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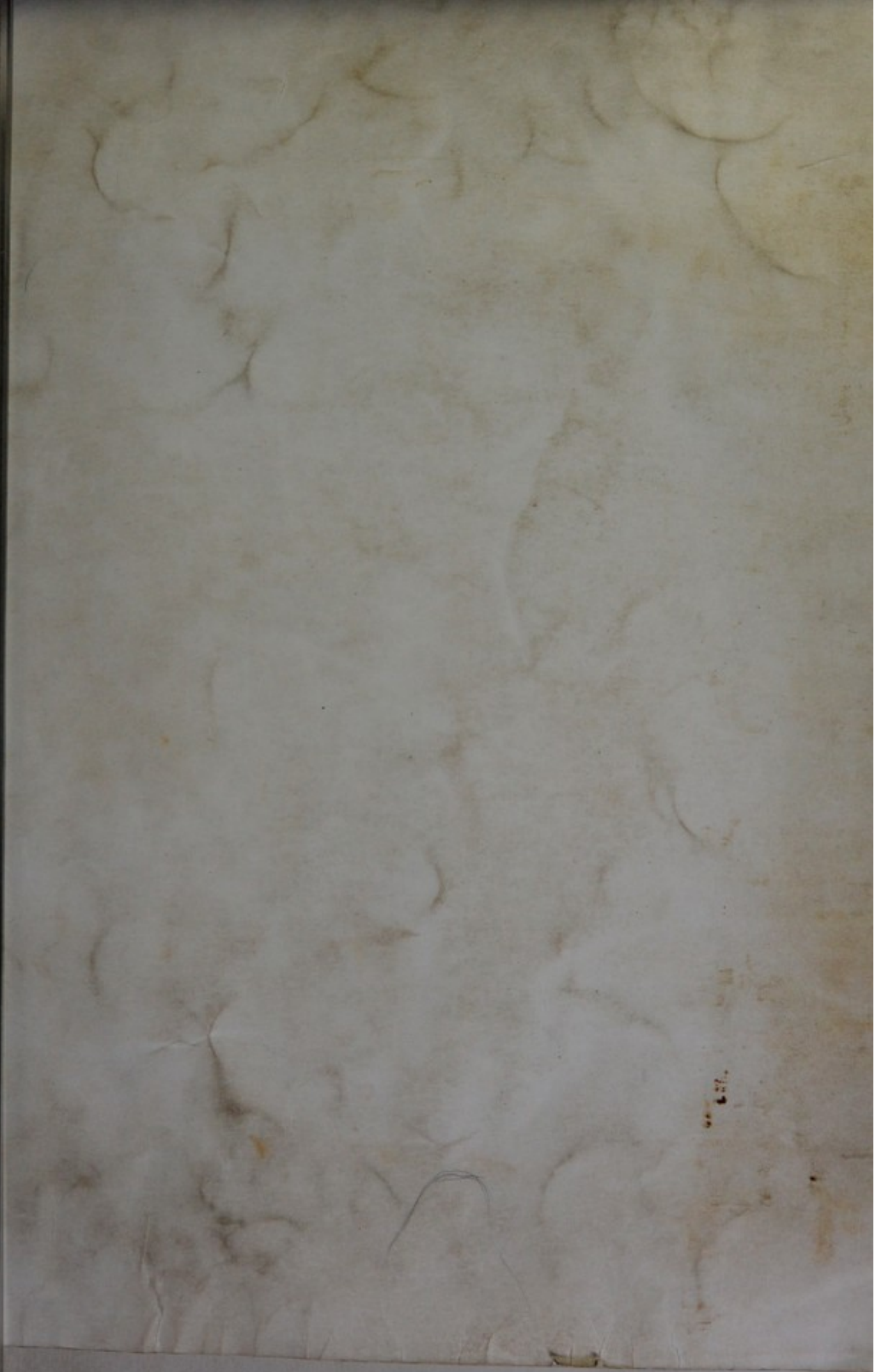
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SANITARY REVIEW

OF THE

SESSION.

(10)

BY

EDWIN CHADWICK, ESQ., C.B.,

THE PRESIDENT.

*READ AT THE MONTHLY MEETING OF THE
ASSOCIATION OF PUBLIC SANITARY INSPECTORS,*

MAY 2, 1885.

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1885.

REPT. CHAIRMAN OF THE

COMMISSION ON THE

REVISION

OF THE

CONSTITUTION

OF THE UNITED STATES

AND

SANITARY REVIEW OF THE SESSION.

AT the closing meeting of the Session of the Association of Public Sanitary Inspectors, held on Saturday, May 2nd, at 1, Adam-street, Adelphi, Mr. Edwin Chadwick, C.B., the President, gave the following address:—He said: Gentlemen, I am expected to give a review of sanitary progress since our last annual meeting. But my address must be chiefly of condolence for the continued delay of promised legislature for large measures of sanitation, delay by the intense preoccupation with measures for constitutional reform. Few can know, what you must see going on silently and unheeded, that the delay in meeting preventable sickness, the loss of work, and the occurrence of preventable deaths in the metropolis (some twenty thousand annually) is far more serious than what could befall the country from the most dire of wars in modern times. It is also a delay of the reduction of an excessive burthen of expense three times heavier than the poor rates. And now we are subjected to an almost exclusive preoccupation of the public, made by an impending war. It may be of interest to advert to the position of our science, for the conservation of military force as serving to display its power for the protection of civil populations. In most wars hitherto, whilst the losses by the sword are as one, the losses by disease, for the most part preventable, have been as three. By the breakdown of the curative service, and by the feeble organisation of a preventive service, we lost our first army in the Crimea. By a distinct organisation of a preventive service, composed of sanitary officers of our first General Board of Health, the second army was saved and brought back in a better state of health and force than they had when they left. At the late commencement of the war in Egypt there was, from default of organisation, another breakdown of the curative service, and of a sanitary and entirely inade-

quate preventive service, and it was evident that if the war instead of being a short one had been a long one, there would have been a repetition of the disasters that befell our first army in the Crimea. Now, however, the comparative health of the present army in Egypt may be taken as indicating better sanitary arrangements. In the Indian army the progress of sanitation—leaving much, however, yet to do—has been most satisfactory. The old death rate there was 67 per 1,000. During the last decade it had been brought down to 20 in 1,000, and since then the progress has been still more satisfactory. According to the last reports, the death rate had been actually brought down to little more than the present death rate of the home army. On the other hand it may be mentioned, as a fact to be regarded socially with concern, that the Russian army and the Russian civil population, from the utter default of sanitary science, are the heaviest death-rated of all Europe. The death rate of the Russian army at home is now just double that of the English home army. Of all continental Governments, so far as we know, the Russian Government has shown the least care or competency for the conservancy of civil or military life and force, or for colonisation. Judging from the excessive death rate of its army and from other circumstances of the neglect of the comfort, the health, and the strength of the civil population, the Government of Russia must be pronounced to be the worst Government on the Continent. I would now advert to incidents of home interest in promise of civil progress. Of these our inquiry may be as to what may be expected from the Commission which most affects your position and future service, the Commission for housing the poor, to which, on invitation, we submitted evidence? What may be its outcome we cannot say; but it cannot fail to be observed that it has so fallen that a subject which would require a leadership of the most highly-qualified and undivided and severe attention, has been left to a conspicuously most distracted attention. Shortcomings from it may therefore be apprehended, on which it may be necessary to make representations for relief. Nevertheless, that Commission has presented the great feature of the spontaneous and earnest attendance of the eldest son of our Queen, of whose own cottages I was enabled some time ago

to say that if all her subjects, owners of property, gave the like care, it would be as if every third year were a jubilee, and there were no sickness and no deaths. You will not have failed to note that in London his Royal Highness went privately and trod a slum to see for himself the lowest conditions to be amended; and that when in Dublin he escaped from the glare of his surroundings, and went and trod a slum there too for examination and comparison. To such slums, to such common conditions of the wage classes in urban districts in England, as well as in Ireland, belong death rates of thirty, forty, and fifty per thousand, death-rates of more than double the death rates of the model dwellings of which his father set the example, which now present death rates of one half, or fifteen, sixteen, or seventeen per thousand; and which, as experience now shows, yield an increase of some ten years more of life, and of less harassed working ability to the occupants of the wage classes. For the sake of the political place of the question of the physical condition of the population, it may be regretted that his Royal Highness could not have prolonged his course and been enabled to enter and see the conditions in which so large a proportion of the population live, for then he would have seen the chief sources of misery and disturbance. When the administration of the relief of the poor in Ireland was with us at the Poor Law Board of London, I got out a return of the proportion of single-roomed or mud-hovelled populations in the four counties where the proportions of the mud-hovelled were the least, and the four where they were the greatest, and contrasted them. In the four where they were the least they were twenty-nine per cent. of mud hovels; in the four where they were the highest they were sixty-one per cent. In the excessively mud-hovelled population the attacks of epidemics were in proportional excess; life was shortened by one-third above that of English agricultural labourers, with whom there is also much to amend; and crimes of violence and passion, murders, and rapes were doubled. Since that time the one-roomed population has been considerably reduced. Nevertheless, it will be found that the maleficent influences of preventable unsanitary conditions remain in their degree. When in Dublin his Royal Highness marked by his attention an example of the most successful sanitation, applied in the infantile stages of

life, for the reduction of the diseases which belong to those stages, and for the improvement of mental as well as physical progress. He did not confine his notice to the superior educational institutions for the few, but he gave his attention to a typical one for the lowest and the many. He went to see an industrial school—that is to say, a half-time school, based on the half-time principle of mixed physical and mental training, as all the district orphanages, and the reformatory and industrial schools, comprising some forty thousand of children; now are. A better instance of the power of sanitation in the infantile stages of life could not be presented, for of the children who do enter into these institutions, the death-rates do not exceed three in a thousand, not a third of those above the children of the outside general population, not a fourth above the children of the slums which the Prince had seen. In the well-managed of these institutions, by frequent head-to-foot washing with tepid water the “children’s diseases” are almost banished; in one with eight hundred children visited recently they had not seen a case of measles for twelve years. In scholastic attainments, those half-time children are generally found to be in advance of the orphan children brought in who have been trained in the long-time schools. And in these half-time schools, as a rule, there are no headaches, and none of that evidence of over-pressure which, whatsoever Mr. Mundella and my Lord Aberdare may have been persuaded, will be proved before any select committee by medical officers, as well as by teachers, to be prevalent, as consequences of the insanitary conditions of their long-time code schools. Of the slums, it is to be observed, that the progenies reared there under insanitary conditions comprise the great seed plots of mendicancy and of habitual crime. It may be taken as proved that at the cost to the public first and last of one living by spoil and mendicancy, in the Industrial and District Schools three are sent to the good as law-abiding and productive subjects.

The next chief event affecting sanitary science that has occurred since we last met has, I consider, been the judgment by Lord Bramwell and his colleagues of the commission of inquiry on the pollution of the Thames, that its condition is a disgrace to the metropolis and to civilisation.

For the sake of others than yourselves, especially of foreign allies on sanitation, I would offer some explanation of general principles, of which I have elsewhere given, at much length, particular illustrations. By the Metropolitan Sanitary Commission and by the first General Board of Health, and also by a Consolidated Commission of Sewers for the Metropolis, plans were got out based on trial works, and on trials on blocks of buildings, for the purification of the houses of the metropolis from stagnant putridity, and also for the purification of the whole of the sewers of stagnant deposit in the metropolis. These trials related to what I called the separate system, that is separating the sewage from the rainfall, and sending the sewage only to the land, and sending the rainfall and the subsoil water to the river. The order of the work then would be:—First the purification of the house by water carriage and self-cleansing house drains; next the purification of the streets by self-cleansing sewers which should hold no stagnant putrefaction and emit no smells; and, lastly, the purification of the river itself. By the economies effected, by small tubular house drains and tubular sewers, three houses and three districts might be improved on sound sanitary principles well, at the cost of doing one on the old system ill. By what I must call a gigantic conspiracy in Parliament as well as out of it, in defence of expensive and profitable work (to the undertakers), and chiefly in deference to the railway engineer who persuaded Lord Palmerston that the cutting of the Suez Canal was impracticable, the Government were persuaded to set aside our plan, and proceed with the river solely at first, on what is called the combined system, by large tunnel sewers of a size to carry away storm water, or as much as possible of it, together with the sewage proper. Self-cleansing house drains and sewers by pipes were absolutely condemned, and the large “man-sized sewers,” large enough for men to enter and cleanse them of stagnant deposit were vindicated as necessary to the combined system, on the assumption that the whole of the sewage proper was all to be carried away in long lines from one end of the metropolis to the other. I was for radiating it outwards in shorter directions, and plans were laid out by our specialist sanitary engineers for

a cost of three-quarters of a million. The authors of the combined system presented an estimate for three millions for the accomplishment of their work. I ventured to declare that it would not be done for less than five millions; but it has cost more than six millions, and Lord Bramwell's Commission pronounce that the condition of the river, which it was the foremost object to retrieve, "is a disgrace to the metropolis and to civilisation." Four millions more of money are now desired by the authority which has done this work, either to carry the sewage farther and throw it into the sea—sewage, that is to say, equal to the sustentation of upwards of two hundred thousand cows—or to purify it by some method of intermittent filtration. On the scale of works done in provincial towns on the separate system, and on block buildings at trial works in the metropolis, the man-sized sewers of stagnant deposit would have been superseded by self-cleansing pipe sewers; and water carriage introduced into all the houses requiring it; and this would have been done within the cost of the combined system of outfall sewers that has failed so disastrously in both house and street; while the sewage itself would have yielded no foul smells, since on the separate system the removal of the sewage is immediate, before decomposition can commence, and, when applied to the land, is no nuisance, but a greatly increased cause of production, and a less nuisance than ordinary culture. In districts where the separate system has been properly applied death rates have been reduced by one-third, and, in some instances, nearly by one-half; and the charges for provision for the casualties of sickness, of loss of work, and premature mortality, have been reduced one-half. Those charges amount to 17s. 6d. per head per annum. Thus for a house of seven occupiers, the average of the metropolis, being £6 2s. 6d. per annum, or 2s. 4½d. per week for all in the house; whereas the cost of efficient works of prevention on the separate system would not amount to more than a tenth of that charge. Sanitary science, as in Sweden and other States, is a means to the greatest economy. Curative science does not empty hospitals; it is only the sanitary service that has done so.

The chief source of the heavy loss of life, force and money to which the metropolis has been subjected in this

great instance, and the danger of further error in the course of remedies is the declared want and the neglect of administrative organisation. The sanitation of schools, and their regular sanitary inspection, together with the physical training of the children by a distinct service, are great means for the reduction of infantile mortality. A select committee of the House of Commons on education and science and art administration, have adopted a resolution that "the primary education in England and Scotland should be under a minister of education," which is in advance in administrative principle; but we ought to present and state the evidence, which they appear not to have taken, for including physical training, and for sanitary inspection for the prevention of the spread of children's epidemics, such as was provided in the rules of our first Board of Public Health.

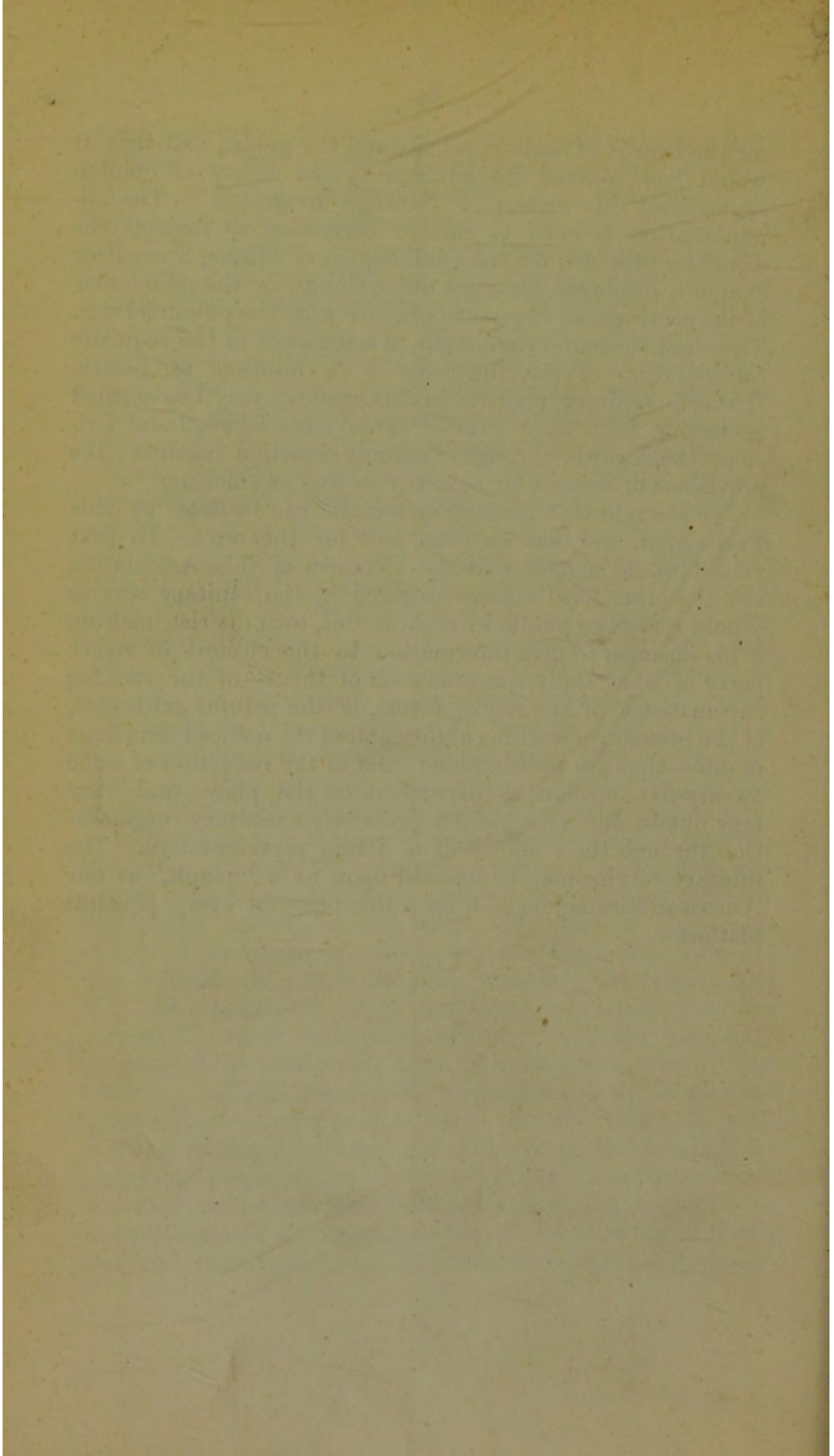
One of the largest public needs is the collection of scattered and weak sanitary functions and the consolidation distinct from the curative service, under a Cabinet Minister of Health. The necessity for this I have shown elsewhere, by reference to the repeated breakdowns of the sanitary as well as the curative service for the army, and to the extreme weakness and halting progress of the sanitary service for the civil population of India. I will only advert to some recent illustrations of the defects of the present provisions for the home service of sanitation: A principal function with which the Local Government Board is charged, in succession to the first General Board of Health, and in analogy to that of the Commons Enclosure Commission in respect to settled estates, is the institution of a competent examination, that the works are of a nature to be of benefit equal to the charges upon all absentees or reversion. Under the Board of Health the service of a local inspection for plans by an engineer; the printing and circulation of his report for local information, and local examination of witnesses, and meetings, were rendered at an expense rarely exceeding three hundred pounds. I refer to two cases of public notoriety as illustrative of the condition of the administration of the department. A measure was proposed for the drainage of the lower Thames Valley. It should have been made a primary objection to such measure that it did not provide for the purification

of the houses, by self-cleansing drains as a means of purifying the drainage, and by the discharge of sewage that was fresh instead of sewage that was putrid. As a consequence the violent opposition of adjacent owners was excited against a system of irrigation with sewage that was putrid, and masses of utterly useless speculative evidence as to various means of dealing with sewage was admitted. The plan was rejected by a select committee, but by a private bill, the costs—which I am now told were not less than a hundred thousand pounds, that is to say, a sum which would have served to drain and purify twenty thousand houses—have been made a permanent charge upon the ratepayers of the district.

I am unaware of an instance of a deep cutting, say of a thousand feet deep, having been successful as a source of supply of water for a population, or as justifying a distributed charge on the rates for one; yet such a charge was allowed at Richmond, Surrey, for a failure, as several other of the like have been in the metropolis. I may mention that when I expressed my surprise to the chief engineer of the department, that such works should be allowed, he repudiated both. Such instances, to those who understand the subject, will be very conclusive as to the condition of a department in which they could have occurred. One security provided for the protection of the future, as well as the present ratepayer against misfeasance or malfeasance was that on the completion of any works they should be examined by a competent officer of the Board, who should certify that they were complete and efficient, and that the money authorised had been duly applied. I am not aware of one instance where this has been done; of not one instance in which the due security has been taken that the authorised outlay has been duly applied to the purpose for which it has been raised. With the increasing pressure of the local rates, now amounting to between thirty and forty millions per annum, investigation may be claimed against the continuance of a loose practice which is very certainly attended by defaults that may engender repudiations of unjustifiable burthens. One result of the due enforcement of the practice of examination would have been that it would have contributed to a growing experience of the efficiency of works and the certainty of collective information of the department

for the benefit of sanitary science and the public, and that it would have averted the uncertainty and laxity of opinion exemplified in respect to sewage irrigation. The administration is open to further correction as respects the securities provided for the qualification of officers, a need for example, displayed, amongst other things, by the permission of the continuance of private practice with the public service. These are elementary points to be considered in the requisite consideration of the functions of a minister of health. Hitherto sanitary progress in this country may be regarded as having been at a rate of three steps forward and two steps backward through ignorant reaction against the provisions of science for economy as well as efficiency.

We are told that nothing systematic can be done by this Parliament, and that we must wait for the next. In that view I would suggest that the members of this Association and the other local officers engaged in the sanitary service should serve the public by each, in his own district, making it his business to give information to the electors of either party of what really concerns each of them—of the racking rheumatisms, of the raging fevers, of the painful existences, of the premature working ability, and of the reduced durations of life—that are preventable ; and of the reduction of some twenty-five millions as dependent on the place that they may obtain for an efficient preventive sanitary organisation through their choice of a fitting representative. The sanitary service may be insisted upon as a “plank,” as our American kinsmen call it, for a due place on every political platform.







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