REPORT OF THE COMMISSIONERS.
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The Commissioners, appointed on the third day of July last "to prepare and report, to the next General Court, a plan for a Sanitary Survey of the State, embracing a statement of such facts and suggestions as they may think proper to illustrate the subject," have considered the matters referred to them, as far as the limited time at their command, and other circumstances, since their appointment, would permit, and submit their Report.

As the object of our commission is comparatively new, and may not be clearly understood by every person, we will state what we understand to be its intention. By a Sanitary Survey of the State is meant, an examination or survey of the different parts of the Commonwealth,—its counties, its towns, and its localities,—to ascertain the causes which favorably or unfavorably affect the health of its inhabitants. The word sanitary means relating to health.¹ When we speak of the sanitary condition of a town, we include a description of those circumstances which relate to, or have an effect upon, the health of its inhabitants. When applied to the inhabitants of a town or district, in their social capacity, it relates to public health; when to individuals, it relates to personal or private health.

The condition of perfect public health requires such laws and regulations, as will secure to man associated in society, the same sanitary enjoyments that he would have as an isolated individual; and as will protect him from injury from any influ-

¹ This word is derived from the Latin sanis, meaning "soundness of body, health." It is sometimes written, erroneously, as we think, asanitary, sanitary, saunitory, and sanitory. The most correct authors, however, now write, sanitary. Hygiene (from a Greek word, derived from Hygeia, the goddess of health, meaning to be well,) is defined "health, the preservation of health, that part of medicine which regards the preservation of health." Hygiene and hygienic have the same meaning as sanitary. These words are sometimes used as technical terms, especially by medical men; but we dislike, and see no good reason for substituting them for the more simple, proper, and comprehensive English words, health and sanitary, which are generally understood. We would divest our subject of all mystery and professional technicalities; and as it concerns every body, we would adapt it to universal comprehension, and universal application.
ences connected with his locality, his dwelling-house, his occupation, or those of his associates or neighbors, or from any other social causes. It is under the control of public authority, and public administration; and life and health may be saved or lost, and they are actually saved or lost, as this authority is wisely or unwisely exercised.

The condition of perfect personal health requires the perfect formation of all the organs of the body, and the perfect performance of each of their functions, in harmony with all the others. Such a condition gives to its possessor, strength, energy, power, buoyancy of spirit, happiness. Disease may be an imperfection in some organ, or a derangement or improper action in some function, or both: and it may exist, and does actually exist, in all communities, in an infinite number of degrees, from the slightest deviation from a standard of perfect health, through all the varieties of sickness, to the lowest standard of vitality, just as the body is about to perform its last respiration. Such a condition gives to its possessor, weakness, lassitude, inability, depression, pain, misery, death. And one or the other of these conditions may be chosen, and is actually chosen, to a greater or less extent, by almost every human being.

We believe that the conditions of perfect health, either public or personal, are seldom or never attained, though attainable;—that the average length of human life may be very much extended, and its physical power greatly augmented,—that in every year, within this Commonwealth, thousands of lives are lost which might have been saved;—that tens of thousands of cases of sickness occur, which might have been prevented;—that a vast amount of unnecessarily impaired health, and physical debility exists among those not actually confined by sickness;—that these preventable evils require an enormous expenditure and loss of money, and impose upon the people unnumbered and immeasurable calamities, pecuniary, social, physical, mental, and moral, which might be avoided;—that means exist, within our reach, for their mitigation or removal;—and that measures for prevention will effect infinitely more, than remedies for the cure of disease.
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INTRODUCTORY STATEMENT.

Some of the reasons for this belief will be given in the
pages of this report. If it shall appear that it is well founded,
—if, indeed, there are facts to support, and legitimate arguments
to sustain it,—what subject, it may be asked, can come up for
consideration, that shall transcend it in importance? We look
upon things as valuable, that are worthless without life, and
and cannot be enjoyed without health. How much more
valuable, then, the means to possess and to enjoy both life and
health, which alone give value to other objects! When com-
pared together, all other matters this side the grave dwindle
into insignificance.

But whom does this great matter of public health concern?
By whom is this subject to be surveyed, analyzed, and practi-
cally applied? And who are to be benefited by this applica-
tion? Some will answer, the physician, certainly. True, but
only in a degree; not mainly. It will assist him to learn the
causes of disease; but it will be infinitely more valuable to the
whole people, to teach them how to prevent disease, and to
live without being sick. This is a blessing which cannot be
measured by money value. The people are principally con-
cerned, and on them must depend, in part, at least, the intro-
duction and progress of sanitary measures.

An eminent physician has recently said: “Our education
has made our calling exclusively a curative, and not a conser-
vative one, and the business of our responsible lives has con-
ained us to it. Our thoughts are devoted to, our interests are
concerned in, and our employments are connected solely with,
sickness, debility, or injury,—with diminution of life in some
of its forms. But with health, with fullness of unalloyed, un-
impared life, we, professionally, have nothing to do.”1 Though
this may generally be true, professionally, yet the intelligent
physician “can see arrows of disease, invisible to any one else;
watch their havoc, and know whence they come, and how they
may be stayed;” and there are many eminent medical men,
who have, as individuals, nobly used the means which their
superior position and knowledge have placed within their con-
trol, in the prevention of disease, and in the promotion of

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public health. And we wish to increase the number of such professional men. We would not, however, confine it to them. We would not make it the object of any one profession exclusively. We would bespeak the attention of intelligent men of all classes and all professions, whatever their prejudices or opinions may have been, to a candid consideration of the whole subject; and if found worthy, would solicit their cooperation and assistance, in its practical application and its onward progress.

"Ignorant men," says Dr. Simon, "may sneer at the pretensions of sanitary science; weak and timorous men may hesitate to commit themselves to its principles, so large in their application; selfish men may shrink from the labor of change, which its recognition must entail; and wicked men may turn indifferently from considering that which concerns the health and happiness of millions of their fellow-creatures; but in the great objects which it proposes to itself, in the immense amelioration which it proffers to the physical, social, and, indirectly, to the moral condition of an immense majority of our fellow-creatures, it transcends the importance of all other sciences; and, in its beneficent operation, seems to embody the spirit, and to fulfill the intentions, of practical Christianity."

In a subject of such vast importance, on which so little is generally known, and so much ought to be universally known, and which is so full of interesting and useful illustrations, it is difficult to confine ourselves within the limits of a single report of reasonable length. This great matter cannot, however, be presented so as to be understood, without some detail. And though we shall restrain any inclination to go into minute illustration, yet, in our judgment, it would be unworthy of Massachusetts, under whose authority we act, and it certainly would be unsatisfactory to ourselves, if we failed to make the attempt, at least, to present the subject so that the people of the State

1 The medical department of the National Institute have said, in the Transactions of the American Medical Association, Vol. 1, p 306, that "they had reasons to know, that the medical profession in this country, as a general rule, has many preconceived prejudices to overcome, in order to prepare it to enter into the inquiry with that spirit of philosophical research, which can alone make its deductions practically useful." We sincerely hope, however, that this prejudice does not extensively exist.

2 "Report on the Sanitary Condition of the City of London," p. 31, by Dr. John Simon, Officer of Health; presented Nov. 6, 1849. To this valuable report we shall have occasion again to refer.

MOVEMENTS may know what we mean; so choose, to carry our recommendations and so that, if thus applied, they may be used power, and increase their intelligent happiness.

It should be borne in mind, however, that the resolve to embrace a station as we might think proper, is in some respects, a report, information, which may hereafter be adopted, it has been instructive and proper here, to have been suggested, and what has been said, and that which concerns the health and happiness of millions of our fellow-creatures.

I. THE SANITARY MOVEMENT.

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 movement goes back to great antiquity, and is
asured up to the direct revelation of the Supreme Lawgiver.
"In the day that thou eatest thereof thou shalt surely die," may be regarded as the first sanitary as well as moral precept.
And from that time, down through the patriarchal ages, there
is evidence that the preservation of health was inculcated as
one of the primitive duties. The sanitary laws revealed to the
Jews, constituted a part of their religion. The regulations for
liness, purification, protection from contagious diseases,
and for the general preservation of health, are said to have

1 The valuable Reports of the Commissions, heretofore existing in Massachusetts, are of
considerable length. That on Insects contains 609 pages; that on Invertebrata, 374 pages;
that on Fishes, Reptiles, and Birds, 416 pages; and that on Trees and Shrubs, 547 pages;
besides illustrative plates in each. The first of these reports has been ordered to be reprinted
this year. It would be reasonable to suppose that MAN was entitled to a consideration
equal to either of these subjects.
been well adapted to the country in which they lived, and are
still observed by the Arabs in that climate.

The advantages of public health were known in many of
the cities of Greece, at the height of her civilization. The
Spartans paid great attention to the physical education of
young men and young women, and trained them to tem-
perance, sobriety, and athletic exercises. Plato and Aristotle
thought that no city could exist, without health officers; and
Epaminondas, Demosthenes, and Plutarch, served in that capa-
city. Hippocrates, "the Father of Medicine," considered a
knowledge of the causes of disease essential to the physician.

When asked, "Who is the physician that is an honor to his
profession?" he replied, "He who has merited the esteem and
confidence of the public, by profound knowledge, long experi-
ce, consummate integrity; who has been led through the
whole circle of the sciences; who has a due regard to the
seasons of the year, and the diseases which they are observed
to produce,—to the states of the wind peculiar to each country,
and the qualities of its waters; who marks carefully the locali-
ties of towns, and of the surrounding country, whether they
are low or high, hot or cold, wet or dry; who, moreover, neg-
lects not to mark the diet and regimen of the inhabitants, and,
in a word, all the causes that may produce disorder in the ani-
mal economy." 1 In conformity with the above observations,
he spent a great part of his life in exploring the islands of the
Grecian seas, and of the Archipelago, in relation to the subject
of the health of the inhabitants. His life was spent in tracing
nature, and in observing and recording facts, as interpreted by
her. Hence the immortality stamped upon his name and
writings.

"But the Romans were the most sagacious and extensive
legislators in such matters. They were in many things mas-
ters of the practical; and have left vestiges still pregnant with
the wisdom of experience. With them, nothing seems to have
been deemed 'common or unclean' that could protect the public
health. We find Pliny writing to Trajan about a fetid
stream passing through Amastris, as if it were an affair of state.

The cloacae of the Tarquins are still among the architectural wonders of the world. The censors, ediles, and curators, who at different periods had charge of the buildings, and of the apparatus for the removal of impurities, were invested with great powers for the execution of their functions, and derived a corresponding dignity from them. The arrangements for supplying the houses of Rome with water were most minute. Those for ventilation and drainage, still traceable in the several remains of Roman amphitheatres, have struck our most advanced sanitarians with surprise at their remarkable adaptation to their purpose; while Mr. Chadwick tells the commissioners of sewers that he has lately received from a friend in Zurich a specimen of exactly such an earthenware pipe as he is now recommending for the distribution of sewage. It had been laid down by the Romans, and "has worked until recent times under 500 feet of pressure!" Indeed, it is easy to see from Vitruvius, and from portions of the collection of Groevius, that the rules and operations for the protection of health in Rome, were of a very radical and peremptory character, and allowed no minor interests to interfere with them. It seems to have been a rule with them, that from the time when the foundation of a city was laid, to that of the summit of its greatness, no structural operation, public or private, should be permitted to take a shape which might render it a harbor either for disease or crime; and it is to this vigilant forethought that, in the absence of other organising agencies discovered only in our later times, we may attribute the success with which that remarkable people preserved social order, throughout so dense and vast a mass of human beings as the inhabitants of the imperial city in the days of its greatness."

The cause of public health received a fatal check, when Rome fell. What was previously known, perished on the invasion of the barbarians, and in the general wreck of civilization. Some dietetic precepts, derived from the Greeks and Romans, were retained, but they were devoid of practical utility. It does not appear that any sanitary regulations existed, from the seventh to the fourteenth centuries. In those dark ages, the

\footnote{Edinburgh Review, Vol. XCI, for January and April, 1850, pp. 214, 406.}
people lived without rule of any kind; and consequently, frightful epidemics often appeared, to desolate the land. Although so ancient, few subjects have since made so slow and so little progress, as the science of public health.

In France, in 1350, King John II established the first Sanitary Police; and this has been considered the commencement of sanitary reform. The ordinance provided, that hogs should not be kept in cities; that streets should be cleansed, and the offal removed; that butchers should not sell meat more than two days old in winter, and one and a half in summer; and that fish should be sold the same day they were caught. Ordinances in 1486 and 1497, excluded potteries from the centre of Paris. Soap is said to have been unknown, until the fifteenth century. In 1567, and at later periods, tan-yards, dye-houses, and like establishments, were required to be located out of the towns, and near the water. Henry IV quieted the people of Paris, who were alarmed at the use of English coal, by obtaining from the physicians a declaration that no harm could come of it. L. Reyn consulted the physicians on the manufacture of bread. Instructions were given, but unfortunately they were not carried out. The greatest number of houses, in cities, had no privies, in the sixteenth century. The ancient parts of cities show that the streets were narrow and crooked, and the houses low, damp, and without light or air. Paving and lighting the streets are modern inventions. The last part of the

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1 There are three terms which are sometimes used, when speaking of public health,—
1. Industrial Police; 2. Sanitary Police; and 3. Medical Police,—which it may be proper to define.

1. By Industrial Police is meant, the laws and regulations concerning the occupations of the people. Under it are included regulations for the location, and for preventing the location, of healthy or unhealthy trades; the hours of labor, &c., and the officers and agents by which they are controlled.

2. By Sanitary Police is meant laws and regulations for the prevention of disease, and promotion of health. Under it are included the laws establishing, and the regulations of, boards of health; regulations for cleansing and purifying cities, villages, and private establishments; removal of nuisances, burying the dead, &c.; and the officers or agents by which these matters are carried forward.

3. By Medical Police is meant laws and regulations for the cure of disease. Under it are included laws prescribing the qualifications and duties of physicians, apothecaries, midwives, &c.; the regulations for their own government among themselves; and the officers and agencies by which they are controlled.

Industrial, sanitary, and medical police, exist in nearly all the governments on the continent of Europe, and will be illustrated to some extent in this report. Those who wish more particular information on these matters, are referred to the lists of books and articles in the appendix; and also to the German work, *Frank (Johann Peter)* System einer vollstandigen medicinischen Polizey: Complete System of Medical Police, 6 vols., 8vo.—to an article on Medical Police, in the Westminster Review, Vol. XLV, for 1846, p. 36; and to the works there reviewed. Also, Transactions Am. Med. Association, Vol. II, p. 336.

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COUNCIL OF HEALTH

The first permanent "Conseil de Salubrité."—Dubois, the Prefect of Paris, in 1802, and was modified by new services of this council are required. It has been considered a great honor to be composed of four members,—Hazard, senior, and Cadet-Gassicourt, to twenty-four, besides the president.

In 1803, M. Thouret was called in 1807, and by M. Thiouret, and it was at the instance of Dr. Petit took place. From greatest consideration sought to the "Conseil de Salubrité." Thouret, d'Arcet, in 1813; M. Marc, in 1814; engineer Girard, and Huzard, in 1815; Juge, in 1821; M. Gautier de Clessé, in 1825; MM. Adelon, A la baraque, in 1828; Dr. Esquirol, Payen and Boussingault, members of MM. Begin, member of the council, and M. Bruzand, architect; and MM. Deyeux, Parmentier, Hubert, Thouret, Leroux, Dupuytren, M. Barruel, Esquirol, Pelletier, de D'Arcet, d'Olivier, (d'Angers) no longer live to direct the labors of their long experience and indefatigable.

This council is merely consultative, submitted to it, is considered an administration. Its labors and decisions, in estimation, that they are seldom

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1 See Traité de la Salubrité, pp. 23 and 24, pear. Annales d' Hygiène publique, tome 1, 1846.
eighteenth century wrought some improvements, but public health did not become a well-ordered measure, until the commencement of the nineteenth century.

The first permanent "Conseil de Salubrité,"—Council of Health,—designed especially for the city of Paris, was established by Dubois, the Prefect of the Police, on the 6th July, 1802, and was modified by new decrees in 1810 and 1815. The services of this council are rendered gratuitously, yet it has been considered a great honor to belong to it. It was at first composed of four members,—MM. Deyeux, Parmentier, Huzard, senior, and Cadet-Gassicourt. It has since been increased to twenty-four, besides the president and secretary.

In 1803, M. Thouret was called to the council; afterwards, in 1807, Leroux and Dupuytren; in 1810, M. Pariset replaced M. Thouret, and it was at the same period that the nomination of Dr. Petit took place. From that time, the men of the greatest consideration sought to have a part in the labors of the "Conseil de Salubrité." Thus we see enter successively, M. d'Arcet, in 1813; M. Marc, in 1815; M. Berard, in 1817; the engineer Girard, and Huzard, junior, in 1819; Pelletier and Juge, in 1821; M. Gautier de Claubry, and M. Parent-Duchâtelelet, in 1825; MM. Adelon, Andral, junior, Barruel, and Labarreque, in 1828; Dr. Esquirol in 1829; afterwards MM. Payen and Boussingault, members of the institute; Dr. Flandin; M. Begin, member of the council of health for the army; and M. Bruzand, architect; and other great men of the nation. MM. Deyeux, Parmentier, Huzard, senior, Cadet-Gassicourt, Thouret, Leroux, Dupuytren, Marc, Girard, Parent-Duchâtelelet, Barruel, Esquirol, Pelletier, de Larrey, de Bouillon-Lagrange, de D'Arcet, d'Olivier, (d'Angers,) de Rohault de Fleury, no longer live to direct the labors of the council, and contribute their long experience and indefatigable activity.

This council is merely consultative. Its advice, in all matters submitted to it, is considered and acted upon by the administration. Its labors and decisions are, however, held in so high estimation, that they are seldom if ever reversed. Their reports

1 See Traité de la Salubrité, pp. 25 and 29; also, pp. 319-359, where the ordinances appear. Annales d' Hygiène publique, tome I, p. 13.
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were published annually, until 1828, when they were discontinued. In 1840, a general report of their labors for the eleven years, 1828–1839, was published; and, in 1847, another report for the six years, 1840–1845.

During the first period 4431 reports, and during the last period 3087 reports, were made to the administration on the numerous questions which it submitted to the council. This is an average of over eight reports weekly, during the whole periods. And many of these reports required much scientific investigation, and great labor to prepare them. From these facts some idea may be formed of the immense amount of gratuitous service which has been performed by this council.1

These reports relate to three great divisions,—health, salubrity, and industry. Under health are classed, among other things, the researches on the adulteration of food, on the vessels used in its preparation, on the precautions to be taken with respect to the vessels and utensils of copper, regard being had to the uses for which they are employed; the experiments on the adulteration of salts, on the adulteration of bread and of flour by different substances, on the poisonous substances employed to color bonbons, liqueurs, &c.; the examination of the methods employed in preparing pork; the examination of the water used for drink; the adulteration of the fluids of linseed and mustard; the use of meat of animals which had died of disease; the researches into the salubrity of dwellings. The head of salubrity comprises the anatomical theatres, their construction, the means of remedying the causes of the unhealthiness which these establishments present; the discharge of sulphurous waters from the public baths, the utility of street fountains, the inspection of barracks, and the sanitary measures to which they should be subject; the improvements to be made in the fires of the establishments which employ coals; the arrangements to be made for the deposit of filth in the rural districts; the purification of sewers; the supply of water for domestic and industrial purposes; the steps to be taken in

1 These reports appear under the title, "Report généraux des Travaux du Conseil de Salubrité pendant les Années 1829 à 1839 inclusivement." Abstracts of these reports were published in the Annales d'Hygiène publique, tome XXXV, p. 61, and XXXVIII, p. 79. A translation of the former is published in the Report on the Sanitary Condition of the Laboring Population of Great Britain, p. 409.
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exhumations; the examination of different contrivances to
empty privies, the ameliorations to be introduced into this
portion of service; the wholesomeness of the markets, the
inspection of prisons. The reports which relate to industry
principally treat of the construction of slaughter-houses; the
condensation of the gas and vapors resulting from the refining
of metals; the fabrication, preservation, and sale of fulminating
and lucifer matches; the precautions to be taken in the con-
struction of fulminating powder-mills, and in the manipulation
of the substances employed there; the measures to be taken
for the conveyance of the fulminate of mercury; the researches
into the employment of bitumens, and the conditions to be
prescribed to the makers; the making of wax candles; the condi-
tions to be imposed on cutgut factories; the researches on the
fires of wash-houses, and on the necessity of decomposing the
soapy water to prevent putrefaction; the sanitary measures ap-
licable to white-lead manufactories, and the researches on the
diseases of the workmen; the propositions of classification for
different trades, such as the silk hat factories, the forges, the
places for making and keeping ether; and the beating of
carpets.

Thus health, salubrity, industry, offer to the “Conseil de
Salubrité” a vast field of researches and investigations, and we
may affirm that there is no question relating to these three great
departments of the administration, which they have not pro-
foundly meditated, and in part resolved. If now we turn to
other subjects, we still find important labors which touch in
several points on the different matters of which we have just
spoken, but which have not, like them, a special and clearly
defined character: such are the reports on epidemics and small-
pox; the measures to be taken to prevent or combat them; the
epizooties that have prevailed at different epochs among several
species of animals, and particularly among milking cows; the
sale of horses with glands, and the regulations to which they
should be subject, as well as other animals seized with conta-
gious diseases; the measures to be taken against rabid dogs, and
the precautions in case of bites from these animals; the model-
ling, examination, and embalming of corpses; the aids to be
afforded to the drowned and suffocated; the measures to be taken to ascertain the number of these accidents, as well as of suicides; the compilation of a new nomenclature of diseases and causes of death; the measures to be taken to prevent fires in theatres, and various other matters.

"The law has divided manufactures into three classes, each being annoying and insalubrious in different degrees. Those of the first class are not permitted at all near dwellings, and can only be established by a royal ordinance, issued by the Conseil d'Etat. In this category are included manufactories of the nitric, sulphuric, and hydrochloric acids, and of lee-ashes; melting establishments using a naked fire; workshops for the preparation of taffetas and varnished tissues; the premises of knackers, tripemen, and catgut manufacturers; those also in which are prepared animal black, glue, Prussian blue, blood manures, 'orseille,' (a kind of dye,) and starch; and factories of phosphorus and lucifer matches, or fulminating compounds. The reasons for placing these in the first class is the danger of fire, their actual injuriousness to health, or the intolerably fetid odors which they emit, although not actually noxious. They can only be established after prolonged and numerous formalities. The demand for permission to do so is first addressed to the prefect, and is then posted, by order of the communal mayors, in those places situated within a radius of six kilometres (about 13,000 feet) round the proposed locality. It remains posted for one month, and during this period the mayor receives objections, and enters them in a special register. The local authorities then draw up a report de commodo et incommodo, and transmit all the documents to the prefect. The prefect transmits the file of papers to the Council of Health, which appoints a commission of inquiry to visit the spot and hear the objections; their report on the facts is then discussed by the council, and it afterwards returns all the documents to the prefect, with its opinion as to the propriety of granting or not granting the required permission. If there be an opposition to this permission, as is ordinarily the case, the matter is referred to the council of the prefecture. The opinion of the latter is not a judgment, against which the condemned manufacture has no appeal; it is communicated to the applicant, who may either desist or persist in his specious arguments. The documents are referred to the prefect, who decides whether the royal ordinance is granted or withheld. If the latter, the manufacturer have already commenced operations, or have already constructed the factory, it is required to pull them down, or not to continue the manufacture: this often occurs.

"The second class comprises those, of which the removal is not strictly necessary, but which, because of the danger to health, or the actual injuriousness which they may occasion, can only be established after a long period of inquiry and formalities. The demand for permission is addressed to the prefect, who transmits it to the mayor, who may make an inquiry de commodo et incommodo, and from thence he can go to the Council of Health. The latter then gives its opinion, and if the result is not as desired, the applicant can appeal to the prefecture. From thence he can go to the highest court of appeal in the kingdom.

"The third class comprises linens, as in the first class, but are subject to the inspection of the Council of Health. The method of obtaining permission is the same as in the second class. They are not, however, subject to the inspection of the permit."
and suffocated; the measures to be taken of these accidents, as well as of a new nomenclature of diseases, are measures to be taken to prevent other matters.

Manufactures into three classes, each dubious in different degrees. Those permitted at all near dwellings, and by a royal ordinance, issued by the category are included manufactories of hydrochloric acids, and of Lee-ashes; sing a naked fire; workshops for the od varnished tissues; the premises of catgut manufacturers; those also in mal black, glue, Prussian blue, blood red of dye,) and starch; and factories or matches, or fulminating compounds.

These in the first class is the danger of sness to health, or the intolerably fetid although not actually noxious. They after prolonged and numerous formal- permission to do so is first addressed to posted, by order of the communal may- nated within a radius of six kilometres nd the proposed locality. It remains nd during this period the mayor receives hem in a special register. The local up a report de commodo et incommodo, documents to the prefect. The prefect papers to the Council of Health, which of inquiry to visit the spot and hear the it on the facts is then discussed by the ds returns all the documents to the pre- to the propriety of granting or not permission. If there be an opposition to ordinarily the case, the matter is referred to the prefecture. The opinion of the latter is at which the condemned manufacture has

no appeal; it is communicated to the proprietor, who may either desist or persist in his speculation; if the latter, all the documents are referred to the Minister of Commerce, and a royal ordinance is granted or withheld. If withheld, and the manufacturer have already constructed his premises, he is re- quired to pull them down, or not to use them for the purpose intended: this often occurs.

The second class of manufacturing establishments comprises those, of which the removal from an inhabited locality is not strictly necessary, but which can only be permitted after it has been clearly shown that no process will be adopted in them which will either inconvenience or injure the neighboring holders of property. Lime or plaster kilns, high pressure steam engines, gas-works, tanneries, foundries, hat factories, manufactories of sulphate of iron and zinc, of sulphate of soda in close vessels, of phosphorus, of imitation trinkets, bituminous mastic, chandleries, whether for tallow or composition candles, and workshops for cleansing verdigris from copper, are all in this category.

None of these are actually injurious to the health, but many are disagreeable, and annoy either with smoke, noise, stench, or the danger of fire. The demand for permission to establish any one of them is addressed to the prefect or vice- prefect, who transmits it to the mayor of the commune, that he may make an inquiry de commodo et incommodo. The Council of Health then gives its opinion, as in the preceding class, and the prefect issues his decree. If permission is re- fused, the applicant can appeal to the council of the prefecture, and from thence he can go to the Conseil d'Etat. The same course is open to the opponents.

The third class comprises lime-kilns that are in operation one month only in a year, potteries, brick and tile works, manufactories of gelatine and isinglass, crucible foundries, dye- works, &c. The method of obtaining permission is the same as in the second class. They are sanctioned near habitations, but are subject to the inspection of the prefect who grants the permit.”

Councils of Health, similar to that of Paris, were established in Nantes in 1817; in Bordeaux soon after; in Lyons in 1822; in Marseilles in 1825; in Lisle in 1828; in Rouen in 1831; and other large cities followed their example.

The important results derived from the investigation of these councils stimulated the labors of private individuals, and very many important works have been published on the subject. In consequence of these works, and of the example of England and other governments in the cause of public health, the "Conseil d'Etat" passed an ordinance, on the 18th December, 1848, for a general health regulation throughout the French Republic.

France is divided into 86 departments, and subdivided into 363 arrondisments, 2,834 cantons, and 37,187 communes, bearing some resemblance to our counties, towns, and districts. Each department is governed by a Prefect, each arrondisment is superintended by a sub-prefect, and each commune by a mayor or other magistrate.

The health ordinance provides that there shall be in each arrondisment a Council of Public Health; the members to consist of not less than seven, nor more than fifteen persons. An order drawn up by the Minister of Agriculture and of Commerce regulates the number of the members and the composition of each council. The members of each council of health of an arrondisment are nominated for four years by the prefect, one-half removable every two years. Commissions of health of a canton, absent from meetings, without assigning reason, if a member of the council of health of an arrondisment is merely advisory. If a member of the council of health of an arrondisment is absent from meetings, without assigning reason, he is considered as disorderly.

The council of health of an arrondisment has the examination of all questions which may be submitted to them, and they have special charge of sanitary regulations of localities to prevent and to control contagious diseases; epizooties and vaccination of the vaccine disease; to provide medical aid to the sick poor; to see to the sanitary condition of the sick poor; to improve the health of the poor; to make the health of salubrity of workshops, schools, alms-houses, and charitable establishments; to provide medical aid to the sick poor; to protect the health of the mass of the people; to diminish establishments of mineral waters; the hygiene of industries; the organization of councils of health; and arrange documents relating to the topography and statistics of the public health. Reports are submitted to the prefect, who must transmit a copy to the Minister of Agriculture and of Commerce. It is made to
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years. Commissions of public health chief towns of a canton, by a special having consulted the council of an it be a council of public health in each the chief towns of a prefecture; the the same as above, and holding their s. These councils of health are pre-
or sub-prefect, and the commissioners e of the chief town. Each council secretary, who hold their offices for of health and commissions hold joint ry three months, and whenever they r authorities. The members of com-
missions of health of a canton may be called to attend meetings of the council of health of an arrondisment, where their voice is merely advisory. If a member of the boards, or of the commissions of a canton, absent himself from three consecutive meetings, without assigning reasons that are approved by the prefect, he is considered as dismissed.

The council of health of an arrondisment are charged with the examination of all questions relative to the public health which may be submitted to them by the prefect or sub-prefect, and they have special charge of the following subjects:—the sanitary regulations of localities and habitations, taking measures to prevent and to control endemic, epidemic, and contagious diseases; epizooties and diseases of animals; the propagation of the vaccine disease; the organization and distribution of medical aid to the sick poor; to furnish means to alleviate the sanitary condition of the laboring and agricultural population; to protect the health of workmen; to provide for the salubrity of workshops, schools, hospitals, lunatic asylums, almshouses, and charitable establishments, barracks, arsenals, prisons, asylums, etc., etc.; to decide questions relative to foundlings; the quality of foods, drinks, condiments, and medicines known to commerce; the amelioration or improvement of establishments of mineral waters belonging to the state, to the departments, to communes, or to individuals, and to provide means to render their use accessible to the sick poor; the abatement by requisition of dangerous, unhealthy, or inconvenient establishments; great works of public utility, the construction of edifices, schools, prisons, barracks, harbors, canals, reservoirs, fountains, markets; the establishment of market places, ponds for soaking hemp, sinks, sewers, cemeteries, butchers' stalls, etc., etc. All these matters are to come under the organization of councils of health.

The council of health of an arrondisment is to combine and arrange documents relating to mortality and its causes, with the topography and statistics of the arrondisment touching the public health. Reports are to be made regularly to the prefect, who must transmit a copy to the Minister of Agriculture and of Commerce. It is made the duty of the respective coun-
cils of health of each department to give advice upon all ques-
tions of public health that may be submitted to them by the
prefect, upon all questions common to the general arrondisment,
or relating to an entire department. It is their duty also to
condense and arrange the reports made to them by the council
of health of the different arrondisments, at the request of the
prefect. This report is immediately transmitted by the prefect,
with the accompanying reports and documents, to the Minister
of Agriculture and Commerce.1 The city of Paris has special
regulations for the protection of the public health.

In the German and Prussian States, systems of sanitary and
medical police exist in greater perfection, and have been applied
more extensively to society, than in any other parts of the
world. They are under the control of government, and espe-
cially the Home Secretary or Minister of the Interior, by means
of a central medical department, the director of which is a kind
of under-secretary of state. This department consists of three
physicians, two apothecaries, and two veterinary surgeons. A
registrar and library are attached to it, the latter containing,
among other documents, copies of the laws relating to sanitary
or medical police by foreign governments. Besides these there
is a scientific council of health, composed of those practitioners
who have attained to professional eminence, whose duty it is
to advise the Executive. Subordinate to these are provincial
boards and councils, the director of which, termed medicinal
rath, superintends the medical police of his province, and is
assisted by the medical superintendent (kreis-physici) of dis-
tricts, corresponding to our counties.

It is the duty of the medical superintendents to report to the
medical council, quarterly, meteorological observations; the state
and prospects of the crops; the epidemic constitution of each
quarter, and the prevailing epidemic; suggestions for improve-
ments in the ordinances relating to his duties; prove actions for
offences against medical laws, or for quackery; and the veteri-
nary practice of the quarter. A yearly return of all medical
practitioners, midwives, apothecaries, veterinary surgeons, per-
sons vaccinated, state of the apothecaries' shops, &c., is made

1 Annuaire Medical et Pharmaceutique de la France, année 1849, p. 60.
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to the secretary of state. The medical superintendent must pass an examination in state medicine, and be approved as a physician, surgeon, and veterinary surgeon. He must reside in the centre of his district, and cannot be absent without leave of the provincial board. He has to inspect the profession within his district; see that surgeons and midwives do not overstep their proper line of practice; look after quacks; inspect the shops of apothecaries; superintend the medical topography of his district; the pauper medical relief, public hospitals, baths, schools, prisons, &c., in relation to their sanitary condition. He must attend to sudden accidents, and assist surgically, or procure assistance, and make post-mortem examinations, and give evidence at inquests. He has under him a district surgeon, to act as his assistant or deputy. They each have an official seal. To each provincial executive is attached a council of health, whose duties, like those of the central council, are to advise the executive, and to act as a board of examiners for the province.

In all the governments on the continent of Europe, laws exist by which every birth, every marriage, and every death, which takes place, is recorded. These records are compulsory and universal. In every case of death, too, the body is inspected by an authorized medical officer, generally appointed by government, who certifies the cause of death. The practice varies in different places. The following are the regulations in Hamburg, communicated to us by Dr. Schroeder of that city:

"1. A certificate of a physician on the actual and natural death of any one that is to be buried, must be delivered at all the churches and chapels of the city, at the foreign religious chapels, and at the Jewish synagogue, before they will be allowed to give the permission for burial. This certificate contains a formula, which must specify the name, residence, age, day of death, and disease of which the person died, and its duration. Without such certificate no permission of burial is given in any case.

"2. No physician is permitted to give this certificate, other-

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1 See article on Medical Police; Westminster Review, Vol. XLV, for 1846, p. 72.
wise than on the most convincing signs of death, and on finding no trace whatever of an unnatural cause. In case of doubt of the actual death, the physician must immediately apply all means for restoring life, and immediately inform the police officers, if the relatives refuse the required assistance. It is also made his duty to give speedy information, on heavy responsibilities, whenever he finds traces of an unnatural death.

3. An inquest is held gratuitously on all those who have died without the treatment of a physician, or who, in cases of sudden death, have not been found alive by the physician called in, either by the magistrate, surgeon, or by one of the members of the council of health, who are appointed to this office for a stated time, and whose names are duly published.

4. In the poorhouses and hospitals this certificate is given by the resident physicians. The physician of the poor of the pauper district gives it to those who enjoy the out-door privilege of these institutions.

5. In the principal hospital, a list is made up weekly, by the resident physician, of those that have died within the week, with their names, ages, and last diseases.

6. All these certificates are collected on Mondays, Wednesdays, and Saturdays, by the messenger of the council of health, from the different presiding officers of the churches, and the other proper authorities, and are immediately carried to the city physician. If he should think it necessary, on account of a deficiency in the certificate, or from any other reason, to examine the corpse himself, nobody can refuse him this examination, which is done gratuitously, under heavy penalties.

7. The city physician presents an abstract of these certificates every month, and in dangerous cases immediately, specifying the numbers, names, sexes, ages, and causes of death of those that died within the month. At the end of the year an exact list of all the buried is handed in to the police officer by the proper authorities, and by him handed to the city physician, who from it prepares and publishes in the newspapers a general report.

Every citizen and inhabitant is urged conscientiously to conform to this regulation, since, beside the advantages in a scientific view, it is the only means of bodies, and prevent secret murder, seasonably, contagious diseases.

Besides the monthly report of the mortality in the city and the time being of the physicians in months an exact list of the names of their diseases, taken from the poor, together with the report of the same.”

One of the most interesting and profession system of registration in increasing the accuracy of the data, to serve as the basis of the report; exceptions, are all certified by physicians, but those specially health office. By these, notes are kept out in regard to the deceased causes which led to death. The fifteen days by a medical board is attended or modified. Even after information is carried, by a person employed to the attending physician, with the particular of interest to be recorded.

In Paris and Munich, the work be made by public officers, who practice, and who receive a fee. In D'Espine the duty is performed by the family, if there be one, but without a medical man having examination must be made by the public effort, the certificate is filled up.

Where there are regularly districts of the city are divided by death takes place, the fact must be made to the verificator, who proceeds to the place after making the necessary exam.

D'Espine—Annuaire de
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onts are made out in regard to the deceased, and the morbid or accidental causes which led to death. These notes are examined every fifteen days by a medical board, discussed, and sometimes extended or modified. Even after all this, the note of registration is carried, by a person employed by the council of health, to the attending physician, who adds to it all the information of interest to be recorded.1

In Paris and Munich, the verification must in every instance be made by public officers, who are generally medical men in practice, and who receive a fee for each verification. At Leipzig, the duty is performed by the regular medical attendant of the family, if there be one, but if the deceased has taken place without a medical man having been in attendance, the verification must be made by the public officer. At Berlin and Frankfurt, the certificate is filled up by the family attendant.

Where there are regularly appointed verificators, the districts of the city are divided between them; and as soon as death takes place, the fact must be communicated to the district verificator, who proceeds to the house, and signs the certificate after making the necessary examination.

"The instructions under which these officers act are of a very stringent character, and the procedure is intended to obviate premature interment, and to detect crime.

The French and German methods of verification are intended to be preventive. A number of instances were mentioned to us, in which crimes, which would otherwise have escaped notice, were detected by the keen and practised eye of the verificator, and the general opinion certainly was that much crime was prevented. We heard of no cases of that cold, calculating destruction of successive members of the same family, which has disclosed itself in England. Such a succession of murders, or the poisoning of children, or allowing them to die from neglect, in order to obtain the burial-money from a club in which they were insured, or from other causes, too frequently pass unnoticed, but under the system of verification they could hardly escape being brought under judicial inquiry, and crime might possibly be diminished by a knowledge of the certainty of its discovery."

In Great Britain, the sanitary welfare and improvement of the people seems to have attracted very little attention until within the last twenty-five years. Boards of health had existed in many cities, but they were generally void of much vitality. The report from the select committee of the House of Commons, on the laws relating to Friendly Societies, was published July 5, 1825; and a second report on the same subject, June 29, 1827. In the Westminster Review for April, 1828, there appeared an able article on the matters suggested in these reports, the object of which was "to exhibit the present state of the information possessed relative to the casualties of sickness and mortality, and the conduct of the government respecting the departments of the public expenditure appropriated as means to diminish the evil effects of these casualties." These works have been considered as the dawning twilight of sanitary improvement.

The review was written by Edwin Chadwick, Esq., of the Inner Temple, barrister-at-law, the individual to whom, perhaps, more than to any other, the cause is indebted. A leading

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1 Chadwick's Report on a General Scheme for Extramural Sepulture, p. 171.
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London periodical, of December, 1849, has described him as
then “a student at law in the Temple. He was not a man of
varied or profound attainments, nor distinguished by any extra-
ordinary brilliancy of intellect. But he was remarkable for
his sagacity in extracting from masses of detail the master facts,
and bringing these to bear for the elucidation of a master
thought. He would confront, undaunted, any amount of in-
tellectual labor; exploring mountains of blue books and statisti-
cal returns, till he had fully ascertained and brought to
light their true riches. For some years his peculiar powers
had been wasted on sifting evidence in private cases for attor-
neys. But in 1828, a slight incident threw the idea of which
we have spoken across his track. He seized it, and it became
the ruling thought of his life.” His name should be handed
down to posterity as one of the greatest and most useful reform-
ers of his age.

Dr. T. Southwood Smith, Professor in the London Fever Hos-
pital,—another individual who has been prominent in all the
sanitary movements, and to whom the world is greatly in-
debted,—called the public attention to the causes of fever, in
his treatise on that subject, in 1830; and subsequently published
a valuable work on the Philosophy of Health. He was ap-
pointed, in 1832, by Lord Melbourne, in conjunction with
Mr. Took and Mr. Chadwick, to investigate the question of
factory labor, which Lord Ashley and Mr. Sadler had at that
time pressed upon public attention. This resulted in the ap-
pointment of Factory Inspectors.

In 1832, a commission of nine persons was appointed to
inquire into the practical operation of the laws for the relief of
the poor in England and Wales. Mr. Chadwick was one of
this commission. Their report was the basis of “An Act for
the Amendment and better Administration of the Laws relating
to the Poor in England and Wales,” which was passed, August
14, 1834. That act placed the whole pauper system under the
management of three commissioners and a principal secretary.
Rt. Hon. Thomas Faulkland Lewis, John George Shaw Le
Fever, Esq., and George Nichols, Esq., were immediately ap-
nointed commissioners, and Edwin Chadwick, Esq., secretary.
He is the author of most of the able papers which have appeared in the fifteen annual reports made since that time. These important documents exhibit one-fourth of all the pauperism as the result of preventable disease; if so, then is pauperism in itself in a similar degree preventable.

March 28, 1833, a select committee of twenty-seven persons, among whom were John Wilks, Esq., Lord Viscount Morpeth, Sir George Grey, Lord John Russell, the solicitor-general, Col. Davis, and other distinguished men, was appointed by Parliament, "to consider and report on the general state of parochial registers, and the laws relating to them; and on a general registration of births, baptisms, marriages, deaths, and burials, in England and Wales." On the 15th of August succeeding, after a thorough investigation, a full report of the result of their labors was submitted. The conclusions of the committee were,—

"1. That the subject is urgently important:

2. That it involves matters of great public and national interest, as well as individual satisfaction, and rights and claims to property; and deserves the attention of the humblest artisan, as well as of the most philosophical and statesmanlike inquirer:

3. That the existing law is imperfect and unjust, and requires not only partial amendment, but real fundamental reform:

4. That great trouble, vast expense, utter uncertainty, capricious changes, and local and general evils exist, while no means are supplied to obtain the information other countries possess, and justly value, as to the state of disease, the operation of moral and physical causes on the health of the people, the progress of the population, and other matters, on which accurate knowledge can scarcely be too highly appreciated or too intensely pursued."

In consequence of the information contained in this report, an "Act for the Registration of Births, Marriages, and Deaths, in England and Wales," was passed June 6, 1836, and went into operation July 1, 1837. This act was brought into Parliament by Lord John Russell, the present Prime Minister of Great Britain, and was advocated by him in a very able speech, in which he said, "It was most desirable that a general system
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ated by him in a very able speech,
most desirable that a general system
of civil registration should now be carried into effect. It was
a most important subject: important for the security of prop-
erty; important to ascertain the state and condition of individ-
uals under various circumstances; important to enable the
government to acquire a general knowledge of the state of the
population of the country, that there should be a general regis-
tration of births, marriages, and deaths.” Sir Robert Peel, Dr.
Bowring, Lord Morpeth, and other distinguished members of
Parliament, were also its warm supporters.
Under the operation of this system, a central office was es-
lished in London, presided over by an officer styled the
Registrar-General of Births, Deaths, and Marriages. England
is divided at present into 11 divisions, 623 districts, and 2189
sub-divisions. In each district there is a superintendent regis-
trar; and in each sub-district, a registrar. London is divided
into 5 divisions,—east, west, north, south, and middle,—36
districts, and 135 sub-divisions. Copies of the records of all
births, marriages, and deaths, which take place during the pre-
ceding week, are made by the registrars of the sub-divisions,
every Saturday evening, and transmitted every Monday to the
superintendent registrars, and by them transmitted to the Regis-
trar-General. An abstract is made of these returns on the same
day, and published on Tuesday, and accompanied by remarks
on the state of the health and weather during the week. Not-
withstanding the greatness of the metropolis, containing over
2,000,000 inhabitants, nearly equal to three times the popu-
lation of Massachusetts, the returns are made with so great reg-
ularity that it seldom happens that a single one is missing.
The deaths by each disease are shown, the prevailing epidemics
recorded and exhibited, and every one is traced from its origin
to its termination. A quarterly report, comprising an abstract
of the returns from all the districts of England, is published;
and from all these documents an annual report is prepared.
Nine annual reports have been published; the first three by T.
H. Lester, Esq., the first Registrar-General. Since the death of
Mr. Lester, George Graham, Esq., has held the office, and he
has made the last six reports. These reports contain a vast
fund of information, of the greatest value, relating to the life,
the health, and the welfare of man.
This was the most important sanitary measure ever adopted in England; and it has been the foundation of nearly all others. Without it they would have been comparatively of little value. A recent writer says:

"The first bill of health was the act for the registration of births, marriages, and deaths. Before that time, a perfect chaos, respecting population and mortality, reigned. Since that time, a mass of statistics, relating to life, health, and disease, has been accumulating, which will exert, and is exerting, an immensely beneficial influence upon the physical and moral welfare of the population of these realms, and indeed, ultimately, upon every people upon the face of the globe. The discoveries in astronomy have not a more palpable application to navigation and commerce, nor the investigations in chemistry to manufactures, than have the statistics of health and disease to physical and moral regeneration."  

"The Quarterly Reports of the Registrar-General are among the most interesting and instructive documents of the day. They are to us what, in an inferior degree, the Saxon Chronicles were to the 11th and 12th centuries. They engrave, in brief but expressive phrases, the national vicissitudes, prospe-rities, trials, and calamities. With those faithful and unerring indices, marriages and deaths, the Registrar-General measures the robustness of national vigor, or probes the depth of national suffering. Backed by those ranks of expressive figures, which permit no exaggeration, and are susceptible of no fallacy, he presents to us a true picture of the present condition of our country and nation. No false rhetoric or untrue coloring is suffered to mar the truth of the hard and simple outlines. No political creed conceals the facts, or perverts their meaning. No unjust law orders the distortion of half the truth by the concealment of the other half. These reports are, indeed, something more than current history; they are the judgments of the time upon itself: and, untinctured as they are by party spirit, and unswayed by personal considerations, those judgments are as true and faithful as those of future times can be. It is no objection to the value of these records, to say that they

chronicle with greater minuteness and accuracy the national ills and chastisements, than the national happiness and success. The most dreary and painful side of human existence is certainly most largely presented to us. The shadow of imperfection and decay tinges all things with its melancholy hues. Our path is rather through the gloomy valley, and under the shade of cypresses, than on the invigorating mountain side, resplendent with the light of heaven. But this seems to be the necessary result of all true histories of the social condition of a people. That which is strongest and most permanent presses aside that which is less vigorous and enduring. Happiness and comfort escape the chronicler; the gaunt features of misery and distress are ever before him. The happy hours of a nation's, as of an individual's life, are as the sandy ripples which the advancing tide washes into smoothness; the hours of sorrow and of trouble are like those ripples fossilized into stone.¹

These reports are regarded as of the highest authority. "If there is any one whose information may be supposed to be accurate, whose impartiality may be relied upon, and whose judgment may be trusted, it is the Registrar-General. He is biassed by no theories, and is above the reach of all suspicious leaning."¹

We have compiled from the Appendix to the Ninth Annual Report of the Registrar-General, (pp. 17, 36, and 70,) the table on pages 34 and 35, to show the rate of mortality among four different populations in England. The first part embraces the whole of England; the second, (District No. 35,) one of the most healthy districts; the third, Liverpool, one of the most unhealthy districts; and the fourth, London. It shows the population, on the night between the 7th and 8th of June, 1841; the deaths for seven years, 1838 to 1844,—three years before and three years after the enumeration; and the average annual mortality per cent. for that period. It also shows the influence of locality, age, and sex, on mortality. This important table will be hereafter referred to, and should be carefully studied and understood.

STATEMENT—1. Of the Rate of Mortality among the Population, living at different ages in the whole of England, and in the most healthy, and the most unhealthy districts of England.

[This statement comprises—1. The whole of England; 2. A part of Surrey, embracing the subdistricts of Dorking, Reigate, and Godstone—numbered 33 in the Registrar-General's Abstract, among the most healthy districts; and 3. Liverpool, among the most unhealthy districts of England.]

<table>
<thead>
<tr>
<th>Ages</th>
<th>England</th>
<th>Surrey</th>
<th>Liverpool</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 5</td>
<td>1,048,270</td>
<td>1,052,398</td>
<td>2,300</td>
</tr>
<tr>
<td>5 to 10</td>
<td>880,907</td>
<td>872,450</td>
<td>1,755</td>
</tr>
<tr>
<td>10 to 15</td>
<td>507,944</td>
<td>503,127</td>
<td>1,200</td>
</tr>
<tr>
<td>15 to 20</td>
<td>1,176,131</td>
<td>1,172,439</td>
<td>2,550</td>
</tr>
<tr>
<td>20 to 30</td>
<td>871,845</td>
<td>867,303</td>
<td>1,900</td>
</tr>
<tr>
<td>30 to 40</td>
<td>621,149</td>
<td>615,035</td>
<td>1,450</td>
</tr>
<tr>
<td>40 to 50</td>
<td>386,037</td>
<td>380,927</td>
<td>800</td>
</tr>
<tr>
<td>50 to 60</td>
<td>224,883</td>
<td>220,238</td>
<td>500</td>
</tr>
<tr>
<td>60 to 70</td>
<td>85,736</td>
<td>83,707</td>
<td>200</td>
</tr>
<tr>
<td>70 to 80</td>
<td>12,935</td>
<td>12,906</td>
<td>10</td>
</tr>
<tr>
<td>Over 90</td>
<td>579</td>
<td>1,091</td>
<td>3</td>
</tr>
<tr>
<td>All ages</td>
<td>7,765,924</td>
<td>8,144,010</td>
<td>16,677</td>
</tr>
</tbody>
</table>

Deaths in the 7 years, 1838-44.

<table>
<thead>
<tr>
<th>Ages</th>
<th>Population, 1841.</th>
<th>Deaths in the 7 years, 1838-44.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 5</td>
<td>301,375</td>
<td>296,961</td>
</tr>
<tr>
<td>5 to 10</td>
<td>100,674</td>
<td>95,764</td>
</tr>
<tr>
<td>10 to 15</td>
<td>53,795</td>
<td>53,449</td>
</tr>
<tr>
<td>15 to 20</td>
<td>35,826</td>
<td>35,802</td>
</tr>
<tr>
<td>20 to 30</td>
<td>26,634</td>
<td>25,634</td>
</tr>
<tr>
<td>30 to 40</td>
<td>517,907</td>
<td>546,910</td>
</tr>
<tr>
<td>40 to 50</td>
<td>61,690</td>
<td>59,903</td>
</tr>
<tr>
<td>50 to 60</td>
<td>31,628</td>
<td>32,693</td>
</tr>
<tr>
<td>60 to 70</td>
<td>4,833</td>
<td>4,512</td>
</tr>
<tr>
<td>70 to 80</td>
<td>5,328</td>
<td>5,207</td>
</tr>
<tr>
<td>Over 90</td>
<td>1,234,784</td>
<td>1,198,004</td>
</tr>
</tbody>
</table>

SANITARY REPORT.

LAW OF THE

Rate of Mortality at different age periods

<table>
<thead>
<tr>
<th>Ages</th>
<th>Males. Females.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 1</td>
<td>20,510</td>
</tr>
<tr>
<td>1 to 10</td>
<td>6,206</td>
</tr>
<tr>
<td>11 to 20</td>
<td>3,331</td>
</tr>
<tr>
<td>21 to 30</td>
<td>2,520</td>
</tr>
<tr>
<td>31 to 40</td>
<td>2,593</td>
</tr>
<tr>
<td>41 to 50</td>
<td>2,320</td>
</tr>
<tr>
<td>51 to 60</td>
<td>1,693</td>
</tr>
<tr>
<td>61 to 70</td>
<td>7,073</td>
</tr>
<tr>
<td>71 to 80</td>
<td>6,900</td>
</tr>
<tr>
<td>81 to 90</td>
<td>5,311</td>
</tr>
<tr>
<td>Over 90</td>
<td>5,098</td>
</tr>
<tr>
<td>All ages</td>
<td>913,007</td>
</tr>
</tbody>
</table>
### LAW OF MORTALITY.

#### Rate of Mortality, &c.—Continued.

<table>
<thead>
<tr>
<th>AGES</th>
<th>1. ENGLAND</th>
<th>2. PART OF SURREY</th>
<th>3. LIVERPOOL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 5,</td>
<td>14.193</td>
<td>4.717</td>
<td>16.210</td>
</tr>
<tr>
<td>5 to 10,</td>
<td>6.403</td>
<td>2.797</td>
<td>6.262</td>
</tr>
<tr>
<td>10 to 15,</td>
<td>3.413</td>
<td>1.453</td>
<td>3.210</td>
</tr>
<tr>
<td>15 to 20,</td>
<td>1.873</td>
<td>0.727</td>
<td>1.652</td>
</tr>
<tr>
<td>20 to 25,</td>
<td>1.003</td>
<td>0.390</td>
<td>0.777</td>
</tr>
<tr>
<td>25 to 30,</td>
<td>0.600</td>
<td>0.230</td>
<td>0.377</td>
</tr>
<tr>
<td>30 to 35,</td>
<td>0.330</td>
<td>0.126</td>
<td>0.197</td>
</tr>
<tr>
<td>35 to 40,</td>
<td>0.210</td>
<td>0.080</td>
<td>0.132</td>
</tr>
<tr>
<td>40 to 45,</td>
<td>0.130</td>
<td>0.050</td>
<td>0.082</td>
</tr>
<tr>
<td>45 to 50,</td>
<td>0.080</td>
<td>0.030</td>
<td>0.050</td>
</tr>
<tr>
<td>50 to 55,</td>
<td>0.050</td>
<td>0.020</td>
<td>0.033</td>
</tr>
<tr>
<td>55 to 60,</td>
<td>0.030</td>
<td>0.010</td>
<td>0.020</td>
</tr>
<tr>
<td>60 to 65,</td>
<td>0.020</td>
<td>0.007</td>
<td>0.013</td>
</tr>
<tr>
<td>65 to 70,</td>
<td>0.010</td>
<td>0.003</td>
<td>0.009</td>
</tr>
<tr>
<td>70 to 75,</td>
<td>0.005</td>
<td>0.002</td>
<td>0.005</td>
</tr>
<tr>
<td>75 to 80,</td>
<td>0.003</td>
<td>0.001</td>
<td>0.003</td>
</tr>
<tr>
<td>80 to 85,</td>
<td>0.002</td>
<td>0.001</td>
<td>0.002</td>
</tr>
<tr>
<td>Over 85,</td>
<td>0.001</td>
<td>0.000</td>
<td>0.001</td>
</tr>
<tr>
<td>All ages,</td>
<td>2.270</td>
<td>1.080</td>
<td>2.107</td>
</tr>
<tr>
<td>Living to 1st bith.</td>
<td>44.1</td>
<td>47.5</td>
<td>65.1</td>
</tr>
</tbody>
</table>

#### 2. Of the Rate of Mortality among the Population of London.

<table>
<thead>
<tr>
<th>AGES</th>
<th>Population, 1834.</th>
<th>Deaths, 7 years, 1833-1844</th>
<th>Annual Mortality, per Ct.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 1,</td>
<td>113,449</td>
<td>117,292</td>
<td>73,787</td>
</tr>
<tr>
<td>1 to 5,</td>
<td>95,653</td>
<td>98,317</td>
<td>63,936</td>
</tr>
<tr>
<td>5 to 10,</td>
<td>85,353</td>
<td>89,271</td>
<td>53,855</td>
</tr>
<tr>
<td>10 to 15,</td>
<td>75,833</td>
<td>79,271</td>
<td>46,033</td>
</tr>
<tr>
<td>15 to 20,</td>
<td>67,833</td>
<td>72,871</td>
<td>38,855</td>
</tr>
<tr>
<td>20 to 25,</td>
<td>58,353</td>
<td>62,271</td>
<td>31,855</td>
</tr>
<tr>
<td>25 to 30,</td>
<td>49,833</td>
<td>54,271</td>
<td>25,055</td>
</tr>
<tr>
<td>30 to 35,</td>
<td>41,353</td>
<td>46,271</td>
<td>19,055</td>
</tr>
<tr>
<td>35 to 40,</td>
<td>33,833</td>
<td>39,271</td>
<td>14,055</td>
</tr>
<tr>
<td>40 to 45,</td>
<td>27,353</td>
<td>33,271</td>
<td>10,055</td>
</tr>
<tr>
<td>45 to 50,</td>
<td>21,833</td>
<td>28,271</td>
<td>7,055</td>
</tr>
<tr>
<td>50 to 55,</td>
<td>16,833</td>
<td>21,271</td>
<td>5,055</td>
</tr>
<tr>
<td>55 to 60,</td>
<td>12,833</td>
<td>16,271</td>
<td>3,055</td>
</tr>
<tr>
<td>60 to 65,</td>
<td>8,833</td>
<td>10,271</td>
<td>2,000</td>
</tr>
<tr>
<td>65 to 70,</td>
<td>5,833</td>
<td>6,271</td>
<td>1,000</td>
</tr>
<tr>
<td>70 to 75,</td>
<td>3,833</td>
<td>3,271</td>
<td>500</td>
</tr>
<tr>
<td>75 to 80,</td>
<td>1,833</td>
<td>1,271</td>
<td>200</td>
</tr>
<tr>
<td>Over 80,</td>
<td>0,833</td>
<td>0,271</td>
<td>100</td>
</tr>
<tr>
<td>All ages,</td>
<td>913,067</td>
<td>1,037,519</td>
<td>174,593</td>
</tr>
</tbody>
</table>
By examining the first part of this valuable table, and following down the left hand column, it appears that in the whole of England, in 1841, there were 1,048,270 male persons under five years of age, among whom 517,897 males died in the seven years, 1838-1844, or an annual average of 7.072 per cent. And in the second part, following a line across the page, it appears that, in London, in 1841, there were 136,253 females between the ages of thirty and forty, among whom 13,122 females died in the seven years, 1838-1844, or an annual average of 1.377 per cent. And if the part relating to the annual mortality per cent. be examined alone, it appears that in the most healthy districts in England, 4.123 per cent. of the males die under five years of age; while in the most unhealthy, 14.372 per cent. die in the same age. In like manner, other facts may be ascertained, by examining other parts of the table.

In resuming our history of the sanitary movement, it appears that in October, 1835, the Secretary of War instituted an inquiry "into the extent and causes of the sickness and mortality among the troops in the West Indies, with a view of founding thereon such measures as might appear likely to diminish the great loss of life annually experienced in these colonies." The investigation was conducted under the superintendence of Major Alexander M. Tulloch, and in 1838 his report on the subject was published; and it was followed by three other volumes, by the same author, under the following titles:

Statistical Reports on the Sickness, Mortality and Invaliding among the Troops:

Vol. I.—The West Indies. Published in 1838.
Vol. II.—The United Kingdom; The Mediterranean; and British America. Published in 1839.
Vol. III.—Western Africa; St. Helena; The Cape of Good Hope; and The Mauritius. Published in 1840.
Vol. IV.—Ceylon; The Tenasserim Provinces; and The Burmese Empire. Published in 1841.

These reports extend over 597 folio pages, and contain a vast mass of facts relating to medical topography and diseases, during the period of 1818 to 1836. They justly attracted great attention at the time of their first publication.

In the mean time, in 1836, the Admiralty issued orders for the preparation of a report relating to the navy. Dr. John Snow, Dr. William Farr, and Dr. Richard Oastler, undertook the work, and his reports, Statistical Reports on the Health of the Royal Navy for the years 1830, 1831, 1832, 1833, 1834, were published in 1835.

Vol. I.—South American, West Indies, and East India Forces. Published in 1841.
Vol. II.—The Cape of Good Hope and East India Forces. Published in 1842.

March 12, 1840, a select committee of the House of Commons was appointed by the government, to inquire "into the circumstances affecting the health, strength and mortality of the children of the poorer classes in various branches of trade and manufactures, and as to the actual condition and time at which they are employed, and as to the effects of such employment upon their mental and bodily health." The result of this commission: one in 1841, and another in 1843, on the moral aspects of the subject, were published in large folio volumes. An abridgment of the latter, under the title of "The Physical and Moral Condition of the Poor Children of the Metropolis," was published in 1844.
art of this valuable table, and fol-
column, it appears that in the whole
were 1,048,270 male persons under
om 517,897 males died in the seven
annual average of 7.072 per cent.
owing a line across the page, it ap-
1841, there were 136,253 females
nd forty, among whom 13,122
ears, 1838-1844, or an annual aver-
e if the part relating to the annual
med alone, it appears that in the
ngland, 4.123 per cent. of the males
e; while in the most unhealthy,
me age. In like manner, other
by examining other parts of the
of the sanitary movement, it appears
secretary of War instituted an inquiry
ses of the sickness and mortality
est Indies, with a view of founding
ight appear likely to diminish the
ved under the superintendence of Major
1836-1844, or an annual aver-
ed alone, it appears that in the
ngland, 4.123 per cent. of the males
ge; while in the most unhealthy,
me age. In like manner, other
by examining other parts of the
a; St. Helena; The Cape of Good
The Mauritius. Published in 1840.
Tenasserim Provinces; and The
mpire. Published in 1841.
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1836. They justly attracted great
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permanent value.
In the mean time, in 1836, the Lords Commissioners of the
Admiralty issued orders for the preparation of similar documents
relating to the navy. Dr. John Wilson was appointed to super-
intend the work, and his reports appear in two volumes:—
Statistical Reports on the Health of the Navy, for the years
1830, 1831, 1832, 1833, 1834, 1835, and 1836:—
Vol. I.—South American, West Indian, and North Ameri-
can; Mediterranean, and Peninsular Commands.
Published in 1840.
Vol. II.—Cape of Good Hope, and West Coast of Africa,
and East India Commands; Home, and Various
Forces. Published in 1841.
March 12, 1840, a select committee of fifteen members of
the House of Commons was appointed "to inquire into the
circumstances affecting the health of the inhabitants of large
towns and populous districts, with a view to improved san-
itary regulations for their benefit." The report was presented,
June 17th following, under the title of "Report from the Se-
lect Committee on the Health of Towns, together with the
minutes of evidence taken before them."
On the 2d of October, 1840, a commission, consisting of
Thomas Tooke, Esq., T. Southwood Smith, M. D., Leonard
Horner and Robert John Saunders, Esqs., was appointed by
the government, to inquire "into the employment of the chil-
dren of the poorer classes in mines and collieries, and the vari-
ous branches of trade and manufacture in which numbers of
children work together; and to collect information as to the
ages at which they are employed, the number of hours they
are engaged in work, the time allowed each day for meals, and
as to the actual condition and treatment of such children, and
as to the effects of such employments, both with regard to their
moral and their bodily health." Two reports were made by
this commission: one in 1841, on the physical, and the other
in 1843, on the moral aspects of the inquiry, comprising five
large folio volumes. An abridgement was published in 1843,
under the title of "The Physical and Moral Condition of
Children and Young Persons employed in Mines and Manufactures.”

In 1838, the Poor-Law Commissioners instituted inquiries into the effects of different methods of managing pauper children; and the results of their inquiry appeared in 1841, in a “Report from the Poor-Law Commissioners on the Training of Pauper Children.” This work contains several valuable papers relating to health, as well as education in general.

A “Report on the Prevalence of certain Physical Causes of Fever in the Metropolis, which might be removed by proper Sanitary Measures; by Neil Arnott, M. D., and James Phillips Kay, M. D.,” dated 12th May, 1838; and another “Report on some of the Physical Causes of Sickness and Mortality to which the Poor are particularly exposed, and which are capable of removal by Sanitary Regulations; exemplified in the present condition of the Bethnal Green and Whitechapel Districts, as ascertained on a personal inspection by Southwood Smith, M. D., Physician of the London Fever Hospital,” dated May, 1838, were published in the Fourth Annual Report of the Poor-Law Commissioners, (8vo. ed., pp. 103, 129,) and also in a separate form. And a “Report on the Prevalence of Fever in Twenty Metropolitan Unions or Parishes, during the year ending the 20th March, 1838. by Southwood Smith, M. D.,” was published in the Fifth Annual Report, (p. 160.)

In consequence of these reports, Lord John Russell, then Secretary of the Home Department, on motion of the Bishop of London, addressed a letter to the commissioners, dated August 21, 1839, directing them to inquire “as to the extent to which the causes of disease, stated in these reports to prevail among the laboring classes of the metropolis, prevail also among the laboring classes in other parts of England, Scotland, and Wales.” The commissioners began this inquiry through the agency of their secretary, Edwin Chadwick, Esq., in November, 1839; and that distinguished sanitary reformer digested the information obtained; and presented his very able and most valuable report, July 9, 1842, which was published under the title, “Report on the Sanitary Population of Great Britain, by Edwin Chadwick, Esq.”

In 1843, appeared “A Supplement of a Special Inquiry into the Inhabitants of the Precincts of the Metropolis, to consider the expediency of measures to remedy the evils arising within the precincts of large towns.” They reported the 14 districts in England and Wales, to which the inhabitants are particularly exposed, and which are capable of removal by Sanitary Regulations; exemplified in the present condition of the Health of Towns, as ascertained on a personal inspection by Southwood Smith, M. D., Physician of the London Fever Hospital,” dated May, 1838, were published in the Fourth Annual Report of the Poor-Law Commissioners, (8vo. ed., pp. 103, 129,) and also in a separate form. And a “Report on the Prevalence of Fever in Twenty Metropolitan Unions or Parishes, during the year ending the 20th March, 1838. by Southwood Smith, M. D.,” was published in the Fifth Annual Report, (p. 160.)

The facts thus far developed were made the subject of an address to the public mind, by a recommendation of the commissioners, consisting of 5,000 copies of this report, for consideration by the Bishop of London, addressed to the commissioners, dated August 21, 1839, directing them to inquire “as to the extent to which the causes of disease, stated in these reports to prevail among the laboring classes of the metropolis, prevail also among the laboring classes in other parts of England, Scotland, and Wales.” The commissioners began this inquiry through the agency of their secretary, Edwin Chadwick, Esq., in November, 1839; and that distinguished sanitary reformer digested the information obtained; and presented his very able and most valuable report, July 9, 1842, which was published under the title, “Report on the Sanitary Population of Great Britain, by Edwin Chadwick, Esq.”

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The facts thus far developed were made the subject of an address to the public mind, by a recommendation of the commissioners, consisting of 5,000 copies of this report, for consideration by the Bishop of London, addressed to the commissioners, dated August 21, 1839, directing them to inquire “as to the extent to which the causes of disease, stated in these reports to prevail among the laboring classes of the metropolis, prevail also among the laboring classes in other parts of England, Scotland, and Wales.” The commissioners began this inquiry through the agency of their secretary, Edwin Chadwick, Esq., in November, 1839; and that distinguished sanitary reformer digested the information obtained; and presented his very able and most valuable report, July 9, 1842, which was published under the title, “Report on the Sanitary Population of Great Britain, by Edwin Chadwick, Esq.”

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Commissioners instituted inquiries into methods of managing pauper children; their inquiry appeared in 1841, in a report Commissioners on the Training of such Children. This work contains several valuable suggestions as well as education in general.

In 1838, Sir Robert Peel, foreseeing the importance of the subject, appointed a commission, consisting of thirteen gentlemen of eminence, to inquire into the present state of large towns and populous districts in England and Wales, with reference to the causes of disease among the inhabitants; and into the best means of promoting and securing the public health under the operation of the laws and regulations now in force; and the usages at present prevailing with regard to the drainage of lands, the erection, drainage, and ventilation of buildings; and the supply of water in such towns and districts, whether for purposes of health, or for the better protection of property from fire; and how far the public health and the condition of the poorer classes of the people of this realm, and the salubrity and safety of their dwellings, may be promoted by the amendment of such laws, regulations, and usages.

This commission made their first report, June 22, 1844; and their second report, February 3, 1845. These works contain 1363 folio pages, besides numerous maps, and other pictorial illustrations; embracing an immense mass of facts on the subjects to which they relate. Two editions have been published: one in two volumes, large folio, and the other slightly abridged, in four volumes octavo, under the title of "Reports of the Commissioners for inquiring into the state of Large
Towns and Populous Districts.” These reports have been justly characterized as “certainly among the ablest and most comprehensive state papers that ever issued from a government office.”

September 24, 1847, another commission, consisting of Lord Robert Grosvenor, Edwin Chadwick, Thos. Southwood Smith, Richard Owen, and Richard Lambert Jones, was appointed to inquire “whether any and what special means may be requisite for the improvement of the health of the metropolis, with reference more particularly to the better house, street, and land drainage; street cleansing and paving; the collection and removal of soil and refuse, and the better supply of water for domestic use, for flushing sewers and drains, and cleansing streets; and also, to the best means of using existing works, and of erecting new works requisite, and of maintaining them in good action; and also, to the most equitable provisions for regulating the charges, or assessing, collecting, and paying the moneys requisite for such purposes, more especially in the districts chiefly inhabited by the poorer classes of the population.” They made their first report, November 19, 1847; their second, February 19, 1848; and their third, July 13, 1848. The commission is still open.

The following interesting statement of facts, containing a condensed summary of the information then possessed, is taken from the speech of Lord Morpeth, made in the House of Commons, March 30, 1847, on introducing his “Bill for improving the Health of Towns in England.” (pp. 6, 33.)

“By a statement drawn up by Dr. Guy, Physician to King’s College Hospital, from the reports of the Registrar-General, it appeared that the relative mortality in the town and country districts was as follows:—

<table>
<thead>
<tr>
<th>Country District</th>
<th>Town District</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population to the square mile</td>
<td>199</td>
</tr>
<tr>
<td>Annual deaths in 1,000,000</td>
<td>19,900</td>
</tr>
<tr>
<td>Annual excess in town districts</td>
<td>7,773</td>
</tr>
<tr>
<td>Rate of mortality</td>
<td>1 in 52</td>
</tr>
</tbody>
</table>

“He also supplies further particulars as to the rate of mortality in different places:—

Isle of Anglesea, 1 in 14
Isle of Wight, 1 in 12
England, 1 in 37
London, 1 in 37

Thus the inhabitants of the country districts, at large, lose eight years of life.

The following table shows the comparative annual loss, and the consequent comparatively small rate of mortality:—

<table>
<thead>
<tr>
<th>District</th>
<th>Rate of Mortality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liverpool,</td>
<td>1 in 32</td>
</tr>
<tr>
<td>Bath, Coventry, Derby,</td>
<td>1 in 26</td>
</tr>
<tr>
<td>Carlisle and Newcastle,</td>
<td>1 in 21</td>
</tr>
</tbody>
</table>

Now it may be objected that the inhabitants of the country districts, at large, lose eight years of life, may occasion the greater mortality; but I find the following statement:—

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He also supplies further particulars as to the rate of mortality in different places:

Liverpool, 1 in 32; Bath, Coventry, Derby, 1 in 26; Carlisle and Newcastle, 1 in 21. Now it may be said that the towns have the advantage of the town districts; but I find the following statement:—

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</tr>
<tr>
<td>Isle of Wight</td>
<td>58</td>
</tr>
<tr>
<td>England</td>
<td>45</td>
</tr>
<tr>
<td>London</td>
<td>39</td>
</tr>
</tbody>
</table>

Thus the inhabitants of London, compared with England at large, lose eight years of their lives; of Liverpool, nineteen. The population of the large towns in England being 4,000,000, the annual loss is between 31,000 and 32,000. But all towns are not necessarily equally unhealthy, as appears by the following statement:—Liverpool, deaths per 1,000, 35; Manchester, 32; Bath, Coventry, Derby, Dudley, Shrewsbury, and Sunderland, 26; Carlisle and Norwich, 25; Halifax and Kidderminster, 21. Now it may be thought that low wages, and the consequent comparatively small command over the necessaries of life, may occasion the greater rate of mortality in certain districts; but I find the following statement, made by a colleague of my own, Lord Ebrington, in a lecture which he delivered at Plymouth: ‘The mortality of the southwestern district, which includes Cornwall, Devon, Somerset, Dorset, and Wiltz, is only 1 in 52, not 2 per cent.; while that of the northwestern, including Cheshire and Lancashire, is 1 in 37. Now let it not be said that this is owing to extreme poverty and want of the necessaries of life; the condition of the laborers of the west, the badness of their dwellings, the lowness of their wages, the consequent scantiness of their food and clothing, have been the subject of public animadversion. With the exception of the Cornish miners, the condition of the laborers throughout the western counties is described as nearly the same: yet in Wiltshire, the county of lowest wages, the deaths are 1 in 49; in Lancashire, 1 in 36. The average age at death, in 1841, was, in Wiltshire, 35 years; in Lancashire, 22; at Liverpool, 17; that of the laborers in Wiltshire, 35; operatives in Liverpool, 15. At Manchester, in 1836, the average consumption per head of the population, was 105 lbs. of butcher’s meat,—about 2 lbs. a week,—exclusive of bacon, pork, fish, and poultry; (what a different average would our county produce!) the average age at death was twenty. The proportion of paupers in the fifteen principal agricultural counties, is 1 in
SANITARY REPORT.

8; in the twelve principal manufacturing counties, 1 in 13; in Lancashire, 1 in 11: and of the deaths in 3,500,000 of town, and about an equal number of a country population, there were, respectively, in 1838 and 1839 together,—country, 1 in 54.91, of whom above 70 years of age, 20 per cent.; town, 1 in 38.16, of whom above 70, 9 per cent.; all England, 1 in 46.60, of whom above 70, 14 per cent.'

"The following was Dr. Guy's statement of diseases which occasion the excessive mortality in large towns:—'Deaths in 1,000,000, from small-pox, in the country, 500; town, 1,000. From measles, country, 350; town, 900. Scarlet fever, country, 500; town, 1,000. Typhus, country, 1,000; town, 1,250. Epidemic and contagious disorders together, country, 3,400; town, 6,000. (Waste of life in towns, under this head, 2,600 a year.) Diseases of infants: teething, convulsions, water in the head,—country, 1,300; town, 3,500. (Waste of infant life, under this head, 2,200 a year.) Scrofulous diseases and consumptions, country, 3,800; town, 4,600. Total excess of deaths, 5,500 in the 1,000,000. So that there is a waste of 22,000 lives in the 4,000,000 inhabiting large towns.'

"Dr. Guy also said, 'The total number of deaths in England and Wales, during the year 1841, was 343,847, or somewhat less than 1,000 a day. Now this is at the rate of one death in 46 inhabitants. But if, instead of one death in 46 inhabitants, there had been one death in 50 inhabitants, or 2 per cent., no less than 25,407 lives would have been saved. Now all men who have paid any attention to this subject, agree in the opinion that, by proper sanitary measures, it is possible to insure such a state of health among the community at large, that the mortality shall not exceed that proportion. If the sanitary state of the entire country could be raised to the condition of the most healthy counties, so that instead of one death in 46 inhabitants, there should be only one death in 54, we should have an annual saving of no less than 49,349 lives, or about one-seventh of the whole number of deaths! At first sight, it may appear extravagant to represent such an improvement of our sanitary condition as possible; but, when it is recollected that, on the one hand, even our most agricultural counties have not yet attained to their best state, towns have been hitherto almost the entire country, of a sanitary condition relatively to the number of inhabitants, is at least within the"

"Dr. Southwood Smith said, 'not a single house in which even in some cases, not a single room in which had not been fever. The district is as familiar to the physicians of names. In every district in which fever prevails extensively, there is the sewerage, a bad supply of water, and a consequent accumulation of this to be so uniformly and generally accustomed to express the fact, the fever districts on a map, and the map of the commissioners to show wherever the commissioners have been, there fever is prevalent; and, on the other hand, it is far from that being the case, the Registrar-General, that there are 28 cases, of which the 10,000 deaths, and 250,000 cases.

"Then it may be asked with, equally subjected to these causes of sickness. The same calculation, far from that being the case, grouped, of ten districts each, as follows:—10 healthiest, with the Registrar-General, that the medium, and the most unhealthiest, as follows:—10 healthiest, with yards to each person, have a right.
manufacturing counties, 1 in 13; in the deaths in 3,500,000 of town, per of a country population, there and 1839 together,—country, 1 in years of age, 20 per cent.; town, 1, 70, 9 per cent.; all England, 1 in 14 per cent.'

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"Dr. Southwood Smith said:—'In some localities there was not a single house in which fever had not prevailed, and, in some cases, not a single room in a single house, in which there had not been fever. The districts in which fever prevails, are as familiar to the physicians of the fever hospital, as their own names. In every district in which fever returns frequently, and prevails extensively, there is uniformly a bad drainage, a bad sewerage, a bad supply of water, a bad supply of scavengers, and a consequent accumulation of filth; and I have observed this to be so uniformly and generally the case, that I have been accustomed to express the fact in this way:—If you trace down the fever districts on a map, and then compare that map with the map of the commissioners of sewers, you will find that wherever the commissioners of sewers have not been, there fever is prevalent; and, on the contrary, wherever they have been, there fever is comparatively absent. Some idea may be formed of the evils which our negligence in the matter of sew-erage and drainage inflicts, when I tell you that the annual deaths from typhus fever amount to 16,000, and the attacks of this loathsome disease to between 150,000 and 200,000.'

"Further still, Dr. Lyon Playfair calculates that, for one unne-cessary death, there are 28 cases of unnecessary sickness; conse-quently, in our large towns, above 700,000 cases of unnecessary sickness. The same calculations in the metropolis would save 10,000 deaths, and 250,000 cases of unnecessary sickness.

"Then it may be asked whether all parts of our towns are equally subjected to these causes of sickness and death? So far from that being the case, I find, from one of the reports of the Registrar-General, that the metropolis is divided into three groups, of ten districts each, under the title of the healthiest, the medium, and the most unhealthy districts. The result is as follows:—10 healthiest, with an allowance of 202 square yards to each person, have a mortality of 1 in 49; 10 medium,
with an allowance of 102 square yards to each person, have a mortality of 1 in 41; 10 unhealthiest, with an allowance of 32 square yards to each person, have a mortality of 1 in 36. Liverpool—gentry, 1 in 35; working classes, 1 in 15. The Rev. Mr. Clay, of Preston, makes four classes of streets:—Well conditioned, mortality among children under one year, 15 in 100; moderately conditioned, 21 in 100; ill conditioned, 38 in 100; worst conditioned, 44 in 100, or three times as much as the first. I will only refer back to the very last half-year's report, where it appears, from tables prepared by Mr. Chadwick, that, in St. George's Hanover square, the average age at which the gentry die is 45; laborers, 27: St. Giles's and St. George's Bloomsbury—gentry, 40; working classes, 17.

There are items of expense which may be reckoned to be incurred under the present system, or rather want of system:—Direct attendance on the sick; loss of what they would have earned; premature death of productive contributors to the national wealth; and expenses of premature funerals. Dr. Playfair estimates this loss for Manchester at nearly £1,000,000; Mr. Hawkesley calculates the loss for Nottingham at £300,000; Mr. Clay estimates the loss for Preston at £990,000; and Dr. Playfair considers the loss of London to be above £2,500,000; and that of England and Wales little short of £11,000,000; and of the United Kingdom, £20,000,000,” or nearly $100,000,000! And this an annual loss!

On the 31st of August, 1848, the great measure which had been brought into Parliament by Lord Morpeth, (now Earl of Carlisle,) became a law, under the title of “An Act for promoting the Public Health.” Under this act a General Board of Health has been organized, consisting of the Earl of Carlisle, Lord Ashley, Edwin Chadwick, Esq., and Thomas Southwood Smith, M. D. Henry Austin, Esq., is their secretary.

While these various governmental measures were in progress, the people were not inactive. Public opinion kept ahead of public measures. In November, 1844, an important meeting was held at Exeter Hall, composed of some of the ablest men in the kingdom, which formed the "Metropolitan Health of
The Liverpool Health of Towns Association. April 23, 1845, the Liverpool Health of Towns Association was organized; and soon after, similar associations were formed in the principal towns in England. A monthly periodical work, entitled "The Liverpool Health of Towns Advocate," was commenced Sept. 1, 1845, and continued until July 1, 1847. In November, 1847, the "Journal of Public Health, and Monthly Record of Sanitary Improvement," was commenced in London, and was continued until December, 1849, under the management of the Metropolitan Association. The books, pamphlets, and documents, official and private, which have more recently appeared on the subject, and the different sanitary movements that have been made for the public benefit, are too numerous to be specified. The whole country seems to be interested; and the people, with some few exceptions, view the sanitary question as The Great Idea of the Towns Association. The most noble the marquis of normandy, k. p., chairman.

Health associations. 45

Health associations. 45
Age. Able articles have, from time to time, appeared in the leading periodical reviews, miscellaneous as well as medical; and among other newspapers, The Times, and The Morning Chronicle, the leading journals of the world, have been its powerful advocates. The Times, during nearly the whole of last year, teemed with able articles. The Chronicle commenced, on the 18th of October, 1849, three series of most valuable papers on "Labor and the Poor;" one relating to the metropolitan districts, one to the manufacturing districts, and one to the rural districts.

Even the Queen, in her recent speech at the opening of Parliament, recommended the subject to public consideration:—

"In the summer and autumn of the past year, the United Kingdom was again visited by the ravages of the cholera; but Almighty God, in his mercy, was pleased to arrest the progress of mortality, and to stay this fearful pestilence. Her Majesty is persuaded that we shall best evince our gratitude by vigilant precautions against the more obvious causes of sickness, and an enlightened consideration for those who are most exposed to its attacks."

It would be impossible here to give even an analysis of these documents and works. The following are among the many conclusions to which we are led from the information they contain:—

1. It is proved that there die annually, in each 100 of the population, of the whole of England, 2.27; of the most healthy district, 1.53; and of the most unhealthy district, 3.58. And that the living to one death are, in these districts, respectively, 44, 65, and 27.

2. It is proved "that the various forms of epidemic, contagious, and other diseases, caused, or aggravated, or propagated, by atmospheric impurities, produced by decomposing animal or vegetable substances, by damp and filth, and close and over crowded dwellings, prevail amongst the population in every part of the kingdom, whether dwelling in separate houses, in rural villages, in small towns, or in the large towns, as they have been found to prevail in the lowest district of the metropolis."
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... to give even an analysis of these facts, the following are among the many that have been led from the information they have published:

... die annually, in each 100 of the England, 2.27; of the most healthy district, 3.58. And are, in these districts, respectively, various forms of epidemic, contracted, or aggravated, or propagated, by decomposing animal or vegetable, or by close and over-crowding amongst the population in every ten dwelling in separate houses, in 100 of the lowest district of the metropolis, 2.27; of the most unhealthy district, 3.58. And are, in these districts, respectively, various forms of epidemic, contracted, or aggravated, or propagated, by decomposing animal or vegetable, or by close and over-crowding amongst the population in every ten dwelling in separate houses, in 100 of the lowest district of the metropolis, 2.27; of the most unhealthy district, 3.58.

3. It is proved that disease and mortality fall more heavily upon those who live in large towns and populous places, than in the country districts, and particularly upon those who live in narrow streets, confined courts, damp dwellings, close chambers, cellars, undrained, unventilated, and uncleansed; and affect most severely the infantile portion of the population, and the heads of families between twenty and thirty years of age.

4. It is proved that, in such situations, the average duration of life is five to twenty-five years less than it might otherwise be; and that, during this curtailed period of existence, the working power of those who live, and their capacity for enjoyment, are greatly diminished by a constant depression of health and spirits, and by the active attacks of fever, cholera, scrofula, and consumption.

5. It is proved that such diseases, wherever their attacks are frequent, are always found in connection with the physical circumstances above specified; and that where these circumstances are removed by drainage, proper cleansing, better ventilation, and other means of diminishing atmospheric impurity, the frequency and intensity of such diseases are abated; and where the removal of the noxious agencies, and other causes of disease, appears to be complete, such diseases almost entirely disappear.

6. It is proved that the annual mortality might be reduced, in the whole kingdom, from 2.27 per cent., or 1 in 44, to less than two per cent., or 1 in 50; and in all large towns, as low as that general average.

7. It is proved that this unnecessary excess of mortality above 2 per cent., occasions an annual loss of more than 50,000 lives in the United Kingdom,—“greater than the loss from death or wounds in any wars in which the country has been engaged in modern times;” and that the causes of these unnecessary deaths occasion at least twenty cases of unnecessary sickness, on the average, to each death, or one million cases annually, which might have been prevented.

8. It is proved that of the 43,000 cases of widowhood, and 112,000 cases of destitute orphanage, relieved from the poor...
rates of England and Wales alone, the greater proportion of deaths of the heads of families occurred from specified remov-able causes; and that the average of their ages was under forty-five years, or thirteen years below the natural probability of life, as shown by experience.

9. It is proved that the preventable causes of disease, and the unnecessary mortality, impose upon the people immense pecuniary burdens which might be avoided.

10. It is proved that the younger population, bred up under noxious physical agencies, is inferior in physical organization and general health to a population preserved from such agencies; and that these adverse circumstances tend to produce an adult population, short-lived, improvident, reckless, intemperate, immoral, and with excessive desires for sensual gratifications.

II. THE SANITARY MOVEMENT AT HOME.

Sanitary Police. Some historical notice of the sanitary legislation of Massachusetts, seems proper, preliminary to any statements of its present condition. We have accordingly presented, in the appendix, the titles of all the acts relating to matters connected with the public health, from the commencement of the provincial charter, in the year 1692, to the present time, arranged in chronological order; and referred, in connection, to the printed works where they may be found. The subject seems to have received little attention from the General Court, during the old colonial charter. Two acts, which have some relation to it, we shall presently notice. Laws were passed by

1 Towns, however, under the general authority which they possessed, sometimes made regulations regarding sickness. The "selectmen of Salem, in 1678, ordered that William Stacy, who is sick of the small-pox, doth not presume to come abroad till three weeks after this date; and that he be very careful that when the time be expired he shift his clothes, and do not frequent company till he be wholly clear of the infection. And again,—" The selectmen being informed that William Lord, Jr., is vested with the small-pox, at his father's house, do order that William Lord, son, his wife and children that live with him, do keep within their house, and that they do not offer to sell any of their wares, viz.: bread, cakes, gingerbread, and the like; and that they suffer none to come to their house, but what necessity requires, upon the penalty of 20s. in money for each offence. It is ordered that Thomas Stacey doth forbear grinding at the mill, and that he be careful he doth not infect others, on the penalty of 20s. A house is ordered to be impressed for our sick, having the small-pox."


The following act was passed by the Massachusetts Colony, in 1660—

"This court, considering how far Satan doth prevail upon several persons within this jurisdiction to make away themselves, judgeth that God calls them to hear testimony against such wicked and unnatural practices, that others may be deterred therefrom:"

"Do therefore order, that from henceforth, if any person, inhabitant or stranger, shall at any time be found by any jury to lay violent hands on themselves, or be willfully guilty of

the provincial government, small-pox, and some other nuisances. In 1692 and 1693, the General Court passed several acts, prohibiting and removing nuisances, and regulating the disposal of refuse. These provisions were incorporated into the burying-place of Christians, but shall be the selectmen of the town where such person doth lie upon the grave as a brand of infamy, damnable practices." Ancient Charters and

LEGISLATION ...