

Public health : the right use of records founded on local facts : being two papers read before the National Association for the Promotion of Social Science, at Bradford, in October, 1859, with an account of subsequent proceedings, further remarks and evidence on the main subject, and replies to certain objections / by Henry Wyldbore Rumsey.

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PUBLIC HEALTH

THE RIGHT USE OF RECORDS FOUNDED
ON LOCAL FACTS.

PUBLIC HEALTH

THE RIGHT TO KNOW
THE RIGHT TO LIVE

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PUBLIC HEALTH

THE RIGHT USE OF RECORDS FOUNDED ON LOCAL FACTS ;

BEING

TWO PAPERS READ BEFORE THE NATIONAL ASSOCIATION FOR THE
PROMOTION OF SOCIAL SCIENCE, AT BRADFORD,
IN OCTOBER, 1859,

WITH

AN ACCOUNT OF SUBSEQUENT PROCEEDINGS, FURTHER
REMARKS AND EVIDENCE ON THE MAIN SUBJECT,
AND REPLIES TO CERTAIN OBJECTIONS.

BY

HENRY WYLDBORE RUMSEY,

AUTHOR OF
'HEALTH AND SICKNESS OF TOWN POPULATIONS,'
'ESSAYS ON STATE MEDICINE,'
'SANITARY LEGISLATION,'
ETC. ETC.

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POSTSCRIPT.

I HAVE just received, through the kindness of Dr. Daremberg, several public documents, of recent date, relating to the vital statistics and sanitary regulations of Paris. These reports fortunately enable me at once to correct some statements which appear in p. xv. of my preface.

The *Médecins vérificateurs*, in the municipality of Paris, are not only required to attest the fact of death, after careful examination, but they are also directed to obtain information respecting the nature of the fatal malady, its antecedent causes and accidental complications, its duration, the name of the person who treated the case, and other particulars. To what extent and with what degree of accuracy this information is recorded, I have not yet been able to ascertain. But an important 4to volume, entitled "*Recherches Statistiques sur la Ville de Paris*,"—which has just issued from the press, under the direction of M. le Baron Haussmann, Préfet of the Department of the Seine,—contains (at pp. 665-670) a classification of the deaths which occurred in Paris, during the three years, 1854-6, according to their alleged "causes." The Tables specify the number of persons dying from each cause, in private houses, in hospitals and hospices, and in prisons. This appears to be the first public use made of the scientific observations reported by the *Médecins vérificateurs*. I hardly need comment upon the Parisian classification of diseases and other causes of death. It differs considerably from that of the Registrar-General. A cursory inspection of the Tables is, however, sufficient to show that diseases, essentially the same, must often be returned under different heads; and for practical purposes a bolder combination of details would be preferable.

H. W. R.

September 15th, 1860.

PREFACE.

THE following papers, which I am permitted to reprint from the 'Transactions of the National Association,' were kindly read for me—in my unavoidable absence from the third anniversary at Bradford—by the Rev. C. H. Hartshorne, Rector of Holdenby*, on the 12th and 13th of October, 1859, in the Public Health Department, and were followed by a full and animated discussion on the working of our registration system.

While the benefits which the Registration Act and Dr. Farr's writings had conferred on sanitary progress were freely acknowledged, remarkable unanimity was displayed by the meeting as to the necessity of some decisive reforms in the local administration of that Act, and also as to the expediency of a large and general measure for improving the vital and sanitary statistics of the kingdom.

Mr. Alfred Price, of Gloucester, who, although not belonging to any profession, had devoted much time and labour to local sanitary reforms, first addressed the Department in support of the author's views and propositions. Quoting the admission of the Registrar-General, in his last Annual Report, that the provisions of the Registration Act are imperfect, as 'all births are not registered,' and only a very small proportion of deaths at sea are returned—he advocated measures for obtaining an amended Act with larger powers of local supervision. Being anxious to ascertain the results of the application of the Public Health Act to Gloucester in 1849, and to compare them with the facts of mortality in 1847 (as reported by the author of these papers), he had commenced, at first alone and afterwards in conjunction with Dr. Buchanan Washbourne, an inquiry extending from 1851 to 1857. In this he experienced all the difficulties which have so often been pointed out by other local inquirers. Baffled in his attempt to ascertain the precise localities of certain deaths, owing to the inaccuracy of entries in the registers, and the conflicting boundaries of borough and registration districts, he wrote to the Registrar-General, and at

* Mr. Hartshorne contributed a very interesting and instructive paper on 'Homes for Working Men,' to the first meeting of the Association, and to its first volume of Transactions. He is also well known as the originator of the movement in 1848, for improving the drainage and health of the extensive district of the Nene Valley. After great exertions for five years, he succeeded in obtaining an Act of Parliament for the improvement of the whole river—a most beneficial measure.

his suggestion submitted a form of instruction to Registrars, which was calculated to remove the difficulty. The exchange of several letters and a personal interview ended only in disappointment, the Registrar-General declining to make the requisite alterations. The Registration Act contains no provision, and the form of return affords no space, for an accurate description of the place of death ; nor are the Registrars instructed to give it. Without this information it is sometimes impossible to state with precision the death-rate of any town or village, which is not of itself a registration district or sub-district. He thought it desirable, also, that the birthplace and ordinary residence of a deceased person should be returned, wherever practicable ; for many persons advanced in fatal disease come and die in healthy places, and so increase unfairly their death-rates. The public benefit derivable from the registration of births and deaths depends much, he said, on its being made available for local use, which is not the case at present—for the Registrar-General, if required, could not give the death-rate of the city of Gloucester. For further proof of the obstacles in the way of local inquirers, he instanced Dr. Carpenter's account of Croydon, and Mr. Aspland's testimony to the inefficiency of the registration system in Lancashire. As to the value of the reported causes of mortality, Dr. Washbourne had shown that, in seven years at Gloucester, no less than 83 deaths under 70 years of age were returned by coroners as 'by the visitation of God' or 'from natural causes.' Mr. Price urged the separate registration of marriages, the local duties of that office being quite distinct from those relating to births and deaths. He also advocated a compulsory registration of births ; and referred to the infanticide prevailing in our large towns, and reported by Dr. Bachhoffner at Marylebone, and to the concealment of crime arising from the non-registration of still-births. He dwelt on the importance of *local* knowledge in calculating the population and death-rate of a town, and held that the best method of promoting sanitary measures in any locality is to secure the accuracy of its statistics and to make them easy of reference to its inhabitants. All his experience tended to enforce the remedy proposed by the author of the papers,—that there should be a superior officer of registration in every district, to revise and correct the returns, with especial regard to the causes of deaths.

He concluded by moving the following resolution :—'That the council of this Association be requested to appoint a special committee to inquire into the existing arrangements for the registration of births and deaths, and the causes of death ; also respecting the non-registration of sickness treated at the cost of the community. The committee to report on these matters to the council, with such recommendations as they think fit, of new or amended regulations, whether by legislative provision or otherwise.'

Mr. Alfred Aspland, F.R.C.S., of Dukinfield, in seconding the motion, hoped that the day was not far distant when sanitary reformers would take up the registration question, and revise the whole system. The present elaborate classification of deaths was, in his

opinion, a delusion and a snare. The names of diseases were often guessed at by Registrars, who must fill in something. The proportion of deaths certified by legally qualified practitioners in the northern districts was very small compared with the metropolitan. He produced a copy of the returns for the Dukinfield district, extracted with great labour by himself, aided by three clerks, at a considerable cost, and extending over a period of eight years. A majority of the resident practitioners had refused to sign certificates; and the certificates given often betrayed great want of exactness in the information supplied. In only 15 out of 2715 deaths, was the cause of death stated by the Registrars to be 'unknown,' when it ought to have been so returned in the greater number. These returns, he believed, were 'cooked,' to indicate zeal, and were a fair sample of all from that part of England. The *number* of deaths, he said, was the only reliable information in the mortuary registers. From a personal knowledge of the acquirements and capabilities of many Registrars in the North of England, he felt it would be hopeless for them to attempt accuracy, especially as 'half the deaths in those districts take place under the auspices of irregular practitioners.' The Clergy are not obliged to demand certificates from the Registrars before burial of the dead; and he knew of an instance in Derbyshire, where, in eighty consecutive burials, certificates were forwarded in only four cases by the Registrars. He had never met with an intelligent Registrar who would not freely confess that the information respecting the causes of death forwarded periodically to the central office, was not to be relied upon. Then* again, the returns from registration districts, based on poor-law unions, are of little avail for municipal or local sanitary investigations. He had tried to work out the information required by Government, in order to establish a local Board of Health, and, like others, he had found almost insuperable difficulties in the way. Under a different system, and with improved local machinery, he said, we might possess accurate records for legal purposes and the finest statistics in the world—materials worthy of elucidation by the pen of Dr. Farr, whom we all recognise as a most scientific statist, and one of the most attractive writers of the day.

Dr. Duncan, of Liverpool, adduced the well-known case of that town as an instance of the erroneous conclusions to which the registration returns are calculated to lead.

Dr. Alonzo Palmer, of the United States of America, observed, that his chief object in visiting England was to obtain information on this subject. In his country, they were free from the impediments which checked the adoption of the author's suggestions, and on his return he should endeavour to introduce a similar code.

Dr. Farr's valuable and interesting remarks on the whole question, with his replies to some of the statements of preceding speakers, are so fully reported in the 'Transactions' (vol. iii., p. 615), that it appears needless to reprint them here. They deserve careful perusal.

The resolution was passed unanimously.

The Rev. C. H. Hartshorne briefly expressed his approval of the

measures proposed in these papers, and moved the next resolution, which was seconded by Mr. Aspland, as follows :—

‘That it be recommended to the council to appoint the following members of the Association as the committee, with power to add to their number such other persons conversant with the subjects referred, as they may deem advisable : three to be a quorum :—The Right Hon. W. Cowper, M.P. ; Dr. Southwood Smith ; Dr. Farr ; John Simon, Esq. ; Dr. Headlam Greenhow ; Rev. C. H. Hartshorne ; Alfred Aspland, Esq. ; H. W. Rumsey, Esq.’

This was also carried unanimously.

At the close of the debate, the President of the Department summed up in favour of the author’s suggestions ; and in his admirable and comprehensive address on the following day, recommended all the main features of this project ; namely, adaptation of the boundaries of registration districts and sub-districts to the limits of sanitary jurisdictions—improvement in the reports of the causes of death—a registration of sicknesses not terminating fatally—medical supervision of the returns of births, deaths, and diseases in each district, unconnected with the registration of marriages.

No discussion could have ended more auspiciously for the project thus launched at Bradford.

At a meeting of the Council of the Association, held in London, on the following November 16th, a resolution was passed embodying the recommendations of the Public Health Department at Bradford, and adding to the subjects for inquiry ‘the non-registration of still-born children’ and ‘the extension of registration of births, deaths, and marriages to Ireland.’

The following names were also added to the list of the committee :—Sir James Clark, Bart., M.D. ; Dr. Acland ; Mr. Edwin Chadwick, C.B. ; Mr. Horace Mann ; Mr. Charles Hawkins ; Mr. P. H. Holland.

Of the eight gentlemen named at Bradford for this committee, five were either residents in London or connected (now or formerly) with central departments of administration, while three were provincial. Of the six gentlemen added by the council, five were in like manner official or metropolitan, one was provincial. Less than one-third of the committee, therefore, might be said to represent those districts to which my proposals are intended to apply, as the metropolis was expressly excluded from the operation of the suggested reforms.

It is also worthy of notice that the Public Health Department at Bradford decided on confining the committee to the statistical question, it being thought unadvisable to enter upon the subject of sanitary police. The council confirmed this limitation ; and although the members were summoned to a ‘Committee on Registration and Sanitary Police,’ only the former of the two questions engaged their consideration. The following is the result of their discussions at their three meetings :—

Resolutions of the Special Committee on Registration, reported to the Council of the National Association, May 3rd, 1860.

At the first meeting of committee, held March 5th.

I. That in order to render the registration of deaths as trustworthy and useful as it ought to be for public purposes, it is, in the opinion of this committee, desirable to substitute for the present non-scientific superintendent registrars of births and deaths, as vacancies occur among them, an order of highly qualified medical superintendents, whose scientific acquirements and practical efficiency should be duly tested by examination or otherwise before their appointment.

II. That it is desirable, in connexion with this change, to separate the office of superintendent registrar of marriages from that of superintendent registrar of births and deaths, and to leave it, where it now generally is, in the hands of the Clerk of the Board of Guardians.

At the second meeting, held March 6th.

III. That it is desirable to combine with the superintendence of the registration of births and deaths, that of sickness attended at the public expense, and, as far as possible, that of sickness attended at public institutions.

IV. That it is desirable to require the authentication of the cause of death by a certificate from a legally qualified medical practitioner, and that when no such certificate is delivered, the sub-registrar be required to inform the medical superintendent registrar, or, if not appointed, a sanitary officer, who shall forthwith make inquiry into the cause of death.

V. That an annual report, embodying the results of the registration of births, deaths, and sickness, be prepared and published for the instruction of the public, and the local administrative bodies.

At the third meeting, held March 14th.

VI. That the local reports referred to in the fifth resolution of this committee be prepared and published by the superintendent registrar of each district, in a form determined by the Registrar-General, for the information of the inhabitants and local authorities.

VII. That in addition to the annual reports already mentioned, a quarterly summary of the deaths and sickness of the district shall be published by each superintendent registrar.

VIII. That the registration of each birth be enforced, and that the births of still-born children from the sixth month be registered, subject, when not certified by a legally qualified fiscal practitioner, to the regulation stated in the fourth resolution of this committee.

IX. That as the boundaries of registration districts very often do not coincide with the boundaries of towns, or of districts under the jurisdiction of local authorities, it is desirable, whenever such places comprise portions of several registration districts,

that the latter shall be consolidated under one medical superintendent registrar, who shall prepare his reports in such a form as will show the vital statistics of the town or towns, or of newly formed communities, separately from that of purely rural or suburban districts.

X. That in the local reports of mortality and sickness, it is important that the returns should specify age, occupation, and class.

XI. That it is desirable that the registration of marriages, births, and deaths be extended to Ireland; and that the registration of births and deaths in that country be carried out in accordance with the resolutions agreed to by the committee in reference to England.

XII. That the resolutions agreed to at the three meetings of this committee be reported to the Council of the Association, with a recommendation that communications be opened with the Government, the Registrar-General, and the Poor-Law Board, for the purpose of laying before them the suggestions of the Association, and of conferring with them as to the best mode of embodying them in a legislative enactment.

The Council did not take these resolutions into consideration until June 7th, when the parliamentary session was too far advanced to admit of any effective action upon the legislation of the year. The Council, after considerable discussion, confirmed the first eleven resolutions, and appointed a deputation for the purpose of conferring with the Home Secretary, the Registrar-General, and the Poor-Law Board. The deputation to consist of—Sir J. K. Shuttleworth, Bart.; Sir James Clark, Bart., M.D.; Sir Charles Hastings, M.D.; Mr. Chadwick, C.B.; Dr. Southwood Smith; Mr. Rumsey; Dr. Headlam Greenhow; with the General Secretary, and those members of Parliament who are members of the Association.

The result of these conferences will doubtless be reported to the Association at the proper time.

Enough has now been said respecting the appointment of the Registration Committee, and its subsequent proceedings. And I might well conclude these introductory remarks by thanking the Council and officers of the Association for their liberal allowance of time and space to my papers.

But I am not disposed to neglect this opportunity of discoursing more freely on some aspects of the question than I had space for in a contribution to a philanthropic society or a volume of Transactions. At the same time, I take leave to notice a few criticisms which have been drawn forth by my suggestions.

My chief object in the present undertaking is to promote the adoption of a more rational, trustworthy, and efficient system of public inquiry

and record than has yet been applied to the SICKNESS and MORTALITY of the population of Great Britain ; so as to ascertain the prevalence as well as the fatality of diseases of different kinds, in every town and district, according to sex and age, and under each of the more notable conditions and occupations of this industrious people.

I have endeavoured to show the necessity for more accurate and impartial information respecting the CAUSES of disease in general, and of epidemics in particular, indicating their periodical variations, their climatic relations, their modes of diffusion, their physical and social concomitants.

Within the last thirty years much has been said and written about the causation and prevention of disease. It is a subject beset with natural and social difficulties, and rendered yet more perplexing by irregular controversy. Scarcely one of its vexed questions has been settled, or is even fairly in the train for solution. Positive assertions, it is true, are made in abundance,—their vehemence being just in proportion to the ignorance of those who make them. We look in vain for any established laws of ætiological science. Nor is this barrenness of result to be wondered at, when sanitary inquiries have been too often promoted, less for the sake of carefully noting, verifying, and grouping facts on the largest scale, than with the design of supporting some favoured theory or maintaining some foregone conclusion ; less with a view to determine the nature and relations of these phenomena—regardless of consequences in the search for truth—than for the purpose of justifying some predetermined ‘sanitary’ measure. When evidence is selected, when the ‘orthodoxy’ of reporters is secured, when nothing contrary to the views of the official promoters is suffered to transpire,—it is but natural that independent observers and original thinkers should prefer an appeal to the public, and thus appear in opposition to the official ranks. On the other hand, it is not surprising that those reports should be most favourably received by persons in authority, which least threaten to disturb the routine of departments or to ruffle the self-complacency of corporations and local boards, and which are least likely to shock the sensitive nerves of any great commercial or manufacturing ‘interest’ by disagreeable revelations concerning its industrial pathology. If the people, the press, and the Parliament of Great Britain prefer an authorized tampering with the very foundations of preventive medicine ; if the cry is to be—peace, peace, when there is no peace ; if those only are to be heard who prophesy smooth things ; then, indeed, it is a mere waste of time to advise a scientific organization, independent as well of corporate as of political influence, for the purpose of investigating and recording in every district the diseases which afflict its inhabitants. But I cannot believe that the nation and its representative Government are determined either to refuse authentic information or to reject conclusions which may be fairly drawn from it ; and therefore I ask that the evidence given to the public touching matters of public health shall be the truth, the whole truth, and nothing but the truth.

With regard to the statistics of disease, it would be difficult to

devise machinery more suitable for noting, collecting, and distributing truthful information than that which is actually ready for our use. In the established registration system, we possess an organization co-extensive with Great Britain, in full and effective operation. It merely needs the grant of additional powers, with the exaction of additional duties, and, above all, competent local supervision, to fit it perfectly for our purpose.

If complete records of sickness and mortality were compiled and published, in the several registration districts, by a legally-constituted order of men, of superior education and large medical experience, habituated to scientific processes, and in respectable position,—any serious misuse of evidence, any deliberate concealment or perversion of facts would be next to impossible; while the number of recorders, and the universality of their jurisdictions, would furnish the necessary corrections for occasional or individual errors. Under such a system, certificates would be no longer accepted from unqualified practitioners; for the medical superintendent would possess just that information with regard to professional qualifications which the present registrars are neither compelled nor assisted to obtain.* No longer would it be possible for Dr. Farr to admit that only 83 in 100 of deaths throughout the kingdom were certified by the medical attendants;† and that in one quarter of a year nearly 22,000 deaths were returned without *any* authorized statement of the 'cause.' Many thousands of sudden deaths, in which incomplete coroners' inquests now fail to determine the cause, would be subjected to autopsy, by direction of a superior medical officer, to whom both magistrates and coroner would defer.

Again, the registrars of births and deaths, the medical certifiers of causes of death, and the officers of public institutions would make their returns under a responsibility at present wholly wanting. The proximity of a scientific supervisor would be the preventive rather than the corrective remedy for avoidable mistakes. We should no longer be able to quote a medical certificate that somebody's death was caused by 'want of vitality,' or another's by a 'worn-out stomach' (*facts*). There would be far less probability that diseases of the epidemic or zymotic class would be confounded with diseases of particular organs, or that the equally important distinction between constitutional or blood disorders and those directly caused by external agencies would be ignored. A case of pneumonia would rarely be certified as typhus, or a death from scarlatina as the effect of a secondary dropsy. Scrofula would oftener escape the euphemism of simple 'abscess' or 'ulcer.' Disease of the heart—a most uncertain term—would less commonly stand for the rheumatic fever on which it depended.

The inherent difficulties of the nomenclature of diseases are indeed vastly increased by a recondite nosology. A classification, such as that of the Registrar-General, must lead to innumerable perplexities and

* See Mr. Horace Mann's letter. *Medical Times and Gazette*, May 19th, 1860.

† See Dr. Farr's speech. 'Transactions of Social Science Association.' Vol. iii. p. 616.

fallacies, and tend to vitiate statistical conclusions, even though the science displayed in medical certificates may come up to the average level of pathological acquirement, and this cannot be expected under the present imperfect arrangements.

Attempts to improve the certified statements of fatal diseases and the scientific evidence given at inquests or in courts of law, have been represented as an absurd striving after an ideal but impossible perfection. Granting fully that it would be most unreasonable to look for perfect reports under any general system, yet to oppose measures clearly tending to secure a minimum of error, because, in the nature of things, abstract truth is unattainable, I consider a more culpable absurdity. Without pretending that the leading facts of sickness and mortality can be recorded and grouped with entire accuracy, I hold that a much nearer approach to perfection is possible and, under the improved organization suggested in these papers, more than probable. An amount of scientific information, which it would now be idle to expect, might then characterize the medical statistics of the kingdom. Not only the superintending officers, but every inquirer, thus aided, would be able to trace fatal cases from the beginnings and earlier stages to the final manifestations of disease.

Most erroneous I deem the assumption that the last phenomena of mortal disease may be correctly reported as the 'cause' of death. They are, in general, but the penultimate effects of the real cause, or at most the last link of a chain of secondary causes. A public registration of sickness would provide the natural and obvious means of correcting mere statements of apparent results, often certified as the 'cause' on a cursory view of the dying or the dead. In crowded manufacturing districts, deaths are continually occurring, to which the medical certifier is summoned barely in time to witness the Hippocratic face, the cold drops on the livid forehead, the last agonies of life. In many a case, the disease, or rather the series of disorders, has been treated only by some bold druggist, or ignorant herbalist, or some wretched quack. Worse still, it is too often the mere expression of the very treatment—regular or irregular—to which the patient has been subjected. In thousands—especially among the infants of factory-workers—it is the direct consequence of maternal neglect, if not of slow alcoholic or narcotic poisoning. Violence, crime, intemperance, privation, congenital infirmity, syphilization, and that mysterious spring of evil—hereditary taint, are more frequently the real causes of a mortality which is hastily attributed to various secondary complaints. If these causes may be referred directly to certain abnormal conditions of society, so may the fatal diseases themselves be frequently traced to over-crowding, to dwellings of unspeakable foulness, to sites most pestiferous,—ulterior causes which need never have existed, or might long ago have been removed, and which, having been tolerated, have prostrated each victim as surely as if his unshielded breast had been struck by the murderer's knife.

Do the reports of the Registrar-General display the frightful agency of these social wrongs, or leave on record a trace of their origin?

A score or two of commonly certified 'causes' of death might easily be cited to show that they mean nothing more than the modes of death, affording hardly a clue to the real nature of the primary disease.

The certificates may be correct enough as far as they go. There may be no error in diagnosis, for there is often no opportunity for diagnosis, properly so called. The last hours of the ebb-tide of life are not the time for scientific diagnosis. We might almost as well look to morbid anatomy alone for a knowledge of morbid symptoms. We might as well expect ætiological instruction from the corpse-inspections practised in many continental towns. They were never intended to supply such information. Yet, strange to say, this acknowledged defect in foreign mortuary returns has been urged, even by sensible persons, as a reason for not instituting a more reliable, though less intrusive method of inquiry and report in this country. It has seemed to me, therefore, of some importance to ascertain the real scope and object of the French and German regulations, and the efficiency of their systems; and I have added, by recent inquiries, to the information I obtained on this subject some years ago.

In France, the law for the civil registration of births, deaths, and marriages is most precise. It is characterized by very careful provisions for proving personal identity, and for purposes of police and legal process generally. The primary duty of record is performed in each commune by the *Officier de l'Etat Civil*, who is also the mayor of the commune or his deputy. Leaving, for the present, the greater part of an excellent account of the system, given to my friend Dr. Ramsay by M. Battel, in which there is much to interest the statesman and the lawyer—I merely direct attention to those regulations which relate to the registration of deaths.

No burial may take place without an authorization given, free of charge, by the *Officier de l'Etat Civil*, who cannot furnish it until he is himself satisfied of the fact of death. Practically, however, instead of verifying the death himself, he commits this duty to a physician—a custom permitted, though not directed by law.

In Paris and some other large cities, there are physicians specially appointed and paid by the municipality to certify deaths—*Les Médecins des Morts*. These do not, however, perform the duty in hospitals, &c. Burial cannot take place until twenty-four hours after death. Permission to bury is granted as soon as the death is verified. In certain cases, as in deaths from contagious disease and in premature decomposition, interment is allowed within twenty-four hours. When there are indications of violent death or other suspicious circumstances, burial is forbidden until an officer of police, assisted by a doctor of medicine or of surgery, has drawn up a *procès verbal* of the condition of the corpse, and of the circumstances relating to it. It may then become a matter for forensic inquiry, on which I need say nothing here.

The registration (*acte de décès*) must in every case be made by the *Officier de l'Etat Civil*, on the declaration of two witnesses, males, not less than twenty-one years of age. These declaring witnesses are,

if possible, to be the two nearest relatives or neighbours, or, where the deceased is at a distance from home, the persons in whose house the death occurs. The simple *acte de décès* is confined to a verification (first) of the fact of death, and (secondly) of the identity of the deceased. Circumstances which may have preceded or accompanied the death are not to be mentioned, 'lest the report should perpetuate the memory of deeds which might cast a stain on the honour of the family.' Such a regulation, under a despotic or revolutionary government, might, I conceive, lead to the suppression of facts of serious moment to personal and public security.

The entry in the register is to contain—1st, the *prénom*, name, age, profession, and residence of the deceased, stating whether single, married, or widowed; 2ndly, if possible, the same particulars respecting father and mother; 3rdly, the birthplace. These particulars are ostensibly for the purpose of identifying the deceased, but they are also of great importance in tracing the causes of mortality. In England, as we know, deaths in hospitals, workhouses, and other public institutions are returned as belonging to the district in which they occur. In France, there is a better arrangement. Notice of every death must be given by the resident officer or manager, within twenty-four hours, to the *Officier de l'Etat Civil*, who, after verifying the fact by a personal visit, must draw up and forward a report thereof with the evidence, &c., to the *Officier de l'Etat Civil* of the last home of the deceased, who transcribes it on *his* register. The death is therefore carried to the account of a locality which has generally much more to do with its causation than the locality in which it chanced to occur. And as the birthplace is also recorded, the public registers contain all necessary materials for a thorough investigation. This we need in England. But the greatest defect in the French law is, that it does not require the *cause* of death to be indicated, and except on suspicion of death by violence, as already mentioned, it is not necessarily to be certified by any scientific person. The duty of the *Médecins des Morts* is limited to confirming the fact of death, and if it should appear to them to have been other than natural, they are bound to give immediate notice of their suspicions to the authorities. If in any large towns, as in Paris, there exist municipal regulations which require an official physician to notify the name of the fatal malady, on the report of the attending physician or of the family, no public use is made of the information thus recorded. It rests unemployed in the sanitary archives of the prefecture of police.

We turn to Germany. Professor Müller has favoured me, through Generalina von Hartmann,* with very recent information from Berlin. I find that no important alteration has been made in the system since Rönne and Simon gave a full and exact account of the mortuary registration and other medico-sanitary regulations of Prussia in 1846.

Every death must be reported to the minister of the parish. Jews

* To that lady I am also indebted for valuable statistical information from Hanover and Berlin, to be used on another occasion.

and Dissenters deliver their notices to the magistrate. There is no national law requiring inspection of the dead by scientific officers, except in cases which demand legal investigation; nor are physicians generally appointed as inspectors of corpses. The *Todtenbeschauer* of Austria does not exist here. But in a few principal towns, the local magistracy appoint medical officers for this purpose, the objects being simply to prevent either undue detention or premature interment of the corpse, and to direct sanitary precautions during epidemics. The cause of death is always registered, but not necessarily on medical authority. A report from the relatives is accepted in the absence of one from the attending physician. A formal certificate of the nature of the fatal disease, not being legally required, is rarely given. The 'causes' are roughly distributed in twelve classes:—(1) still-born, (2) debility of old age, (3) suicide, (4) sudden accidents, (5) child-bed, (6) small-pox, (7) hydrophobia, (8) *acute* internal diseases, (9) *chronic* internal diseases, (10) apoplexy, (11) external injuries, (12) unspecified. Here is no pretence to a scientific nosology. The law demands scientific report on the cause only under suspicious circumstances.

Copies of the parochial registers are forwarded to the local civil authorities—police boards, or town magistrates, or crown officers, as the case may be. These again transmit them to the Provincial Boards or to the *Landrath*, from which they are forwarded to the Statistical Bureau of the metropolis, where they are printed and published.

The replies from Hanover, with which I am favoured by Herr Amtsrichter Dr. Siemens, describe a system very similar to the Prussian. The parochial clergy, as in the north of Germany generally, are the registrars, while the completeness and accuracy of the register for civil purposes are secured by legal enactments. The law does not prescribe inspection of the dead by a physician or surgeon, and no such inspection takes place in the majority of deaths, especially in rural districts. Scientific returns therefore are not attempted, but the parish minister must report the manner of death (*Todesart*), the age, civil condition, and creed of the deceased. A medical certificate of the nature of the fatal disease is quite as rare as an inspection of the corpse; and neither is decreed by law. A classification of 'causes' somewhat like that of Prussia is adopted. The collection, revision, and compilation of vital statistics are on a system strictly analogous to that of Prussia.

In the southern States of Germany greater scientific accuracy is attempted, though seldom attained.

The regulations in Baden are remarkably precise and methodical.* Medical inspection and report are enjoined in every case. An officer to be appointed for the purpose in every town and parish. Towns containing more than 6000 inhabitants to be divided between two or more medical inspectors. The registers to be kept by these inspectors. A copy of each register to be forwarded to the *Bezirk-staats-arzt*

* See Rohatzch. 'Medicinal Polizei.' Augsburg. 1846.

(district physician) at the close of each year ; and an abstract of the register to the Sanitary Commission ; which, after revising and verifying it, is to forward it to the Government, with other reports affecting the health of the district.

Each entry of death in the register is to include among other particulars, the cause, the duration of the fatal illness, and whether or not attended by a medical practitioner. And in the annual summary returned by each town or district, the deaths, male and female, are to be classed under five heads,—(1) acute diseases, (2) chronic diseases, (3) external diseases, (4) accidents, (5) suicides. There is a column for the number dying without medical attendance, and one for the deaths in each of six periods of life.

In Bavaria, whatever may be the law at present, the practice in 1846 was reported by Rohatzch to be very defective. Inspection of the dead was not regularly performed. In the poorer and remoter districts it was deputed to the *Landarzte*, and even to bathers and barbers. Efforts were, however, being made to correct the want of uniformity, and to supply local defects of organization.

The Austrian system is more perfect, and in populous districts is tolerably well worked. Every death must be first reported to the local magistrate, who sends the *Todtenbeschauer*, a surgeon, to inspect the deceased. No clergyman is permitted to bury a corpse without a certificate from this officer, founded on a description of the last illness by the attending physician, or, failing that, on the evidence of relatives or friends, as well as on his own careful inquiry. Except in deaths from epidemics, or under particular circumstances, burial is prohibited within 48 hours. The duty of the *Todtenbeschauer* does not necessarily include a scientific report of the cause of death. All sudden, violent, or suspicious deaths, still-births in certain cases, and deaths happening under the treatment of quacks, are referred to a court of official physicians and surgeons—*Gerichtliche Leichenbeschau*. The German codes of medical jurisprudence and methods of forensic inquiry in medico-legal cases, are greatly superior, on the whole, to those of this country.

The remarkable diversity with respect to the law and practice of mortuary registration which I have shown to exist among the principal states of Europe, and their general neglect of any scientific record of the causes of death, doubtless result in statistics inferior, medically speaking, to those of our Registrar-General. But an impartial examination of the various continental systems will suggest many improvements in our own. At all events, the fact of European failures is no fair argument against such a reform of the English arrangements as is advocated in the following papers—a plan which differs far more widely from any continental system than it does from that now in operation in Great Britain.

I now revert to my plan of including with the registration of births and deaths the statistics of all sickness attended under the Poor Law, and of that relieved by charitable and provident Institutions, such, at

least, as enjoy immunities from the State or are in any way protected by law.

A public registration of disease is no new or strange demand. It was one of the 'twelve proposals by which the lives of many thousands of the rich as well as the poor may be saved yearly,' made to Parliament by a philanthropic gentleman, John Bellers, who wrote in the beginning of the eighteenth century, before the first of our modern hospitals was planned. It was again urged by the quaint Dr. Clifton, physician to the Prince of Wales, in 1732, with special reference to hospitals.* 'Private men,' said he, 'may labour and tug at it as much as they will, but they can never bring it to a bearing like the publick.'

The late excellent Dr. Walker, of Huddersfield, about 16 years ago, recommended the appointment of a medical authority in each Poor Law Union or registration district, who, in addition to other important duties, should draw up annually a report of the health of the district, from the reports of union surgeons, aided by the returns of infirmaries and dispensaries. He wished also that the officers of medical charities, as well as union medical officers, were instructed to observe the same nomenclature and form of registration.†

A comprehensive plan for the uniform registration of the sickness which affects the poorer classes—embracing all public and social sources of relief—was suggested in my evidence before the Medical Poor Relief Committee of the House of Commons in 1844.‡

In the inquiries which I was then pursuing, I was struck with the extravagant waste of time and labour by the hard-worked parochial surgeons, 'in mere pencraft, upon bundles of ruled paper, which served no higher purpose than that of economical checks upon poor-rate expenditure.' But I also saw that merely to make better use of the reports of sickness furnished by these gentlemen, would be to leave unnoticed the greater part of disease occurring among the poor—its localities, circumstances, and causes, unregarded. The immense proportion of sick poor relieved by others than the poor-law staff, especially in large towns, was therefore strongly represented to the Parliamentary Committee, in order to show that no partial measures could possibly avail either for statistical inquiry, or for medical science, or for economical administration.

For instance, to report the cases of the 5600 pauper patients of Bristol and Clifton in 1843, leaving unregistered those of the 17,000 poor who were during the same year relieved by the medical charities of that district, would be to convey a most erroneous idea of the sickness and infirmity actually prevailing among the masses of its population. Again, as to Liverpool. In 1843, 6131 cases were treated as paupers, but no fewer than 64,112 cases were attended in the grand

* Clifton's 'State of Physick,' pp. 171, 2.

† See also some very striking remarks on the want of statistical returns of disease from our Medical Charities, by Mr. Baker, the Factory Inspector, in his Report on Leeds in 1843.

‡ Evidence, 9154, 9155.

infirmaries and dispensaries of that wonderful place. Admitting that these are not average specimens of provincial towns, the returns, which I then collected and carefully compiled, showed that in eight large towns not under the Poor Law Amendment Act, in various parts of England, the mean ratio of pauper patients was as $7\frac{1}{2}$ to 100 of population, and the ratio of patients in medical charities as $8\frac{1}{2}$ to 100. Taking the mean of eight large northern towns under the Poor Law, the pauper cases were barely $2\frac{1}{3}$ per cent. of population, while the charity patients were $6\frac{3}{4}$ per cent. In Bath, the proportion was 4.18 sick paupers to 22.44 charity patients in 100 inhabitants.

An examination of the schedules appended to my evidence* might convince an impartial inquirer that the great medical charities of the kingdom ought to be included in any statistical system which may hereafter be applied to the sickness of the poor.

Projects of a more limited and special kind have been since put forward by others. Mr. Liddle, now Health Officer for Whitechapel, among many useful suggestions, in 1848, respecting the health of the poor,† proposed amended forms for the weekly medical returns made to Boards of Guardians, and their utilization in general sanitary inquiries. Again, the talented editor of the late *Sanitary Review*, in a well-reasoned article (vol. iii., p. 317), showed how easily these returns, with a few obvious modifications, might be employed as a basis for the national registration of disease, especially in the record of epidemics. He proposed a Registrar General of Diseases in London, as the central authority, to whom the district returns, after local use, should be forwarded for digest and publication. This would probably be considered a needless creation of a new governmental office.

The last proposal of the kind has emanated from Dr. Milroy. It differs not materially from its predecessors. It recalls to the sanitary statist the fact, that year by year at least a million and a half cases of sickness and accident—chiefly preventable, and due to ‘circumstances not inseparable from mere poverty’—are reported to local boards incapable of applying them to their most important purpose. In his able paper, Dr. Milroy reproduces the questionable proposal that these truly national records should be compiled by an officer of the Poor Law Board; thus, on the one hand, isolating the statistics of pauper sickness from that of the poorer classes in general; and, on the other hand, encouraging the inference that an exceptional class, peculiarly liable to disease, may be taken as an average specimen of the morbidity of the entire working population.

On several occasions within the last sixteen years, I have urged the importance of extending any public registration of sickness to Friendly Societies, including sick clubs, and the so-called ‘self-supporting’ dispensaries.

The vast extent of this field of observation, and its peculiar value

* These tables were re-published with corrections in my pamphlet, ‘Health and Sickness of Town Populations,’ 1846.

† See ‘Journal of Public Health,’ 1848.

in demonstrating the effects of industrial occupation of various kinds, as well as the influence of frugal habits, upon life and health, would justify every legitimate effort to cultivate it, as part of a national system of sanitary statistics. It contains just those elements which are necessary to compensate for the inherent defects of poor law and medical-charity returns. Its combination with these, in every district, would perfect our scheme of registration. Mr. Tidd Pratt in 1858 announced, that 'from the returns made to the Registrar of Friendly Societies, and from information received from other sources which may be relied on, it would appear that the number of these societies, enrolled and certified, and now existing in England and Wales, is about 20,000, and that the number of members exceeds 2,000,000, with funds exceeding 9,000,000*l.*' Now it also appears, from the quinquennial returns made by these societies to Government, that the average period of 'sickness' befalling each member is nearly two weeks annually.* We may therefore safely affirm that more than a million 'cases' happen yearly to the members. As yet, very little is known of the nature and causes of the sickness relieved by the funds of these societies. If we accept the calculations which have been made by Mr. Neison and Mr. Finlaison, from the quinquennial returns,—determining the *ratio* of sick-time which occurs at each age and period of life, in different occupations, and tabulated for cities, towns, and rural districts,—no scientific use has hitherto been made of this valuable store of facts; nor, indeed, is it available to the medical statist until returns are made quarterly, or at least annually, giving the same particulars of each case of disease and accident as we propose to obtain from Medical Charities and the Poor Law service. Mr. Neison says truly, that 'a careful inquiry will show the vague nature of the returns for medical and other scientific purposes, unless carried further than the mere amount of sickness, without regard to the circumstances under which it has taken place, and the causes producing it.'

Such a mass of information, when properly digested, would prove of the highest utility to the members themselves, not only as regards the financial security of their regulations, but as developing the circumstances and causes of the sickness which they subscribe to relieve; thus directing the enlightened attention of the largest class of the community to measures of prevention. I am well aware that 'sickness' in the Friendly Society sense is not always sickness in the medical sense, and *vice versâ*. But the discrepancy, being capable of explanation by more full and scientific reports, need not affect the statistical value of corrected observations.

A national registration of disease might readily include returns from certain classes more or less isolated from the rest of the community; as in prisons and penitentiaries; in the dockyards, arsenals, and other public works; in the revenue departments and the police

* Mr. Neison's Table E, males, gives an average for all ages of $1\frac{97}{100}$ weeks of sickness *per annum*. (Contributions to Vital Statistics, 1857, p. 27.)

force; in mines, collieries, and factories; in asylums of different kinds; in schools maintained by endowments or aided by national funds. All these are in various degrees under legal inspection and public control, and might therefore be called upon to contribute to the common record their *quota* of facts for the public benefit.

It is no doubt a matter of some difficulty to determine the limits within which a State Registration of Diseases should be confined, especially in the outset. A distinction has been drawn between that sickness which is relieved by local or national taxation—as under the Poor Law, and in prisons, &c.—and that which is treated in institutions maintained, more or less permanently, by charity or by provident effort; as though the latter group were wholly independent of public aid, and therefore irresponsible. The assumption, however, is not strictly correct. In both public and provident institutions, the sick are relieved by funds under legal protection. Their managers act under legal responsibility. Their rules generally may be enforced by law. They are, moreover, favoured by statutory immunities. Hospitals and dispensaries are exempt from local taxation. Enrolled Friendly Societies have been privileged by many successive Acts of Parliament; and they are accordingly compelled to make periodical returns of their sickness and mortality, as well for their own safety as in acknowledgment of the advantages they derive from the State. They might, on the same just principle, be required to extend and improve the intelligence they supply to the public. Tabular forms might be prepared and printed by authority of the Registrar General, and forwarded to every provident society and medical charity, with an offer of moderate remuneration to the secretary or clerk for making the returns. Then, and not until then, might the demand for information be enforced by penalty for non-compliance.* A distinct refusal—improbable enough—by the governors of any charity, or by the members of any enrolled society, to permit the forms to be filled up, *at the public cost*, ought at once to deprive the recusant institution of the advantages it now enjoys by law. The hospital or dispensary withholding its statistics ought not to escape the payment of rates. The provident society objecting to furnish a periodical statement of its mortality and sickness to the District Superintendent, should be liable to a suspension of its powers, exemptions, and facilities of investment and legal process.

We may admit that even if all the diseases, thus relieved and recorded, were uniformly registered by competent authorities, a large proportion of sickness would still escape public notice, unless and until, by the voluntary co-operation of medical practitioners, the registration were extended to cases occurring in the higher and middle

* A clause in the Registration Act for Scotland, and in the Registration Bill for Ireland, which compels medical practitioners to give *gratuitously* a scientific description of the cause of every death occurring under their care, under penalty of fine for omission, is a pretty specimen of the tyrannical treatment to which the medical profession is liable from the law-makers of this 'free' country.

classes of society. This has been accomplished in Philadelphia (U.S.)* without the slightest breach of professional confidence or violation of domestic privacy.

So general an extension of the system must be the work of time, the result of patient and gentle efforts, in any country.

Again, we may admit that, in the absence of a complete and universal record of sickness, materials would not exist for comparison with general death-rates. But both the diseases and the mortality of large portions of society might be ascertained; and merely because perfect records for the whole population would be unattainable for many years, it would be most unreasonable and impolitic to neglect the first practical steps towards so important an end.

Commencing with cases attended under the Poor Law, we might at once determine the district-rates of sickness and mortality in that class of the community. The statistics of hospitals and dispensaries might soon follow. Almost all the required particulars—sex, age, occupation, condition or class, locality from whence admitted, date of admission, nature of disease—primary and secondary, duration of illness prior to admission, duration of treatment, and the result (whether cured, relieved, unrelieved, dismissed, or dead)—are at present to be found in the books of most well-managed hospitals. All we need is uniformity of record, and a public supply of tabular forms, so contrived as to facilitate statistical abstracts, and to enable the scientific inquirer to identify cases treated successively in different institutions. Many valuable suggestions have been made on this subject; but none of more practical utility than those of Miss Nightingale, who has thus added to her inestimable services in the cause of science and humanity.

The fallacy of assuming any fixed ratio between sickness and mortality has been fully exposed by one of our most scientific actuaries. 'The highest ratio of sickness,' says Mr. Neison, 'is sometimes found associated with a favourable rate of mortality.' (p. 410.)

Not only in particular societies, but in various employments and

* One of the leading physicians of that city, Dr. Henry Hartshorne, has devised, for the use of private practitioners, a simple tabular record, in which every case is to be entered at the time of the first visit, *by a single mark*, on a line opposite to the name of each disease or accident, printed in the first column. There are columns for the several periods of life, in one of which the mark is to be made. There are also two columns for the sexes; but it would be an improvement to omit these, keeping a separate form for each sex, and so saving the trouble of a second mark. The last column is for deaths.

The more usual diseases are entered on a monthly table, the rarer on a quarterly. I doubt the advantage of this arbitrary separation. With slight modifications, however, I believe that this record might be introduced into private practice, easily and successfully; and that in many districts the whole body of practitioners would co-operate in this way with a Sanitary Superintendent, who would supply them with forms. Dr. Hartshorne's record has been adopted by the Medical Society of the State of Pennsylvania, and recommended by its Academy of Natural Sciences.

localities, the same discrepancy is observable. Bakers at the early and middle periods of life, are less subject to sickness than the working classes generally, but their mortality is higher. Butchers experience a very high rate of mortality, though not subject to more than the average amount of sickness. So in Scotland, the rate of mortality is found to be much higher among the same class than in England, but the rate of sickness is actually below that of England. The 'sick time' of members of provident societies in this country appears to be steadily on the increase, notwithstanding 'sanitary' improvements.

Under the existing defect of system, the difficulty is great of even approximating to the real amount of sickness publicly attended in any of our large towns; but the 'Report on the Beneficent Institutions of the Metropolis, by a Committee of the Statistical Society,' has enabled us to form some idea of what was done in one year—1854—for the physical ailments of the London population.* In some continental cities—particularly in Germany—where *all* the sick poor are provided with medical aid at the public charge, the facts are more readily ascertained. Now, comparing the sickness thus reported with the general mortality, I find that while in London the death-rate is comparatively low, the public sickness-rate is apparently much higher than in any continental city from which I have been favoured with statistical returns.†

Nor will the vast amount of illness prevailing in our large towns seem at all improbable to those who reflect on the social circumstances and changes to which I have alluded in the first of the following papers (p. 4) and elsewhere.‡ There are grounds for the belief that while the standard of hygienic observances, personal and public, remains at its present level, and while the average age of the population is gradually increasing, especially in towns,—*a diminution in the rate of mortality will be found to co-exist generally with an augmentation of the rate of sickness.* The very triumphs of advancing medical art are probably attended by an average prolongation of the helpless and infirm conditions of life.

If it were possible to include the amount, as well as the intensity of disease in a national inquiry of wider scope than that so labori-

* Not less than 647,000 'cases' appear to have been relieved in the medical charities and by the parochial medical officers; beside an unknown number of private patients, sufficient nevertheless to maintain about 2800 physicians and surgeons (see 'Medical Directory'), with an army of druggists, smaller specialists, and nurses. For the same year the Registrar-General reported the total mortality of the London 'Division' at 37,151. Now, supposing that the number of cases attended privately only equalled the number for which the profession received no remuneration, there were not fewer than 35 cases of sickness to each death,—a very high estimate.

† When a sufficient body of these facts has been collected, I hope to publish the results.

‡ 'Deaths in a younger population are attended with less sickness than deaths in an older,—in a male population than in a female,—in an agricultural than in a manufacturing community.'—*Sanitary Legislation, &c.*, p. 16.

ously and skilfully applied by Dr. Headlam Greenhow* to the mere death-rates from particular diseases in 105 Registration Districts ;— or rather, if the death-rate from each disease, the cases being correctly certified and traced to their proper causes, could be determined for every district, town, and sanitary jurisdiction in the kingdom, as it has been determined for the whole of England and for London by the Registrar General, on his present imperfect data ;—we might at no distant day rejoice in our acquaintance with the comparative effects—upon health as well as upon life—of different causes, in places of every description, under conditions and employments the most various, and at every period of the people's life-time. Even if comparisons of local rates of mortality were always founded on such an analysis of deaths, according to age, as Dr. Farr† has so clearly proved to be essential, we should be spared that preposterous abuse of the published death-rates which often characterizes popular statements and pleas for 'sanitary' reform. The mere proportion of deaths to population in some town or building, within a brief period, is again and again put forward as a proof of the favourable or unfavourable condition of health in that place, without reference to the ages, habits, and employments of its inhabitants, without distinguishing residents from casual immigrants,‡ regardless of vicissitudes of climate

* 'Papers on the Sanitary Condition of the People of England,' 1858.

† Registrar-General, 20th 'Annual Report,' p. 174.

‡ The remarkable effect upon the death-rate of a town, produced by a large proportion of migratory residents, has been well shown in Frankfort by Dr. G. Varrentrapp, one of the most expert and accurate of statisticians, to whom I am indebted for some very interesting particulars.

The general death-rate of that city (average of 8 years) is about 18·4 per 1000 ; that of the suburban villages 25·5 ;—a startling fact for any one who relies on local death-rates. But when the population of the city is analysed, it appears that no less than 4-9ths consists of strangers, 'persons who come to serve or work there,' mostly in the early period of adult life, unmarried and without children. There is therefore a large 'excess of that part of the population which experiences, on account of age, less than the average rate of mortality' (Dr. Farr). Not more than 10 per cent. of the foreign residents are under 14 years of age. This reduces the proportion of children in the whole population to 19 per cent. ; whereas, in the adjacent villages, the proportion is just half as much again—28½ per cent., which is about the same as in London, where 32 per cent. are under 15. (In England, 36 per cent. ; in France, 27 per cent.)

It appears that in 1858, deducting still-births, which are registered among the deaths, 472 or 473 persons died under 14 years of age, the population under that age being 12,371. The death-rate of children was therefore 38·1 ; while the death-rate at all ages was 18·4. In London, the death-rate under 15 is about 34·8, while the average death-rate is 24·2. This comparison goes far to establish a higher infantile mortality, with a far lower average death-rate, for Frankfort than for London.

Further, the apparently higher death-rate of villages round Frankfort is in great measure due to numerous illegitimate births, occurring in the houses of midwives who provide for the sins of the city. Removing this urban influence upon the suburban death-rate, and assuming the ages of the village population to be the same as those of the city, the ratio of mortality at each period of life may be actually less in the villages than in the city ; thus reversing the fallacious conclusion which might be drawn simply from their respective death-rates. It must be recollected that Frankfort is remarkable for a general *bien-être* and absence of pauperism.

and seasons, calamitous events, or any other modifying circumstances. Locality and structural arrangements are extolled or condemned on evidence which would scarcely satisfy even a coroner's jury. Such a misuse of vital statistics almost justifies the opponents of the science in their trite remark that 'you may prove anything by figures.' The indiscriminate appeals so often made to the rates of mortality threaten to become a public nuisance. An ill-informed member of the House of Peers lately announced that the Registrar General's reports of a decreasing death-rate in the large towns, proved that any legislation against the Adulteration of Food was wholly unnecessary!

The real sanitary condition* of a population, that is, its average state of health, is most correctly determined by summing up the periods during which persons, of every age and sort, suffer from disease, injury, or infirmity—so as to incapacitate them, in youth and middle age, for the ordinary business and functions of life,—or to make them, in childhood and old age, subjects for constant care and nursing.

The total 'sick-time' measures the *amount* of disease. Medical records display its *nature* and *causes*. The number of deaths, according to sex and age, determines its *intensity*. Upon these stand-points every statistical inquiry respecting life and health ought to depend.

When the principal phenomena of disease and death shall be carefully noted and faithfully reported in every district,—when they shall be subjected to close analysis and rigid induction by scientific superintendents of registration, we may reasonably expect the establishment of some laws of causation, some principles of prevention, and some authoritative check upon the impertinent dogmatism of unlearned and superficial sanitarians.

At present, beside the difficulty of clearing problems of ætiology from the extraneous considerations with which they have been surrounded by motives of personal interest, such as official advancement, commercial profit, or political convenience,—we have to encounter the more serious task of reconciling the observations of disinterested and philosophical inquirers, who have, honestly enough, arrived at very different conclusions.

Take, for example, the views of the late Dr. Snow as to the mode by which Cholera is propagated.† Compare them with those in the same direction, but worked out with greater logical precision and force of illustration, by that positive contagionist, Dr. W. Budd, as regards both Cholera and Typhoid fever. Proceed with the comprehensive researches of Dr. Murchison, who concludes that—while Typhus fever is eminently contagious and seldom met with in country districts except as the result of direct importation—Typhoid fever is contagious only in a limited sense, and being generated, as he believes,

* The phrase 'sanitary condition,' is now very often used to signify the extent to which cleansing of streets and houses is adopted in any place,—a curious instance of recent change in the meaning of a word which I respectfully commend to the notice of Dean Trench.

† 'Cholera and the Water Supply in the South Districts of London.'

by emanations from putrefying organic matter, ought to be called Pythogenic fever.* The cesspools and sewers which on this theory are the source of the mischief, Dr. W. Budd declares to be only the means of conveying a specific poison poured forth from some diseased intestines; and he therefore names it, Intestinal fever.† We turn from one to the other of these learned and sagacious observers with a conviction that each has given a series of illustrative facts which is all but inexplicable on the contrary hypothesis.

Dr. Herbert Barker, again, in his interesting monograph on the origin and propagation of epidemics, admits the contagiousness of typhus or typhoid (not precisely distinguishing the two) with still greater reservation. He attributes the source and diffusion of both mainly to local causes. He acknowledges, with Dr. Murchison, the 'cess-pool fever;' but, with Dr. Budd, he unhesitatingly classes Asiatic cholera among 'transmissible diseases, originating in a poison which is reproducible in the body.' Few well-informed persons, indeed, now venture to deny that pestilential cholera is communicable by human intercourse.

In opposition to the pythogenic theory, appears also the negative evidence of a distinguished officer, Dr. M. William, C.B., who shows that a class of persons employed in the Customs (waterside officers), who are peculiarly exposed to exhalations from decaying organic matter in the foul water and festering mud-banks of the Thames, are, if anything, less liable than others to fever and cholera.

One can hardly pass on without noticing the singular views of Dr. Parkin,‡ who has diligently studied the rise and progress of epidemics in almost all parts of the world. He ignores altogether the influence of contagion. He also denies, and brings a striking array of evidence in support of his denial, that either 'the products of decomposing matter on the surface, or the alteration of the air by over-crowding, or the use of impure water, have any influence in the production of the two classes of disease termed epidemic and endemic.' These he traces in many remarkable instances to telluric exhalations or the escape of malaria from the ground,—the particular miasm depending on the nature of the soil and its geological peculiarities.

We are next told by Mr. Craig, of Ayr, that all the influences before mentioned—filth, impure air, contagion, miasmata—are as nought in the production of epidemics, compared with variations in Electric Tension! Yet this strange exaggeration of a remote cause of disease ought not to deter us from a most careful study of the morbid action of the imponderable elements, as shown especially in meteorological phenomena. Moreover, we have yet to learn how much of the causation and prevention of disease depends upon its geographical distribution.§

* See *Medico-Chirurgical Transactions*, Vol. XLI.

† See Dr. W. Budd's contributions to the *Lancet*. 1859.

‡ 'The Causation and Prevention of Disease.' By John Parkin, M.D. 1859.

§ This important question, still in its infancy, is now being well handled by a learned physician of Dantzic, Dr. Hirsch.

I purposely avoid a reference to older controversies—such as those on plague and yellow fever, or the earlier discussions on cholera, in which our highest authorities of the day were engaged, important as their bearing is upon the general question. I have confined myself to a few of the latest independent writers, and I seek for a reasonable explanation of the contrariety of their evidence. The thread of truth may probably be disentangled in time by closer inquiry, by wider and more systematic observation of facts. A far keener distinction needs to be drawn between the elementary principle or essence peculiar to each zymotic disease—whatever that element may be—and the conditions under which it grows and spreads,—these conditions being too often mistaken for its cause. Neither philosophy nor physical science warrants the notion that the same single cause can produce, directly, fifty different effects. The existence of specific contagion in certain epidemics, of which small-pox may be taken as a type, is undeniable. The specific virus of small-pox is demonstrable. Progressive medical investigation may show, if it has not already shown, a material and communicable virus in other less obvious infections. A large majority of physicians of great renown—including many most careful observers and logical reasoners—have been and still are to be found in the ranks of the so-called ‘contagionists,’—holding the doctrine, it may be, with various limitations, and not seldom differing widely as to the degree in which it is applicable to the same disease.

But in justice to the minority who deny the influence—or even the existence—of personal infection, we must acknowledge that they have been among the foremost in the righteous battle with FOUL AIR and its sources, which they seem to regard as the sole cause of epidemic sickness and of preventable mortality.

All these doubts and conflicts may serve to teach us that moderation and humility which ought to guide our search for truth. They ought to check that overweening confidence which detracts so sorely from the merit of some recent sanitary publications.

My chief object in referring to these controversies, is to adduce another proof of the necessity of more extended, impartial, and permanent investigation into the social circumstances of disease—and especially of epidemic disease—than has ever yet been attempted.

Is any one so sanguine as to expect that a body of competent reporters might be organized for the whole of the United Kingdom without any legislative arrangements of a permanent nature? Or can it be reasonably supposed that the end could be obtained by merely spontaneous association? The voluntary principle, so powerful in the diffusion of Christianity, in works of mercy, in struggles for liberty, and in scientific discovery, has invariably proved quite unequal to the regular, constant, and universal performance of laborious official duties, without any hope of profit or of praise. The mere certification of the ‘cause’ of death, performed, as it is, voluntarily though too often imperfectly, by the greater number of English practitioners, can by no means be admitted as an instance to the contrary.

A gratuitous undertaking occupying scarcely five minutes for each death, though honourable to the profession, can hardly be considered a sacrifice.

Attempts to return the medico-sanitary statistics of districts, by scientific associations, though highly creditable to the members, could only be—as they have proved to be—incomplete, unsystematic and temporary. The contributors would be for the most part actuated by similar views, influenced by the same traditions, and often prompted by common professional interests. Their ablest and fullest reports would rarely represent the experience even of the body to which they belong.

Quite as little could we rely on any special commission appointed by Government. For if in action only for a time or on emergencies, it would in no way meet the great requirements of the case. Mr. Chadwick has well shown the evils of that system. To a permanent organization of the kind there would be grave constitutional objections. In the absence of legal tests of competency, and public proofs of excellence, the selection of commissioners would become a mere matter of personal preference. The standard of qualification would be arbitrary, and the commission would sink into an affair of political patronage. No one who has a just respect for science could view with indifference, still less with approbation, any such contrivance.

There remains a constitutional and rational course of procedure. Offices of high responsibility and requiring special qualifications in the holders, should be created by Act of Parliament. The choice of officers ought not to depend upon privilege, prerogative or patronage; nor yet upon the fleeting breath of popular favour; but solely upon personal fitness, fairly tested by the Examiners of a University or Board of Science, unless satisfactorily proved by meritorious services.

An objection of a singular nature has been made to the project advocated in these papers,—to the effect, that, if authorities were constituted to prepare and publish reports of the sickness and mortality of every district or local sanitary jurisdiction, nothing would be left for the amateur statist of each place to accomplish. In other words, that it is expedient to tax the country for imperfect returns, admitted to be unavailable for local purposes, in order that the national spirit of spontaneous effort may be roused, and that every village may produce a Michael or a Carpenter! If this be sound policy, it is applicable as well to the business of administration as to the supply of intelligence at the public cost. In fact, for aught we know, it may be an esoteric principle of state-management, and may thus serve to explain some remarkable passages in the history of civil and military administration. For instance, had the Governments of Europe maintained humane and wholesome prisons, we might never have heard of John Howard's philanthropy. Had the sick and wounded in that unfortunate Crimean campaign been duly provided for and properly tended by appointed officials, Florence Nightingale might not have so nobly earned her world-wide fame. There may then be a deliberate and profound design in these apparent *lâches*. The production of philan-

thropists and social reformers may be the 'final cause,' as a logician would say, for the perpetration of blunders and the conservation of abuses.

But unhappily for this splendid theory, there is also a host of discontented tax-payers who will not accept the explanation, practical men who persist in demanding, that if central offices—a Census and Registration department—a Council of Health—a Poor Law Board—are to be maintained, and their Blue Books printed at the public charge, the information these afford shall apply correctly to every town and district, and be easy of reference to its inhabitants.

Any attempt to defeat a fair project for the improvement of local administration by raising against it the stale cry of centralization—despotism—bureaucracy—would be intelligible enough and in some degree excusable, if made either by the local bodies themselves, or by ephemeral journalists who have some clique to serve, or a profit to turn by fostering vulgar conceits. But we can hardly suppose that an objection of the kind would come from the heads of a central department, with the view of averting public attention from its defects. Such an attack, however, from any quarter, is the less to be apprehended in the case of my proposals, as their object is, unmistakably, the localization of intelligence as opposed to its mere centralization.

Instruction in the main facts of life and health, of death and disease, which are alike the foundation and the plea for sanitary laws, ought of course to precede any grant of power to administer those laws. And a machinery for collecting and diffusing the necessary knowledge ought to be the preliminary condition of any further legislation for the public health. The first demand of every rational sanitary reformer would therefore be—'That a permanent organization for local scientific Inquiry and Report be established in every Registration district or small group of districts.'

This indispensable requirement was omitted in a very important petition from the Council of the Social Science Association, presented to Parliament in 1859. The petitioners were, doubtless, justified in praying 'that local authorities be invested with sufficient powers for dealing with causes of disease,' and 'that the Crown exercise a reasonable amount of supervision as to the efficiency and success with which these powers are employed.' But they failed to ask for the fulfilment of the primary condition which could alone make the exercise of those powers an advantage to the people. It seems to me that petitions of this kind proceed on the mistaken assumption, that all causes of preventable disease can be removed by parochial vestries and boards elected by ratepayers,—ignoring the only reliable basis upon which sanitary regulations can rest. So long as a large share of disease-causation is due to circumstances and conditions, which, though probably removable, may yet be wholly beyond the reach and irrespective of the functions of Town Councils and Local Boards, it is as unreasonable as it is untrue to call for only one class of preventive measures.

I have elsewhere exposed the common fallacy of assuming that a comparatively high average death-rate, in any town or district, is an absolute proof even of excessive mortality in its proper population. The alleged excess has to be examined. The facts have to be analysed by competent investigators, men versed in statistical researches. The deaths of recent immigrants have to be separated. The mortality has also to be checked by the sickness and infirmity not ending fatally, and by the proportion of 'effectives' among the inhabitants. This information, it is no less the duty than the policy of the national Government to supply. It cannot prudently be left to the suspected localities. If courageous persons, here and there, have published, at their own risk, and possibly to their disadvantage, local verities unpalatable to their neighbours; others are to be found—though I hope only a few—who would not hesitate to distort the scanty evidence within their reach for the sake of propitiating Bumbledom and fattening upon a popular delusion.

To those only who have read the following papers will the concluding prefatory remarks be interesting or even intelligible; but they are rendered necessary by objections which have been raised to some details of my scheme.

A few members of the *legal* profession, it appears, have taken alarm at the proposal to appoint *medical* Superintendent Registrars of births and deaths—supposing that it would involve them in some loss of official employment and salary. Their patriotic anxieties are needless, I am glad to say, on the present occasion. If the suggested reforms should happily be adopted by Parliament, the office now held by lawyers and clerks of unions would remain virtually intact. Only the name of their appointment would be changed. They would still be Superintendent Registrars of Marriages; and as those duties which relate to marriages, places of worship, &c., constitute the bulk of the services imposed by successive statutes on the present superintendents, and are, in fact, all which cost them any time or trouble, it would be most unreasonable in any case to diminish the salary of the office as it now exists. The medical appointment would be distinct, embracing indeed the verification of the Registrars' accounts of births and deaths, but in no other way necessarily interfering with the responsibilities of the present office.

Any violent or sudden disturbance of existing arrangements might be easily avoided; and, as it is proposed to deal only with vacancies as they happen, it is highly improbable that the proposed sanitary office could be at once completely organized in any district.

By way of illustration, we may suppose that, in case of a vacancy, the power of appointing a medical successor in the birth-and-death department, remains with the Board of Guardians; the qualifications, salary, and tenure of the new office being determined either by Parliament, or by some Government authorities legally empowered for the

purpose. Let us suppose, also, that a vacancy occurs in a single registration district, and that a candidate is selected whose fitness has been satisfactorily tested, and who is ready to accept the small governmental salary, which, according to my estimate (p. 9) would be from 170*l.* to 200*l.*, for a registration district of the average size and population. Obviously, it might be impossible in the first instance to insist upon the provision which debars the officer from private practice, for the Board might have no option but to appoint one of the resident practitioners. In the event, however, of their appointing a non-resident candidate, the prohibition ought to be strictly enforced.

Other functions of sanitary police and legal medicine, which, in the Second Paper, are proposed to be committed to the new superintendent, and to be paid for out of the county rates, might be performed at once by an officer who is not permitted to practise privately; but in no case should they be committed to a resident medical practitioner, continuing to act in this capacity.

The appointment being duly made, one of the earliest duties of the new officer would be to make careful inquiry into the grouping of population, the boundaries and natural features of his own and of neighbouring districts; so as to procure all necessary *data* preparatory to a convenient extension of his jurisdiction, by authority of the Registrar-General, on the occurrence of any vacancy in the adjacent districts to be annexed or divided. For I contemplate only 250 Sanitary Superintendents in the 587 provincial registration districts of England and Wales. A generation might pass away before the normal organization would be completed in every part of the kingdom; but the advantages of adopting a system to come so gradually into operation would more than compensate for a long delay of uniformity. Time would be given to perfect minor details. The medical superintendents, not being at first entrusted with districts of the full extent to be ultimately assigned to them, would be more able to encounter the difficulties of an untried employment. Experience might point out the desirableness of some modifications of the original scheme; and the vast majority of districts would gain by the gradual introduction of the reform.

Cheltenham, September 1, 1860.

FIRST PAPER.

Read at Bradford, October 12, 1859.

On Certain Deficiencies in our Public Records of Mortality and Sickness, with Suggestions for an Improved and Extended National System of Registration.

ALL who are interested in the cause and progress of sanitary science are aware of the invaluable aid it has received from the publications of the Registrar-General. They are, in fact, our first text-books in the study of hygeiology—the very accidence of our grammar. And it is no depreciation of the acknowledged merits of the chief of that department to add that the scientific value of his reports is mainly due to the celebrated medical statist who was fortunately selected by the Government to aid him, and who, from the date of the first Registration enactment, has ceaselessly endeavoured to animate the movements and correct the aberrations of its vast machinery, curiously developing, from the mist of atomic facts contributed by the local Registrars, the grand though hitherto shadowy outlines of the form of our national Hygeia—a vision which inspires her votaries with earnest resolves to trace more clearly her true proportions.

It is not, therefore, from indifference or insensibility to the magnitude of what has been achieved that I now proceed to insist upon the importance of much that yet remains to be accomplished; and as no eulogy of mine is needed by those who direct the present arrangements, so I trust no apology will be expected from me, if I attempt to show the utter inadequacy of existing means to the requirements of an advancing science, and to the due application of its benefits to the people.

The more important defects of our registration system may be thus briefly described:—

I. The imperfect and often erroneous certification of the causes of death, especially in crowded districts,* and the absence of any sufficient provision for verifying and correcting reported facts, so that conclusions founded on these returns are often worse than useless.

II. The frequent omission to register births, 'owing to a defect in the Registration Act,'† and the non-registration of still-births, so that it is impossible either to calculate correctly the natural increase of population, or to ascertain the number and the causes of the deaths of new-born infants.

III. The want of correct and accessible information respecting the diseases recorded by the medical officers of unions and other public

* See information supplied by provincial Officers of Health. (Essays on State Medicine, pp. 102-3-4, 350.) See also Mr. Alfred Aspland's paper 'On Certain Fallacies in our National Mortuary Returns.' (Transactions of Manchester Statistical Society.)

† See 20th Annual Report of Registrar-General, p. 1.

institutions, with especial reference to their causes, consequences, and periodical prevalence.

IV. The want of an organized system for the compilation and publication of such facts in every district.

V. The want of correspondence between the boundaries of Registration districts or sub-districts, and the boundaries of districts constituted for municipal government or sanitary management, so that local investigators are generally compelled to set aside the Registrar-General's returns, and to collect and re-arrange the materials, at a vast expenditure of time and labour, for the purposes of sanitary inquiry.*

* The following instances are a few only of those which might be given :—

1. In my Report on the Mortality of Gloucester, in 1848, I had no means of ascertaining the comparative mortality of the strictly urban parishes, the sub-urban parishes (partly within and partly without the municipal boundary), and the rural parishes, but by making an entirely new abstract of the entries in the local registers. Mr. Alfred Price and Dr. Buchanan Washbourne have since effected a far more minute examination and laborious compilation of facts for seven years; the Registrar-General's return being useless for the objects of their investigation.

2. Dr. Alfred Carpenter, in his interesting History of Sanitary Progress in Croydon, was obliged to take his facts from mortality tables published by Mr. Westall, 'as the district of Croydon in the Registrar-General's return includes many other parishes, besides taking no account of the great increase of population in the town itself: so that on this account there is no real correspondence between Mr. Westall's return and the Registrar-General's.'—(p. 14.)

3. Mr. Michael, the zealous sanitary reformer of Swansea, says:—'The present areas of registration are absurd. It is a work of the greatest labour to eliminate from the returns the rate of mortality of any given town or borough. For example, Swansea is in the domains of three registrars, each of whom registers deaths partly within and partly external to the borough. No one could therefore know what the actual rate of sickness and death was at any time but by carefully examining every entry, and this is not permitted. As a special act of grace, I was permitted to do so when an officer of health for Swansea, but since that time have been unable to procure the privilege (!); and, although chairman of the sanitary committee, it is only because I am a medical practitioner that I know anything of the sanitary condition of the town. * * * I may give you another illustration of the fallacy of drawing any statistical deductions as to districts from the reports of the Registrar-General. Dr. Gairdner has lately asked me to account for discrepancies in the apparent mortality of Swansea and Merthyr. The return for Swansea includes a population of 7000 in Llangafelach, four miles from the town, and far beyond the borough boundary. The return for Merthyr includes Aberdare and Gellygaer, from four to seven miles off, and separated from the town by a high mountain ridge.'

4. Dr. Headlam Greenhow's accurate reference to the death-rate (1841-50) of the registration district of Liverpool (see 'Papers relating to the Sanitary State of the People,' &c., 1858) has exposed him to some severe criticisms on the part of the officers of the Corporation of Liverpool, who allege, with reason, that the mortality of Liverpool as a whole ought not to be inferred from the returns of only one registration district to the exclusion of more healthy portions of the borough contained in other registration districts, and inhabited by one-third of the borough population.

The omission, for it can scarcely be called an error, is clearly attributable not to Dr. Greenhow but to the 'mal-arrangement of the registration districts,' as Mr. McGowen himself calls it.

5. In my notes on density of population in relation to mortality (see appendix A to 'Sanitary Legislation,' &c., 1858), numerous other instances are mentioned in which the inclusion of places having the character of towns with rural parishes or waste lands in the same registration districts renders the tables contained in the 16th Annual Report of the Registrar-General (pp. 142-153) perfectly useless as evidence either of the crowding or of the death-rates of those places.

VI. The general nonconformity of the boundaries of Registration districts and sub-districts with the natural characteristics and limits of the locality.*

VII. The entire neglect of many observations, social and scientific, which are absolutely essential to safe conclusions in matters of public health, and which can only be efficiently reported under a national system of Registration.†

There are, moreover, some specific anomalies and errors in the present system that serve to indicate the direction in which a reform in our vital and sanitary statistics should proceed.

(a) Among the 624 Superintendent Registrars in England and Wales, there are probably not ten‡ who are known as scientific men or who superintend the Registration with a view to the advancement of sanitary science.§

(b) The office of Superintendent Registrar of Births and Deaths is essentially distinct from that of Superintendent Registrar of Marriages; and the combination of these functions (by the 'Act for Marriages' of 1836) has led to a mistaken estimate of the objects of the former office as well as of the personal qualifications requisite for its proper execution. For the duty of superintending the performance and registration of marriages seems naturally to belong to members of the legal profession and others who, as clerks of unions, now generally hold the appointment. But the supervision and correction of local records of mortality and reproduction would fall no less naturally to persons medically educated, and in scientific hands might conduce materially to the improvement of the public health.

(c) There is no legal or authorized co-operation between those officers (of either grade) who are charged with the registration of deaths and those who record cases of sickness and accident in unions,

* Many instances of this perplexing contrariety might be cited. One may here suffice. The Forest of Dean is an extensive district, of remarkable geological formation, bounded on two of its three sides by important rivers, and inhabited by a distinct class (I might almost say race) of people, living for centuries past under peculiar laws and local customs, and now largely employed in mining and metallic works. One might expect that the published statistics of mortality and reproduction in the Dean Forest would throw some light on the physical and sanitary condition of its inhabitants. But the census and registration returns give no precise information on the subject; for not only do those districts (unions) which contain most of the Forest parishes, include other parishes, outlying and different in kind, but no fewer than twelve of the real Forest parishes, with a total population of more than 20,000, are included in unions belonging to the adjacent 'Registration counties' of Hereford and Monmouth. Nor do the Forest portions of these unions constitute separate sub-districts, so as to admit of being again grouped together for statistical returns. To determine, therefore, the longevity, mortality, and sanitary state of this singular people would require a new territorial distribution of the population and a new compilation of primary facts.

† These questions are discussed at some length in the third of the writer's 'Essays on State Medicine,' 1856.

‡ Only four were 'medical' in 1853.

§ Mr. May, of Macclesfield, a Superintendent Registrar, in an able paper read at the Birmingham meeting of the Association, showed how beneficially his important office might be directed to the promotion of sanitary measures.—*Transactions*, 1857, p. 403.

hospitals, and public institutions. The certified 'cause of death' returned to the Registrar-General is very often a different disease from that recorded for the same case in the books of medical charities or poor-law medical officers. Even with a steadily diminishing proportion of uncertified deaths, the certificates themselves too often show carelessness in record, if not errors in diagnosis.* Superintendent Registrars have no power to revise the medical certificates, or to promote a more correct nomenclature of diseases, or to correct the blunders of ignorant non-medical registrars; nor are they technically qualified to exercise such powers, great as is the necessity for some methodical revision of the Registers by an instructed local officer.

(d) There are literally no published records of the cases of sickness attended at the cost of the community. The sanitary state of the people is, therefore, inferred solely from the number of deaths—that is, from only one of the results of sickness—no public account being taken of the number and duration of the attacks which shorten the effective lifetime of the population.

Facts are accumulating to prove that the mere number of deaths occurring in any locality bears no constant or even approximate ratio to the real amount of unhealthiness existing there. As a necessary result of improvements in domestic management and medical treatment, and owing to the removal or absence of those more virulent agents of destruction which, by sharp and decisive strokes, prematurely sever the thread of life, its duration has been lengthened in our great cities; but, at the same time, the sickly and infirm period of existence has been prolonged probably in a greater degree than even life itself. Chronic diseases, or at least functional disorders, have increased. Vital force is lowered. Man's work is arrested; his duties are unperformed; his objects fail; though he still lives. Weakly, diseased children are now mercifully helped, as they never were in olden time, to grow up into weakly, ailing adults, who, in their turn, propagate with abnormal fecundity an unsound progeny. Is this true sanitary progress? Does it deserve the ostentatious parade of a decreasing death-rate?

Lastly, personal antecedents and remote causes of deaths now generally escape notice. The deaths of those who merely enter a district to die there belong rightfully to another locality; and vast numbers succumb in our large towns, in seaports, in public establishments, hospitals, asylums, workhouses, and prisons, whose diseases were not acquired in the places where they died, and who can scarcely be said to have lived there. The mere death-rate, therefore, without the life-rate of the inhabitants, may and does lead to most fallacious conclusions as to local unhealthiness.

* Ample excuse will be made for the scientific imperfections of the certificates by those who practically know the irregularity with which these certificates are procured, and who recollect that the statement of fatal causes is entirely a voluntary service rendered gratuitously by many thousands of practitioners for the public benefit.

Moreover, when the ages of a population are examined, the crude and hasty deductions from a general death-rate are often reversed.

Such are some of the more striking deficiencies in the sanitary statistics of this country. It would be easy to show how they affect, and are affected by, certain acknowledged errors and defects in our various public medical provisions for the sick poor. But this and other questions of local administration are too wide for discussion in this paper. For the present, I am content to urge that the true and safe course of the sanitary reformer lies in the path of sanitary inquiry—a path on which we have only just entered, and in which our steps are still hesitating and uncertain.

It is therefore suggested that the Legislature should without delay engraft upon the existing arrangements for registration an improved machinery for the collection of vital and medico-sanitary statistics.

A scientific officer is required in every registration district or group of districts, out of the metropolis, to superintend the registration of births and deaths ; to promote greater care and accuracy in the certification of causes of mortality ;* to compile a local register of sickness from the medical returns of parochial districts, workhouses, and other rate-supported institutions, hospitals, and dispensaries, provident societies and public works ; to inquire carefully into the causes of attacks and epidemic visitations ; to note physical phenomena and social conditions in connexion with disease ; and to aid in diffusing locally the information thus obtained.

Here I deem it advisable to enter into some details respecting the official qualifications and scientific knowledge which might be fairly required of candidates for the proposed office of Sanitary Superintendent ; and in so doing I shall have briefly to notice certain functions not at present connected with the registration department, but which, nevertheless, this officer ought to be prepared to perform.

In the first place, as Hippocrates taught, he ought to be thoroughly acquainted with the natural and social peculiarities of the locality in which he is to act. He should know its climate, soil, and waters, as well as the habits, occupations, and circumstances of its people, and the general characteristics of its *fauna* and *flora*. He ought to be

* 'They (superintending officers of health) would soon give to the registration that degree of accuracy and completeness which would fit it in a perfect manner for every use, civil and legislative, to which a perfect registration is capable of being applied.'—Dr. Southwood Smith. *Health of Towns' Commission*, First Report, 8vo, vol. i. p. 40.

'A medical registrar would be especially useful in avoiding mistakes in copying the medical certificates of death. At present many monstrous words and ridiculous errors occur from the illegibility of the certificate, which a medical registrar would be able to avoid.

'A medical superintendent registrar would be useful in detecting the errors of the non-medical registrar, when he collates the certified copy of the register with the original before it goes to London.

'Both would be useful in asking now and then for additional information or explanation from the medical practitioner who gave the certificate.'—Dr. Greenhill : quoted in *Essays on State Medicine*, note, p. 353.

competent to investigate unusual or morbid conditions of the vegetation of the district, to notice developments of peculiar forms of insect or animalcular life in air and water, to inquire into the nature and relations of such phenomena, and their influence upon the health of the higher orders of animals. He would naturally be the authorized reporter of meteorological observations for the district. The same officer should also be competent to aid in geological researches with reference to social objects: as agriculture, drainage, water supply, building, &c.*

Again, in the application of chemistry to local purposes, similar necessity exists for scientific agents in official position.

To determine the composition and qualities of soils and waters; to analyse manures and crops; to test the purity, detect the adulterations, and indicate the comparative advantages of articles used for food and drink; to ascertain the genuineness of medicines, and to reveal the presence of poisons in manufactured articles or organic structures,—all these are duties pertaining to the office of a highly qualified public analyst and histologist,† who should be responsible, on grounds of public safety, not so much to the producers, manufacturers, and retail dealers of the locality, or their representatives, as to the nation in its collective capacity.

It seems also obvious that the same officer would be the most available and trustworthy referee in those legal inquiries which are held to determine the causes of suspicious deaths and public calamities, and which so seriously concern human life, health, and liberty. An independent officer, thus highly qualified, could alone be relied on for correct reports as to the effects of various occupations and commercial processes, either on the persons employed in them, or on the surrounding population, if they are permitted in towns. He would also be an unbiassed authority for certifying the age and the fitness of children for factory labour.

Thus qualified and thus engaged, he would naturally become the scientific adviser, if not assessor, to local executive boards.‡

The regular statistical reports which I have suggested, exhibiting

* Agricultural statistics are never likely to be satisfactorily reported, unless under some such scientific direction, which shall connect them with other objects of public utility, and divest them of their merely fiscal character.

† In places where there is no public professor of the natural sciences, an officer of this description might, when not otherwise employed, act as an instructor of the people in matters which connect science with daily life and labour. The public chemical laboratory with philosophical apparatus and mechanical or industrial models—for there should be such an institute in every populous district—might be open, under his superintendence, not only for the gratuitous instruction of the people, but for their personal security, as the public office at which adulterations in articles of daily consumption might be detected. In large and populous districts, however, these duties would doubtless be better performed by a chemical officer, who might be either the deputy of the sanitary superintendent, or his coadjutor. (See the following Paper).

‡ ‘As assessors or advisers to executive boards, the services of scientific men would be highly valuable.’ (Glasgow Report of British Association, Parliamentary Committee, p. 56, 1855).

the fluctuations of vital force in man, animals, and plants, under varying material or climatic conditions, and in connexion with local customs, habits, and regulations, should be printed and circulated for municipal and popular information in every district. All this could be done without fear, favour, or prejudice, only in case the proposed Sanitary Superintendents were made independent of disturbing local influences. They should be 'emancipated from all such interference as is calculated to obstruct the zealous performance of their duties.'*

This is doubtless the chief desideratum in the sanitary management of our towns and districts.

But inasmuch as persons possessing the requisite scientific qualifications, habituated to official duties, and ready for employment, are at present but rarely to be found; and as, in any case, it is desirable to avoid sudden and sweeping changes, I propose that these appointments be gradually made, one by one, as vacancies occur in the post of Superintendent Registrar. Not fewer, I believe, than twelve of these vacancies happen yearly. Let them be filled in future by persons medically educated, whose scientific qualifications shall have been satisfactorily tested. Let these officers be responsible to Government, and be paid out of the Consolidated Fund, as the Superintendent Registrars now are. Their reports, founded on the various returns collected by them, might be sent, in the first instance, to the General Register Office—as the statistical department of Government—there to be corrected, abstracted, and compiled. The results might be forwarded to the Privy Council, as the medico-sanitary department of Government. It is of the highest importance that the power of appointing and dismissing these reporters should not be vested absolutely in local boards, which by no means represent the sanitary interests of the lowest class of rent-payers and operatives, and their families, who are the chief sufferers from removable causes of disease.

The metropolitan districts need not at present be included in any measure of this kind, for several reasons, of which only one requires mention. There are already officers of health appointed in every London district; and whether their relations with the registration officers and with the medical attendants of the sick poor are satisfactory or the reverse—whether their peculiar official position promotes or hinders the beneficial objects of their appointment—it is certain that the metropolis requires exceptional management, and that any defects in its medico-sanitary organization would require a special measure of reform. All that I ask with reference to the metropolitan system is—that it may not be extended to the country at large.

I repeat, then, that the Sanitary Superintendents of Registration, now proposed for the provincial districts, should be authorized (1) to receive the returns of sickness and mortality from the various official

* See Glasgow Report, *supra cit.*, p. 62, 1855.

persons responsible for such returns, (2) to make special inquiries into alleged causes of disease and death, especially when unexplained or unusual in amount, and (3) to compile these returns and observations in a prescribed manner, and report them quarterly (or oftener in emergencies) to the General Register Office; the results relating to each district to be published separately, in a cheap and intelligible form, for the use of the inhabitants.

It is not proposed that the Scientific Superintendent should be at once empowered to fulfil all the duties which properly belong to a health officer; neither is it meant that the appointment of a regular Officer of Health, wherever duly resolved upon, should be deferred until a vacancy occurs in the office of Superintendent Registrar; but I call attention to the fact—that the original scheme for Officers of Health in England included supervision of the registration of births, deaths, and diseases.* And it is doubtless owing to the subsequent omission of this part of the Health Officer's functions, that these appointments have failed of their original design in so large a proportion of the few districts in which they have been made.

In proposing, therefore, to start simply with the 'Registration' department of the Health Officer's duties, I fall back upon an old principle in connexion with an existing office; and this, I submit, would be less likely to encounter opposition in the House of Commons than a more complete but distinct project for the institution of Officers of Health throughout the kingdom.

Even the minor and tentative course now suggested is impossible without an amended Registration Act. The Registrar-General, with his present powers, could not, were he so disposed, inaugurate the reform. But if Parliament could be prevailed upon to try the experiment thus cautiously and gradually—the Government and the Press watching, reporting, and improving, if necessary, the operation of the measure in the districts to which it might be applied—there is a strong probability that in a few years the growth of public intelligence on this question would lead to a demand for its general adoption; even at the cost, if unavoidable, of compensating a number of the old superintendent-registrars.

A Registration department, thus reformed and extended, would prove a powerful engine of public instruction. It would aid and lighten the duties of local boards and philanthropic workers. And it would pave the way for that more complete and efficient sanitary organization, which the country will in time call for.

Some estimate of the cost of this extension of the Registration Office may be fairly demanded of me. Now, it would be impossible to name any amount of annual charge upon the public funds which would be satisfactory to those who do not perceive the immense im-

* See General Sanitary Report, 1842, pp. 350—356. 'Administrative Means for the Extension of Medical Science.'

See also Report on Interment in Towns, 1843. pp. 123—126.

See also Health of Towns Commissioners' First Report. 1844. 8vo. Vol. i. pp. 37—40.

portance of the objects which it is proposed thus to accomplish. The same variety of motives—the least discreditable of them arising from ignorance of the subject—which raised a parliamentary opposition almost sufficient to defeat the Public Health Bill of last session, would probably create a majority against any measure, however well contrived, for the general and immediate organization of a scientific corps.

To abate the just requirements of sanitary reform in the vain hope of mitigating the hostility of its irreconcilable opponents, or of firmly attaching its professed yet insincere allies, would be an abandonment of principle to which I cannot consent. The advantage of my plan, however, is, that it does not immediately involve any general or extensive change. If, in the case of public education, Parliament consents to a vast annual increase of the national grant, we may reasonably ask for a much smaller increase in the sums voted for the closely-allied department of sanitary inquiry, instruction, and inspection.

If, for instance, the moderate sum of 100,000*l.* per annum were to be ultimately applied to the stipends of the whole body of scientific Superintendent Registrars for England and Wales, exclusive of the metropolis—that is, for 587 registration districts in the ten provincial registration divisions, it would allow 170*l.* per annum on the average for each district. But two or three of these might generally be united, and the average salary of each Sanitary Superintendent would then amount to about 400*l.* Thus there would ultimately be 250 extra metropolitan Sanitary Superintendents, or 25 on the average in each Registration division.

The present Superintendent Registrars received from the Consolidated Fund, in 1857-8, 9130*l.* for births and deaths only. If an average of twelve of these appointments should become vacant annually, the increase of charge upon the Consolidated Fund, caused by the adoption of my suggestions, would at first be scarcely more than 2000*l.* per annum. The augmentation would become more rapid, as in the course of time the vacancies became more frequent, until in about thirty years (if not sooner by general consent) the organization might be complete. So that the national income would not be charged considerably until the measure had been fairly tried and public opinion tested in its favour.

But it appears to me so important to guard the independence of this official corps, that I doubt whether a post of even 400*l.* a year ought to be held by any one, however qualified, who might be professionally dependent upon his neighbourhood for the larger portion of his income, and therefore constantly tempted to make his public employment secondary and subservient to his private gains. If this objection be well founded—and there are facts enough to support it—we are forced to take into consideration certain other sanitary and medico-legal functions; the necessary remuneration for which, being paid chiefly out of local funds, might be added to the suggested Government salary, so as to place the Sanitary Superintendent in the position required for the free and impartial exercise of his office.

To these additional public functions I propose to call your attention in a following paper.

I now merely add a few words on the mode of testing the important qualifications of the proposed officers.

At present no university of the United Kingdom grants a degree in the natural sciences corresponding to those qualifications.* Nor has any examining 'Board of Science'—as recommended by the British Association—been constituted. The Legislature lately passed a measure for regulating the qualifications of practitioners in curative medicine, but the 'Medical Act' contains not a single provision relating to practitioners in preventive medicine. Yet the latter is admitted to be the higher department of the profession, as it is undoubtedly of the greater moment to the State and to the interests of the community.

The only step hitherto taken by Parliament towards the requirement of sanitary knowledge, as a condition of sanitary employment, is a clause in the Public Health Act of last session, whereby the Privy Council is empowered to issue regulations for securing a 'due qualification for vaccinators.' Yet what is this special vaccinating qualification but a fraction of that general sanitary qualification—that competent knowledge of hygeiology—which ought to be required of every public medical officer? It is, therefore, time to demand a State examination for sanitary appointments; and a Committee of Privy Council on Public Health, aided by the new 'Medical Council,' would probably be the fittest authority to determine the nature and extent of qualifications, and to appoint a Board of Examiners.

To what extent the principle of competition should be applied to these examinations would be a matter for future deliberation. In the main it is a good principle; yet there are some essential qualities, moral and intellectual, which could not well be determined by a mere competitive trial.

The foregoing suggestions may be thus practically summed up:—

I. In the event of the death, or resignation, or removal of any (extra-metropolitan) Superintendent Registrar, the duties of his office to be divided between two officers, as follows:—

Those duties which relate to notices, licences, performance and registration of marriages, to be still committed to the clerk of the union, or other person appointed by the Board of Guardians:—

The superintendence of registration of births and deaths to be committed to a sanitary officer.†

* Since the above was written, the Senate of the University of London has confirmed certain regulations respecting degrees in science.

† The following among other alterations would be required in the Acts for Registration and Marriage, 1836-7:—

Reg. Act, § 7. Repeal provision that the clerk of guardians shall have the option of accepting office of Superintendent Registrar of Births and Deaths.

Mar. Act, § 3. Repeal provision that the Superintendent Registrar of Births and Deaths shall be Superintendent Registrar of Marriages.

All provisions in the Marriage Act relating to notices, licences, performance

II. The registers of births and deaths, with the certificates of causes of deaths, to be examined and revised by this Sanitary Superintendent, who should also be empowered to collect returns of all cases of sickness and accidents attended by the union and workhouse medical officers, as well as of cases relieved by any hospitals, dispensaries, societies, and other public institutions, within his district; the persons making such returns being paid for the same at the rate of per case. The reported causes of sickness, infirmity, and mortality to be carefully inquired into by the Sanitary Superintendent, especially those connected with locality, soil, density of population, dwellings, water supply, food, occupations, habits, &c.

III. These corrected returns of births, deaths, and diseases, together with meteorological observations, and notes of local events and circumstances affecting the public health, to be reported quarterly (or oftener if necessary) to the Government; and to be published annually by the Sanitary Superintendent of each district or group of districts, in a local report, which should give a comparison of the local sickness and death-rate, with averages taken from the kingdom, from the county, and from districts under similar circumstances. These reports to be circulated among all members of local boards, magistrates, and other official persons, and to be offered to the public at a low price.

IV. The proposed Sanitary Superintendents of Registration—as statistical reporters for national purposes, independent of local and political influences—to be paid out of the Consolidated Fund; and their appointment, if made by local boards, to be subject to such regulations and conditions as might be required for the safety of large classes unrepresented by these boards, and to such tests of qualification, by examination or otherwise, as Parliament or the Privy Council might determine.

V. The Registrar-General to be empowered to combine two or more registration districts for the purposes of this measure; and also to alter the boundaries of districts and sub-districts wherever they are shown to be generally inconvenient and to need re-adjustment in harmony with local sanitary jurisdictions.

and registration of marriages by Superintendent Registrar, to apply only to the Superintendent Registrar of Marriages.

Registers of births and deaths to be kept separately from those of marriages, and under the custody of the proposed Sanitary Superintendents.

SECOND PAPER.

Read at Bradford, October 13, 1859.

On Certain Departments of Medico-Sanitary Police and Medico-Legal Inquiry, in connexion with the Scientific Superintendence of Mortuary Registration.

IN concluding my suggestions on the improvement of the statistics of births, deaths, and sickness, I said that there were certain other functions of sanitary inspection and of medico-legal inquiry which might be most advantageously entrusted to the proposed scientific superintendents of registration.

Considerations of administrative economy, no less than the intimate mutual relations subsisting between these several offices, render it of great importance that they should be treated as parts of one project.

I. The first of these departmental functions, therefore, to which I would direct your attention, is the Inspection of Vaccinations.

No one who is thoroughly informed on this question would venture to assert that the present law and practice of public vaccination in England are satisfactory and efficient, and that no further legislative interference is required.

Mr. Simon's Letter to the President of the late General Board of Health on this subject—an exhaustive and most valuable document,—contains statements founded mainly on Mr. Marson's original observations, which leave no room for doubt that the imperfection of the safeguard afforded to the English people by vaccination is attributable more to the faultiness and inefficiency of the vaccination itself, than to the omission of its performance. Mr. Marson has proved that the intensity, if not the amount, of post-vaccinal small-pox (*i.e.* the danger of the disease among the vaccinated), is greater exactly in proportion to the badness of the vaccination. The best performances of this operation show a rate of mortality from subsequent small-pox only one-thirtieth of that which results from the worst; and (I believe from the same cause) there is an enormous and increasing prevalence of modified small-pox, not ending fatally, yet perpetuating the horrid disease by contagion.

Before, therefore, we can reasonably call upon the Legislature for more stringent compulsory enactments, we should demand security for better vaccination, *i.e.*, for greater care that the lymph to be transmitted shall be taken only from perfect cases, for greater attention to the health of the subjects, for greater accuracy in the operation itself, for more critical observation of its result, and for more caution in certifying the production of the true Jennerian vesicle.*

We may, I believe, rest satisfied that all which central administra-

* 'Millions of vaccinations have been performed with lymph not fully possessing its original endowments.' Papers on Vaccination. Mr. Simon to General Board of Health, 1857, p. 39.

tion can effect in this country will be effected under the able direction of Mr. Simon, whose office, fortunately for this and other sanitary reforms, is now made permanent; but I do not hesitate to express my conviction, that, of far greater importance than direct Government interference, or than any positive instructions to vaccinators, would be the impartial inspection of the vaccinated cases by a local scientific officer.

This can be secured, in my opinion, only by separating the function of operating from that of certifying, and by committing the latter to the inspecting officer. One of the chief defects in the working of our present legalized system is the omission of certification. Private practitioners in a large number of instances not only neglect or decline to certify at all, but probably in most cases they omit to send the duplicate certificate to the Registrar. Public vaccinators must also be remiss on this point, for Mr. Griffin, in his useful 'Vaccination Statistics,' shows that out of 411,268 cases successfully vaccinated at the public charge in the year ending September, 1857, only 376,798 were recorded by the Registrars, and the latter number of course includes private cases which were not paid for by boards of guardians.*

Now, if penalties are to be enforced for neglect of vaccination, they should be imposed, not upon the non-vaccinated, but upon the non-certificated. Admission into schools, colleges, service of any kind, professional or mercantile employment, without a certificate or other proof of efficient vaccination, ought to be made a punishable act, as it is in some continental states. This, though an indirect method of compulsion, would be much safer and surer than that adopted—but not carried into effect—in England.

The public can possess no reliable guarantee for the proper execution of this protective measure until the Legislature creates a special agency for inspection and certification.

The proposed Sanitary Superintendents of Registration, or their appointed deputies, would be the proper agents. But how should they be remunerated? Mr. Griffin says that the average payment for vaccination in England and Wales is 1s. 7 $\frac{3}{4}$ d. per case, while in some unions it is 2s. 6d. The Act specifies 1s. 6d. for cases within two miles, and 2s. 6d. for those beyond. Not only medical bodies, however, but official authorities, seem to be generally of opinion that the payment for all duties connected with public vaccination should be raised to 2s. 6d. and 3s. 6d. respectively. Assuming this increase of remuneration, I propose, first, that the present legal rates be paid to the vaccinator, who should be required simply to record the operation, and thus be relieved of all further trouble and responsibility in the case; and, secondly, that the additional shilling be paid to the

* 'The order is felt to be so irksome that it is not complied with.' Mr. Griffin, *Lancet*, July 16, 1859. And 'this result can hardly be considered surprising when we reflect on the injustice, as well as impolicy, of arbitrarily requiring professional services without any corresponding acknowledgment. (Memorial of Epidemiological Society, 1855.)

inspector, for examining, certifying, and finally registering the results of the vaccinator's proceedings.

The parents or guardians of vaccinated children should be made responsible for their appearing before the inspector on the appointed days.* Those who avail themselves gratuitously of the national provision would be required to meet him at stations or other appointed places, and at stated times, under penalty for non-attendance, unless sufficient reason were given. Those who are vaccinated by private practitioners would have either to appear at the Inspector's office and to pay a higher fee—say 2s. 6d.—for inspection, registry and certificate; or, if any should prefer being visited by the inspector, to remunerate him for calling upon them, according to a regulated scale of fees. In a population of from 60,000 to 70,000, which I assume to be the average for the district of a sanitary superintendent, there would probably occur, under an effective system of vaccination, from 1500 to 1800 cases, public and private, annually; and the inspector's fees would therefore amount to nearly 100*l*. This, it must be confessed, would be a very economical outlay for the most real and complete security for efficient vaccination with which the people could be provided.

II. There is another public function—noticed in my previous paper—which, in most if not in all districts, might with the greatest benefit to society be committed to the proposed Sanitary Superintendents. I mean the examination of articles of food, drink, and medicine, suspected of impurity or admixture with deleterious substances.

So prevalent are fraudulent adulterations of the necessaries of life; so extensive is the injury which they inflict (often secretly) upon the health, nourishment, and vigour of the people; so disgraceful to the commercial character of the country is their notoriety; so completely is the consumer at the mercy of the dealer or manufacturer; so utterly unable are the working classes, at all events, to protect themselves against the ingenuity of fraud,†—that any one ignorant of the obstacles to corrective legislation in this country would be at a loss to account for the hesitation of Government and Parliament in adopting decisive measures for the public safety and credit, more especially as the urgent necessity for some enactment was declared, in 1856, by a committee of the House of Commons, whose clear and

* It has been said that inspection by another officer might interfere with our present system of eighth day visitation by the vaccinator himself, which provides for the weekly presence of a lymph supply at the station when and where it is wanted. But this objection appears to me to be merely nominal. There would be no practical inconvenience in the simultaneous visits of the vaccinator and inspector, each having a distinct duty to perform. On the contrary, the two officers would have the opportunity of rendering mutual assistance, and, in case of the unavoidable absence of either, the other would be at hand to arrange with the people for the future completion of the postponed duty.

† 'The poorer the district, the greater the amount of adulteration.'—Parliamentary Report, 1856, p. 4.

comprehensive report might well have been followed by prompt legislation.*

The real point, however, for present discussion is, whether such legislation might not, in the first place, be limited to a few effective provisions for detecting adulterations and publishing the results of analysis, with the names of offenders.

A measure of this kind need in no way interfere with the freedom of commerce, while it would afford consumers just that information which would fairly enable them to act on the well-known maxim, *caveat emptor*.

The infliction of penalties—fines and imprisonment—might be deferred for future enactment, if that be found necessary, which I doubt.

By what official machinery, then, should these falsifications of food be detected? The Parliamentary committee rightly decided against leaving examinations of this kind to Excise Officers and analysts appointed by the Board of Inland Revenue.

It seems clear also that two orders of public analysts should be instituted,—one consisting of local officers, acting in appointed districts, and competent to conduct the more ordinary examinations; the other of a few eminent specialists, acting for the whole of England and Wales, and habituated to intricate processes, who might be consulted in what are felt to be very difficult cases, as well as in appeals against local decisions.

A great majority of the inspections could doubtless be satisfactorily managed by any well-instructed analysts and microscopists. The Parliamentary Committee, however, very wisely suggested the reference of certain important and delicate cases to officers appointed by the Privy Council. But Mr. Scholefield's last Bill, as amended in Committee, is open to these grave objections:—first, it assumes, strangely and I think irrationally, that, in case any local board should determine to put the Act in force, a thoroughly competent analyst will be found, ready for office, on the spot; and, secondly, it leaves these appointments unconditionally to the local boards, not a single security being taken for testing the qualifications of the candidate, or for protecting him when appointed in the independent exercise of his most arduous duties. The analyst, even if not an ignorant or unpractised man, would hold office merely at the pleasure of the majority or of an

* It has been sensibly remarked that the people are as much entitled to legal protection with respect to the quality of the articles they purchase, as to that legal protection which they already enjoy with respect to quantity—*e.g.* against fraud in weights and measures.

If certain politicians are right in concluding that adulteration is not a subject for legal prohibition, 'because it results from intense competition, and you may as well legislate against competition as against adulteration,' their principle ought to be extended, and other fraudulent actions, resulting from 'irresistible' personal motives, ought to be left unpunished—theft, for instance, because it results from intense acquisitiveness, and, as these politicians would say, 'you may as well legislate against acquisitiveness as against theft.' Go on in this way, and we shall soon make short work of the criminal code.

influential clique of the local board, which might contain, for aught we know, the principal adulterators of the place.*

The Birmingham measure, for these reasons, is, I fear, a delusion. If allowed to become law, it will be another obstacle to normal legislation; it will create another class of interests—official and professional interests—opposed to fair and searching inquiry; it will open a new field for municipal jobbing, and afford another plea for central dictation.

Far better in every respect would it be to make use of the simple, though effective organization proposed in this paper. The Sanitary Superintendent might himself act, in some places, as the analyst of the district; whilst, in other places, these examinations might be made by a distinct officer, specially qualified, and with similar securities for efficient and independent action.

The poor should be encouraged to apply gratuitously, at proper times and with due notice, for the examination of any purchases or supplies of food which they believe to be adulterated or unwholesome. Other persons would be entitled to similar information on payment of expenses with small fees.

Not only food of all kinds, beverages, and medicines, but also mineral products, soils, manures, and other articles of commerce would be brought for examination to the District Office of Public Health.

Local authorities—magistrates and boards—would of course be empowered to order the analysis of any public supplies—water especially. Proved adulterations and impurities should be published at the analyst's office and in the local papers.

This public officer ought certainly to receive a fixed salary. For the sake of illustrating my principle, I may say not less than 200*l.* or 250*l.* for a district of the proposed population.

III. Toxicology naturally pertains to the office of a public analyst, and leads us on by a plain connecting link to a third function of paramount importance to the public safety, which I propose to deal with in the same manner.

Dr. Farr has left us no room to question the necessity of far more accurate information than we now possess respecting the causes of sudden and violent deaths. Reliable statistics show that a very large proportion of such deaths pass the ordeal of a coroner's inquest without a record of those 'particulars' which the Registrar-General requires of coroners for the purposes of correct registration. He has also shown that these particulars of information are unattainable without medical inspection and report in aid of the legal inquiry.

Medical jurisprudence, as a special branch of practice, is scarcely

* A first-rate microscopist of this town, to whom I expressed a wish that he were appointed histologist for the district, replied, 'I would not accept such a post so long as I depend on my profession for an income. I could not afford to incur the hostility of the food-selling inhabitants of the place.'

recognised in England; for the occasional employment of this or that eminent professor in courts of law does not amount to a national recognition of his office. The State troubles not itself to secure a high standard of education and a thorough practical training for those who, if fully qualified, might be steadily employed, with incalculable advantage to the public, in forensic inquiries. The supply of scientific evidence—chemical and pathological—in coroner's inquests and courts of assize is abandoned to chance. Any one may act as medico-legal referee for the nonce at the will, or it may be the caprice, of any lawyer practising in any court. And, as an almost inevitable result, the physical sciences are not seldom subjected to extraordinary perversions, and the medical profession to needless humiliation, by the performances of its members in the witness-box. In the absence of persons specially qualified and experienced, medical practitioners are called away from their ordinary and multifarious engagements, and too often appear in court rather as partisans of a cause than as philosophical expounders of obscure and terrible events. If human life is to retain the comparatively high value which has been so nobly set upon it in England; if every strange and suspicious death is to be submitted to a rigid and complete—and, if necessary, a costly—investigation; if the principle of popular co-operation in our inquests is to be maintained; and if, at the same time, our forensic medicine is no longer to excite the astonishment—sometimes even the ridicule—of intelligent foreigners, science must be systematically brought to bear upon the legal process.

Now, the machinery suggested in this paper is precisely calculated to meet the administrative difficulty and to supply the public want. Those subjects which would chiefly engage the attention of a sanitary superintendent of mortuary registration are hardly to be separated from the study and practice of forensic medicine. The cause and manner of every sudden death brings the preventive and the medico-legal functions into close co-operation. No theoretical distinction between medical jurisprudence and hygeiology deserves serious notice in administrative arrangements.

I may be allowed to support my views by a quotation from the same judicious authority to whom I have already referred.

'Without an examination of the organs of the body, and often without an analysis of their contents, the cause of death cannot be determined, either negatively or affirmatively. And this examination would be most satisfactorily conducted by one medical officer in each district, who would become by experience expert in manipulation and sagacious in judgment. He might undergo, before his appointment, a special examination in medical jurisprudence, and be very properly the Health Officer of the district.'*

We may therefore safely conclude, in the first place, that together with other much needed reforms in the coroner's office and court,

* Dr. Farr's letter to the Registrar-General on 'Suggested Improvements in the Coroner's Inquest.' Nineteenth Annual Report of Registrar General, 1858, p. 205.

many of which are recommended both by Dr. Farr and by the learned body of coroners themselves, an expert in medical jurisprudence and toxicology ought to be appointed in each of the districts which it is proposed to commit to a sanitary superintendent of registration; and secondly, that the same officer, if thoroughly instructed, might perform both these functions, with the others already mentioned.

There are engagements of a medico-legal nature, not relating to sudden or violent deaths, which must not be forgotten in this sketch. The medical referee might have to inquire and report on alleged personal incompetence—whether moral, mental, or physical—for the fulfilment of public or family duties, or of labour contracts, and to detect malingerers. He might have to protect extreme youth, perhaps also extreme old age, by examination and certificate, from illegal compulsion to work. He might have to inquire into the nature and extent of personal injuries, caused by mechanical violence, by unprotected machinery, by accidents in mines or in public conveyances; or resulting from brutal assaults incited by hatred, by lust, by intoxication, or by wanton savagery; many of these attacks and injuries, like ordinary cases of sickness, ending not in the death of the sufferers.

Three orders of official experts would be required under a normal system of medical jurisprudence; the first, as now suggested, for coroners' inquests and local investigations; the second, consisting of men of higher standing, for the circuits of assize, and for inquiries of a more extended scope and design; the third, a central committee of eminent toxicologists, medical jurists, and psychologists, to aid the metropolitan courts and to report on appeals from the provinces.

It will at once appear to every well-informed person, that I am recommending neither the French nor the German system of legal medicine; although there are features in both which deserve unprejudiced attention, and might perhaps be adopted, with some modifications, in this country.

As to the remuneration for the district medico-legal office. All the reasons which have been so fairly urged by the coroners, and never, I believe, refuted, for commuting the casual and precarious fees of their ancient office into a fixed stipend, apply with equal force to a stated salary for the medical referee. And for the sake of completing my hypothetical estimate of expense, I may name 150*l.* or 200*l.*, as an average annual payment for these duties, if combined with the before-mentioned functions, in a district of the proposed extent.

I have now completed my description of four sanitary offices—statistical, supervisory, analytical, medico-legal—all of them subjects of pending legislation; and I have shown that a moderate stipend for each function would raise a total salary of 850*l.* or 900*l.* for the district. This amount I consider to be the minimum which would suffice to place the office-holder in a position corresponding to his superior qualifications and weighty responsibilities, and justify his absolute restriction from private medical practice. Nearly half of the above salary would, on my plan, be paid out of the Consolidated

Fund; the remainder principally by local taxation, and the county-rate, for obvious reasons, would be a more equitable and convenient source than the parochial or district rates.

It has appeared to me unnecessary to touch upon the ordinary duties of a Health Officer; although some of them would fall, as a matter of course, to the proposed sanitary superintendent. They are well known to this audience. Some are specified in an Act of Parliament; and all that strictly belong to the office, in its present condition, are comprehensively, yet concisely, stated in the Instructional Minute of the late General Board of Health (Dec. 20, 1855), then under Mr. Cowper's presidency. I consider this to be our best summary of the purely hygienic duties of the Officer of Health; but I venture to suggest, that some two or three of the details of that 'Minute' properly appertain to the medical visitation of districts smaller than it is desirable to commit to the officer in question. For instance, regular inspection of the dwellings of the poorer classes, whether common lodging-houses, cottages, or apartments, with reports thereon to the Local Board, and sanitary advice to the poor occupiers, is or ought to be the business of the medical officers of parochial districts, and need be referred to the superintending Health Officer only in special cases, or by way of appeal. Whenever the department of medical attendance on the poor is placed upon its right footing, it will assume a sanitary and preventive character, and the officers will prove most valuable aids and deputies to the Health Officer of a larger sphere of duty. The medical-relief corps, also, would in time supply the most eligible candidates for vacancies in the appointment of sanitary superintendents.

A full programme of the details of district sanitary inspection would theoretically include certain matters not at present under legislative consideration. I pass them by purposely, as I wish to avoid everything which might startle the cautious or excite needless difference of opinion.

There is, however, one unperformed public duty which calls for notice at this time and place.

The working of the new 'Medical Act' has shown the necessity for some recognised local agency to aid and correct the registration of medical practitioners. The Medical Council is not only without power to prosecute for offences against the Medical Act, but it has no local machinery for scrutinizing and verifying the claims of applicants for registration. Organized co-operation with the metropolitan Medical Registrar is neglected in most districts. In some towns it is attempted by medical societies, self-formed for this purpose. But when these associations enter upon a course of rigorous action in defence of professional interests, they are in danger of degenerating into a sort of small courts of inquisition for the suppression of medical heresies; and in that case they would inevitably excite the jealousy of the public, and fail in the really useful object of their institution. Accuracy of record, and periodical correction of the Medical Register, will be most satisfactorily attained by entrusting

local inquiries and proceedings, under the Act and by authority of the Medical Registrar, to the official superintendents, whose various functions are the subject of this paper.

On the other hand, the duties and responsibilities of a district Officer of Health ought to be such only as obviously belong to a jurisdiction of limited extent, and might be discharged conveniently by a local authority. Wider and more comprehensive functions of observation and comparison, such as would be exercised over several counties, and involve authoritative advice and frequent communication with the Privy Council, belong more appropriately to Government inspectors; say, one for each of the ten extra-metropolitan registration divisions of England and Wales, in official relation with the Health Officers or Sanitary Superintendents. There are, moreover, some special institutions and regulations which might demand the undivided attention of itinerant inspectors for the whole kingdom. Several examples of this method of supervision, perhaps more than enough, are to be seen in operation among us. Probably, there may be too strong a tendency to create special offices, and to isolate inspecting duties, in cases where the public would be gainers by consolidating them. But I avoid entering into details upon this point. My principal object in referring to general inspection is to distinguish it from local superintendence. The latter, in my opinion, should neither be so minute as to interfere with existing arrangements for the medical care of districts, nor so extensive as to supersede, ineffectually, a higher kind of inspection.

Finally, to anticipate a probable objection to the general project of sanitary officers, advocated in these papers;—it may be said that an attempt to combine so many different employments in one office is likely to fail, owing to the great difficulty, if not impossibility, of obtaining candidates who would possess the requisite variety and extent of qualifications.

I admit that this objection would be valid and the difficulty insuperable, were it proposed at once to organize a corps of such officers for the whole country.

But my object, I repeat, is to introduce the reform gradually. In this, as in all other matters, a demand would in time create a supply; and a sufficiently numerous body of learned and skilful men would in the course of a few years be duly prepared to fill vacancies as they occur, and to undertake the extended responsibilities of the appointment.

We may, after all, grant that a thorough knowledge of physiology as regards living forms generally,—of pathology in the same wide signification,—of chemistry, organic and analytical,—of natural philosophy, geology, and meteorology,—and of statistical processes and results, would rarely co-exist in the same officer adequately with other indispensable moral and mental qualities; and therefore that wherever facilities offered, the various employments might be advantageously divided, in order to secure the more complete fulfilment of the several objects contemplated. But we shall all agree that no one form of organization can possibly ensure, universally, a perfect administration.

We must accept the nearest approach to the *beau idéal* which the intellectual and material resources of the nation can supply, and which the social peculiarities of the locality will admit. Now, to apply these axioms and postulates. In a very populous district, containing, say, more than 150,000 inhabitants within a manageable area, it might be better to divide the several occupations between two officers, entrusting to one, perhaps, the inspecting* and the statistical, to another the forensic and the analytical.

But, in the majority of districts, I believe it will be found that a general acquaintance with the natural sciences, official aptitude and experience, power to call in further technical aid or to refer any disputed point to a metropolitan board, and liberty to accept the local co-operation of persons more profoundly versed in specialties, are conditions which would render one scientific appointment more beneficial to the public than the creation in the same place of several offices, which, from the very circumstance of their number, must be inadequately endowed.

The principal requirements of the improved organization which I recommend, are :—

First, the comprehensive education, practical training, and strict examination, of candidates for sanitary office.

Secondly, a proper performance of many unfulfilled or imperfectly executed—yet most necessary—public duties.

Thirdly, the consolidation of certain allied functions, instead of their fragmentary, expensive, and inefficient separation among several classes of agents.

Fourthly, the prohibition of private medical practice to public sanitary officers.

In carrying these principles into operation, it may appear desirable, as I have admitted, to double or treble the population of a sanitary district in some localities, and to furnish its official superintendent with one or more scientific coadjutors.

Safe and true principles of administration admit of easy adaptation to local differences and to the various circumstances of a people.

Having, I hope, met the more practical criticisms to which my propositions may be open, I need hardly dwell upon possible objections of a merely theoretical or æsthetical nature. Yet a few remarks seem to be due to those who hold that sanitary regulations do not come within the province of Government, and that systematic legislation for the public health is an improper interference with personal freedom of action.

The opposition of this school appears to me to depend mainly upon their ignoring the distinction between PERSONAL HYGIÈNE, or the voluntary action of individuals in the preservation of their own health and that of their families, and PUBLIC HYGIÈNE, or the legal action of society, by sanitary institutes, for the welfare and security of the public.

* If the regular inspection of vaccinations should prove to be too onerous an addition to the multifarious duties of a Health Officer, it might be entrusted to his deputy, who should be one of the medical-relief corps of his district.

Every one fairly instructed in the first elements of physiology and the simpler precepts of health, is responsible to his Maker and himself alone for the neglect of those maxims and precautions which are strictly personal and in no way affect the well-being of his neighbours. But laws for the protection of the public health are a necessary condition of civilization, binding each member of the community by the good old rule, *sic utere tuo ut alienum non lædas*. Every citizen is thereby made responsible to the State, and surrenders for the general good a portion of his natural liberty, as the price of his share of the advantages of brotherhood and nationality.

On the other hand, it would be utter waste of time to notice the shallow declamation and smart sophisms which I have seen aimed at well-considered projects of medico-sanitary organization. What need one reply to such epithets as—utopian, un-English, centralizing, despotic, &c. ? Applied to rational administrative reforms in a country where the local element of government greatly preponderates, and where the central executive is strictly responsible to Parliament, they are as—

. 'a tale
Told by an idiot, full of sound and fury,
Signifying—nothing.'

Unfortunately this verbiage tells with an unthinking multitude; and the result, as Mr. Ruskin eloquently describes it, is—a population which 'resists every effort to lead it into purity of habit and habitation, to give it genuineness of nourishment and wholesomeness of air, as a new interference with its liberty, and insists vociferously on its right to helpless death.'

Every teacher of great truths must reckon upon this sort of opposition. But the wise and hopeful sanitary reformer will not be discouraged. He will not cease to propound and defend—forbearingly yet unflinchingly—those principles of public action which he believes to be of fundamental importance in sanitary management. Nevertheless he thankfully accepts, from those in power, such instalments of a better system as are possible under existing circumstances, and are not incompatible with future progress in a right direction. Cautious and far sighted, however, he does not hesitate to reject unsafe concessions, founded on no sound principle, even though plausible and attractive; for well he knows that they tend to create future impediments, to conceal or to protect present abuses, and to strengthen the hands of the obstructive and reactionary.

His motto is 'Progress.' His means;—impartial, scientific, and comprehensive inquiry; skilful compilation and truthful publication of facts in every district; unsparing exposure of abuses; systematic instruction of the people by qualified teachers; enlightened administration of wise laws.

His ends;—the health and longevity of the people, aiding their moral and religious improvement, confirming the obligations of social order, strengthening the foundations of public liberty, and thus promoting the lasting peace and happiness of his country.