less than 11 out of 48 known cases were fatal in the houses of these localities, or nearly one death to three recoveries; whereas in the remainder of the district, the deaths were 32 out of 303 known attacks, or more than eight recoveries to each death.

The data of the foregoing Table B. as to attacks in this district are so far complete as to yield evidence of some interest respecting the age-distribution

of attacks. In successive years of life, up to four years of age, it is found that the children had an increasing liability to attack; and in subsequent years a diminishing liability. But in this connexion the previous prevalence of scarlatina four years ago has to be remembered. The liability to death after attack did not quite follow the same rule. Children under three died in the proportion of one fourth of the attacks; but in the fourth year of life (the period of maximum susceptibility to attack) the disease was much less fatal, the deaths numbering only one-tenth of the attacks.

It would appear plain from the foregoing history that at one time it was within the ability of the Sanitary Authority to prevent the epidemic. There was no sudden outbreak affecting simultaneously any number of families, but for some weeks there were only a few cases which might have been isolated, if a place for their reception had been at hand; and such isolation with efficient measures of disinfection of clothing and bedding would in all probability have stayed the further spread of the disease, and have been the means of saving some hundreds of cases of sickness, and some dozens of lives. The Authority, however, were not in a position to carry out such isolation or disinfection. They had no isolation hospital, nor did they attempt to improvise one to meet the emergency. They were at no pains to prevent the exposure of infected persons and things, or even to warn people against that free intercommunication which they knew to be going on between infected and healthy. The medical officer of health, beyond advising the closing of the schools at the beginning of November (*i.e.*, after the disease had made a firm lodgment in the town) has done nothing to assist or guide his Authority in this time of urgent need.

The full effects of the evils of this epidemic cannot be estimated by the sickness and mortality above recorded, not to mention the money cost of the sickness, or the impairment of health to survivors:—it will be sufficient to point in addition to the discredit incurred by the town through this epidemic. This has already made itself felt by visitors ceasing to frequent the place, a circumstance of which I received general complaint.

I have already mentioned that scarlatina was not extinct at the end of the year, when my inspection terminated. Further, I learned during my inquiry, of measles recently introduced into the town. I accordingly addressed a letter to the Authority, proposing for their adoption such measures to prevent the spread of these diseases as would be available for instant use.

Sanitary Administration.—Mr. Searle, Parochial Medical Officer of the Brixham District (Totnes Union), holds the appointment of medical officer of health at a salary of 20*l.* per annum, no part of which is paid from moneys voted by Parliament.

He has not fulfilled the duties attaching to his office in any such manner as is contemplated by the Public Health Acts and required by the Board's instructions. He has made no inspection of his district, nor has he advised his Authority as to the adoption of measures necessary to prevent the spread of infectious disease and to remedy unwholesome conditions calculated to exercise a prejudicial influence upon the health of the community. He ascribes this neglect to the terms of his appointment not requiring him to carry out such duties. At the time of my visit he was not receiving returns of mortality in accordance with the Board's memorandum of July 1885:—they were sent to him for a while at irregular intervals, the Authority paying the registrar 1*l.* 1*s.* per annum to supply them, but this payment was stopped a few months since.

Mr. Widdicombe has just recently been appointed inspector of nuisances and water bailiff for the urban district, and road surveyor to the whole parish, at the small salary of 60*l.* per annum, partly paid by the Highway Board. Of the 60*l.*, 12*l.* only is allotted in payment of the duties of inspector of nuisances. It has been shown that this district stands in special need of strict supervision and close searching out of nuisances. And it remains for the Authority to consider whether they can reasonably expect the work to be satisfactorily done under the present arrangements and for the small salary given.

The Authority have done much good work in paving and lighting the town, as also in providing it with sewerage and water supply and in carrying out measures to improve the same. On the other hand, in their current sanitary

administration they have signally failed, as herein-before stated, to fulfil the requirements of their own byelaws, and to give effect to the Public Health Act in regard specially to the clauses relating to disease prevention and to nuisances. Such failure would appear to be in part due to their not making proper use of the medical officer of health and inspector of nuisances appointed in accordance with the requirements of the Public Health Act to assist them. No doubt they have in some respects great inherited difficulties to contend with in carrying out their duties, owing to the close manner in which dwellings are crowded together in the old parts of the town. But even as to this much might have been done under the advice of a careful medical officer of health, and by the aid of a vigilant inspector of nuisances, to improve the condition under which the people live, to secure efficient ventilation and cleanliness of dwellings, and to insure their precincts being kept in a wholesome condition. I am informed that frequent notices have been posted up warning people not to commit nuisances by throwing filth on the street grids, &c., but in no instance could I learn that legal or other action had been taken to enforce the notice. The excuses alleged were that the "notices were torn down," and the "difficulty of finding the offender," but such difficulties would hardly be pleaded by an Authority in earnest about its sanitary duty. As a riparian authority they have neglected to secure such inspection of vessels as is directed by the Public Health Act (section 110). This inspection is for Brixham a matter of considerable importance, seeing that a very large number of small craft frequent this port.

In conclusion, I would express my thanks to the clerk and other officers of this Authority and to Messrs. Green and Hayward for the ready and valuable assistance they courteously afforded me.

F. H. BLAXALL.

January 1889.

RECOMMENDATIONS.

(1.) Under the advice of a skilled engineer, provision should be made for the efficient ventilation and flushing of the sewers. House drains should be carefully examined, and where found faulty in construction or position, they should be reconstructed. Drains and sink pipes inside dwellings should be led outside, and cut off over a trapped inlet of a drain. Bath and lavatory pipes should not be led directly into soil pipes.

(2.) Water-closets situated within dwellings should be placed against an outer wall with an opening to the external air. Soil pipes should be fixed outside the building and be continued upwards without diminution of diameter to a point above the roof. All water-closets, whether inside or outside dwellings, should be fitted with service cisterns and provided with separate means of flushing. Where closets and pans in communication with sewers occupy positions within dwellings dangerous to health, they should be abolished, and proper closet accommodation provided. Where no suitable place can be found for making such provision the question ought to be raised whether the house is fit for human habitation. In some cases where there is adequate space about dwellings it may be practicable to provide means of excrement disposal by adoption of a properly organised pail system, the contents of the pails being regularly removed in metal carts provided for the purpose. Both the pails and the carts should be frequently cleansed and disinfected.

(3.) Steps should be taken to protect the town water supply against risk of pollution. To this end no direct communication should be allowed between water mains and water-closets. The Authority should cause examination to be made of the sources of other water supplies in use in the town, and a supply of assured wholesomeness should be substituted for any water of suspicious character.

(4.) Slaughter-houses, nuisances, cleansing of footpaths, and the construction of new streets and dwellings in the district of Lower Brixham

should be regulated by appropriate byelaws, and such byelaws should be strictly enforced. The model byelaws of this Board would advantageously be adopted as a basis in place of those already existing.

(5.) The provisions of the Dairies, Cowsheds, and Milkshops Order of 1885 as to registration should be carried out, and milkshops should be kept under due supervision.

(6.) An hospital for the isolation of cases of infectious disease should be provided, and the several sections of the Public Health Act providing against infection (sections 120 to 129, and 141 and 142) should be sedulously enforced. Means of efficient disinfection of infected bedding and clothing are required for the district.

(7.) Vessels should be inspected and dealt with as directed by the Public Health Act, 1875 (section 110), and the Public Health (Ships) Act, 1885.

(8.) The appointment of medical officer of health should be placed on a more satisfactory footing. He should be required to carry out his duties on the lines indicated in the regulations issued by the Local Government Board for the guidance of medical officers of health. In accordance with the Board's Memorandum of July, 1885, the Authority should instruct the Registrar to supply the medical officer of health with weekly returns of mortality, and with immediate information of the occurrence of any death from infectious disease, and they should further provide for his receiving early information of any case of infectious sickness occurring in the poor law practice.

(9.) The Sanitary Authority should so remunerate the inspector of nuisances that they can reasonably call upon him to perform the duties properly attaching to that office. They should also exercise the powers vested in them under section 189 of the Public Health Act, 1875, and make regulations with respect to the duties of this officer; and in drawing them up they would do well to consult the duties attaching to the office of inspector of nuisances as laid down by the General Order of the Local Government Board 10th March 1880.

In carrying out his duties the inspector of nuisances should direct special attention to the precincts of dwellings standing in confined courts and alleys, and exercise strict supervision over the method of excrement removal by pails and carts. He should also periodically inspect and report on the several establishments regulated by law or byelaw; and he should be supplied with a report-book, wherein to enter particulars of his inspections.