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Publication/Creation

[London?] : [H.M.S.O.?], 1877.

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**Mr. Netten Radcliffe's Report to the Local Government Board
on the prevalence of Diphtheria and Scarlet Fever at Sid-
mouth, and on the Sanitary State of the Town and District.**

GEORGE BUCHANAN,
Assistant Medical Officer,
September 5, 1877.

In accordance with instructions I visited Sidmouth (3rd—7th August), and made inquiry as to the prevalence of diphtheria and of scarlet fever there, and generally as to the sanitary condition of the town and district. I now submit briefly the results of the inquiry, as also of a conference with the Local Board of Health on the several subjects to which it related.

Six deaths from diphtheria or diphtheritic affection have been registered, and probably seven have occurred, in the Urban Sanitary District of Sidmouth (population, Census 1871, 3,360) since the beginning of the year.* Two of these deaths happened in January, in separate families, one in March (in one of the families in which fatal cases had occurred in January), one in June, and two (three?) in one family, in July. The last of these deaths occurred on the 25th July.

With regard to scarlet fever, the district appears to have been free from the disease at the beginning of the year. On the 17th July the Medical Officer of Health reported its epidemic prevalence in the district, and at the time of my visit 60 cases or thereabout had come to his knowledge, and one fatal case had to that time been reported.†

Excepting diphtheria and scarlet fever no other form of fatal infectious disease appears to have been recently prevalent in the district. But on the 17th July the death of a girl, aged 17 years, from "fever," probably enteric, was registered; and it is not unimportant to mention here that small-pox has recently shown itself in a neighbouring district.

It would appear then that an epidemic of diphtheria is imminent in the district, that scarlet fever is rapidly extending there, that there is present danger from enteric fever, and that a near approach of small-pox has to be guarded against. The Local Authority is unprepared to meet either the present or any threatened epidemic. It has no hospital for the isolation of cases of infectious disease, no public means for disinfection, and no mortuary. In other words, it has made no provision whatever of the sort the law empowers it to make for the direct arrest or limitation of infection, though such provision is here peculiarly necessary under the crowded condition in which much of the cottage population lives, if any control is to be exercised over the prevalence of infectious disease in the district.

With respect to small-pox, the population of Sidmouth appears to be in a particularly unfortunate position, not only from the want of any provision for dealing with the disease on the part of the Local Authority, but also from the imperfect state of infant vaccination among it. I would refer to the Medical Officer of Health's statements on this subject, in his annual report for 1876. This imperfection is said to arise from the public vaccination being seriously interfered with by a practice of gratuitous vaccination carried on at the Public Dispensary of the town. This practice, although of importance when the Dispensary was first established, and until the present regulations as to public vaccination came into force, is now detrimental to the population of the town and district, as well, it would appear, from the difficulty of making it efficient as from its impairing the efficiency of the arrangements for public vaccination.

The recommendations of the Medical Officer of Health (17th July) in view of the present epidemic of scarlet fever were such as were practicable in the absence of hospital accommodation and public means of disinfection, and consisted in the closure for a time of the parish day schools and the Sunday schools, the gratuitous supply of disinfectants, the distribution of printed instructions for the guidance of the people during the epidemic, early burial of the dead from the disease, and a house-to-house visitation for the discovery and removal of nuisances.

All of these recommendations were judicious and of the last importance in the unprepared state of the Local Authority‡ if the epidemic were to be arrested; but

* There is reason to believe that a death registered as "hydrocephalus" should have been registered as "diphtheria." The patient was a child two years of age, who died on the 17th July. On the 21st and 25th July two other children of the same family, aged respectively 5 years and 6 years, died. The cause of death in the one case was registered as "diphtheria," and in the other as "sore-throat, diphtheritic."

† Under date the 31st August, the Medical Officer of Health informs me that about 100 additional cases of scarlet fever have come to his knowledge since my visit, and that three other deaths from the disease have been registered.

‡ The Medical Officer of Health, the Local Board not acting in this respect, himself communicated with the vicar and other school managers, and induced them to close the schools.

two only had been acted upon by the Local Board—namely, the gratuitous supply of disinfectants, and the house-to-house visitation for the discovery and removal of nuisances—at the time of my visit. Several members of the Local Board, in conjunction with the Medical Officer of Health and Inspector of Nuisances, carried out the house-to-house inspection, and in its course a state of things as to nuisance was discovered, for which the Local Board, as it frankly confesses, was quite unprepared. As the result of this inspection very many nuisances needing to be dealt with were reported to the Board, over a hundred of them demanding immediate attention.

Although an attempt at abatement of the numerous nuisances above referred to had been made before I visited Sidmouth, abundant evidence remained to show that for some time previous to its recent action the duty of the Local Board as to nuisance removal and prevention, except in the principal thoroughfares, must have been in abeyance. The quantity of conspicuous nuisance which came under my observation from imperfect drainage, neglected privies, and from accumulations of the refuse of houses, slaughter-houses, stables, and piggeries, notwithstanding the previous attempt at abatement, was wholly beyond my experience in a place so circumstanced and so easily supervised as Sidmouth.

It is unnecessary for me to give a detailed account of the numerous nuisances and other unwholesome states which came under my observation. These have been fully described by the Medical Officer of Health in his reports, from time to time, to the Local Board, and I need not do more than state briefly as follows the conditions under which they have arisen.

Imperfect Sewerage and Drainage.—The town of Sidmouth is sewered partly by properly laid earthenware-pipe sewers (as is reported to me), with outlet into the sea below low-water mark, and partly by old brick sewers. Of the former—the earthenware-pipe sewers*—the provision for ventilation is very inadequate, and I suspect from the stench I noted proceeding from the gulleys at more than one point that they may be suffering deterioration from the general neglect into which the sanitary administration of the district has fallen. The main line of earthenware-pipe sewer is believed to be kept free of deposit by a stream of water which passes through it. This I doubt. It seems to me highly requisite that the earthenware-pipe sewers should be subjected to examination by a competent engineer, that proper arrangement should be made for flushing them, and that ample provision should be provided for their ventilation. Of the condition of the brick sewers very little seems to be definitely known, but the Local Board contemplates replacing them in time by earthenware-pipe sewers. I think that this replacement and the completion of the sewerage of the town on one system should be carried out without delay.

Much nuisance from imperfect channelling of premises, and improper arrangement of drain inlets, and in some instances apparently (*e.g.*, Anchor Yard, Whitton's Yard) absence of drains came under observation. The nuisance arising from defective flow of drainage from premises, or the stagnation of drainage, is augmented by the common use of boulder or pebble paving for yards. This kind of paving under the best circumstances is an impediment to the free flow of drainage from the surface, and is apt to retain filth in the interstices of the stones.

Imperfect and polluted Water-Supply.—The water-supply is obtained partly from a source outside the town, belonging to the Trustees of the Sidmouth Manor,† and partly from private wells. The Trustees' water is reported to be good, and free from liability to pollution, but unfortunately it is too limited in amount for the supply of the whole of the population. Several of the wells are liable to pollution from the soakage into them of filth from imperfect drains, from cesspools, and from the surface. Others become obviously polluted and a few brackish when the subsoil-water is backed up by high tides, and when the river Sid is in flood. Moreover, in parts of the town the wells do not yield a supply adequate in quantity to the wants of the inhabitants. Thus in the Eastern Town, for example, a single shallow well with ordinary hand-pump, in one instance, has to serve the needs of upwards of 350 persons.

There would appear to be little probability at present of an additional supply of water being obtained from sources outside the Urban District, but it would seem quite feasible to improve the supply to parts of the town where this is deficient; and economy of the water would perhaps be best consulted by the establishment of public fountains fed with the Trustees' water, as recommended by the Medical Officer of Health. It is probable, also, that certain excellent springs in the district now running to waste could be utilized at a comparatively small cost for the town.

* The sum of 1,100*l.* for the construction of these sewers and for sewer ventilation throughout the town, &c. was borrowed by the Local Board in 1873, as authorised by the Local Government Board, after local inquiry by Major Tulloch, R.E.

† This source of supply, formerly the property of a Company, has recently been purchased by the Trustees of the Sidmouth Manor.

Pending the introduction of a proper supply of good water to the town from sources beyond risk of contamination, all practicable protection against pollution should be secured to the well-water by measures leading to the abolishment of cesspits, the rectification of imperfect drains and sewers, and the prevention of soakage of filth from the surface. Every possible precaution of this nature should, under present circumstances, be held to be imperative.

Filth Disposal.—(a.) No common plan of excrement-disposal is carried out in the district. Water closets predominate in the town, and in cottage property these are flushed by hand. But there are many privies with cesspits of the old type, and recently certain privies on a presumed "dry system," and on a "pail system," have been permitted by the Local Board to be erected. The hand-flushed water-closet probably sufficiently meets the requirements of the cottage population in the town, but unless its adoption be accompanied by strict systematic inspection on the part of the Local Authority, particularly where the supply of water is scanty or involves trouble in the carriage, it is apt to give rise to great nuisance. A primary condition of the adoption of this form of closet is such inspection, a condition which appears to have wholly failed in Sidmouth, with the necessary common result of offensive blocked closets. The cesspit privies are here as elsewhere intolerable permanent nuisances, fouling the air, the soil, and the sub-soil water from which the wells are supplied. Measures should be taken for abolishing them with the least practicable delay. The modified privies, "pail" and "dry," which have recently been erected have been constructed under an entire misapprehension of the principles which should govern their arrangement and management, and are consequently great nuisances. The watercloset should be substituted for them, or if a dry-system of excrement disposal be here preferred, it should be the dry-earth system. I would refer to the office report on "Certain Means of Preventing Excrement Nuisances in Towns and Villages" for full information adapted for the guidance of the Local Board on this subject.

There would appear to be much deficiency of any privy accommodation whatever in some parts of the district.

(b.) The disposal of house refuse, and the refuse of stables, of pig-styes, &c. is practically unregulated. Such refuse is deposited, apparently without limit to its accumulation other than the notions of the depositor and in contravention of the Local Board byelaws, simply on the surface of the ground, without proper receptacle to contain it, or if a receptacle is provided, this is uncovered, and as a rule of a capacity sufficient to contain several weeks' or months' accumulation. The removal of this refuse has been largely left to the action of the householders, although the Local Board professes to undertake the removal through a contractor. Some of the grosser accumulations of such refuse had been, I was informed, removed just before my visit, and after the house-to-house inspection made by the Local Board to which reference has been made. So perfunctorily, however, had this process been performed that before it came to my knowledge I had entered in my note-book some of the places to which it had been applied as instances of gross nuisance, without the least suspicion that they had been professedly cleansed a few hours before.*

Slaughter-houses and Pig-styes.—Notwithstanding the Local Board's byelaws, neither slaughter-houses nor pig-styes are under such regulation and supervision as is needed. In one instance the blood and offal of the slaughtered animals was deposited in a covered tank lying beneath the surface of the ground, partly in a small confined yard in front of the slaughter-house door, and partly within a stable in the same enclosure. The contents of this tank (which has an overflow into the common sewer) are removed at intervals of several weeks to a field in the immediate vicinity of dwelling-houses, and there made use of as manure, the Local Board exercising no supervision over the offensive process. In another instance, horses and pigs are kept in the same enclosure with the slaughter-house, and the offal, stable-manure, and pig-manure are deposited in a large open receptacle capable of containing several weeks accumulation.

The nuisance from pig-keeping in the town is very considerable. The pig-styes, as a rule, are placed close to inhabited dwellings, and the prevalent notion of pig-keepers appears to be that the animals should be kept in as filthy a state as possible. A large piggery existing in the rear of certain alms-houses and adjacent to other houses had been subjected to a presumed process of cleansing shortly before my visit, but even in its cleansed state it was a nuisance. Certain pig-styes elsewhere in the town

* With reference to these accumulations of refuse, I may mention that I saw in Sidmouth two instances of insensitiveness to filthiness which are unique in my experience. In the course of my inspection I came upon two bakers' hand-carts for the delivery of bread, each belonging to a different baker, put to stand aside in the interval of use. The carts were unexceptional in excellence of make and orderliness of paint and general appearance; but they positively were placed, each of them apparently as customary in fine weather until the time came for filling them again with bread, directly over accumulations of house, stable, and fish refuse.

had also been subjected to a so-called process of cleansing which had merely served to show how impossible it was, with the original constructions of the styers, to keep them in anything like a cleanly condition; while the liquid manure which had flowed from them for a period of many months, and had been suffered to form a long deep offensive pool in rear of an adjacent building, was left untouched.

These examples will suffice to show that the regulation of slaughter-houses and pig-styes has been practically left to the persons interested in them.

Houses unfit for habitation.—Many of the cottages in Sidmouth are old, built at a time when shelter was the almost sole consideration entertained in the construction, some still inhabited are ruinous, others are rapidly falling into ruin, not a few are covered in with rotten thatch, and several have not the capacity for a single small family. Of much of this property it happens fortunately for the future health-welfare of Sidmouth that reconstruction is in prospect, and this process has indeed begun. But I am by no means assured that the Local Board is exercising the requisite supervision over the process, and over the arrangement of the newer buildings which will supplant the old, that is demanded from it in the interests of health. With respect to the older cottages, which it might be desirable to have re-constructed, but of which re-construction is not probable, some of these do not need to be regarded as unfit for habitation, and in the case of such cottages the Local Board has ample powers to cause such improvements in ventilation as may make them less objectionable as dwellings.

The river Sid.—The river Sid as it passes, and forms, indeed, the eastern boundary of the town, partly within and partly outside the Urban Sanitary District, was at the time of my visit very foul. The stream does not flow into the sea from an open mouth, but filters through an elevated bar of shingle which crosses the outlet. Behind the bar the river forms a pool, in which are contained the impurities brought down by the current. To these impurities Sidmouth contributes not a little, as may be observed from the Mill Bridge, where the bed of the river is used as a place of deposit for various kinds of filth, apparently from neighbouring houses, and where also sewage finds its way into the stream.

The Hamlets.—The hamlets situated within the area of the Local Board's district appear to have been as much neglected in the several matters which have been referred to as the town. The unsanitary conditions which there require the attention of the Local Board are obvious, and the mode of dealing with them has been indicated by the Medical Officer of Health. With respect to the questions of sewage and filth-disposal in these places the Office Report on Excrement Nuisances in Towns and Villages will probably prove helpful to the Board. With respect to water-supply, it is desirable to note that the present Medical Officer of Health reported to the Local Authority a great deficiency in the hamlets of Woolbrook and Stoford in 1866, and that he repeats what he then said as still applicable in his report for 1876.

The foregoing is the substance of the observations and suggestions I submitted to the Local Board in my conference with it. They cover pretty much the whole of the functions of the Board as to the prevention of infectious diseases and the removal of nuisances. In these important respects the duties imposed upon the Local Board by the Legislature have practically for some time been hardly recognized. The Local Board is desirous that I should point out to this Board (as, indeed, I have done already) that the discovery of the present state of things in its district as to nuisance was made by its own action. But while doing this I must at the same time observe that the reports of its Medical Officer of Health have since 1873 (the papers in my possession do not go further back) given full information as to the existence of the evils I have described, and that with reference to the more important of these the Local Government Board has from time to time communicated with the Local Board and directed attention to them.

J. NETTEN RADCLIFFE.

1st September 1877.

RECOMMENDATIONS.

I. *In respect to Infectious Diseases.*—1. A hospital should be provided for the isolation of cases of infectious disease.

The hospital for permanent purposes may be a cottage which would give accommodation for four patients (two of each sex, in separate rooms), also accommodation for the nurse in charge, with kitchen and washhouse. It should have sufficient ground about it to admit of a temporary extension by tents or huts in

case of need. But it is essential that the hospital should always be ready for use so as to admit of immediate isolation of the earliest cases of infectious disease which occur. (See the Office Memorandum on the subject.)

2. Apparatus for the disinfection by heat of bedding, clothing, and other textile fabrics which have been exposed to infection should be provided.

The simplest, most readily regulated, and probably most economical apparatus would perhaps be one heated by common gas.

3. A mortuary should be provided.

4. An arrangement should be made with the Registrar of Births and Deaths to give to the Medical Officer of Health immediate notice of deaths registered from infectious diseases in the district, in addition to the monthly return of all deaths and causes of death.

II. *In respect to Sewerage and Drainage.*—1. The sewerage of the town should be completed without delay upon the plan which has already in part been carried out. The existing sewers should be subjected to a careful examination, by a competent engineer, with a view to ascertain the efficiency of their working, ample provision should be made for the ventilation of all sewers (as was urged by Major Tulloch in 1873), and proper arrangement should be established for flushing them.

2.—Systematic measures should be adopted for rectifying, under competent supervision, the imperfect drainage of premises.

III. *In respect to Water-Supply.*—1. The augmentation of the Trustees' supply, so as to admit of the general distribution of their water throughout the town, being remote, public fountains—or rather "taps"—fed by the Trustees' water, or by unutilised fitting springs in the district, should be established in those parts of the town where the water-supply is most deficient, or where it is impure.

2.—The measures of nuisance removal to be presently noted should be carried out with careful regard to protecting the existing wells in the town from pollution.

IV. *In respect to Filth Disposal.*—1. Measures should at once be taken for abolishing all foul cesspits and cesspit privies.

2. It is desirable that a common plan of excrement-disposal should be adopted within the sewered area.

3. If this common plan be the use of waterclosets, hand-flushed and other (as would perhaps be best under the circumstances), it must be clearly understood that nuisance from the hand-flushed closets, particularly as the water-supply is defective, can only be prevented by frequent systematic inspection of the Local Board's Officers.

4. If any other form of excrement-disposal should be adopted in the town, this will best be the *dry-earth system*, carried out under the close inspection of the Local Board's Officers.

5. In the hamlets and detached houses, where a watercloset system cannot, unless in exceptional instances, be had, the *dry-earth system*, or the simplest of the improved privy systems, is best for adoption. The privy system referred to requires that the privy-pit shall be water-tight, that it shall be so arranged and of such small capacity that the excrement may be kept constantly covered by ashes and house refuse, that its contents shall be sheltered from rain, and that frequent removal of the contents shall be a necessity.

The conditions requisite for carrying out properly the *dry-earth system* and approved modified privy systems are described in the Office Report on the subject.

6. The deficiency of privy accommodation should be rectified.

7. The Local Board should itself undertake by means of its own officers the cleansing of privy-pits and the removal of accumulations of house and other refuse, except where, in case of accumulations used as manure, that removal is permitted to be done by the householder under stringent regulations.

8. The removal of excrement, of house and other refuse, should be effected at frequent regular intervals, in no case exceeding one week, and no privy-pit or other receptacle for refuse, moveable or fixed, should be of a capacity to contain more than one week's accumulation.

9. The receptacles for house or other refuse, if moveable, should be kept under a penthouse or otherwise sheltered from rain, if fixed: they should have a cover.

V. *In respect to Slaughter-houses and Pig-styes.*—1. Slaughter-houses and pig-styes, or more accurately the keeping of pigs, should be subjected to regulations under bye-laws framed in accordance with the Model Bye-Laws of the Local Government Board relating to them. Pigs should not be kept close to dwelling-houses.

VI. *In respect to Nuisance Removal generally.*—With respect to other nuisances and unwholesome conditions, such, for example, as relate to the habitable state of many

cottages, and to the condition of the river bed, it is unnecessary that particular recommendations should be made. These are matters of detail which can only be properly dealt with by the Medical Officer of Health, and by him only on condition that the Local Board will exercise its functions in respect to nuisances. This it has not done. It has not even required from its Inspector that he should keep a register of his inspections, of the recommendations he has made, and of the action taken upon them. In fact, the functions of the Local Board as to nuisances-removal have been suffered to fall into abeyance, and as a preliminary measure to the due resumption of these functions, and to the efficient execution of the suggestions already made, the Local Board should require from its Inspector a proper record of the work he performs, and it should itself keep a record of the action it takes upon the information of the Inspector or of the Medical Officer of Health.