ON THE
MORTALITY IN PRISONS,
AND THE
DISEASES MOST FREQUENTLY FATAL TO PRISONERS.

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THE amelioration of public health, which has been effected by the diffusion and practical application of scientific truths, is one of the most remarkable features in the history of society during the last sixty or seventy years. This happy result of the advance of civilization is manifested in the improved condition of all classes of the community, but is seen nowhere more conspicuously than in the gaols and houses of correction in this country.

In Howard's time, the prisons of England, like those of the rest of Europe, were so filthy, crowded, and ill ventilated, that the air which the unfortunate inmates were compelled to breathe had an insupportable odour, and was almost constantly laden with the infection of putrid fever. The most benevolent persons scarcely ever ventured within the

walls of these noisome hotbeds of vice and disease ; and even Howard found it necessary to protect himself against infection by carrying about him vinegar, and other reputed antidotes. This state of things no longer exists. The prisons of England are now, for the most part, remarkably clean, and if not *perfectly* ventilated, are very rarely so crowded as to endanger life by the development and propagation of typhus or putrid fever. To casual observers, indeed, they may appear to have every requisite for the preservation of health, which is consistent with the state of imprisonment ; and by all who witness their present condition, they must be admitted to offer a striking contrast to the gaols visited and described by the great English philanthropist.

But, notwithstanding their greatly improved condition, an examination of the statistics of many of these establishments shows that the rate of mortality is much higher amongst the prisoners confined in them than amongst persons of the same age in society at large. This fact, which has not hitherto occupied much of the attention of members of our profession in England, is, I think, well worthy of their consideration ; for, setting aside the possibility of aiding in the further improvement of the health of prisons, some facts of direct professional interest, and a few perhaps capable of useful application in the field of practical medicine, may be gathered from an inquiry into the causes which have produced the unusual amount of disease, and

high rate of mortality amongst incarcerated criminals. There are several reasons why this inquiry has been so much neglected. The principal one, however, seems to be, that the disease which is now chiefly fatal to prisoners is chronic in its growth and progress, requiring many months for its complete development; while the opportunity of observing the effects of imprisonment during so long a period has been afforded to few medical men in this country. In the county gaols and houses of correction of England, the average time during which criminals are confined does not exceed a few weeks. In the hulks, the average time of imprisonment has been much longer; but these establishments have never attracted much of public attention, and the state of health in them has not been made the subject of inquiry. With respect to the only other penal establishment, the Millbank Penitentiary, where criminals were confined for periods of two, three, or four years, there has been no want of publicity or of investigation; but here another circumstance has prevented inquirers from examining the effects of imprisonment on the health. A severe epidemic having once prevailed in the Penitentiary, and having been ascribed by the medical men who witnessed it, to a local noxious influence, no other cause seemed requisite to explain any amount of disease which might subsequently prevail. Hence, of late years, the nature of the maladies most generally fatal to the prisoners in the Penitentiary has, I believe, been seldom inquired after, and has be-

come known to few persons besides the medical officers of the institution.

Personal observation of the health of the prisoners in the Penitentiary during the year 1840 and subsequent years, and an examination of the medical records of the establishment, convinced me that a great part of the most serious diseases there prevalent, and especially of such as proved fatal, arose, not from any noxious influence peculiar to the locality, but from causes which were likely to be common to most if not all prisons. The desire of arriving at a satisfactory conclusion as to the relative activity of different causes of disease in the Penitentiary, led me to institute a rather extensive inquiry respecting the rate of mortality, the nature of the more prevalent fatal diseases and their causes in other penal establishments.

The main results of this investigation were, first, that imprisonment, continued for periods of 2, 3 or 4 years, produced everywhere a high rate of mortality; and secondly, that, although in particular instances other causes might contribute to increase the number of deaths, yet, in all prisons, the Millbank Penitentiary included, the increased mortality was chiefly due to the prevalence of *one and the same disease*, namely, tubercular scrofula. The facts upon which these conclusions are based, will be detailed in the paper now before the Society.

The present seems to be a favourable period for reviewing the medical history of prisons, especially in this country. For within the last two or three

years great changes have been effected in the whole system of secondary punishments, and in the state of prisons. 1st. The prison at Millbank has, since June 1843, ceased to exist as a Penitentiary, having been converted into a great central depôt for convicts destined for transportation. The opportunity of observing the effects of long imprisonment in this establishment is therefore now at an end.

2nd. The diet of prisoners in all gaols throughout England has been regulated according to an uniform and improved scale promulgated by the Secretary of State.

3rd. New prisons have been erected in which advantage has been taken of the most recent improvements in practical science, in order to render the system of warming and ventilation as perfect as possible. In these prisons, and also to a less extent in many others, great care is now exercised to afford varied employment for the minds and bodies of the prisoners, and, in a word, every means is used to maintain as perfect a state of health as is consistent with the condition of restraint, and with the discipline which holds out the fairest promise of reforming the moral character.

These changes constitute a new epoch in the history of prison discipline in this country. Some years however must elapse before the effects produced on the health by confinement in the newly-erected prisons, and under the new arrangements, can be satisfactorily determined. The remarks in this paper refer only to the results of imprisonment during the

period of fifteen or twenty years just past, and under the conditions which during that period have been presented by the Millbank Penitentiary, and by most other great prisons in Europe and America.

The plan which I shall follow, is first to determine the rate of mortality in the Millbank Penitentiary and in other prisons, comparing the mortality in each prison with that of the free population in the country to which it belongs; secondly, to point out several causes which influence very much the number of deaths in prisons, and occasion the rates of mortality within them to vary quite independently of any difference in the system of discipline, diet, and other internal arrangements; and lastly, to show the relative prevalence of different classes of fatal diseases amongst prisoners, and to demonstrate the influence of the duration of imprisonment, diet, season of the year, age, sex, and other causes, on the production and frequency of those diseases to which the mortality of prisoners is chiefly due.

In these several divisions of the subject, I shall generally, first examine the data afforded by the Millbank Penitentiary, and afterwards compare these data with those derived from other prisons.

I.—RATE OF MORTALITY IN PRISONS.

Rate of Mortality in the Millbank Penitentiary.—When we endeavour to determine what has been the rate of mortality in the Millbank Penitentiary, we meet with a serious difficulty, owing to the

humane practice pursued by the superintending committee, of recommending to the mercy of the Crown all such prisoners as appeared to the medical officers to be sinking under the effects of imprisonment, or at least to be already in a much impaired state of health.*

The total number of deaths during the eighteen years from the commencement of 1825 to the end of 1842 † was 205 ; the average number of prisoners during the same period was 532 (see Table I. in the Appendix). The average annual mortality, therefore, was only a little more than twenty per thousand (21·380), or two per cent. But besides the prisoners who died in the Penitentiary, there were 355 invalided, or pardoned on medical grounds,

* The rule which guided the medical officers in this matter was as follows :—“ If any prisoner shall be afflicted with any disorder in which change of air shall appear to be necessary to preserve his or her life, or from which the patient is not likely to be sufficiently recovered to quit the infirmary during the term for which he or she shall have been sentenced to confinement in the Penitentiary, the medical superintendent shall state the circumstances of the case to the committee, in order that they may consider of the propriety of bringing such prisoner under the notice of the Secretary of State, as a fit object of the royal mercy.”

† In consequence of the great prevalence of disease in the Penitentiary during 1823, the institution was in that year closed for several months. It was re-opened in October 1824, and was finally converted into a dépôt for convicts, in June 1843. It can scarcely be necessary to say, that “ an account of the disease which prevailed in the Penitentiary in the year 1823,” was published by Dr. Latham.

during the same period of eighteen years. Now, if all these cases of invaliding were reckoned as deaths, the rate of mortality would be raised to rather more than fifty-eight per thousand (58·405), or 5·840 per cent. annually. This, however, would be a highly exaggerated estimate; for though it is true that many of the prisoners, thus invalided, have died soon after their release from prison, it is equally certain that the majority of them have recovered, and that in a large proportion of the cases the result would not have been fatal during the criminal's imprisonment, even had they been detained until the expiration of their sentences.

After a careful examination of the list of diseases which formed the grounds of pardon, and a consideration of all the facts bearing on this difficulty, I have formed the opinion that out of the 355 cases in which prisoners were invalided, 123 would in all probability have terminated fatally before the completion of the full terms of imprisonment, had no pardons been granted, and consequently that those 123 cases may be added to the number of deaths. According to this calculation, the annual mortality in the Penitentiary will have been 34·209 per thousand, or 3·420 per cent., as is shown in the subjoined Table.

Average number of prisoners.	Total number of Deaths in the Institution during 17 years.	Number of deaths annually per 1,000 prisoners.	Total number of pardons on medical grounds.	Probable total mortality found by adding 123 of the pardons to the deaths.	Annual ratio of probable mortality per 1,000 prisoners.
532	205	21·380	355	328	34·209

On referring to the 5th report of the Registrar-General, (page 35,) we find that this rate of mortality is more than twice as high as that to which all persons in the metropolis, of the same period of life as prisoners, were subject during the year 1841, and it would consequently seem that the criminal's liability to die was more than doubled by imprisonment in the Penitentiary.

Mortality per thousand of the inhabitants of the metropolis, between the ages of 15 and 70, during the year 1841	}	15,390.*
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Two objections, however, may be urged against the fairness of this comparison. The first which I shall notice, is that the year 1841 was a healthy year, while during two of the 18 years over which the mortality tables of the Penitentiary extend, Asiatic cholera was prevalent, and caused 31 deaths amongst the prisoners. These deaths from cholera may certainly, with perfect fairness, be excluded

* The rate of mortality in 1841 is here taken as the standard for the annual mortality in the metropolis; because the census having been taken in that year, we know the *actual* population at different ages,—one of the elements in the calculation, by which we deduce the ratio of the deaths,—while, in other years, we are obliged to calculate from the *estimated* population. In subsequent parts of this paper, when the mortality from different diseases comes under discussion, other periods are referred to, viz., 1840 and 1841, taken together, and the year 1842. The reason of this is, that the Registrar-General's Reports give no account of the mortality of persons of different ages, from the various causes of death, in the year 1841 alone.

from the calculation in estimating the mortality of the Penitentiary ; but even then, we find the ratio of deaths to the number of the living in the Penitentiary, and in the metropolis generally, to have been respectively 30·976 and 15·390 per thousand annually.

	Total mortality during the 18 years.	Annual rate of mortality per 1,000 prisoners.
Mortality amongst the Prisoners in the Millbank Penitentiary during the years 1825 to 1842, exclusive of deaths from Asiatic cholera .	174	18·147
Do. Do. with the addition of 123 pardons, which are to be reckoned as deaths .	297	30·976

With this correction, therefore, the mortality in the Penitentiary still appears to have been excessive. But it may next be urged, that this excessive mortality should in great part be ascribed to the unhealthiness of the class of society from which the prisoners are chiefly derived. This second objection to the comparison drawn above, between the mortality in the Penitentiary and that amongst the free population of the metropolis, will be more conveniently considered, after we have inquired into the facts displayed in the statistical records of other penal establishments, and have determined how far a very high rate of mortality is to be regarded as their general characteristic.

The penal establishments respecting which I have been enabled to obtain the requisite data for calculating the proportion of deaths to the number of

prisoners, are the Houses of Correction and Gaols of the different Counties of England and Wales,* the Hulks of England,† the Maisons de Correction

* The statistics of the County Prisons of England and Wales have been extracted with much labour from the annual reports of the Inspectors of Prisons. The returns of the average daily number of prisoners given in those reports, include debtors as well as criminals in the cases of those County Gaols which receive both classes of prisoners. To ascertain the average number of criminal prisoners, I have deducted from the average daily number of all prisoners, the number of debtors at the date of the returns. The numbers thus obtained must approximate very closely to the real average numbers of criminal prisoners in the different gaols. In order however to avoid the imputation of inaccuracy, I have arranged in separate tables, those prisons which contained only criminal prisoners, or at least but very few debtors (see Table II. in the Appendix), and those in which the debtors are in considerable number (Table III.). The deaths of debtors are seldom noticed in the returns, but when they are mentioned I have subtracted them from the total number of deaths. Of the statistics of Lancaster Castle I have accurate accounts for a long series of years (see Table XXIV.); Captain Hansbrow, the Governor of that prison, having kindly furnished me with a return of the average number of the criminal prisoners, and the mortality in each year, from 1825 to 1843. The statistics of the Cold Bath Fields House of Correction and the Tothilfields Bridewell (Table IV.) were obtained from the Home Office in 1840. The details of the statistics of the Wakefield, Knutsford, and Devizes Houses of Correction, collected from the Reports of the Inspectors, will be found in Tables XXII. to XXV.

† The number of convicts confined in the Hulks, and the mortality they have suffered during 15 years, is shown in Table V., which has been formed from returns obtained from the Home Office.

et de Force, and the Bagnes or Hulks of France,* the Geneva and Lausanne Penitentiaries in Switzerland,† and several of the principal Penitentiaries or State Prisons of the United States.‡ The main re-

* A work compiled from official documents, by M. Raoul Chassinat, entitled, "*Études sur la mortalité dans les Bagnes et dans les Maisons Centrales de force et de correction*," and very recently published by authority of the Minister of the Interior, has furnished the data for estimating the mortality of criminals in the penal establishments of France.

† The statistics of the Penitentiaries of Geneva and Lausanne (see Tables VI. VII. XXIII. and XXIV. in the Appendix) have been gathered from the following sources: 1st, an article entitled *Hygiène de la Prison Pénitentiaire de Genève*," by M. Ch. Coindet, in the 19th volume of the *Annales d'Hygiène Publique*; —2nd, the "*Examen Médicale et Philosophique du Système Pénitentiaire*," of M. Gosse, published at Geneva, 1838; 3rd, the article on the "*Régime Pénitentiaire*," by M. Moreau Christophe, in the 22nd volume of the *Ann. d'Hygiène Publique*; and 4th, two articles on the "*Schweizer Strafanstalten*," by M. Varrentrap, in the 1st and 2nd vol. of the *Jahrbücher der Gefängnisskunde*. Frankfort, 1842 and 1843.

‡ I have been enabled, through the kindness of W. Crawford, Esq., Inspector of Prisons, to collect very accurate information respecting the vital statistics of the American Penitentiaries, that gentleman having allowed me to consult his very extensive collection of statistical and other works relating to the state of prison discipline in America, and other countries. The data employed for the construction of the Tables VIII. to XIV. and XXVI. to XXXII. are principally derived from the following sources: the series of annual reports of the Inspectors of the Eastern Penitentiary of Pennsylvania; many of the annual reports of the Inspectors of the Penitentiaries or State Prisons of Auburn, Sing Sing, (or Mount Pleasant,) Charlestown, Wethersfield, and Maryland; Mr.

sults which these data have afforded, are shown in the annexed Table. Deaths from Asiatic cholera have been excluded from the calculation, in all cases except those of the French Hulks and Prisons. I have not been able to ascertain what amount of mortality was caused by the epidemic of cholera in the penal establishments of France.

Crawford's report on the Penitentiaries of the United States, ordered by Parliament to be printed, March 1835 ; *Rapports sur les Pénitenciers des États-Unis* par MM. Demetz et Blouet, Paris 1837 ; the annual reports of the Boston Prison Discipline Society ; and the work of Dr. Julius, "*Nord-Amerikas Sittliche Zustände*," published at Leipzig in 1839.

Names of Prisons, &c.	Periods to which the data belong.	Average number of prisoners.	Total number of deaths during the whole period	Annual ratio per 1,000 prisoners.
The 36 largest County Gaols and Houses of Correction in England.	5 years, 1838 to 1841	8,657	823	19·013
Wakefield House of Correction.	9 years, 1835 to 1843	561	135	26·732
Knutsford House of Correction.	7 years, 1834 to 1840	246	34	19·710
Lancaster County Gaol.	19 years, 1825 to 1843	263·736	102	20·355
Devizes House of Correction.	12 years, 1829 to 1840	174·666	32	15·767
Millbank Penitentiary.	18 years, 1825 to 1842	532	174*	18·147
The Hulks of England.	15 years, 1825 to 1831	3,389	1,980	38·938
The 19 Maisons centrales de Force et de Correction of France.	16 years, 1822 to 1837	M. 15,583 F. 4,768	M. 13,859 F. 3,030	M. 55·5 F. 39·5
Poissy (Maison centrale).	16 years, 1822 to 1837	852	417	30·5
Nismes (Maison centrale).	16 years, 1822 to 1837	1,373	1,345	61·3
Eysses (Maison centrale).	16 years, 1822 to 1837	1,423	1,981	86·9
The 3 Hulk Establishments or Bagnes of France.	16 years, 1822 to 1837	6,915	4,508	40·7
Brest (Bagnes).	16 years, 1822 to 1837	1,800	885	30·7
Rochfort (Bagnes).	16 years, 1822 to 1837	991	848	53·4
Toulon (Bagnes).	16 years, 1822 to 1837	4,182	2,775	41·4
The Geneva Penitentiary.	16 years, 1826 to 1841	56·911	24	26·380
The Lausanne Penitentiary.	15 years and 3 months, Oct. 1826 to Jan. 1841	88·144	52	38·690
The Maryland Penitentiary.	8 years, 1834 to 1840 & 1843	372	155	35·763
The Eastern Penitentiary of Pennsylvania.	14 years, 1830 to 1843	266·7	147	39·336
The Sing Sing State Prison of New York.	13 years, 1828 to 1840	763·384	300	30·822
The Wethersfield State Prison, Connecticut.	12 years, 1830 to 1837 & 1839 & 1842 to 1844	195	68	27·048
The Auburn Penitentiary, New York.	16 years, 1825 to 1840	613·62	186	19·019
The Charlestown State Prison, Massachusetts.	12 years, 1829 to 1840	283	65	19·408

* Exclusive of prisoners pardoned on account of impaired health.

It will be seen that the annual rate of mortality ranges in the different prisons in England from 15·767 per thousand to 38·938 per thousand ; in the prisons of the United States, from 19·019 to 39·336 per thousand ; and in Switzerland from 26·380 to 38·690 per thousand ; while in France the rate of mortality of the Hulks varies from 30·7 to 53·4 per thousand, and that of the Houses of Correction from 30·5 to 86·9 per thousand.

The annual rate of mortality amongst persons at liberty in the different counties or cities in which these prisons are situated is shown by the subjoined Table:

County or City.	Period.	Ages.	Sexes.	Ratio of deaths per 1,000 persons living.
England* (the Metropolis).	1841	15 to 70	Both sexes.	15·390
France† (the whole country).	1817 to 1831	15 to 70	Males. Females.	14·140 14·679
" (the most healthy districts).	— —	— —	Males. Females.	13·178 14·510
" (the most unhealthy districts).	— —	— —	Males. Females.	16·126 14·834
Paris‡	1817	15 to 70	Both sexes.	17·988
Switzerland§ (Geneva)	1814 to 1833	15 to 70	Both sexes.	16·165
United States|| (City and County of New York).	Mean of 1838 & 1842	10 & upwards	Both sexes.	15·760

* Fifth Report of the Registrar-General, pp. 34, 35.

† Mém. sur les lois de la population, et de la mortalité en France, par M. Demonferrand, Journ. de l'École Polytechnique, Tome XVI. 26^e cahier, Année 1838, pp. 294, et seq.

‡ Recherches Statistiques sur la Ville de Paris, 1833, Tab. No. 7 and No. 20.

§ Recherches Historiques et Statistiques sur la Population de Genève, par M. Mallet, Ann. d'Hygiène, Tome XVII. p. 169.

|| Census of the United States, 1840, and Annual Reports of

On a comparison of this Table with the preceding one, it will be seen that in all these countries the mortality of prisoners has much exceeded that of the free population. But it will be observed that the excess of mortality has been far greater in some prisons than in others. To what causes must we ascribe this difference in the rates of mortality presented by different penal establishments? This is the next question which offers itself for solution.

At first sight it might be supposed that the relatively low rate of mortality of some prisons and the high mortality of others, are measures of the healthiness or unhealthiness of these institutions, and of the different degrees in which the health of the prisoners is injuriously affected by the discipline, diet, and general arrangements to which they are subjected. A more exact inquiry, however, shows that such a supposition would be most erroneous, for we find that there are many circumstances independent of all systems of prison discipline and internal prison arrangements, which nevertheless greatly affect the number of deaths occurring in

the Interments in the City and County of New York. The rate of mortality is calculated from the population in 1840, and the mean number of the deaths in 1838 and 1842. The ages of the Black population being grouped differently in the Census and in the Annual Reports of the Interments in the City of New York, it is not possible to give the rate of mortality between the ages of 10 and 70. Hence when the mortality of the Black population alone, or of the whole population (Whites and Blacks together), is given in this paper, it has been necessary to include all ages above 10 years.

penal establishments. It is necessary that I should point out and illustrate the operation of the more important of these circumstances, before I attempt to define the real influence of imprisonment on the health and chances of life.

II.—CAUSES INFLUENCING THE RATE OF MORTALITY IN PRISONS.

The circumstances whose influence it is most necessary to consider before reasoning upon the data afforded by the mortality tables of a prison, are, first, the extent to which the practice is carried, of granting pardons to convicts in an impaired state of health ; secondly, the degree of predisposition of the class of persons forming the population of the prison, to fatal disease ; thirdly, the length of imprisonment which the convicts undergo ; and, fourthly, their liability to endemic and epidemic diseases, from the situation of the prison.

I. *Pardons on Medical grounds.*—The necessity of inquiring whether the prisoners are invalided, or pardoned on account of impaired health, and to what extent this is practised, is clearly enough demonstrated in the case of the Millbank Penitentiary.

The table of deaths which actually occurred within that institution gives a rate of mortality of scarcely more than eighteen per thousand annually : but the prisoners pardoned on account of impaired health were very numerous,—so numerous, indeed, that, according to a fair estimate of the probable fatality of the diseases forming the grounds of pardon,

the rate of mortality, exclusive of the deaths from cholera, should be regarded as nearly thirty-one per thousand annually.

In no other penal establishment, probably, has the pardoning of prisoners on account of ill health been practised to so great an extent as in the Millbank Penitentiary ; but undoubtedly it has not been confined to that institution. Prisoners in many of the county gaols and houses of correction of England have frequently received their pardons, on a representation of the impaired state of their health being made by the magistrates to the Secretary of State. The mortality really appertaining to the state of imprisonment in these establishments is therefore greater than is shown in the table at page 126.

Some data given in the Eighth Report of the Inspector of Prisons in the Northern and Eastern District, enable us to estimate the extent to which the number of deaths in the county prisons has been reduced by the pardoning of criminals in ill health. It appears that in the Wakefield, Liverpool, Preston, Lancaster, Chester, and Derby gaols, the number of prisoners pardoned on account of their bad state of health, during the years of which the statistics are given in the report above mentioned, has been 35, while the number of deaths has been 61.

Now, assuming that the prisoners who would have died had they not been released, bore the same proportion to the whole number pardoned as we have estimated them to have borne in the Millbank Penitentiary, we must regard the mortality of

these prisons, during the years to which the data belong, as 73·11 instead of 61. And if we further suppose that the number of deaths has been diminished, by the pardoning of criminals in ill health, to the same extent in the thirty-six principal gaols and houses of correction of England, as in the six prisons just named, we must estimate the real total mortality of the whole thirty-six prisons, during the five years, (1838 to 1842,) at 986·385 instead of 823, and their average annual mortality at 22·788 instead of 19·013 per thousand. This estimate is probably not far from the truth.*

Again, the comparatively low rate of mortality of some of the American prisons cannot be wholly

* The calculation by which this result is obtained is as follows :—The number of deaths during the last two or three years, in the six prisons named in the preceding page, has been 61, and the number of pardons 35. In the Millbank Penitentiary we reckoned 123 out of 355 pardons, or 346 per thousand, as deaths. Dividing 35, then, by $\frac{346}{1000}$, we find the number of pardons (namely, 12·110), which are to be reckoned as deaths, and to be added to the mortality of the six county prisons, and in this way we find 73·11 to be the probable total mortality of those prisons during the years in which 61 prisoners died in the prisons and 35 were pardoned. To find the probable mortality of the thirty-six county prisons during the last five years, we add to the deaths which occurred in the prisons, namely, 823, a number which bears the same proportion to 823 as 12·110 does to 61. This required number is 163·385, which being added to 823, makes the probable total mortality 986·385. The average annual mortality amongst 1,000 prisoners is of course ascertained by multiplying this number by 1,000, and dividing by the aggregate of the average numbers of prisoners in the several years, which was 43,285.

explained, except on the supposition that pardons have sometimes been granted to prisoners whose health has been failing, and who would have died if they had been kept longer in prison. No account of these pardons on medical grounds is given in any of the reports of the American Penitentiaries; yet that such pardons are granted is certain, from casual expressions used in some of their reports, and in pamphlets on prison discipline published in America.*

The number of prisoners pardoned under these circumstances, seems however to have been much less in the American prisons than at the Millbank Penitentiary. For in the Eastern Penitentiary during the first seven years after its establishment, only three prisoners appear to have been pardoned in a bad state of health.†

On the other hand, the comparatively high rate

* Two letters "On the abuse of the pardoning power" were published at Philadelphia in 1839; and in one of them the writer, Mr. Samuel R. Wood, for many years Warden of the Eastern Penitentiary, after condemning the facility with which pardons are granted to prisoners in America by the Executive, says, that one of the grounds often taken in the petition for pardon, is, "that he (the prisoner) is in delicate health, and that unless liberated he may die in prison." Again, the physician of the New Jersey Penitentiary, in his report for the year 1839, says, "There are generally from 10 to 20 on the sick list. Some of them are predisposed to consumption, and two or three have the disease in its confirmed state, and *will die in prison unless they are pardoned out.*"

† See the table of prisoners admitted into and discharged from the Eastern Penitentiary, at pages 98 to 119 of the Report of MM. Demetz and Blouet.

of mortality of the Hulks in England, 38·938 per thousand, is undoubtedly in part owing to the circumstance, that, as a general rule, convicts in the Hulks have not been pardoned on account of loss of health. The same has probably been the case in the French hulks and prisons, although other causes must have contributed to raise the mortality of those establishments to the high rate which they present.

2. *Differences of the Prisoners in respect of race, class, and consequent predisposition to disease.*—The extent to which the practice of invaliding or pardoning prisoners in bad health is carried, influences the *apparent* mortality in prisons, but there are other circumstances which cause the *actual* mortality to vary, quite independently of any effect which the discipline and internal arrangements of these establishments may produce upon the health. One of these circumstances is a difference in the race or class of persons constituting the population of the prisons, in regard to their state of health and liability to disease.

The influence which the condition of life of prisoners exerts on their rate of mortality while in confinement, was pointed out long since by M. Villermé.* He showed that the mortality in the different prisons in the Department of the Seine increased in a direct ratio with the wretchedness and poverty of the class of prisoners confined in them. The mean annual mortality of these prisons

* Annal. d'Hygiène Publique, tom. i. p. 3.

during the years 1815 to 1818 inclusive, was as follows :—

Prisons for persons in good or tolerable circum- stances.	}	Grande Force . . .	1 in 40·88
		Madelonnette . . .	1 in 38·03
For persons of a poorer class.	}	Conciergerie . . .	1 in 32·06
		Petite Force . . .	1 in 26·63
		Sainte Pelagie . . .	1 in 24·48
For persons who were nearly destitute.	}	Bicêtre	1 in 18·75
		Saint Lazare . . .	1 in 17·92
For beggars and vagrants who were totally destitute, and many diseased, aged, and infirm.	}	Depôt de Mendicité à Saint Denis	} 1 in 3·97

Other causes besides the mere poverty of the class whence the prisoners were derived, certainly contributed to increase the mortality of some of these prisons. And the comparatively low rate of mortality of those in which prisoners of a less destitute grade of society were confined, may be in part referred to the circumstance that such prisoners, having funds at their command, could obtain extra food and other comforts, even while in confinement. But still we cannot doubt that the more sound state of their constitutions had a large share in enabling the latter class of prisoners to resist the injurious influence of imprisonment, and that the intensity with which the same injurious influence operated on prisoners of a lower grade, was in a great measure owing to their having been rendered prone to disease by previous destitution and debauchery.

The importance of taking into account the different degrees of predisposition to disease which distinguish different classes of prisoners, before we draw inferences from the different rates of mortality of different prisons, is remarkably apparent in the case of the American Penitentiaries. We have already seen that the principal Penitentiaries or State Prisons of the United States vary considerably in the rate of mortality of the criminals confined in them. The annual proportion of deaths to the daily average of prisoners being in

The Sing Sing State Prison	30·822	per thousand.
The Eastern Penitentiary	39·336	„ „
The Maryland Penitentiary	35·763	„ „
The Wethersfield State Prison	27·048	„ „
The Charlestown State Prison	19·408	„ „
The Auburn State Prison	19·019	„ „

The high rate of mortality of the State Prison of Sing Sing is, as I shall presently show, in part due to its unhealthy situation. But this is not the case with the Eastern and Maryland Penitentiaries, both of which have elevated healthy sites. How then are we to account for the deaths being proportionally so much more numerous in these two Penitentiaries than in the State Prisons of Auburn, Charlestown, and Wethersfield? Must we infer that the relatively high rates of mortality of the two former institutions are wholly or chiefly due to an injurious influence arising from their construction, their internal ar-

rangements or system of discipline? If we were inclined to adopt such an opinion with regard to the Eastern Penitentiary, which is distinguished from the other prisons by a different construction and a different system of discipline, we should at once hesitate to do so, on remembering the high rate of mortality of the Maryland Penitentiary; for this institution is regulated after the very same system as the Auburn and Charlestown prisons, in which the rate of mortality is so low. A little further inquiry reveals to us another cause which will explain a great part of the excessive mortality both in the Eastern and in the Maryland Penitentiary. This cause is the peculiar predisposition to disease of a large proportion of the criminals confined within their walls. The number of prisoners in the Eastern Penitentiary during 14 years (1830 to 1843 inclusive) was on the average 267. Of this number, 165 were of the white race, and 102 of the dark races, chiefly negroes. In the Penitentiary of Maryland (a slave state) the proportion of prisoners of colour was even greater; the total number of prisoners received during eleven years being 1238, and 677, or more than half of that number, being people of colour. The presence of so large a proportion of individuals belonging to the dark races, who in a climate much colder than that of their native country, and in circumstances wholly unnatural to them, are known to suffer a very great mortality, would readily be admitted as a sufficient reason for the rate of mortality

of these Penitentiaries being very high. But the influence of this circumstance is even greater than could be anticipated. The subjoined Table gives some data for estimating the relative mortality of the white and coloured races amongst the free population of the cities and counties of Philadelphia and New York.

	Period.	Races.	Ages.	Population living.	Deaths.	Mortality per 1,000 living.
City and County of Philadelphia	1821 to 1830*	White	All ages	—	—	24·22
		Coloured	All ages			47·52
City and County of New York.	1840†	White	All ages	296,352	7,397	24·963
		Coloured	All ages	16,358	471	28·793
	Population of 1840, mean no. of deaths during 1838 and 1842†	White	10 and upwards	219,276	3,312	15·104
		Coloured	10 and upwards	13,076	350	26·766
	Ditto†	White	10 to 60	211,580	2,734	12·92
		Coloured	10 to 55	12,187	291	23·87
	Population and deaths, 1842†	White	10 to 60	220,991	2,952	13·35
		Coloured	10 to 55	12,736	297	23·32
		Whites, Males	10 to 70	107,941	1,626	15·063
		Females	10 to 70	118,502	1,618	13·653

In all the instances here cited, on whatever basis the calculation is made, as to place, year or age, the

* From Emerson's Medical Statistics.

† From the Annual Reports of the Interments in the City and County of New York. The population in 1840 is taken from the Census of the United States. For the opportunity of consulting these and several other statistical works I am indebted to W. Farr, Esq., of the General Register Office.

mortality is much greater amongst the coloured than amongst the white population ; and it will be seen, that where the population under the age of ten years is excluded from consideration, the ratio of deaths amongst the coloured is nearly twice as high as amongst the white inhabitants. This difference in the mortality of the two races becomes much exaggerated in the state of imprisonment. The mortality of the white races is raised from 13 or 15 per thousand annually, to 20 per thousand ; but that of the coloured race, which in the free condition ranges from 23 to 27 per thousand, has been during the last fourteen years as high as 70 per thousand in the Eastern Penitentiary, and even higher in the Wethersfield State Prison, during the last three years.

	Period.	Races.	Ages.	Population living.	Average annual No. of deaths.	Mortality per 1,000 living.
City and County of New York.	Population of 1840	White	10 and upwards	219,276	3,312	15·104
	Mean No. of deaths in 1838 & 1842	Coloured	10 and upwards	13,076	350	26·766
Eastern Penitentiary of Pennsylvania.	14 years, 1830 to 1843 inclusive	White	—	165	3·527	20·34
		Coloured	—	102	7·142	70·10
Wethersfield State Prison.	3 years, 1842 to 1844 inclusive	White	—	153·33	4·33	28·260
		Coloured	—	49·66	5	100·671

It is certain, then, that the coloured population of the United States suffers an appalling mortality in the state of imprisonment, and it follows that the number of deaths in the Penitentiaries and State

Prisons will, *cæteris paribus*, be greater in a direct ratio with the proportion of the coloured race amongst the prisoners. And when we compare the proportional numbers of the coloured and white races in the different Penitentiaries and State Prisons of the United States, it becomes apparent that the fact of the rate of mortality having been so much higher in the Eastern Penitentiary, in the Maryland Penitentiary, and in the Sing Sing State Prison, than in the State Prisons of Charlestown and Auburn, may in great part be referred to this cause.

Name of Penitentiary or Prison.	Number of Prisoners.				Proportions per cent. of coloured to total number.	Rate of mortality per 1,000 prisoners.
		White prisoners.	Coloured prisoners.	Total number of prisoners.		
Baltimore Penitentiary, Maryland	Received during 11 years, 1830 to 1840	561	677	1,238	54·685	35·763
Eastern Penitentiary, Philadelphia.	Average daily number during 14 years, 1830 to 1843	165·04	101·88	266·92	38·169	39·336
Wethersfield State Prison, Connecticut	Number on 31st March, 11 years, 1830, 1832, 1834 to 1839, and 1842 to 1844	148·454	45·727	194·181	23·646	27·048
Sing Sing State Prison, New York	Mean of the data in Table XIV. in the Appendix.	—	—	—	20·	30·822
Auburn State Prison, New York	Received in 15 years ending Dec. 1839	2,499	313	2,812	11·130	19·019
Charlestown State Prison, Massachusetts	Number at Michaelmas during 12 years, 1829 to 1840	247·33	31·75	279·08	11·379	19·408

In the Sing Sing State Prison, one fifth, in the Eastern Penitentiary nearly two fifths, and in the Maryland Penitentiary more than one half of the whole body of prisoners were negroes, mulattoes or Indians; while in the Auburn and Charlestown State Prisons, not one in nine belonged to the coloured races.

In the Wethersfield State Prison, the proportion of coloured prisoners was twice as great as in the Auburn State Prison, but much smaller than in the Eastern Penitentiary of Pennsylvania, and its rate of mortality was in like manner much higher than that of the Auburn Prison, but lower than that of the Eastern Penitentiary.

The foregoing facts prove incontestibly, that the diversity in the rates of mortality in the different Penitentiaries of the United States is in great part, though not wholly, due to the various proportions borne by the people of colour to the whole number of prisoners; and that any estimate of the relative salubrity of these establishments, and of the influence of their different systems of prison discipline on the health, which is formed without this circumstance being taken into account, must be incorrect and unjust.

The fact that bodies of prisoners differ greatly in their predisposition to disease, and in the amount of disease actually existing amongst them, deserves some consideration also, when we compare with each other the several penal establishments of England; for the high rate of mortality of the Hulks in England certainly depends in a great measure on

there being a large proportion of unhealthy and aged prisoners amongst the convicts in that establishment.

Until the recent change in the constitution of the Millbank Prison, the Hulks were the general depôt for all convicts sentenced to transportation. From this depôt the surgeons of the convict ships took the healthy and able bodied convicts, rejecting all such as they considered to be, from disease or infirmity, unfit for transportation to a penal settlement. A large accumulation of these rejected convicts consequently took place, and the mortality amongst them necessarily rendered the proportion of deaths amongst the whole body of convicts in the Hulks considerably higher than it would have been under other circumstances.

3. *Length of the terms of confinement.*—Another circumstance necessary to be taken into account previous to forming any opinion as to the causes on which the mortality of a prison depends, is the length of confinement which prisoners undergo. The average term of imprisonment varies greatly in different prisons, and, as a general rule, the rate of mortality is highest in those prisons where the terms of imprisonment are longest. This is apparent when we compare with each other the different prisons of England and the Continent.*

* The data from which the average duration of the terms of imprisonment in the different prisons has been calculated, are the total number of prisoners received into each prison, and the average number constantly in confinement during a series of years (see, for example, Table XV. in the Appendix).

Names of prisons,	Average duration of imprisonment,	Rate of mortality per 1,000 prisoners,
English County Gaols and Houses of Correction. }	1 month 16 days	22·788
Hulks of England	10 months 12 days	38·938
Millbank Penitentiary	2 years	30·965
Geneva Penitentiary	1 year 8 months	26·380
Lausanne Penitentiary	1 year 4 months	38·690
Prisons of France	Men . . 3y. 1m. 6d.	55·5
	Women . 3y. 2m. 27d.	39·5
	Both Sexes, 3y. 1m. 17d.	53·6
Hulks of France	Men, 7 yrs. 10 mhs. 6 ds.	40·7

In the English county gaols and houses of correction, where the average duration of imprisonment is about six weeks, the annual rate of mortality, allowing for pardons on medical grounds, has been only 22·788 per thousand prisoners.

In the Geneva Penitentiary the average duration of imprisonment has been 20 months, and the annual rate of mortality 26·380 per thousand. In the Millbank Penitentiary the average term of imprisonment was rather more than two years, and the annual mortality was 30·965 per thousand; while in the French Hulks, where the mean length of imprisonment has exceeded seven years, the rate of mortality has been as high as 40·7 per thousand prisoners. To this general rule of the increase of the ratio of deaths in proportion as the duration of imprisonment is greater, there are however several exceptions even amongst the English and Continental prisons.

The Hulks of England, the Penitentiary of Lau-

sanne, and the French Maisons Centrales, all present higher rates of mortality, compared with other penal establishments in their respective countries, than can be explained by reference to the terms of imprisonment suffered by the criminals confined in them.

In the case of the English Hulks this is due to a cause which has already been mentioned, namely, the great accumulation of unhealthy convicts in those establishments.

The comparatively high rate of mortality in the Lausanne Penitentiary and French prisons is less easily accounted for.

The want of correspondence between the average terms of imprisonment and the rate of mortality is still more remarkable in the American Penitentiaries, especially when we compare them with the penal establishments of England and France.

Names of prisons.	Average duration of imprisonment.	Annual ratio of mortality per 1,000 prisoners.
Auburn State Prison	3 years, 3 months,	19·019
Maryland Penitentiary	3 years, 2 months, 12 days	35·763
Wethersfield State Prison	3 years, 1 month, 25 days	27·048
Sing Sing State Prison	3 years, 2 months, 2 days	30·882
Charlestown State Prison	2 years, 9 months, 4 days	19·408
Eastern Penitentiary	2 years, 1 month, 6 days	39·336

Thus amongst the American prisons the *lowest* rate of mortality is coincident (in the Auburn State Prison) with the *longest* average term of imprisonment, while the *highest* rate of mortality is

coincident (in the Eastern Penitentiary) with the *shortest* average period of imprisonment. And again, when we compare those American prisons in which the negroes are not very numerous, namely, the Auburn, Charlestown, and Wethersfield prisons, with the prisons of Europe, we find the latter presenting, for the most part, much higher rates of mortality, although the convicts confined in all of them, except the prisons and hulks of France, undergo shorter terms of imprisonment than do those in the American prisons.

These facts afford a fresh proof of the impossibility of explaining all the varieties in the rates of mortality of prisons, by reference to one cause. Other circumstances being the same, the rate of mortality will be low where the terms of imprisonment are comparatively short, and will be high where they are protracted; but the influence of length of imprisonment may be more than counterbalanced by other causes, tending to increase or diminish the proportion of deaths.

In consequence of the number of deaths in prisons being liable to increase or diminution from so many different causes, it is impossible to determine the exact influence of the duration of imprisonment, by comparing the rates of mortality in different penal establishments. But we attain this object more satisfactorily when we compare the rates of mortality to which prisoners are subject at different periods of their imprisonment in the same prison.

The medical and other records of the Millbank

Penitentiary have afforded me the requisite data for making such a comparison; and the results at which I have arrived are comprehended in the subjoined Table.*

Periods of Imprisonment.	First year.			Second year.		Third year.	Fourth year.	Fifth year.	Sixth year.	Total.
	First 3 months.	Second 3 Months.	Second 6 months.	Third 6 months.	Fourth 6 months.					
Number of prisoners exposed to the chances of disease and death during each period.	3571	3470	3264	2905	2472	1645	611	94	5	
		3365		2682						
Number of deaths at each period from all causes except Asiatic cholera and suicides.	1	15	22	36	25	41	10	—	—	150
		38		61						
Annual rate of mortality per 1,000 prisoners at each period of imprisonment.	1·120	17·291	13·477	24·44	20·226	24·924	16·202			
		11·292		22·744						

* The following are the data from which the number of prisoners exposed to the chances of disease and death, during the successive periods of imprisonment, has been computed.

In the course of the seventeen years, 1825 to 1841 inclusive, 3,615 prisoners were confined in the Penitentiary, under the penitentiary system. The convicts under sentence of transportation are not included. The imprisonment of 2,962 had already terminated previous to the 1st of January 1842, while 653 still remained in the institution at that date. Both the prisoners discharged and those that remained had reached very various periods of imprisonment. The periods are specified in the first line of the Table at the next page, and the number of the discharged prisoners, the number of those remaining, and the total number of both classes, who at the time of their release, or on the 1st of January 1842, had reached each of these periods of imprison-

Here we see that prisoners in the Millbank Penitentiary were liable to very different rates of mortality at different periods of their imprisonment ;

ment, are given in the second, third, and fourth lines of this Table :—

Periods of imprisonment.	First 3 months.	Second 3 months.	Second 6 months.	Third 6 months.	Fourth 6 months.	Third year.	Fourth year.	Fifth year.	Sixth year.	Above 6 yrs.	Total.
Prisoners discharged within each period of imprisonment	50	74	218	221	251	1133	837	169	8	1	2962
Prisoners remaining, whose imprisonment had reached but not extended beyond each period.	38	40	80	198	196	74	25	2	—	—	653
Prisoners discharged and remaining, whose imprisonment had reached but not extended beyond each period.	88	114	298	219	447	1207	862	171	8	1	3615
Number of prisoners who entered on each period of imprisonment	3615	3527	3413	3115	2696	2249	1042	180	9	1	
Average number exposed to the liability of disease or death during each period.	3571	3470	3264	2905	2472	1645	611	94	5		

From these numbers we may calculate how many prisoners were exposed to the chance of disease and death during each period of imprisonment.

The whole 3,615 of course entered upon the first period of three months, but as the imprisonment of 88 did not extend beyond this period, there were only 3,527 who entered on the second period of three months ; and again, as there were

the proportion of deaths to those living being, in the first year of imprisonment, 11·292 per thousand ; in the second year, 22·744 per thousand ; and in the third year, 24·924 per thousand ; while in the fourth year it fell again to 16·202 per thousand. These numbers, however, by no means exhibit the whole influence of the duration of imprisonment on the production of fatal disease amongst the prisoners in the Millbank Penitentiary. It will be re-

114 whose imprisonment did not extend beyond the second period, only 3,413 entered on the third period, and thus the number of prisoners who entered on the successive periods gradually diminished, as is shown in the fifth line of the Table. Since, however, all the prisoners who entered upon each period of imprisonment did not remain during the whole period, these numbers are not exactly those we are seeking. They do not represent the number of prisoners exposed *throughout* each period to the chances of being diseased or dying. To obtain this, we must take the mean of the numbers at the commencement and at the end of each period. The reason for this is sufficiently obvious. For if we suppose the whole 3,615 to have entered the Penitentiary on the same day, and 88 to have been discharged at a nearly even rate during the first three months, leaving 3,527 at the commencement of the second three months, then the mean between 3,615 and 3,527, or 3,571, will be the mean average number in the institution during the first period of three months. In the same way, the mean between 3,527 and 3,413 may be assumed to be the average number in the Penitentiary during the second three months of their imprisonment, and so on for the remaining periods. These numbers, which are given in the sixth line of the above Table, are the numbers with which we have, in the text, compared the deaths and pardons at each period, in order to determine the influence of the duration of imprisonment.

collected, that besides those who actually died in the prison, there were many prisoners whose health became so much impaired as to endanger life, and who on this account were pardoned.

Now an examination of the proportion of prisoners, thus invalided or pardoned on medical grounds, at different periods of imprisonment, shows a progressive and rapid increase up to the fifth year; the proportion during the first year being 5·940 per thousand prisoners; in the second year 37·211 per thousand; in the third year 79·021; in the fourth year 117·839; and in the fifth year 127·658 per thousand. See the subjoined Table.

Periods of Imprisonment.	First year.			Second year r.		Third year.	Fourth year.	Fifth year.	Sixth year.	Total.
	First 3 months	Second 3 months	Second 6 months	Third 6 months	Fourth 6 months					
Number of prisoners exposed to the chances of disease and death during each period.	3571	3470	3264	2905	2472	1645	611	94	5	
		3365			2682					
Number of pardons at each period.	—	1	19	44	56	130	72	12	—	334*
		20			100					
Ratio of pardons per 1,000 prisoners at each period of imprisonment.	—	1·152	11·641	30·292	45·307	79·021	117·839	127·658		
		5·940			37·211					

* It is to be remarked that the data in this and the two preceding tables refer only to 17 years, 1825 to 1841, and only to the Penitentiary prisoners (exclusive of the female convicts under sentence of transportation). Hence the number of deaths and pardons is not the same as in other tables in this paper.

It would not however be fair to measure the influence of protracted imprisonment on the rate of mortality, either by the number of pardons at different periods of the punishment, or by the deaths and the pardons, referrible to the corresponding periods, combined. For it must be borne in mind, that little more than one third ($\frac{346}{1000}$) of these pardons were cases of disease which would have proved fatal had imprisonment been continued ; and further, that as the remission of the remainder of a convict's sentence would be recommended, and granted with less hesitation, when he had already endured imprisonment for a considerable period, than at the beginning of his punishment, the proportion of cases which would really have proved fatal has most probably been smaller amongst the prisoners pardoned in the third, fourth, and fifth years, than amongst those liberated in the first two years of their imprisonment. From this last consideration we should be inclined to admit, that the increase in the number of pardons in the more advanced periods of imprisonment had been much less than is represented in the foregoing table ; but, on the other hand, we must recollect that the pardons were granted on account of diseases which destroy life slowly, and, consequently, that if the prisoners had remained in confinement, their deaths would have occurred in many cases six, nine or even twelve months later than the period at which they were pardoned.

Assuming that these sources of error compensate for each other, we shall find the rate of mortality, for each period of imprisonment, by adding together

the deaths, and rather more than one third ($\frac{346}{1000}$) of the pardons appertaining to the corresponding periods. Thus :

	No. of prisoners exposed to the chance of death.	Total Number of pardons.	Number of pardons to be added to the deaths.	Deaths.	Total mortality.	Ratio of mortality per 1,000 prisoners.
First year .	3365	20	6·920	38	44·920	13·052
Second year	2682	100	34·600	61	95·600	35·645
Third year .	1645	130	44·980	41	85·980	52·267
Fourth year	611	72	24·912	10	34·912	57·139
Fifth year .	94	12	4·152	—	4·152	44·170

The rate of mortality amongst the prisoners in the Millbank Penitentiary, then, appears to have been 13·052 per thousand during the first year of punishment; 35·645 during the second year; 52·267 during the third year; 57·139 during the fourth year; and 44·170 during the fifth year; the rate of mortality rising rapidly from the first to the third year, and slowly in the fourth year; but falling again in the fifth year. The objection may be raised, that there is too much of mere supposition in the process by which we attain to this result. But even admitting this, as to details, the correctness of the result in the main cannot be doubted. The mortality suffered by convicts during the first year of their imprisonment has been comparatively slight; it has been more than doubled during the second year, and has continued to increase to the end of the third year. (See the table at page 145.)

It is worthy of remark, too, that in the course of seventeen years (1825 to 1841), not one convict was

pardoned, and only one died during the first three months passed in the Penitentiary; although 3,571 were exposed to the chances of dying. Now if the proportion of prisoners dying had remained as small as this throughout their imprisonment, or if no prisoners had been detained for more than three months, the annual rate of mortality would have been very little more than 1 (1·120) per thousand, and the Millbank Penitentiary would, as far as could have been inferred from the mortality occurring in it, have appeared to be by far the healthiest prison in England. This fact completely exposes the fallacy of the comparisons which are often drawn between the rates of mortality in different prisons, without reference to the length of the terms of imprisonment.

If any confirmation of this assertion were required, it would be found in the statistical facts relating to another class of prisoners who were confined in the Millbank Penitentiary, and to whom no reference has yet been made—I mean the military offenders who had been sentenced by court martial. Of this class of prisoners, 3,592 were confined in the Penitentiary between the 18th of November 1837 and the 31st of December 1842, and during the whole of that period three died, and four were pardoned on medical grounds, the annual proportion of deaths to the average daily number of soldiers in confinement being only 4·601 per thousand, of pardons 6·135 per thousand, and of deaths and pardons together only 10·736 per thousand.* This exceedingly low

* See Table XVI. in the Appendix.

ratio of deaths, and pardons on medical grounds, amongst the soldiers in the Penitentiary, was entirely owing to the short period during which the majority of them were confined, their average term of imprisonment being only two months and five days.

In the statistical account of the mortality in the prisons of France compiled by M. Raoul Chassinat, and recently published, one of the points which is fully illustrated by tables, is the influence of the duration of imprisonment on the mortality of convicts. The data comprised in the subjoined Table, which gives the rate of mortality of male convicts during each year of imprisonment in twelve great prisons of France, are borrowed from that work.

Names of prisons.*	Rate of mortality per 1,000 in different years of imprisonment.										
	1st year.	2nd year.	3rd year.	4th year.	5th year.	6th year.	7th year.	8th year.	9th year.	10th year.	Above the 10th year.
Beaulieu .	39·8	56·9	40·0	66·3	49·0	37·0	34·7	39·2	15·1	16·1	00·0
Clairvaux .	29·8	61·0	69·4	58·1	67·3	152·4	165·5	213·9	131·4	135·4	98·9
Embrun .	46·2	63·1	45·0	45·6	19·8	25·4	33·6	8·5	12·3	00·0	34·4
Ensisheim .	41·4	60·4	55·9	57·7	46·1	22·6	22·7	36·2	29·1	5·4	44·4
Fontevrault .	29·5	43·3	46·8	45·7	57·8	50·7	66·1	72·4	67·7	45·0	82·0
Loos .	47·2	65·9	72·1	43·5	26·3	16·5	31·3	11·4	8·6	30·3	71·4
Melun .	28·5	45·7	47·8	30·6	22·5	23·8	18·0	19·3	13·0	14·0	35·0
Mount St. Michel	26·8	58·1	69·7	59·5	45·0	32·2	23·4	12·8	5·8	6·8	66·6
Nismes .	46·5	71·2	85·8	85·3	48·9	41·8	30·5	16·4	37·9	15·8	22·7
Poissy .	24·7	41·6	32·3	36·8	22·4	8·0	17·2	00·0	00·0	86·9	00·0
Riom .	48·5	76·6	94·7	79·8	71·5	39·6	13·6	24·7	27·6	62·5	55·5
Rennes .	39·4	44·0	50·7	55·6	17·9	44·0	33·0	9·9	25·3	13·1	54·0
Average .	37·35	57·48	59·18	55·37	41·20	41·17	40·80	38·72	31·15	35·94	47·07

* The Maisons Centrales of Eysses, Gaillon, and Limoges, are omitted in this table, because the mortality in those prisons seems to have been rendered excessive by special causes.

Here, as in the Millbank Penitentiary, the prisoners have suffered much less mortality during the first year of their imprisonment, than at subsequent periods, and less in the second than in the third year. In these French prisons, however, where the mean annual rate of mortality amongst the male convicts is as high as 47·07 per thousand, the difference between the first year's and second year's mortality, and between the second and the third year's, is not so great as it has been in the Millbank Penitentiary. The injurious influences to which the high rate of mortality is owing, have been felt even at an early period of imprisonment.

The Eastern Penitentiary of Philadelphia is the only American Prison, the published records of which furnish the means of ascertaining the proportional numbers of the deaths amongst the convicts at different periods of their imprisonment; and the data, in the case of this prison, only extend over the first seven years succeeding its establishment, when the number of convicts was small. Still the results they afford, confirm, to a certain extent, those already detailed. The mortality of the convicts during the first three months' imprisonment was only 11·851 per thousand; during the first year 22·071 per thousand; and during the second year 47·729 per thousand; during the third year it was only 38·647; and in the fourth year only 24·719 per thousand.*

* The data from which these results have been calculated, are contained in the Table given at the next page:—

Here then the mortality was comparatively low during the first year's imprisonment, and rose greatly in the second year. It is probable too that the difference between the first year's and the second year's rate of mortality would have been even greater, but for the unhealthy condition of many of the black convicts at the time of their re-

	First year.			Second year.		Third year.	Fourth year.	Fifth year.	Sixth year.	Seventh year.	Total.
	First 3 months.	Second 3 months.	Second 6 months.	Third 6 months.	Fourth 6 months.						
Discharged . . .	7	11	59	75	87	46	16	9	1	1	312
Remaining . . .	37	34	68	89	82	43	13	4	6	9	385
Discharged and remaining	44	45	127	164	169	89	29	13	7	10	697
Prisoners who entered on each period of imprisonment.	697	653	608	481	317	148	59	30	17	10	
Exposed to disease and death throughout each period.	675	630·5	544·5	399	232·5	103·5	44·5	23·5	13·5	5	
	589			314·5							
Deaths . . .	2	5	8	10	3	3	1	—	—	1	33
Pardons . . .	—	—	—	—	2	1	—	—	—	—	3
Rate of mortality per 1,000, the pardons being reckoned as deaths.	11·851	31·720	29·559	50·125	43·017	38·647	24·719	—	—	200·000	
	22·071			47·729							

This table shows, in the first three lines, the periods of imprisonment which had been reached by the 312 prisoners who were discharged from the Eastern Penitentiary during the seven years, 1830-1836, and by the 385 who remained in the institution on the 31st December 1836. The rest of the table will be easily understood if it be compared with those given at pages 145 and 146, with the note at page 145.

ception, which rendered them incapable of bearing imprisonment, even for one year. The ratio of deaths fell during the third year of imprisonment, and again still more in the fourth year ; but much importance cannot be ascribed to this result, since the number of prisoners exposed to the chance of dying at a period of imprisonment more advanced than the second year, was too small to afford a safe basis for statistical reasoning. I must however remark, that in the Millbank Penitentiary, and also in the prisons of France, the mortality has been greater amongst the prisoners who were undergoing their second, third or fourth year of imprisonment than amongst those who had been longer in confinement, so that it would seem as if prisoners who were of feeble constitution, or predisposed to disease, generally fell victims to the injurious influences attending imprisonment before the end of the fourth year of their confinement, while those who were able to support their punishment until that period, without serious deterioration of health, were proof against the causes of disease to which they were exposed.

4. *The Locality*.—The circumstances whose influence we have hitherto examined, namely, the number of prisoners pardoned on account of sickness, their original condition as regards predisposition to disease, and the length of their sentences, should always be first considered in drawing a comparison between the rates of mortality of several different prisons. If all the prisons be found to stand on a

nearly equal footing as regards these three circumstances, and the mortality of one of them be excessive, we shall then, and not till then, be justified in concluding that some cause unfavourable to health exists either in the locality of this prison, in its construction, in the diet, clothing and lodging of the prisoners, or in the discipline to which they are subjected. The influence of the locality should in this case be determined before the excess in the number of deaths is imputed to the internal arrangements of the establishment, and the only sure evidence of the mortality being increased by a noxious influence of the locality, will be the prominent part played by endemic diseases amongst the causes of death. Hence it will be most important to determine the relative number of deaths caused by diseases of this class in the different prisons, for we may by this means be enabled to refer to an influence of situation, the excessive mortality which would else be attributed to the discipline or other internal arrangements.

These remarks may be illustrated by the example of the American prisons. The rate of mortality, as we have seen, varies greatly in these prisons. In two of them, namely, the Auburn and Charlestown State Prisons, it is under 20 per thousand annually ; while in three others, the Maryland Penitentiary, the Eastern Penitentiary, and the Sing Sing State Prison, it is upwards of 30 per thousand annually. The excessive mortality is entirely accounted for, in the case of the Maryland Penitentiary, by the num-

ber of coloured prisoners received into that institution. But in the Sing Sing State Prison, and in the Eastern Penitentiary, the proportion of coloured prisoners is not large enough to explain away more than a part of the excess in the ratio of deaths: ...It is not difficult to demonstrate this, and we may even calculate with tolerable accuracy, how much of the excess of mortality is accounted for, by the coloured population of these prisons, and how much remains to be explained by other causes.

In the Eastern Penitentiary the rate of mortality of the white prisoners has been about 20 per thousand annually, and that of the coloured population 70 per thousand annually. But in the Auburn and Charlestown Prisons, neither of these classes of prisoners can have suffered so high a rate of mortality, for the annual ratio of deaths amongst both the white and the coloured prisoners, taken together, has been under 20 per thousand. It is probable that more convicts have been pardoned in a state of disease, which would have terminated in death, in these prisons, than in the Eastern Penitentiary; but that is a question which we are not now considering;—we are looking merely to the mortality actually occurring in the different prisons; and, making our calculations on this basis, we must assume that the ratio of deaths amongst the coloured convicts in the Auburn Prison has not been more than 60 per thousand annually, nor the mortality amongst the white prisoners more than 16 per thousand annually. According to this estimate, which cannot

be far from the truth, we can account for the whole number of deaths in all the American prisons, except the Eastern Penitentiary, and the Sing Sing State Prison, but in these prisons some excess of mortality still remains to be explained.

The subjoined Table shows the rates of mortality (exclusive of deaths from cholera) which have actually prevailed in six of the American prisons; and also the rate which should appertain to each, according to the estimate of the mortality of white and coloured prisoners just given.

Names of prisons.	Auburn State Prison.	Charlestown State Prison.	Sing Sing State Prison.	Wethersfield State Prison.	Eastern Penitentiary, Pennsylvania.	Maryland Penitentiary.
Proportion of coloured prisoners to the whole body of prisoners.	11·130 per cent.	11·379 per cent.	20 per cent.	23·646 per cent.	38·169 per cent.	54·685 per cent.
Actual rate of mortality per 1,000, exclusive of deaths from cholera.	19·019	19·408	30·822	27·048	39·336	35·763
Hypothetical rate of mortality, estimating that of the white prisoners at 16 and the coloured at 60 per 1,000.	20·897	21·006	24·800	26·404	32·973	40·061

This table shows that the actual rate of mortality is, in two of these prisons (those of Auburn and Charlestown), slightly below, and in one (the Maryland State Prison) considerably below, the rate theoretically assigned to them. In the Eastern Penitentiary, and in the Wethersfield and Sing Sing State Prisons, on the contrary, the actual rate of mortality presents an excess, which in the Wethers-

field prison is very trifling in amount, but in the two other prisons is equal to six deaths annually per thousand prisoners.

Let us now inquire into the nature of the diseases causing death in these different American prisons, and we shall, I think, find a satisfactory explanation of the excess of mortality in the prison of Sing Sing.

If Tables XXVI. to XXXII., in the Appendix to this paper, be examined, it will be seen that I have classed under distinct heads the following causes of death:—1. Fevers; including remittent and typhus or continued fever, but exclusive of the exanthemata. 2. Bowel complaints; comprehending common cholera, diarrhœa, dysentery, enteritis, and ulceration of the bowels; and 3. Hepatic diseases, comprehending hepatitis, diseased liver, and jaundice. Now with regard to the bowel complaints, it will, I think, be admitted, that where they are remarkably prevalent, in a severe form, through a series of years, they may safely be referred to an endemic cause, of the nature of malaria. That they have been thus prevalent in the Sing Sing State Prison is certain; for the mortality caused by them in this prison during the eleven years, 1830 to 1840 inclusive, has been 4·862 per thousand annually, while amongst the population of the city and county of New York above the age of 10 years, the mortality by the same diseases has been only ·884 per thousand annually.*

* In addition to the evidence drawn from the number of deaths from fevers and bowel complaints, which is adduced in the text, I

	Amongst the population above the age of 10 years in the City and County of New York during the year 1842.	Amongst the Prisoners in the Sing Sing State Prison.
Annual mortality per 1,000 by cholera, diarrhœa, dysentery, enteritis, and ulceration of the bowels.	·884*	4·860

With respect to the fever, more hesitation may at first be felt, in admitting that it should be classed with diseases arising from insalubrity of the locality. But, from the following considerations, it seems to me far more probable that, at least, the majority of the fatal cases of fever were due to this cause, than that they were cases of typhus generated by causes existing within the prison itself, or introduced from without by contagion or infection. In the first place, there is in the Sing Sing prison no crowding of prisoners in confined dormitories, such as produced or fostered the gaol fever of a former period: each convict occupies a separate cell at night, and during the day works either in a spacious workshop, or in the open air. In the second place, the introduction of contagious typhus is improbable, both from

may refer, in proof of the prevalence of these diseases in the Sing Sing prison, to a table of the predominant diseases amongst the hospital cases in that prison during five years, which is given at page 39 of Mr. Crawford's "Report on the Penitentiaries of the United States." It will there be seen that out of 3,357 cases of sickness, exclusive of Asiatic cholera, 236 were cases of dysentery, 707 cases of diarrhœa, 52 cases of common cholera, and 96 cases of fever.

* Gastritis is here included with enteritis.

the absence or rarity of intercourse between the prisoners and other persons who are at liberty, and also from the situation of the prison at a distance from any large town. Lastly, positive arguments in favour of the fever in Sing Sing State Prison being of malarious origin, are furnished in the concurrent prevalence of diarrhœa and dysentery; in the term "congestive fever," in many instances used by the physician—a term commonly applied by American writers to a fever of undoubted malarious nature; and, lastly, in the situation of the building. It stands on a low flat, at the foot of a hill, which completely overlooks it, and close to the bank of a very large tidal river, the Hudson.

The mortality from fevers, however, in this prison has not been so excessive as the mortality from bowel complaints. The average annual ratio of deaths from fever, in the Sing Sing Prison, has been 3·093 per thousand, and in the city and county of New York, 1·400 per thousand.

	Amongst the population above the age of 10 years, in the City and County of New York during 1842.	Amongst the Prisoners in Sing Sing State Prison.
Annual mortality per 1,000, from fevers, not including the exanthemata.	1·400	3·093

With the fevers and bowel complaints of the malarious districts of hot climates, hepatic diseases, it is well known, are generally, if not always, associated. When, therefore, in particular localities within the temperate zone, we find affections of the

liver, as well as fevers and bowel complaints, producing an unusual number of deaths, we are justified in inferring, if no other obvious cause be present, that the excess of mortality from these liver affections, like the increased number of deaths from fever and bowel complaints, has been caused by a local malarious influence; and we must, I think, come to this conclusion with respect to the hepatic affections which have caused several deaths in the Sing Sing Prison. The mortality from diseases of the liver in that establishment has been more than twice as great as amongst the population of the city and county of New York.

	Amongst the population above 10 years of age in the City and County of New York during 1842.	Amongst the Prisoners in Sing Sing State Prison.
Annual mortality per 1,000 from hepatic diseases.	·334	·773

Dropsy, too, has caused an extraordinary number of deaths in the Sing Sing Prison, and has, I have no doubt, been the effect of malarious influence. For on the coast of Africa, and in the West Indies, where bowel and liver complaints, and fevers, are rife, dropsies also are amongst the diseases most fatal to our troops. In order, however, to avoid the appearance of wishing to exaggerate the influence of the locality of Sing Sing, I shall not here class dropsies with the other endemic diseases.

We have now to compare the mortality in Sing Sing State Prison from fevers, bowel complaints, and hepatic affections, with the mortality from the

same diseases in the other American prisons. This comparison is made in the subjoined Table.

Names of Prisons.	Sing Sing State Prison.	Eastern Penitentiary.	Maryland Penitentiary.	Auburn State Prison.	Charlestown State Prison.
Annual mortality per 1,000 prisoners, from fevers.	3·093	1·070	0·000	1·099	1·961
Annual mortality per 1,000 prisoners, from bowel complaints.	4·860	·802	1·709	·610	·653
Annual mortality per 1,000 prisoners, from hepatic affections.	·773	·000	·569	·366	·000
Annual mortality per 1,000 prisoners, from fevers, bowel complaints, and hepatic affections.	8·726	1·872	2·279	2·075	2·614

The much greater number of deaths caused by these diseases in the Sing Sing Prison than in the other prisons, is at once apparent. In the Auburn and Charlestown State Prisons, and in the Maryland and Eastern Penitentiaries, the annual mortality from fevers, bowel complaints and liver affections, has been on the average 2·210 per thousand. In the State Prison of Sing Sing it has been 8·726 per thousand, so that there has been in that prison an excess in the annual mortality, by these classes of diseases, equal to 6·516 per thousand prisoners. We are now, therefore, in a position to explain the whole mortality in the Sing Sing Prison.

It will be remembered that the rate of mortality in this prison has been 30·822 per thousand annually, while the rate of mortality in the Auburn Prison, which is situated in the same State, and regulated

according to the same system of discipline, has been only 19·019 per thousand annually. The greater number of coloured prisoners in the former prison, accounted in part for its high rate of mortality, but, due allowance being made for this circumstance, the annual ratio of deaths should still have been only 24·800 per thousand prisoners ; so that there remained an excess of rather more than six deaths annually per thousand prisoners. The cause of this we have now discovered in the prevalence of fever and endemic diseases of the digestive organs, which have given rise to a much greater mortality in the Sing Sing Prison, than in the other American prisons, the excess in the average annual proportion of deaths being more than six per thousand prisoners. Although, therefore, the difference is so great between the rate of mortality of Sing Sing and that of the Auburn prison, yet there is every reason to suppose that the internal prison arrangements do not produce a more injurious effect upon the health in one of those establishments than in the other, the excess in the number of deaths in the Sing Sing prison being entirely referrible to the number of the coloured prisoners, and to the insalubrity of the locality.

Leaving now the subject of the American Penitentiaries, let us inquire whether the influence of an unhealthy site has in an important degree affected the mortality of any of the *Prisons of England*. This inquiry is especially interesting in relation to the Millbank Penitentiary ; but it has appeared to me, that both the interest and value of the conclu-

sion arrived at would be increased by subjecting the principal County Gaols and Houses of Correction, together with the Penitentiary, to a comparative examination. The decision of this question, in reference to any prison, necessarily depends on the number of deaths caused there by endemic disease. No other kind of proof, as I have before remarked, can determine satisfactorily, whether a malarious influence has raised the rate of mortality amongst the prisoners. Hence we must at present confine our attention to those prisons whose published statistics make us acquainted with the causes, as well as the number, of the deaths occurring within their walls. The Medical Records of the Millbank Penitentiary, from the period of the re-opening of the institution to the end of the year 1842, are in this respect as complete as could be wished. Very excellent tables of the deaths and causes of death in the Lancaster County Gaol, and the Wakefield, Knutsford and Devizes Houses of Correction, have also been furnished by the surgeons of those prisons to the Inspectors of the Northern and Eastern, and the Home Districts, who have published them in their Reports. The periods over which the data in these tables extend, are sufficiently long, and the deaths are sufficiently numerous, to form a tolerably sure basis for an opinion as to the prevalence of different classes of diseases in the prisons just named.

The accounts of the deaths and causes of death in the majority of the English County Prisons, which are contained in the Reports of the Inspectors, either do

not reach back more than two or three years, or have been published irregularly. They cannot, therefore, be admitted as trustworthy evidence of the kind of diseases which are usually prevalent in the individual prisons. Taken in the aggregate, however, these data are valuable, since they afford us the means of estimating the average mortality from different classes of diseases in the prisons of England generally, without reference to particular prisons. Such, then, are the data which we must examine, with the view of determining whether in the case of the English prisons, as in those of America, the influence of a malarious site has in particular instances produced a rate of mortality greatly surpassing the average rate in other similar establishments.

From the general Tables of deaths in the Millbank Penitentiary, in the Lancaster County Gaol, in the Wakefield, Devizes and Knutsford Houses of Correction, and in twenty-nine other English prisons, combined in two groups,* I have extracted all the deaths due to those diseases which most frequently arise from endemic causes.

I have arranged those diseases in three classes, namely,—1, Fevers ; 2, Bowel Complaints ; and 3, Hepatic Affections ; and have calculated the annual rate of mortality caused in the different prisons and groups of prisons by these different classes of diseases. The results thus obtained, are shown in the following abstract Table :—

* See Tables XVIII. to XXV. in the Appendix.

Names of Prisons.	Periods to which the data belong.	Aggregate of the yearly averages of prisoners.	Total mortality.		Mortality by fevers.		Mortality caused by bowel complaints.		Mortality by hepatic affections.		Mortality by the three classes of diseases combined.	
			No.* of deaths	Annual No. per 1,000 prisoners.	No. of deaths	Annual No. per 1,000 prisoners.	No. of deaths	Annual No. per 1,000 prisoners.	No. of deaths	Annual No. per 1,000 prisoners.	No. of deaths	Annual No. per 1,000 prisoners.
Millbank Penitentiary.	18 years, 1825 to 1842.	9,588	174	18·147	35	3·650	18	1·877	1	·104	54	5·632
Wakefield House of Correction.	9 years, 1835 to 1843.	5,050	135	26·732	29	5·742	16	3·168	1	·198	46	9·108
Devizes House of Correction.	12 years, 1829 to 1840.	2,096	32	15·267	9	4·293	4	1·908	—	·000	13	6·202
Lancaster County Gaol.	19 years, 1825 to 1843.	5,011	102	20·355	5	·997	16	3·193	1	·199	22	4·390
Knutsford House of Correction.	7 years, 1834 to 1840.	1,725	34	19·710	3	1·739	3	1·739	—	·000	6	3·478
12 English County Prisons, chiefly Houses of Correction. See Table XX.†	Various between 1837 and 1842.	12,046	196	16·270	20	1·660	15	1·245	2	·166	37	3·071
17 English Prisons, chiefly County Gaols. See Table XXI.	Various periods. See Table XXI.	8,427	181	21·478	16	1·898	10	1·186	5	·593	31	3·678
All the County Gaols and Houses of Correction.	As stated above.	34,355	680	19·793	82	2·386	64	1·863	9	·261	155	4·511

The first point here elucidated, to which I would draw attention, is the comparative mortality by fevers, bowel complaints and hepatic diseases, in the Mill-

* Exclusive of those caused by Asiatic cholera.

† Table XX. in the Appendix includes these twelve prisons, and also the Wakefield, Devizes and Knutsford Houses of Correction, and the Lancaster County Gaol.

bank Penitentiary and in the English County Prisons respectively. The opinion generally entertained respecting the site of the Penitentiary is so unfavourable, that few persons would have been surprised had the mortality from diseases of the endemic class appeared far greater in that institution than in any other prison in England, and many perhaps will still be slow to believe what is here demonstrated by indisputable facts,—that the proportion of deaths caused by this class of diseases has in the principal county prisons, taken collectively, been only $\frac{1}{5}$ th less, while in some of the prisons it has been considerably greater, than in the Penitentiary. The average annual mortality by all the diseases which can be ascribed to the influence of malaria has been 4·511 per thousand prisoners in the County Goals and Houses of Correction, and 5·632 per thousand in the Millbank Penitentiary.

This excess of mortality on the side of the Penitentiary has been almost entirely due to fever; the proportion of deaths caused by bowel complaints has been scarcely at all greater in that institution than in the county prisons.

Such is the result of a comparison of the Penitentiary with other English prisons taken collectively. When we examine the statistics of the individual county prisons, we find that in at least two instances they have suffered a greater mortality from fevers, bowel complaints and hepatic diseases, than the Penitentiary. For in the Wakefield House of Correction the mortality by fever alone has been 5·742

per thousand prisoners ; by bowel complaints alone, 3·168 per thousand prisoners ; and by all diseases which can be regarded as of endemic origin, taken together, 9·108 per thousand prisoners,—a rate of mortality which is $\frac{4}{5}$ ths higher than has been experienced from the same diseases by the prisoners in the Penitentiary. In the Devizes House of Correction, also, the mortality by these diseases has been greater than in the Penitentiary, though the excess has not been so considerable as in the Wakefield House of Correction.

In the above comparison of the mortality from fevers, bowel complaints and liver affections, in the Penitentiary and other English prisons, account has been taken only of the deaths which have actually occurred in the institution. It seems unnecessary to make any allowance for the cases of prisoners pardoned while in ill health. For the diseases now under consideration are for the most part of an acute character, and when they become chronic, though often obstinate, are seldom incurable. The prisoners pardoned on account of these diseases must, therefore, in all prisons have been few, and their number has probably not been greater in the Millbank Penitentiary than in the County Gaols and Houses of Correction. But even if we were to add one-fourth of the pardons on account of these diseases, (·469 per thousand prisoners annually,) to the deaths in the case of the Penitentiary, and were to make no such addition in the case of the other prisons, the mortality by fever, bowel complaints

and hepatic affections, in the Penitentiary, would still not be greater than in the House of Correction of Devizes, and would still be $\frac{1}{3}$ rd less than in the Wakefield House of Correction.

There are other prisons, besides those of Wakefield and Devizes, in which diseases of the endemic class have produced a greater mortality than in the Penitentiary ; but the published statistics do not in those instances extend over such long periods, and consequently would not form examples so trustworthy and decisive ; and I abstain from referring to them individually. The evidence I have adduced is quite sufficient to establish the fact, that the site of the Penitentiary is not so pre-eminently insalubrious as has been supposed.

Another result of more general professional interest, and greater importance, may be deduced from this inquiry respecting the mortality caused by fevers, bowel complaints and hepatic diseases in the prisons of England. We have seen that the average proportion of deaths from these diseases, amongst the criminals confined in the principal county prisons, has been 4·511 per thousand annually. An examination of the reports of the Registrar-General, shows that the mortality from the same causes amongst persons in the metropolis, of the same period of life as prisoners, amounts to only 1·226 or 1·418 per thousand annually. The mortality from these diseases, therefore, during recent years has been more than three times as great in the county prisons of England, as amongst

the general population of London. This is shown in the subjoined Table. The mortality in the prisons, from the diseases referred to, is there compared with the mortality caused by the same diseases in the metropolis, amongst persons between the ages of 15 and 60, during the years 1840 and 1841,* and also amongst persons between the ages of 15 and 70 during 1842,† a year in which bowel complaints were unusually fatal.

	Periods.	Number of prisoners or population.	Total mortality.		Mortality by fever.		Mortality by bowel complaints.		Mortality by jaundice, hepatitis, and diseased liver.		Mortality by these three groups of diseases.	
			No. of deaths.	Annual number per 1,000 living.	No. of deaths.	Annual number per 1,000 living.	No. of deaths.	Annual number per 1,000 living.	No. of deaths.	Annual number per 1,000 living.	No. of deaths.	Annual number per 1,000 living.
33 County gaols and houses of correction.	Various	34,355	680	19·793	82	2·386	64	1·863	9	·261	155	4·511
Population of the metropolis between the ages of 15 and 60.	2 years, 1840 and 1841.	1,182,402	30,518	12·994	1276	·546	910†	·388	681	·292	2867	1·226
Population of the metropolis between the ages of 15 and 70.	1 year, 1842.	1,275,842	18,764	14·707	705	·552	687†	·538	418	·327	1810	1·418

† Gastritis included.

* See the Fifth Report of the Registrar-General, p. 456 et seq.; where a table is given, showing the deaths from various causes at this period of life, in the two years 1840 and 1841, and the annual deaths to 1,000,000 living at each period of life.

† The deaths in the metropolis during the year 1842, from different diseases, and at different ages, are given at p. 296 to 303 of

In this comparison, hepatic diseases have been included with fevers and bowel complaints. This has been done, rather with the view of making the basis of the comparison, in the case of these English prisons, the same as in that of the American Penitentiaries, than from the belief that the affections of the liver, which have been most frequently fatal in the English prisons, have been due to the same causes as the bowel complaints and fevers. Hepatic affections, in fact, appear to have been less fatal in English prisons than in London, amongst persons of a corresponding period of life. It is from fevers and bowel complaints, that the excess of mortality just now pointed out has arisen. The annual average rate of mortality from fevers has been 2·386 per thousand in prisons, and only ·546 or ·552 per thousand in the metropolis. And the mortality from bowel complaints, which even in 1842 was only ·538 in the metropolis, and in the years 1840 and 1841 only ·388 per thousand, has been on the average 1·863 per thousand in the prisons. Fevers, therefore,

the Fifth Report of the Registrar-General. The population of the metropolis of the ages of 15 to 70 for the year 1842, has been calculated by multiplying the population, at the same period of life for 1841, by 1·0175,—the probable annual rate of increase of the population of the metropolis between the ages named, during the 10 years from 1831 to 1841. The actual annual rate of increase of the whole female population of the metropolis between 1831 and 1841 was 1·01543 (see the Registrar-General's Fifth Report, p. 448). But tables of the increase of the population of all England, given in the Fourth Report, show that the increase is greater in the middle than at the two extremes of life.

have been between four and five times as fatal, and bowel complaints at least four times as fatal, in prisons as in the metropolis.

Fevers and bowel complaints are far from being the diseases which produce the greatest mortality amongst prisoners. Fever, formerly such a scourge, is now comparatively a rare disease in the English gaols ; it does not produce in ten years as many deaths as it formerly caused in one, and, I believe, never rages in them as a contagious epidemic. Yet it is evident from the facts already stated, that both fevers and bowel complaints are, even at the present period, much more frequent causes of death in prisons than amongst the general population. How is this to be explained ?

The Reports of the Prison Inspectors contain ample evidence of the prevalence of bowel complaints in many of the County Gaols and Houses of Correction. They also prove that it is generally ascribed to some peculiarity of the prison dietaries. Great difference of opinion, however, seems to prevail as to the particular article or quality of diet which is in fault. In one prison the greater prevalence of the disease in the summer season is ascribed to the use of *old* potatoes ; in another, to the use of *new* potatoes. In a third, the gruel is thought to be the *cause* ; while in a fourth, a bason of gruel at night is given as a *preventive*. The most generally-received opinion, however, I believe to be, that the *liquid* nature of the diet is the cause of the complaint, and several facts strongly favour this view of the matter.

In the first place it is certain that many prisons liable to the prevalence of diarrhœa have sites which are not *manifestly* insalubrious ; and it has further been observed, that while the disease has prevailed in a prison, the population of the immediate neighbourhood has not suffered from it in any remarkable degree. Hence the inference would appear obvious, that the cause of the disease was one to which the prisoners alone were exposed ; and in the absence of any other evident source of the evil, it would be natural to ascribe it to the diet ; for if food of a liquid form were capable of producing diarrhœa, such an effect might certainly be expected to result from the dietaries which have, until recently, been in use in many prisons. It has happened moreover, on several occasions, that an unusual prevalence, constituting almost an epidemic of diarrhœa, has followed a reduction of the nutritious quality of the diet, and has either ceased, or has become mitigated, on the diet being again improved. These facts certainly favour the opinion that the diarrhœa of prisons is produced by the liquid quality of the food.

But there are other facts which prevent my concurring in this view. If it were the correct one, diarrhœa should have been prevalent in all prisons in which the food was principally liquid. This has by no means been the case. There are many prisons in which this complaint has been of rare occurrence, although the dietary has consisted chiefly of liquids. I need instance merely the Salford and Preston Houses of Correction, where bowel complaints have been very infrequent, although for se-

veral years the prisoners were allowed less solid meat and bread than in other prisons where diarrhœa was prevalent, and much more liquid food, namely, six pints of soup and twenty-eight pints of gruel weekly.

Besides, we can scarcely conceive that a merely liquid and unstimulating diet, though it might produce simple looseness of the bowels, could give rise to acute inflammation of the large intestines, or dysentery. Yet, wherever diarrhœa is very prevalent, this more severe form of the disease also shows itself occasionally. In many of those instances, too, in which more solid and nutritious food has produced so beneficial an effect, the disease has not wholly disappeared. It has been much mitigated in severity, and has become less extensively prevalent, but it has still continued to be more frequent amongst the prisoners than amongst the population of the country around.* Lastly, the officers, and the families of those resident in the

* A remarkable exemplification of this statement is afforded by the history of the epidemic which prevailed in the Millbank Penitentiary during the year 1823. The epidemic broke out shortly after the diet of the prisoners had been rendered very meagre. The diet was improved, and immediately the severity of the disease became mitigated. The conclusion to be drawn from these facts seemed obvious; and the physicians appointed by Government to investigate the cause of the disease, reported that it had been produced by the reduction of the diet, conjoined with the cold of the preceding winter. But soon the renewed violence of the epidemic, while the diet was abundant, and while the weather, with the advance of spring, was becoming milder, taught them that their judgment had been an erroneous one.

prison, have generally not escaped, but on the contrary have occasionally suffered very severely, especially at those times when the disease has been most prevalent amongst the prisoners.

For these reasons, it seems to me impossible to regard the diet as the sole cause of the prevalence of diarrhœa in prisons. There are other facts, which, besides being inexplicable according to that view, seem to indicate, in a positive manner, that the disease really depends on some form of malaria floating in the atmosphere.

One fact of this kind is, that the diarrhœa of prisons varies in its degree of prevalence according to the season and the state of the atmosphere, just as the more severe dysentery does in countries where that disease is confessedly dependent on the influence of miasm. In dry, frosty weather, in winter, it is of rare occurrence ; in the spring it is more frequent if the weather be moist as well as mild ; and its prevalence is usually greatest in the latter part of the summer, and in the autumn, especially if great heat has succeeded to rain, or if rain has succeeded to hot and dry weather. In those years, too, when bowel complaints are unusually prevalent in the town or country in which a prison is situated, they manifest themselves with disproportionate severity amongst the prisoners.

This has recently been exemplified in the Millbank Penitentiary. During the year 1842, bowel complaints were unusually prevalent in the metropolis, and the mortality produced by them

was twice as great as in either of the two previous years. In the same year, dysentery prevailed to a great extent in the Penitentiary, and in a few months was the cause of as many deaths as all forms of bowel complaints had given rise to during the seventeen previous years.

These are not the only grounds for believing that bowel complaints, when they prevail in prisons through a series of years, are due to the influence of malaria. I have visited many prisons in different parts of England, and have met with none in which the prevalence of bowel complaints was remarkable, and the site, at the same time, free from obvious sources of malaria. Either the particular locality was low and damp, or there was moist, imperfectly-drained land, with more or less of stagnant water in the immediate vicinity, or the whole tract of country was relatively low, imperfectly drained, and subject to inundations in rainy seasons, the soil clayey and damp, and the atmosphere subject to fogs.* Where the prevalence of diarrhoea in prisons was not so great, there these characters of the locality existed in a less marked degree. The land, perhaps, was not at all too damp for the purposes of agriculture, but from some cause or other was generally in a moist state: either it re-

* Such, for example, is the situation of the Wakefield House of Correction. In the second report of the Inspector for the northern and eastern district, it is described as standing "in a low humid situation, on the margin of a water-course." It is surrounded by extensive meadows, which have a stiff clay soil, and are flooded in the winter.

tained for a long period the rain which fell upon it, or it was kept moist by land springs. Where the disease was of rare occurrence, the situation of the prison was eminently salubrious. The same rule will be found to hold good with regard to lunatic asylums,* workhouses and barracks. In the last-mentioned establishments, the production of diarrhœa by the poorness of diet is out of the question ; the rations of soldiers in quarters in England are abundant, and everywhere the same. Yet there are barracks distinguished by the prevalence of diarrhœa. This was the case in a remarkable degree two or three years ago at the Tower. At the Portman-street Barracks, on the contrary, where the soldiers' lodgings were quite as ill-constructed, diarrhœa had been a very rare ailment. No obvious cause for this

* I would instance the Lunatic Asylums at Hanwell and Wakefield, as illustrations of this remark. The former institution has a site most favourable to health. The latter, on the contrary, lies in a hollow, surrounded by fields and gardens, which have a sub-soil of clay, and are generally damp ; while close to it, and partly encompassing it, is a plantation which grows out of a damp moat-like excavation. With respect to these two Asylums, Sir William Ellis, who in both had held the office of medical superintendent, makes the following remarks in his work on *Insanity and Lunatic Asylums* :—"Independent of diseases peculiarly connected with the nervous system, the insane seem particularly subject to others, such as chronic inflammation of the bowels, diarrhœa and dysentery. These diseases appear to depend a good deal on locality ; in the Asylum at Wakefield, a large proportion of the deaths was at one time owing to them ; whilst in the one at Hanwell, they are comparatively of rare occurrence ; this possibly may be accounted for by the former being on a cold clay soil, and the latter on a fine bed of gravel."

difference in the health of the two establishments existed, except the dissimilarity of their localities, and especially the presence of a moat, half choked up with mud and weeds, which then surrounded the Tower Barracks.*

We have seen that the theory which ascribes the production of diarrhœa to the poorness and liquid nature of the prisoners' food will not account for all the facts of the case. Now in this respect, the other explanation, namely, that the disease is caused by miasms floating in the atmosphere, has a great advantage. For, adopting this view, we shall still be able to understand how the nature of the diet should have great influence on the prevalence of the disease. The increased prevalence of the bowel complaints consequent on the reduction of the diet, is, indeed, no more than we should expect ; for if the atmosphere were slightly impregnated with malaria, it might be incapable of affecting prisoners while their systems were supported by even a moderate allowance of food, and yet might produce serious effects on them when they had been weakened by low diet. For the same reason, persons living in the immediate neighbourhood, and even the officers residing within the prison walls, may escape the attacks of the disease altogether, or suffer much less frequently than the prisoners, because, being better fed, and perhaps fortified by the use of fermented liquors of some

* The moat surrounding the Tower has, within the last year or two, been drained and partly filled up, but sufficient time has not yet elapsed since these measures were completed, to allow of our drawing conclusions as to their effects on the health.

kind or other, they are better able to resist the influence of the slightly poisoned air which they breathe ; while the prisoners, being deficient in nervous vigour and activity of the nutritive processes, in consequence of scanty diet, confinement and more or less of mental depression, are extraordinarily susceptible of any noxious influence. A parallel case, is that of armies encamped in malarious countries. It is a well known fact, that, under these circumstances, the officers either escape altogether, or suffer in a far less degree than the men, from the endemic disease.*

The foregoing remarks have reference to the various forms of bowel complaints prevalent in prisons. The origin of the fever is a still more difficult subject of investigation. But my belief is, that many of the cases of fever, like the bowel complaints, are really of endemic or malarious origin. I of course admit that fever, like diarrhœa, may occur in prisons from other causes than malaria. Persons confined in prisons which are situated in large and closely-populated towns or cities, like Liverpool or London, will be liable to infection, when an epidemic typhus prevails amongst the surrounding population. But in such instances as those of the Wakefield House of Correction, in this country, and the Sing Sing Prison of the American State of New

* See Pringle's *Observations on the Diseases of the Army*, 5th edition, 1765, p. 67 and 183 ; and Tulloch's *Reports on the Sickness, Mortality and Invaliding among the Troops in Western Africa*, p. 25 ; in the *Mauritius*, p. 22 c. ; and in the *West Indies*, p. 97.

York, where fever has prevailed at intervals for a series of years, concurrently or alternately with dysentery and diarrhœa, and where no immediate contiguity of a dense population exists to explain its origin, it seems to me impossible to doubt that the fever, as well as the bowel complaints, has been caused by malaria generated in the localities. Moreover, the fever which has occasionally shown itself in the Millbank Penitentiary differs in some of its most striking features from the continued fever, or typhus, of crowded cities, as well as from the "gaol fever" of former periods, and approaches more nearly to certain forms of the "remittent fever" of malarious countries.*

If the views here proposed be correct, great practical benefits would arise from the adoption of the

* The drinking of bad water is one of the reputed causes of dysentery and fever. Yet there seems to be very little evidence to show that an endemic prevalence, of either of these diseases, has ever arisen from such a cause. That the bowel complaints so common in English prisons, workhouses and lunatic asylums do not depend on the quality of the water, I am perfectly satisfied. In several of these institutions, in which bowel complaints are most rife, the water used for drinking is obtained from deep wells, and cannot, therefore, contain any putrescent organic matter. And in the Millbank Prison it has recently been proved in a conclusive manner that the Thames water, which the prisoners drink, does not cause the diarrhœa from which they frequently suffer. In consequence of it having been suggested to one of the Inspectors of that prison, that the Thames water, cleansed by subsidence only, and not by filtration, was likely to exert a deleterious influence on the health of the prisoners, a supply of the purest water from a neighbouring Artesian well was obtained every second day for two months; and one third of the prisoners (about 350)

following preventive means : 1. Previous to the erection of any new prison, an elevated dry site should be most carefully selected. 2. Wherever a prison already built is liable to the prevalence of fever or bowel complaints, all obvious sources of malaria should at once be got rid of, and the drainage of the surrounding land should be made as perfect as possible : if there should be any very low and damp spots, these should be filled up ; and the land, if in cultivation, should be laid out in such crops as require least moisture. 3. As there are, perhaps, localities, where the development of malaria, owing to a peculiarity of the soil and substrata, can be prevented by no practicable system of drainage, it will in some instances be necessary to give the prisoners a more liberal diet than would be required in other gaols, in order that they may resist the influence of the miasm still floating in the atmosphere.

Returning from this digression, I will now briefly recapitulate the principal results of the inquiry, respecting the influence of unhealthy sites, on the mortality of English prisons.

It was assumed, as the basis of this investigation, that any increase of the mortality of a prison produced by insalubrity of site, would be shown in the number of deaths from fevers and bowel complaints.

were supplied with this water only, whilst the other two thirds (about 700) were allowed to drink the Thames water as before. The result was, that no difference in the health of the two bodies of prisoners was experienced. Proportionally as many cases of diarrhœa, and also of other diseases, occurred amongst the one as amongst the other.

We sought therefore to determine from statistical data, first, whether the mortality from these diseases in particular prisons had much exceeded the average mortality produced by them in prisons generally ; and secondly, whether fevers and bowel complaints had been much more fatal to criminals confined in prisons, than to all persons at the same period of life, living in the metropolis. The facts which we examined with the view to determine the latter point, placed it beyond a doubt, that fevers and bowel complaints had been between four and five times as fatal in the county prisons of England, taken collectively, as in the metropolis generally. And the result of our comparison of the number of deaths caused by these diseases in different prisons, showed that they had not been equally prevalent, or at least, not equally fatal in all prisons, since there were some of these establishments in which the mortality from fevers and bowel complaints had been much below the average, and others in which it had considerably exceeded the average ; the excess being greatest in the case of the Wakefield House of Correction. We found, too, that in the Millbank Penitentiary, the mortality from these diseases, though greater than the average mortality caused by them in the county prisons taken collectively, yet had been less than in the Wakefield House of Correction, and one or two other prisons.

If now we place side by side the rates of mortality due to fevers and bowel complaints, and the rates of mortality from all causes in the Millbank Peniten-

tiary, the Wakefield House of Correction and the thirty-two other county prisons, we shall see that the total mortality, both in the Millbank Penitentiary and in the Wakefield House of Correction, has been much above the average total mortality of the other prisons, but that in the first-named prison the diseases which can be ascribed to the influence of malaria have produced a very small part of the excess in the total mortality, while, in the case of the Wakefield House of Correction, that class of diseases has been the principal source of the increased ratio of deaths.

	Total mortality per 1,000 prisoners.	Mortality from fevers and bowel complaints per 1,000 prisoners.
32 County prisons (those included in Tables XX. and XXI. with the exception of the Wakefield House of Correction)	18.597	3.412
Millbank Penitentiary (123 of the pardons being added to the total mortality, and one-fourth of the pardons on account of fevers and bowel complaints, to the mortality from those diseases)	30.965	5.944
Wakefield House of Correction	26.732	8.910
Excess of mortality in the Millbank Penitentiary above the average of 32 county prisons	12.368	2.532
Excess of mortality in the Wakefield House of Correction, above the average of 32 county prisons	8.135	4.498

The average annual mortality per thousand prisoners from all causes, in the Penitentiary, (making the addition previously explained for the pardons on medical grounds,) has exceeded, by more than twelve (12.368) deaths, the total average annual mortality of thirty-two county prisons, calculated

only from the deaths actually occurring in those prisons. And the deaths caused by fevers and bowel complaints will account for only 2·532 out of that annual excess of twelve deaths. On the other hand, the total annual mortality in the Wakefield House of Correction (without any allowance for pardons on medical grounds) has exceeded the average annual mortality of the thirty-two other county prisons, by rather more than eight (8·135) deaths per thousand prisoners, and of this excess 4·498 deaths per thousand prisoners, or more than half, have been due to fevers and bowel complaints.

The remaining excess of mortality in the Wakefield prison, amounting to 3·637 deaths per thousand prisoners annually, seems to have been owing, not to any greater prevalence of the diseases, produced or aggravated by imprisonment, but solely to the circumstance, that the practice of recommending prisoners in ill-health for pardon on medical grounds has been adopted to a less extent in the Wakefield House of Correction than in other county prisons.*

* During the last two or three years, at all events, the pardons have been proportionally less numerous in the Wakefield prison than in other prisons, as will be seen in the subjoined Table :—

Prisons.	Liverpool.	Lancaster Castle.	Chester Castle.	Derby.	Preston.	Wakefield.
Years.	1841 and 1842.	1841, 1842 and 1843.	1842 and 1843.	1842 and 1843.	1841, 1842 and 1843.	1842, and 1843.
Number of deaths	16	9	6	4	1	25
Number of pardons	13	8	4	3	2	5

It appears, then, that the rate of mortality of the Wakefield House of Correction has been raised above the average rate of other English prisons, chiefly if not exclusively by a noxious influence of the locality, while the influence of the site has had but a slight share in augmenting the number of deaths in the Millbank Penitentiary; the high rate of mortality in this institution having been due to causes more immediately connected with the state of imprisonment.

Rates of Mortality of the Criminal Class, in Prison and out of Prison.—We have now considered the influence of the several circumstances which although, as it were, extraneous to the state of imprisonment, and not conditions necessarily or constantly attending it, yet influence greatly the number of deaths occurring in prisons.

Some of the facts which we have passed in review have an important bearing on the question which we previously left unanswered—the question, namely, whether the comparatively high rate of mortality common to most prisons can be ascribed to the unhealthiness of the degraded class whence criminals are in greater part derived—whether, in fact, the mortality of prisoners is only the mortality proper to persons whose constitutions have been injured by the combined influences of destitution and debauchery.

We have seen that the real mortality, at least of the English prisons, is by no means wholly exhibited in the number of deaths actually occurring in these prisons, but that the number of prisoners

pardoned on account of the bad state of their health must also be taken into the account ; and we have found that, according to a fair estimate of the proportion of cases that would have terminated fatally amongst the whole number pardoned on medical grounds, the rate of mortality of the Millbank Penitentiary would have been 30·976, and that of the county prisons 22·788, per thousand prisoners. These are higher rates of mortality than we can suppose the criminal class, out of prison, to experience ; and consequently these high rates of mortality alone form a ground for believing that the mortality of criminals is increased by imprisonment.

But we have further seen that the rates of mortality are, *cæteris paribus*, highest in those prisons where the terms of imprisonment are longest, and lowest where the terms of imprisonment are shortest ; and likewise that the mortality to which the prisoners are liable, is far less in the earlier periods than in the more advanced periods of their imprisonment in the same prison. Now if the high rate of mortality of prisons were wholly or even principally due to the unhealthiness of the criminal class, we should not find that the increased duration of imprisonment was thus attended by a higher ratio of deaths.

This fact, indeed, can only be explained on the supposition that the state of imprisonment, or conditions attending it, have exerted an injurious influence on the prisoners' health. The *low* rate of mortality during

the first six months of the prisoners' confinement is doubtless in part owing to the circumstance that criminals, when they enter prison, are for the most part free from acute disease, and even from very advanced chronic disease. It can, however, be scarcely necessary to observe that this is not the sole nor even the chief cause of the difference between the mortality of earlier and later periods of imprisonment. For, amongst prisoners in the more advanced periods of their term of imprisonment, the proportion of deaths is twice or even three times as great as amongst any class of persons in the general population of the same age as prisoners. Liverpool presents a higher rate of mortality than any other town in England, and its population, including as it does a large number of Irish, is probably even more unhealthy than the whole body of criminal prisoners in England ; for the prisoners come from all ranks of society, and from all districts of the country—from the rich as well as the poorest classes—from the agricultural as well as the manufacturing districts ; yet the rate of mortality of the population of Liverpool, between the ages of 15 and 70, is much lower than that of prisoners even in the county prisons of England, and consequently very much lower than the rate of mortality which the prisoners in the Millbank Penitentiary suffered, especially at the more advanced periods of their terms of confinement. This is shown in the following Table :—

Annual mortality of the population of London between the ages of 15 and 70 during 1841	15·391 per 1,000 living.
Annual mortality of the population of Liverpool between the ages of 15 and 70 during 1841	18·191 per 1,000 living.
Estimated average annual mortality of prisoners in the county prisons of England, including a certain proportion ($\frac{346}{1000}$) of the pardons on medical grounds	22·788 per 1,000 prisoners.
Estimated annual mortality of prisoners in the Millbank Penitentiary, including a certain proportion ($\frac{346}{1000}$) of the pardons on medical grounds	30·976 per 1,000 prisoners.
Estimated rate of mortality of the prisoners in the Millbank Penitentiary, during the third year of their imprisonment	52·267 per 1,000 prisoners.

The mortality of the population between the ages above mentioned, was, in the year 1841, 15·391 per thousand in London, and 18·191 per thousand in Liverpool. The mortality of the county prisons of England has been 22·788 per thousand ; that of the Millbank Penitentiary, at all periods of imprisonment, nearly 31 per thousand, whilst the estimated rate of mortality of convicts passing through their third year of confinement in that institution was more than 52 per thousand.*

The statistics of the American prisons may, at first sight, seem to prove that the state of imprisonment has not everywhere been attended by an in-

* Instances may be met with in which the mortality of the inhabitants of a particular town, or part of a town, has exceeded the mortality of the population of other towns, or other parts of the same town, to a greater extent than the mortality of Liverpool is in the text stated to have exceeded that of London. For exam-

creased mortality. The white convicts in these prisons certainly appear to have suffered much lower rates of mortality than prisoners in England and on the continent of Europe. For the proportion of

ple, the mortality in two different groups of streets in Brussels, during the three years 1840 to 1842, was, according to M. Ducpétiaux (*Des Décès dans la Ville de Bruxelles*, p. 14 to 18), as follows :—

In 5 streets in which more than half of the families are poor, - - -	} The mortality was 33 per 1,000 persons living.
In 250 streets in which there were no poor fa- milies, - - -	
	} The mortality was 20 per 1,000 persons living.

It is to be recollected, however, that in this instance, and others of the same kind, we have presented to us the mortality of persons of all ages. And not only is the mortality in the early years of life always much higher than in after years, but, moreover, the increase of mortality which so often attends poverty falls chiefly on the very young, and not nearly so much on persons of the middle period of life. Thus, in the instance above given, 551 out of 1,000 deaths occurred during the first 5 years of life in the poorer streets of Brussels, while only 320 out of 1,000 occurred in these early years in the richer streets. So that if these early years of life were excluded from consideration, the difference between the mortality of the poorer and that of the richer class would be much less than the difference between 20 and 33 per 1,000 living. In fact, the mortality at all ages in Liverpool was greater than in the poorest streets of Brussels, although, between the ages of 15 and 70, it was only 18 per 1,000 annually.

	London.	Liverpool.
Mortality at all ages	24·269	33·882
Mortality from 15 to 70	15·390	18·191

deaths amongst the white convicts in the Eastern Penitentiary, during a series of years, has been only 20 per thousand annually, while in the County Prisons of England, the proportion of deaths has been nearly 23 per thousand, in the Millbank Penitentiary 31 per thousand, in the Geneva and Lausanne Penitentiaries respectively 26 and 38 per thousand, and in the French prisons (males) 55 per thousand. This comparatively low rate of mortality of the white convicts in the Eastern Penitentiary, appears the more remarkable from the circumstance that the average term of imprisonment is longer in that institution than in any of the prisons with which it is here compared, except those of France. It is true the rate of mortality (20 per 1,000 annually) assigned to the Eastern Penitentiary, being deduced solely from the number of deaths which have actually occurred in the institution, is somewhat below the true rate of mortality. For the pardoning of prisoners, whose health had become impaired, has doubtless reduced the number of deaths in the American prisons, as it has in those of England. The number of pardons on medical grounds in the Eastern Penitentiary, however, appears to have been so inconsiderable, that, had no pardons been granted, the whole mortality would probably not have been greater than that of the English County Prisons, namely, 23 per thousand annually, and this would have been a very low rate of mortality if we consider the average length of the sentences in the Eastern Penitentiary. In other American prisons, the par-

dons on medical grounds have probably been more numerous than in that institution; but, on the other hand, the deaths in those prisons have been fewer; so that we cannot certainly assign to the Auburn, Charlestown, and Wethersfield prisons a higher rate of mortality than the one just mentioned, namely, 23 deaths annually per thousand prisoners. The causes of the comparatively low ratio of deaths amongst the white convicts in the American prisons will be fully considered when we come to speak of the prevalence of scrofulous disease in different prisons, and of the causes to which that prevalence is due. I will here, therefore, merely mention one cause which has undoubtedly been highly influential in preserving the health of prisoners in American penitentiaries; namely, their very abundant and nutritious food. We shall find that the liberal diet of American prisoners contrasts strongly with the meagre allowance to which, until recently, criminals in most of the English County and Borough Prisons were restricted, and still more with the even scantier fare of imprisoned criminals in Scotland.

Admitting, however, that the proportional number of deaths is smaller amongst white convicts in American prisons, than amongst the criminals in the prisons of this and other countries of Europe, we are still able to show that imprisonment, even in America, is attended with an increase of mortality. We have previously seen that the annual mortality of the white population of the City and County of New York, between the ages of 10 and 60, is scarcely

13 per thousand of the living, that the annual mortality of the same population above the age of 10 years is about 15 per thousand living, and that the mortality of the white male population alone in the City of New York, between the ages of 10 and 70 years, is likewise about 15 per thousand annually. Now, the question is, whether either of these proportional numbers can be taken to represent the rate of mortality to which the criminals of the white race in the American States are subject when not in prison, or whether we must assign to them as high a rate of mortality as we have done to the criminal class in England. The following considerations lead me to believe that the rate of 15 deaths annually per thousand living may, for the purpose of comparison with the mortality of white prisoners in the American Penitentiaries, be fairly taken to represent the mortality of this class of persons when at liberty.

In the first place, it must be borne in mind that the lowest class of society in the American States, especially in those which, like Pennsylvania, border on the slave states, is formed chiefly of coloured people, and that the whites are for the most part not exposed to the same degree of destitution, and such strong temptations to brutal vice and debauchery, as the lowest class of society in England, whence our criminals are chiefly, though not wholly, derived. On this account it is probable that but little difference exists as regards health between the white criminals in America before their imprisonment, and the general white population of

such a City as New York. Secondly, we should remember that in taking as our standard of comparison the mortality of the whole white population of New York above the age of 10 years, or even the males between the ages of 10 and 70, we are including a large number of persons at an advanced period of life, who, by reason of their age, are subject to a very great mortality, while in prisons there are few persons older than 60 or 65 years.

Lest, however, any one should still think that the mortality of the white population of New York, of the ages mentioned, namely, 15 deaths annually per thousand living, is somewhat lower than the mortality to which criminals even at liberty would be subject, we will assume the ratio of deaths in the American prisons to have been only 20 per thousand annually, which is the rate of mortality of white prisoners in the Eastern Penitentiary, calculated from the deaths alone, without including any cases which were prevented from terminating fatally in the institution by the criminals being pardoned. According to this estimate, the annual mortality suffered by white persons in America will have been raised from 15 per thousand to 20 per thousand by the influence of imprisonment, and even this must be regarded as a considerable increase in the ratio of deaths amongst persons who are chiefly in the meridian of life.

With regard to the coloured persons, the increased mortality which *they* suffer from imprisonment is almost unparalleled; the mortality of these people, out of prison, being 27·225 annually

per thousand living of both sexes, (29·115 per thousand of the males,) and in prison as much as 70·10 per thousand. A large number of the negroes, it is true, have been in a diseased state when admitted into the penitentiaries ; but the extraordinary mortality they have suffered while in prison cannot be wholly accounted for by this circumstance. It seems, indeed, to be generally admitted in America, that imprisonment exerts a most injurious influence on the health of coloured persons.

Both in England and in America, therefore, imprisonment seems to have been productive of a great increase of mortality ; and looking at the high rates of mortality of the prisons of France and Switzerland, we cannot doubt that the same has been the case in those countries. This fact, then, being established, we have next to inquire what the disease or diseases are to which the increase of mortality is chiefly due ; for till this point is determined, we cannot usefully investigate the effects of the several circumstances capable of influencing the health, to which criminals are exposed in the state of imprisonment.

III.—DISEASES BY WHICH THE MORTALITY OF PRISONS IS CHIEFLY PRODUCED.

Fatal Diseases of the Prisoners in Millbank Penitentiary.—In the investigation of the rate of mortality in prisons, we first examined the statistics of the Millbank Penitentiary, and afterwards compared the results they afforded with data derived from

other sources. It will be convenient to follow the same plan in the present inquiry respecting the diseases which have been most fatal to prisoners.

We have already determined what amount of mortality has been caused in the Millbank Penitentiary, and the other English prisons, by three classes of diseases, viz. fevers, bowel complaints and hepatic diseases. We have found that the mortality from hepatic diseases has been less in these prisons than in the metropolis, but that fevers and bowel complaints have been four or five times more fatal to prisoners than to all persons at the same period of life in London. We have also found that the proportional number of deaths caused by fevers and bowel complaints *in the Millbank Penitentiary*, though somewhat greater than *in most County Prisons*, has not been so much in excess, as to account for the higher rate of mortality by which the Penitentiary is distinguished from most of the latter prisons. We will now direct our attention more especially to the rates of mortality due to fevers, bowel complaints and hepatic diseases, *in the Millbank Penitentiary and in the metropolis respectively*, and will compare these rates of mortality with each other, in order to determine in what degree the greater mortality of the *prisoners in the Penitentiary*, as *compared with persons at liberty*, has been caused by these diseases, and what excess in the ratio of deaths remains to be explained by other causes, when the mortality from fevers and bowel complaints has been deducted.

	Annual mortality per 1,000 from fevers.	Annual mortality per 1,000 from bowel complaints.	Annual mortality per 1,000 from hepatic diseases.	Annual mortality per 1,000 from these 3 classes of diseases.
Millbank Penitentiary (including one fourth of the cases pardoned on medical grounds)	3·702	2·242	·156	6·100
Metropolis 1842*	·552	·538	·327	1·418
Excess of mortality in the Millbank Penitentiary	3·150	1·704		4·682

From this table it appears that the total excess of mortality from the three classes of diseases, fevers, bowel complaints and hepatic diseases, in the Millbank Penitentiary, as compared with the metropolis, has been 4·682 deaths per thousand annually. The mortality from all causes in the Penitentiary, however, we have estimated at 30·976 deaths per thousand annually, while the mortality from all causes, amongst persons of the ages of 15 to 70 in the metropolis, has been only 14·707. In the total mortality, then, there has been an excess of 16·269 deaths per thousand annually, on the side of the Penitentiary, and fevers and bowel complaints have produced little more than one-fourth of this excess. There remain 11·587 deaths annually per thousand prisoners to be accounted for by other causes.

The mortality caused by the different classes of diseases (exclusive of fevers, bowel complaints and hepatic affections) in the Millbank Penitentiary and in the metropolis respectively, is shown in the next table; where the diseases most fatal to prisoners

* See the note (†) at p. 171.

may be distinguished at a single glance. The class of "epidemic diseases, exclusive of fever, diarrhoea, dysentery and cholera;" the "diseases of the head and nervous system," and the "abdominal diseases (exclusive of enteritis and ulceration of the bowels)," have, each of them, produced a rather greater mortality in the Penitentiary than in the metropolis generally; the excess of mortality produced by the "diseases of undefined nature" is somewhat more considerable; but the whole excess of mortality from these four classes of diseases amounts to no more than 2·322 deaths per thousand annually; and this is entirely compensated for by the deficiency in the mortality caused by "heart diseases," "diseases of the respiratory organs (exclusive of consumption and hæmoptysis)," "diseases of the urinary and generative apparatus," the "diseases not classified," and "violent deaths," which have produced fewer deaths in the Penitentiary than in the metropolis generally. The great excess of mortality, it is manifest, has been caused by "consumption and hæmoptysis," and "other tubercular diseases." The annual ratio of deaths from consumption and hæmoptysis I have computed to have been 13·244 per thousand in the Penitentiary, while it has been only 4·374 in the metropolis. The annual mortality from other tubercular diseases, according to my estimate, has been 2·869 per thousand in the Penitentiary, and only ·033 per thousand in the metropolis. So that tubercular diseases have produced in the Penitentiary an excess of mortality equal to 11·706 deaths per thousand annually,—which is nearly exactly the number of

deaths by which the mortality of the prisoners in the Penitentiary has exceeded the total mortality of persons of corresponding ages in the metropolis, after the deaths caused by fevers, bowel complaints and hepatic diseases have been deducted.

	Annual mortality per 1,000 persons living, from										
	Epi- demic dis- eases, not includ- ing fevers and bowel com- plaints	Con- sump- tion and hæmop- tysis.	Other tuber- cular or scrofu- lous dis- eases.	Dis- eases of the head and ner- vous sys- tem.	Dis- eases of heart and circu- lating system.	Dis- eases of the respira- tory organs, exclu- sive of con- sump- tion.	Abdo- minal dis- eases not in- clud- ing fluxes.	Dis- eases of the urinary and gene- rative appa- ratus.	Other dis- eases, not classi- fied.	Dis- eases of un- defined nature.	Sui- cide and violent deaths.
Deaths in the Penitentiary.	·834	7·613	·835	·730	·104	·625	·312	·000	·417	·730	·313*
Cases pardoned, which would have terminated fatally.	·000	5·631	2·034	·808	·500	·365	·261	·287	·704	1·773	
Total estimated mortality of the Penitentiary.	·834	13·244	2·869	1·538	·604	·990	·573	·287	1·121	2·503	·313
Mortality between the ages of 15 and 70 in London.	·213	4·374†	·033	1·411	·627	2·106	·305	·534	1·820	1·195	·581‡
Excess of mortality in the Penitentiary.	·621	8·870	2·836	·127	—	—	·268	—	—	1·306	
Excess of mortality in the metropolis.	—	—	—	—	·023	1·116	—	·247	·699	—	·268

This result is so remarkable, and its accuracy depends so much on the correctness of the estimate I have formed of the mortality produced by different

* Suicides alone.

† Including half the deaths from hæmorrhage, which we may suppose to have been caused by hæmoptysis.

‡ Various kinds of violent deaths.

diseases in the Penitentiary, that some explanation of the data and method of computation on which this estimate is founded seems to be called for. Now, with regard to the deaths which actually occurred in the prison, no doubt can be entertained. The annual mortality per thousand caused by each disease, or each class of diseases, has been calculated from the number of deaths during the 18 years, 1825 to 1842, and from the aggregate of the average numbers of prisoners in confinement during those several years. Thus, the number of deaths from consumption and hæmoptysis, namely 73, has been multiplied by 1,000, and then divided by 9,588, the aggregate of the numbers in prison in the 18 several years (see Table XVIII. in the Appendix). The quotient, 7.613, was, of course, the annual ratio of deaths per thousand prisoners which consumption and hæmoptysis had produced during the whole period. The calculation of the number of deaths caused within the prison itself by each class of diseases is, therefore, a mere matter of arithmetic.

It is not so with the estimate of the mortality which the pardons on account of each disease should be taken to represent. Here we have to exercise our judgment upon the fatal tendency of the different diseases, and upon their probable rate of progress towards a fatal termination in persons confined in prison. For, as the prisoners pardoned on medical grounds appear to have been released, on the average, about one year before the expiration of their sentence, the question is, how many of the prisoners pardoned on account of each disease, or class of diseases, would have died

before the expiration of a twelvemonth if they had remained in prison.

From my knowledge of the usual rate at which cases of consumption proceed to a fatal termination in the state of imprisonment, and of the period of the disease at which prisoners suffering from it have in most cases been pardoned, I have thought it by no means an exaggerated estimate, to set down three-fifths of the pardons, granted on account of consumption and hæmoptysis, as deaths,—that is to say, I have supposed that 54 out of the 90 prisoners pardoned on account of those diseases would have died in the prison, had their confinement been prolonged until the expiration of their sentences. In the case of diseases of the heart likewise, I have reckoned that three-fifths of the pardons (4·8 out of 8) may be regarded as deaths. But with respect to all other diseases, I have assumed that in only one out of every four of the cases where they formed the grounds of pardon (that is to say, in 64·25 out of the 257 cases), would the prisoner have died in prison, supposing that no remission of his sentence had been granted. If the list of diseases in Table XIX. be examined, it will be admitted, I think, that this is a just estimate. For in a large number of cases the diseases were such as either do not usually prove fatal, or do so only after a very long course; in confirmation of which remark I may instance the pardons on account of chronic rheumatism, ulcers of the legs, epilepsy, and uterine disorders. The grounds of pardon in a very large number of cases are recorded as general ill health, debility, and vis-

ceral disease. It is difficult to form a decided opinion as to what proportion of those cases would have proved fatal. It is most probable, however, that the majority of the more serious of them really belonged to the category of scrofulous or tubercular disease of the lungs, or other internal parts, and, consequently, when we estimate the proportion of fatal cases to have been only one in four amongst the pardons on account of these diseases of undefined nature, we are underrating the mortality from consumption rather than the mortality from other causes. With regard to the 78 cases in which scrofula formed the ground of pardon, we cannot doubt that in many of these also the lungs were seriously affected with scrofulous or tubercular disease; but as, in many others, the chief development of the disease must have been external, I have estimated the proportion of fatal cases to have been only one-fourth of the whole number.*

Without any exaggeration then of the facts, it seems to me to be clearly proved by the medical records of the Penitentiary, that the mortality caused by tubercular disease has been between three and four times as great during the eighteen years, 1825 to 1842, among the convicts confined in this prison, as it was in the year 1842 amongst persons of the same period of life in London generally; and that three-fourths of the excess of deaths from all causes in the Penitentiary above the rate of mortality of all

* It is in accordance with the estimate here given of the probable fatal tendency of the different diseases which have formed the grounds of pardon, that the number of deaths represented by the 355 pardons on medical grounds is stated at the commencement of this paper to be 123.

persons in the metropolis of the same period of life, has been due to the prevalence of this disease; fevers and bowel complaints having produced only one-fourth of that excess of deaths.

The facts and arguments have already been detailed on which I found my belief that the high rate of mortality suffered by prisoners in the Millbank Penitentiary cannot, except in small part, be ascribed to the unhealthiness of the criminal class. This opinion will be seen to be confirmed by the following statistical facts.

In the course of the year 1840, 1,052 prisoners were received into the Penitentiary, and in twelve out of this number, signs of phthisis were detected, either at the time of their reception, or so soon afterwards as to leave no doubt as to the disease having existed, although in a latent state, when they were received into the institution. There is every reason for supposing that the remaining 1,040 prisoners were free from the disease.

Now of these 1,040 convicts, only 523 were Penitentiary prisoners, who were confined for periods varying from one to four years, but on the average for about two-and-a-half years, while 517 were convicts under sentence of transportation, who passed a much shorter time in the Penitentiary—on the average, not more than two months. Amongst the latter class, no further development of phthisis was observed, but of the 523 Penitentiary prisoners, no less than forty-seven came under treatment for pulmonary phthisis, and seventeen died of that disease before the end of 1843.

Comparing the large number of these prisoners in whom tubercular disease of the lungs first showed itself while they were in the Penitentiary, with the small number who were affected with it at the time of their reception, we cannot, I think, hesitate to admit that imprisonment exerted here a very powerful influence in causing the development of the disease.

I have said, that twelve out of 1,052 prisoners received in the year 1840 (1·141 per cent.) were phthisical at the time of their reception ; but it is to be remarked, that in more than half of these cases, the disease was then latent. The proportion of cases of phthisis existing in an *active state*, amongst criminals when they enter prison, is, I believe, more accurately shown by the following data, extracted from the Medical Register of the male convicts received into Millbank Prison during the year 1844. The total number of male convicts registered was 3,249. The number of phthisical persons amongst them was eleven, and their proportional number, consequently, only 3·38 per thousand.

From these facts it must, I think, be obvious, that the proportion of persons affected with phthisis amongst the criminals received, has been far too small to account for any considerable part of the great mortality which that disease every year produced amongst the prisoners confined in the Penitentiary.

Fatal diseases in the English County Prisons.—On account of the comparatively small number of prisoners in the individual county prisons, no conclusion could be fairly drawn from the number of deaths from different diseases in each of these

prisons taken separately. I shall therefore examine here merely the data afforded by the mortality tables of thirty-three county prisons taken collectively. From these tables it appears (see the Abstract table below*) that consumption and other tubercular diseases have not produced the same excessive mortality in the county prisons as in the Millbank Penitentiary, and that a proportionally greater amount of mortality has been caused, not only by fevers and bowel complaints, but also by several other classes of disease,—especially by the sporadic diseases of the respiratory organs, not registered as of consumptive nature.

	Annual mortality per 1,000 persons living, from													
	Fevers.	Other epidemic diseases.	Consumption and hæmoptysis.	Other tubercular or scrofulous diseases.	Diseases of the brain and nervous system.	Diseases of the heart and circulating system.	Diseases of the respiratory organs, exclusive of consumption.	Hepatic diseases.	Bowel complaints.	Diseases of the abdomen, exclusive of bowel complaints, enteritis and ulceration.	Diseases of the urinary and generative apparatus.	Other diseases not classified.	Diseases of undefined nature.	Suicide and other violent deaths.
33 English county prisons.	2·386	·407	4·540	·232	2·270	·291	3·376	·261	1·833	36	·291	1·251	1·688	·724
Persons aged from 15 to 70 in the metropolis.	·552	·213	4·374	·033	1·411	·627	2·106	·327	·538	·305	·534	1·820	1·195	·581
Excess of mortality in the county prisons.	1·834	·194	·166	·199	·859	—	1·270	—	1·295	·131	—	—	·493	·143
Excess of mortality in the metropolis.	—	—	—	—	—	·336	—	·066	—	—	·243	·569	—	—

It must be remembered, however, that this table

* The Tables of which this is an abstract, are those numbered XX. and XXI. in the Appendix.

exhibits the rates of mortality calculated solely from the deaths which actually occurred in the prisons, and that the cases of prisoners pardoned in a diseased state are taken no account of. In a former part of this paper, I have shown that the proportion borne by the pardons on medical grounds to the deaths, in the county prisons, has been such, that supposing the number of fatal cases amongst these pardons to have been the same in the county prisons as they appear to have been in the Penitentiary, the mortality of these prisons should be estimated at twenty-three deaths, instead of nineteen deaths, per thousand prisoners annually. By a similar calculation we may form an approximative estimate of the mortality which would have arisen from consumption and other tubercular diseases in these county prisons, had no prisoners been pardoned on account of impaired health. The result of such a computation is given in the next Table ; and it will be seen that even with this correction, the excess of mortality caused by consumption and scrofula has been less than that produced by fevers and bowel complaints taken together.

	Mortality per 1,000 from consumption and hæmoptysis,	Mortality per 1,000 from other tubercular or scrofulous diseases.	Mortality per 1,000 from consumption and all tubercular diseases.
County Prisons	6·257	·858	7·115
Metropolis	4·374	·033	4·407
Excess of mortality in the County Prisons.	1·883	·825	2·708

Although, therefore, consumption and other forms

of scrofula have been more fatal to the prisoners confined in the county gaols and houses of correction of England, than to the inhabitants of the metropolis, they have produced much less mortality in those prisons than in the Millbank Penitentiary. This result, however, by no means militates against the belief that the tubercular cachexia, most frequently fatal, in the form of pulmonary phthisis, is the disease which imprisonment has an especial tendency to produce. For, as I have before pointed out, the terms of imprisonment which persons undergo in the county prisons, are, in a vast majority of cases, so short, that if the germs of the tubercular phthisis were formed during the state of imprisonment, there would not be time for the disease to become fully developed, much less for it to reach its fatal termination before the prisoner's discharge. Owing to this circumstance, we should expect that the mortality from consumption would be much less considerable in the county prisons than in the Millbank Penitentiary. Indeed, all circumstances being considered, it appears to me that the amount of mortality from consumption in the county prisons has been quite sufficient to prove that imprisonment in those establishments has the same tendency to produce tubercular disease as confinement in the Penitentiary. The average term of imprisonment in the county prisons being under two months, while some prisoners are detained as long as eighteen months or two years, a very large proportion of the terms must have been under one month.

Now it is a very rare occurrence for a prisoner to die of consumption within a month, or even two months, after being committed to prison. The deaths from this disease must, therefore, have occurred principally amongst the prisoners confined for long terms, and their number being comparatively small, the mortality from consumption amongst them must have been excessive.

I shall have a future opportunity of demonstrating the correctness of this inference, when the influence of length of imprisonment on the development of tubercular disease shall come more especially under consideration. In the meantime, however, I may mention a fact which proves clearly enough that prisoners confined for short periods have suffered even less mortality from tubercular disease in the Penitentiary than in the county prisons. Of 3,592 military offenders who, in the course of the five years, 1838 to 1842 inclusive, were confined in the Penitentiary for various periods, and whose average term of imprisonment was two months and five days, only one died of consumption. Two others, affected with this disease, were pardoned before the expiration of their sentences. But even if these two cases are reckoned as deaths, which they should not be, the annual rate of mortality from consumption will have been only 4·601 per thousand upon the average number of soldiers in confinement.

Fatal diseases in the English Hulks.—I am not able to give any account of the diseases which have

been fatal to the convicts in the English Hulks. This, however, is the less to be regretted, since no inference as to the effects of imprisonment in those establishments on the health could be deduced from the mortality caused there by different diseases ; circumstances already explained, having led to the accumulation in the Hulks, of prisoners who had become diseased in other prisons.

Fatal diseases in the Prisons and Hulks of France.—Satisfactory statistical information respecting the diseases fatal in the prisons and hulks of France is also wanting. Some reports, however, which have been published by the Physicians of the Maisons de Correction at Nismes and Rennes, show that tubercular consumption has been the principal fatal disease in those prisons, as it has been in the Millbank Penitentiary.

M. Toulmouche, Physician to the prison at Rennes, places phthisis first in the order of frequency amongst the causes of death, and states, moreover, that in the course of three years, (1831 to 1833,) when the average number of prisoners was 540, no less than 238 cases of pulmonary phthisis, and 31 cases of glandular enlargement, came under medical treatment.* And in the prison at Nismes, out of twelve deaths, which occurred in the wards of M. Boileau Castelneau during the year 1838, six were due to phthisis, and two to other tubercular diseases.†

* Annal. d'Hygiène, tom. xiv., p. 1, et seq.

† Annal. d'Hygiène, tom. xxii., p. 207. The causes of death

Fatal diseases in the Prisons of Switzerland.—The statistics of the Geneva and Lausanne Penitentiaries are much more complete. And although, owing to the number of prisoners in these institutions being small, and the deaths also few, any inferences from the data they afford would not alone have much weight, yet they serve to confirm the accuracy of the conclusions deduced from other facts.

In the Geneva Penitentiary, the annual mortality from consumption has been 9·892 per thousand prisoners, and the mortality from other scrofulous or tubercular diseases 2·198 per thousand. The annual mortality from all tubercular diseases has therefore been 12·090 per thousand, while the annual ratio of deaths from all causes has been only 26·380 per thousand. Now, if it be borne in mind that we have no account of the number of prisoners pardoned in consequence of their being in an impaired state of health, and also that the average terms of imprisonment have been considerably shorter in the Geneva Penitentiary than at Millbank, it will, I think, be admitted that the mortality from tubercular disease has been, proportionally, quite as great in the former as in the latter institution.

In the Lausanne Penitentiary, the annual ratio of in the twelve cases are recorded as follows :—Two cases of scrofula with phthisis, one of scrofulous ophthalmia with phthisis, two of white swelling with phthisis, one of phthisis, one of scrofula with chronic pericarditis, one of external scrofula with fever, one of abscess of the iliac fossa, one of disease of the cervical vertebræ, one of white swelling, and one after the operation of lithotomy.

deaths recorded as due to consumption has been only 6·802 per thousand prisoners. One-fourth of the total number of deaths has been ascribed to “marasmus,” which, in the words of M. Gosse,* was “probably complicated with disease of the lungs;” and if we suppose only half of these cases (which in the Table are referred to the diseases of undefined nature) to have been really of the nature of pulmonary consumption, the mortality from this disease will have been 11·337 per thousand annually.

	Annual mortality per 1,000 living, from											
	Fevers.	Consumption.	Other tubercular diseases.	Diseases of the brain and nervous system.	Diseases of the heart.	Diseases of the respiratory organs, exclusive of consumption.	Bowel complaints.	Other diseases of the abdomen.	Diseases of the urinary and generative apparatus.	Diseases not classified.	Diseases of undefined nature.	All causes.
Geneva Penitentiary†	1·099	9·892	2·198	5·496	·000	4·396	1·099	1·099	·000	1·099	·000	26·380
Lausanne Penitentiary‡	·000	6·802	·000	5·669	2·267	2·267	2·267	—	1·134	5·669	10·204	36·281

The mortality from diseases of the brain and nervous system appears to have been very considerable, both in the Geneva and in the Lausanne Penitentiaries. But we must not hence infer that imprisonment in those institutions has a peculiar tendency to produce diseases of that class; for where the number of prisoners is small, the occurrence of two or three cases more than ordinary, of any spora-

* Examen Médicale et Philosophique du Système Pénitentiaire. Geneva, 1838, p. 198.

† See Table XXXIII. in the Appendix.

‡ See Table XXXIV. in the Appendix.

dic disease will cause the mortality from that disease to appear unusually great ; and the high ratio of deaths from diseases of the brain in the Geneva and Lausanne Penitentiaries, is, without doubt, a circumstance of this accidental nature. The same explanation applies to the high rate of mortality from the group of diseases not classified in the Lausanne Penitentiary.

Fatal Diseases in the American Prisons.—I proceed now to show the amount of mortality produced by consumption and other forms of tubercular disease amongst prisoners in America. The terms of confinement in the American prisons have been for the most part even longer than in the Millbank Penitentiary ; and the official reports of the more important of these establishments, many of which I have been enabled to consult, contain accurate information as to the diseases fatal to the prisoners. We have here then presented to us the means of determining, in a tolerably satisfactory manner, whether imprisonment for several months or years has in other prisons, besides the Millbank Penitentiary, produced the same prevalence of tubercular disease—whether, in other prisons, as well as in the Millbank Penitentiary, the greater mortality of prisoners, as compared with persons at liberty, has been chiefly, indeed almost exclusively, due to tubercular phthisis. The data are deficient only as regards the pardons granted to prisoners on account of impaired health, respecting which we have no satisfactory information.

We will confine our attention at first to the *white convicts* in the American State prisons ; for a part of the official documents before referred to, afford data from which we can determine the mortality caused by different diseases amongst the white and the coloured convicts separately. The Statistical Tables of the Eastern Penitentiary of Pennsylvania give, not only the number of deaths amongst the white and coloured convicts respectively in that institution, but also specify the nature of the disease which was fatal to each individual prisoner during several years. In the Auburn and Charlestown prisons, too, the proportion of coloured prisoners to the whole number in confinement has been so small that we cannot be far wrong in taking the mortality from different diseases amongst the whole body of prisoners to represent the rate of mortality suffered by white convicts from those diseases. In the following Table, therefore, the ratio of deaths from different diseases, and classes of diseases, amongst the white convicts in the Eastern Penitentiary,* and amongst all convicts in the Auburn and Charlestown State Prisons,† during a series of years, is compared with the mortality which the same diseases produced amongst the white male population of the city and county of New York, during the year 1842.‡

* See Table XXVII. in the Appendix.

† See Tables XXX. and XXXI. in the Appendix.

‡ See Table XXXV. in the Appendix.

	Annual mortality per 1,000 living, from														
	Fevers.	Epidemic diseases exclusive of fevers and bowel complaints.	Consumption and hæmoptysis.	Other tubercular diseases.	Diseases of the brain and nervous system.	Diseases of the heart and circulating system.	Diseases of the respiratory organs, exclusive of consumption.	Hepatic diseases.	Bowel complaints.	Other abdominal diseases.	Diseases of the urinary and generative apparatus.	Other diseases not classified.	Diseases of undefined nature.	Suicides and violent deaths.	Total mortality.
White convicts in the Eastern Penitentiary.	·677	2·031	12·864	·000	1·354	·677	·677	·000	·677	·000	·677	·677	·000	·000	20·311
All convicts in the Auburn State Prison.	1·099	·244	9·526	·366	·977	·244	2·687	·366	·610	·732	·122	·977	·488	·977	19·418
All convicts in the Charles-town State Prison.	1·961	·000	10·787	·000	·980	·326	1·634	·000	·653	·000	·000	1·307	1·306	·653	19·614
White male population of New York.	1·380	·778	4·706	·167	2·167	·472	1·389	·315	·935	·241	·129	·778	·231	1·288	15·054

The results of this comparison are, 1st, That no class of diseases but that of consumption and hæmoptysis has produced, uniformly in the three prisons, a greater mortality than in the city and county of New York ; 2nd, That fevers, other epidemic diseases, diseases of the brain and nervous system, diseases of the heart and vascular system, hepatic affections, bowel complaints, other abdominal dis-

eases, diseases of the urinary and generative apparatus, and violent deaths, have produced a rate of mortality below the standard of comparison, if not in the three prisons, at least in two out of the three ; 3rd, That there has been a slight excess of mortality from the group of unclassified diseases in the Auburn and Charlestown prisons, and an excess equal to 1·298 death per thousand persons living, from the sporadic diseases of the respiratory organs in the Auburn prison ; but, 4th, That the annual mortality per thousand persons living, from consumption and hæmoptysis, amongst the white convicts, has exceeded the rate of mortality from the same causes amongst the white male inhabitants of New York, by as much as 8·158 deaths in the Eastern Penitentiary, by 4·820 deaths in the Auburn prison, and by 6·081 deaths in the Charlestown State prison. From other forms of tubercular disease no deaths appear to have occurred either in the Charlestown prison, or amongst the white convicts in the Eastern Penitentiary, and only a trifling mortality in the Auburn prison.

Now the mortality from consumption and other forms of tubercular disease in the Millbank Penitentiary has exceeded the mortality from the same causes in London, by as much as 11·706 deaths per thousand prisoners annually. It would appear, therefore, that the excess of mortality from this disease had been less considerable in the American prisons than in the English Penitentiary. It must be remembered, however, that in calculating the

mortality of the Penitentiary at Millbank, a certain proportion of the pardons on medical grounds was added to the deaths from each disease, while in the case of the American prisons the estimate of the mortality is formed solely from the deaths which actually occurred in the prison. This is one reason why the excess of deaths from consumption and other tubercular diseases does not appear so great in the latter prisons as in the former. Another reason is, that the white criminals in America, as I have already pointed out, are originally, in all probability, a healthier class of persons than the criminals in England. But we must still, I believe, admit a third reason, namely, that imprisonment in most of the American Penitentiaries has really exerted a less injurious influence on the health than confinement in the Penitentiary of Millbank. Into the various causes of this difference I shall inquire on a future occasion. For my present purpose it is only necessary to show that the whole excess of mortality amongst the convicts, as compared with persons at liberty, has been due to tubercular diseases, as well in the American prisons as in the Millbank Penitentiary.

This fact is exhibited most clearly in the annexed tabular view of the rates of mortality from consumption and other tubercular diseases, and from all other sporadic diseases, in the different prisons of England and America, and in the cities of London and New York. Epidemic diseases are not included, because they vary so much in their degree of prevalence in different pri-

sons, from merely accidental circumstances, and quite independently of the influence of imprisonment.

Cities and Prisons.	Annual mortality per 1,000 living, from		
	Consumption, hæmoptysis and other tubercular diseases,	All other sporadic diseases,	All causes, -- fevers, other epidemic diseases and bowel complaints excepted,
Millbank Penitentiary	16·113	8·083	24·196
English County Prisons	4·772	10·395	15·167
Inhabitants of London between the ages of 15 and 70	4·407	8·997	13·404
Eastern Penitentiary of Pennsylvania, (White Convicts)	12·864	4·062	16·926
Auburn State Prison	9·892	7·565	17·455
Charlestown State Prison	10·787	6·213	17·000
White male population of New York, between the ages of 10 and 70	4·873	7·088	11·961

Directing our attention first to the county prisons of this country, we see that in these establishments, where the terms of imprisonment are generally short, the excess of mortality above the rate to which persons in the metropolis are subject, has not been greater in the case of the tubercular, than in that of other sporadic diseases.

Now, we ought to obtain the same result on comparing the American prisons with the city and county of New York, if prolonged imprisonment in those institutions had no greater tendency to generate tubercular phthisis than to cause other sporadic diseases. We find, however, that in re-

gard to the relative mortality from tubercular and other sporadic diseases, the American prisons resemble the Millbank Penitentiary much more than the English County Gaols and Houses of Correction. For while the mortality from other sporadic diseases has been less in the Charlestown Prison and the Eastern Penitentiary, and only a fraction greater in the Auburn Prison,* than in the city and county of New York, the mortality from consumption, and other tubercular diseases, has been more than twice as great amongst the convicts in the Auburn and Charlestown Prisons, and three times as great in the Eastern Penitentiary, as amongst the white male population of New York. In the Millbank Penitentiary the proportional mortality from tubercular diseases has been between three and four times as great as the proportional mortality from the same diseases in the metropolis; and the ratio of deaths from other sporadic diseases has been $\frac{1}{8}$ th higher in the metropolis than in the Penitentiary.

There is yet another way in which we may demonstrate that consumption and other diseases of the same nature have been the predominant causes

* The disease which has produced the greatest excess of mortality next to consumption, in the Auburn State Prison, is inflammation of the lungs. And the number of the fatal cases of this disease has been so much greater in the Auburn, than in the other prisons, that I cannot help suspecting that in many of the cases the diseases were of tubercular nature, and not simple pneumonia.

of death amongst the white convicts in the American prisons, as well as amongst the criminals in the Millbank Penitentiary. It consists in showing the proportion borne by the deaths from those diseases, to the whole number of deaths from all sporadic diseases in the prisons of England and America, and in the cities of London and New York. This is done in the table at p. 217, where it will be seen that the proportion of the total mortality from sporadic diseases which has been caused by tubercular complaints, has been in

London	$\frac{1}{3}$ rd or $\frac{5}{15}$ ths.
The English County Prisons	$\frac{1}{3}$ rd or $\frac{5}{15}$ ths.
Millbank Penitentiary . . .	$\frac{2}{3}$ rds or $\frac{10}{15}$ ths.
City and County of New York, } rather more than	$\frac{2}{5}$ ths or $\frac{6}{15}$ ths.
Auburn State Prison, nearly	$\frac{3}{5}$ ths or $\frac{9}{15}$ ths.
Charlestown State Prison, } rather more than	$\frac{3}{5}$ ths or $\frac{9}{15}$ ths.
Eastern Penitentiary, nearly	$\frac{4}{5}$ ths or $\frac{12}{15}$ ths.

In whichever way, then, we regard the facts, it is equally apparent that the tubercular cachexia has been the predominant cause of death amongst prisoners (of the white race) confined for long terms, in America as well as in England, and that when epidemic and endemic diseases are excluded from consideration, the whole excess of mortality amongst prisoners, as compared with the free white inhabitants of an American city, may be ascribed to tubercular disease.

Now, when we inquire respecting the causes of death amongst criminals belonging to the *dark races*,

in the American prisons, we meet with proofs that consumption and other forms of tubercular scrofula have been even more destructive to this class of prisoners than to the white convicts. The only accurate information which we possess respecting the diseases fatal to blacks in the state of imprisonment is derived from the official reports of the Eastern Penitentiary of Pennsylvania.* But the results deducible from the facts there given are entirely confirmed by the Mortality Tables of the Maryland Penitentiary.† For in the latter institution more than half the prisoners are Negroes or Indians ; and it will be seen from the following Table that the mortality from consumption has been extraordinarily great.

	Annual mortality per 1,000 living, from				
	Consumption, hæmoptysis and other tubercular diseases,	Other sporadic diseases,	All sporadic diseases.	Fevers, bowel complaints and other epidemic diseases.	All diseases.
Coloured prisoners in the Eastern Penitentiary of Pennsylvania.	40·748	25·321	66·069	3·303	69·372
All prisoners in the Maryland Penitentiary.	28·490	8·547	37·037	1·709	38·747 †
Coloured male population of New York above the age of 10 years.	11·011	13·626	24·637	4·478	29·115 §

* See Table XXVIII. Appendix.

† See Table XXXII. Appendix.

‡ Not including Asiatic cholera.

§ Different classifications of the ages of the coloured people being

The rate of mortality from consumption and other tubercular diseases has been 11 per thousand annually amongst the coloured male population of the City of New York ; while in the Eastern Penitentiary it appears to have been as high as 40 per thousand ; and even this is, I believe, below the truth. For it will be seen, on referring to Table XXVIII. in the Appendix, that out of the total number of 63 deaths amongst the coloured convicts in the Eastern Penitentiary, 13 are ascribed to chronic inflammation and disorganization of the lungs, and we can scarcely doubt that many of these were really cases of tubercular disease. This opinion derives confirmation from the circumstance that no other sporadic diseases but those of the respiratory organs appear to have produced an excessive amount of mortality amongst the coloured people in the Eastern Peni-

adopted in the Census of the United States, and in the Tables of Mortality, we cannot ascertain the rate of mortality to which that part of the population is subject between the ages of 10 and 70. To compare the deaths with the population, it has been necessary to include all ages above 10 years. The rate of mortality has been calculated from the Census of 1840, and the deaths in 1842, and therefore is probably not quite correct. The error, however, cannot be great, for it will be seen by Table XXXVI. in the Appendix, that the rates of mortality from all causes and from tubercular diseases are found to be very nearly the same, whether the deaths in 1838 or the mean of the deaths in 1838 to 1842 be compared with the population of 1840. It would seem, in fact, that the black population of the State of New York does not increase.

tentiary, and also from the fact that in the Maryland Penitentiary, where more than half the convicts are blacks, the excess of mortality has been wholly due to consumption, only one death having been caused by any other disease of the respiratory organs (see Table XXXII. in the Appendix).

There is one other American State Prison, namely, that of Sing Sing, near New York, the statistics of which afford tolerably complete information as to the diseases causing death amongst the convicts. I have not hitherto made any reference to the data derived from this source, in the present inquiry respecting the mortality caused by tubercular disease amongst prisoners ; because the deaths appertaining to the coloured prisoners are there not distinguished from those of the white prisoners ; and because the proportion of Negroes and Indians amongst the whole body of prisoners (about $\frac{1}{5}$ th) is too small to render the liability of criminals of the dark races to particular diseases very perceptible in the tables of mortality, and yet so large as to prevent our inferring from those tables, the frequency of a particular cause of death amongst the white convicts. The statistics of the Sing Sing Prison are valuable, however, from the light they throw on another question of some interest,—the question, namely, whether or not the presence in the atmosphere, of malaria, arising from the soil, has a tendency to produce tubercular disease, and to increase the mortality from the more fatal forms of that malady. We have previously

seen that the mortality from fevers, bowel complaints, (especially dysentery,) and hepatic diseases, has been so considerable in the Sing Sing Prison, as to place it beyond a doubt that the site is a malarious one. Now, when we inquire as to the mortality caused by tubercular diseases in this prison, we find that it has been very little greater than in the Auburn and Charlestown prisons, where the diseases which can be ascribed to the influence of malaria have produced few deaths, and that it has been actually less than amongst the white convicts in the Eastern Penitentiary, who likewise have suffered but little from diseases referrible to malaria.

	Annual mortality per 1,000 living, from				
	Consumption and other tubercular diseases,	Fevers and other epidemic diseases, bowel complaints and hepatic diseases,	All other sporadic diseases,	All diseases, exclusive of fevers, other epidemic diseases, bowel complaints, hepatic diseases and Asiatic cholera.	All diseases except Asiatic cholera.
Male population of New York, aged 10 years and upwards.	5.304	3.562	7.763	13.067	16.629
Auburn State Prison.	9.892	2.329	7.197	17.089	16.418
Charlestown State Prison.	10.787	2.614	6.213	17.000	19.614
Eastern Penitentiary, white convicts.	12.864	3.385	4.062	16.926	20.311
Sing Sing State Prison.	11.265	9.277	9.835	21.100	30.377

The mortality from "other sporadic diseases" has been considerably greater in the Sing Sing Prison than in the other state prisons; but on examining the list of fatal diseases in the former prison, we find that this excess of mortality has been owing, not to any disease which we can suppose to have been of tubercular nature, but to dropsy, which has caused a large number of deaths, and in all probability has been in great part produced by malarious influence. There seems every reason, therefore, to believe that the annual ratio of deaths caused by tubercular disease has been really no greater in the State Prison of Sing Sing than in other American Penitentiaries. This result is not an unimportant one. For it is strong evidence of the incapability of malaria to produce tubercular disease,* and, as we shall presently see, affords a valuable ground of argument in support of the position that the locality of the Millbank Penitentiary has had only an inconsiderable share in producing the high rate of mortality amongst the prisoners in that institution.

The fatal diseases in the Millbank Penitentiary the same, and due to the same causes, as in other prisons.—In a previous part of this paper, it was

* At the same time it may be remarked, that the amount of tubercular disease among the prisoners in the Sing Sing State Prison has been far too considerable to afford any support to the opinion recently put forth by several French writers, that phthisis is of rare occurrence in malarious countries,—that malaria in fact impedes the development of the disease,—an opinion which seems to be based on very imperfect statistical data.

shown that the diseases which from their nature might be ascribed to the operation of malaria, had produced but a small part of the mortality of the Penitentiary at Millbank. Owing, however, to the exaggerated notion of the insalubrity of the locality which has prevailed, many persons would probably still imagine that the noxious local influence, although it did not occasion great mortality from those diseases which are generally recognised as the effects of malaria, yet might increase the mortality from other diseases. The facts detailed in the foregoing pages seem to me to demonstrate quite satisfactorily the erroneousness of such an opinion, which, moreover, has not one positive argument in its favour. It has been shown that the increased mortality in the Millbank Penitentiary has been due, almost wholly, to the diseases which are characterized by the deposition of tubercular matter in different organs of the body, but principally in the lungs; and it has further been shown that in all prisons where convicts have been confined for long terms, the same state of things has prevailed; that in Switzerland, and in America, as well as in the Millbank Penitentiary, tubercular diseases have produced a rate of mortality twice or three times as high as the same diseases cause amongst the free population of cities; while the mortality from no other diseases or class of diseases has uniformly in all prisons been raised above the ordinary ratio amongst the free population.

From these facts the obvious conclusion seems to be, that an increased amount of tubercular disease has been the general result of imprisonment, and that the causes of the mortality in the Millbank Penitentiary are not to be sought for in circumstances peculiar to that institution, but rather in conditions generally attendant on the punishment of imprisonment as hitherto carried out.

The rate of mortality from tubercular diseases appears to have been lower, it is true, in most prisons than in the Millbank Penitentiary, but the reason of this has been, in some cases, the shorter duration of the terms of imprisonment, and in others probably the apparent reduction of the mortality caused by the prisoners being pardoned on account of ill health ; an addition having been made to the mortality from tubercular diseases, so as to compensate for this source of error, in the case of the Penitentiary, but not in the case of other prisons. Still it must be admitted, that, as far as the published facts show, the white prisoners in America appear to have suffered less mortality from tubercular disease, and consequently less mortality altogether, than the prisoners in the Millbank Penitentiary. Now the case of the Sing Sing Prison is valuable, inasmuch as it shows that the greater mortality from consumption, and other tubercular diseases in the Millbank Penitentiary, cannot be ascribed to the influence of malaria exhaled from the surrounding grounds, or from the banks of the river. For at Sing Sing the influence of malaria

has been manifested in other ways much more unequivocally than at Millbank, yet the mortality from tubercular diseases appears to have been no greater in the Prison of Sing Sing than in other American prisons, which are governed by the same rules, and have salubrious sites.

The site of the Millbank Penitentiary, it cannot be denied, is so far calculated to promote the prevalence of tubercular disease, as it is in close proximity to a most densely populated part of a large city ; for the air of crowded cities is, doubtless, more favourable to the development of that disease than is the air of an open country. But the influence of this circumstance must have been comparatively trifling. The causes which operated most powerfully in the production of tubercular disease in the Millbank Penitentiary, were, I believe, as in other prisons, wholly independent of the locality.

The fact that tubercular phthisis is the most frequent cause of death in prisons has been noticed by several continental writers ; but it has not hitherto, as far as I know, been demonstrated by a sufficient amount of evidence of a precise character, and has not attracted much attention. That phthisis should be the disease most fatal to prisoners could not indeed appear at all remarkable, since we know that amongst the general population at the middle period of life there is no other cause of death which produces nearly so great a mortality. In order that the fact should have much importance

or interest, it was necessary to show from trustworthy statistical data, that the mortality from consumption has borne a larger proportion to the whole number of deaths, and also to the number of persons living, in prisons than in society at large ; and to do this has been one of my principal objects in the present paper.

Prevalence of scrofula in prisons.—It is however the prevalence in prisons, not of pulmonary phthisis merely, but of all forms of the scrofulous cachexia, characterized by the deposition of tubercular matter, which I have wished to illustrate. The most frequent and chief seat of the disease, when it proves fatal, being the lungs, and the published reports on prisons seldom giving exact information with regard to the prevalence of any diseases but those causing death, the statistical facts which I have been able to collect, tend in most instances to prove only that great mortality has arisen from *phthisis pulmonalis*. Yet I am not the less convinced that other forms of tubercular disease, and especially disease of the external absorbent glands (or scrofula), have been proportionally quite as prevalent.

In the case of the Millbank Penitentiary, this admits of being satisfactorily demonstrated. In the first place it will be seen, on examining the list of pardons on medical grounds, that in 78 out of 337 cases, scrofula formed the ground of pardon. It would of course be only in aggravated cases that the existence of scrofula would be considered a ground for releasing a convicted criminal from imprison-

ment ; we may therefore infer that the prevalence of the disease must indeed have been very great, if in the course of eighteen years, 78 cases occurred in which release from imprisonment seemed called for.

But I am able to adduce still stronger evidence of the prevalence of tubercular disease in the Penitentiary. During the year 1840, 1,052 prisoners were received into the Penitentiary. At the time of their reception, fourteen of these prisoners, or 1.330 per cent., had scrofulous enlargement, with or without suppuration, of the cervical glands, combined in four cases with the signs of pulmonary phthisis ; and 1,038 were to all appearance free from external scrofulous disease. Of these 1,038 prisoners, 527 were Penitentiary prisoners, and 511 were females under sentence of transportation, who passed a much shorter time in the Penitentiary. Of the latter class of prisoners, two became affected with scrofula while in the Penitentiary ; but of the former class, no less than thirty-seven had, before the end of 1843, come under treatment for external glandular scrofula, which was combined in fourteen cases with tubercular disease of the lungs. This fact, that 37 out of 527 persons became affected with scrofula in the course of so short a period, will surely be admitted as sufficient evidence of imprisonment in the Penitentiary having had a tendency to produce other forms of tubercular disease besides pulmonary consumption.

From the data just detailed, it appears, that the proportion of scrofulous individuals amongst

the prisoners received into the Millbank Penitentiary, in the course of the year 1840, was 1·330 per cent. In order to determine whether this can be taken as the average proportion of cases of scrofula amongst criminals in England, before they have undergone long terms of imprisonment, I have examined the Medical Register of Convicts received into the Millbank Prison since it has been converted into a dépôt for transports. The state of health of 3,249 male convicts received during the year 1843 is there accurately recorded, and forty-four, or 1·354 per cent., are set down as being affected with external scrofula.* This result corresponds very closely with that afforded by the statistics of the year 1840: we must therefore, I think, regard it as tolerably certain that about $1\frac{1}{3}$ rd per cent. of the criminals sent to the Millbank Penitentiary, or Prison, are affected with external scrofula.

Of those who are scrofulous when received at this institution, there are, however, many in whom the disease has first shown itself while they were in the county prisons, consequently the proportion of scrofulous individuals amongst criminals who have as

* The proportion of criminals bearing cicatrices of scrofulous sores on their necks, amongst those received at the Millbank Penitentiary, is also shown by the Medical Register. It appears that out of 3,249 male convicts received into the prison during 1843, 27, or 8·31 per thousand, had such scrofulous cicatrices. I am not acquainted with any facts which, serving as standards of comparison, would enable us to determine whether this proportion is a very large one.

yet suffered no imprisonment must be even less than $1\frac{1}{3}$ rd per cent.

With respect to the influence of imprisonment in the county prisons, I feel satisfied that if the terms of imprisonment had been of equal duration, a far greater amount of scrofulous disease would have been produced in them than in the Millbank Penitentiary ; and I base this opinion on the following grounds,—first, the large proportional number of cases of scrofula amongst those prisoners who had been confined six or eight months in county prisons, before they were sent to the Penitentiary ; secondly, the fact, that at least half the prisoners who were scrofulous when received, declared the disease to have first shown itself during their confinement in the county prisons ; and thirdly, my knowledge of the degree in which prisoners in these establishments have been exposed to the causes of scrofula.

I regret that I am at present unable to give any statistical information as to the prevalence of scrofula amongst the prisoners in Scotland, and can only state generally, that the proportion of scrofulous individuals has been far greater amongst the convicts sent to Millbank from the prisons of Scotland, than amongst those who come from the poorest districts of England.

In the Penitentiary of Lausanne, the chief diseases of the prisoners are stated by the physician, Dr. Pellis, to be a kind of chlorosis, affecting both sexes, and the *tubercular cachexia* ; and the latter disease is said to affect not only the lungs, but also the intestines, the *glands of the neck*, the mem-

branes of the brain and the limbs, with a relative frequency corresponding with the order in which these parts are here enumerated.*

In proof of the prevalence of scrofulous disease in American prisons, I need only direct attention to the list of the causes of death amongst the black convicts in the Eastern Penitentiary (see Table XXVIII.), where it is shown that in fifteen out of sixty-three fatal cases, the prisoners were the subjects of scrofulous disease in other parts of the body, besides the lungs, and to the following remarks of the physicians of two of the Penitentiaries of the United States.

Dr. Bache, Physician of the Eastern Penitentiary of Pennsylvania, states that "the predominant diseases in that prison were *scrofulous diseases*, dyspepsias and affections of the chest, including *consumption*." Dr. Coleman, the Physician of the New Jersey Penitentiary, says, "the tendency to glandular obstruction is seen in almost every prisoner who has been confined in the cells for more than a year, when he is in the least degree indisposed. * * * Some *post mortem* examinations have been made, and in all of them the lymphatic glands were enlarged to an enormous degree, indurated and obstructed." And in a subsequent report :—"The greater number of cases on the (sick) list, are those forms of debility that depend on glandular obstructions, and seem peculiar to prisons."

* See Varrentrap's paper, "Die Schweizer Straf-anstalten," in the *Jahrbücher der Gefängnisskunde*, bdl. i. p. 8.

The remarkable prevalence of scrofulous disease amongst the black convicts in the American prisons, is certainly owing to their being extremely liable to the disease, and very frequently affected with it at the time of their entering the Penitentiaries. But with respect to the white convicts in the United States, it appears that the prevalence of scrofula amongst them, before they have undergone imprisonment, is rather less than amongst the criminals admitted into the Millbank Penitentiary. Such, at least, is the only inference which can be drawn from the following facts:—During the two years 1838 and 1839, 160 white convicts and 93 blacks were received into the Eastern Penitentiary. Of the blacks eight, but of the whites only two, were scrofulous. In the year 1842, 102 whites and 40 blacks were received, and amongst the whole number there were three affected with scrofula. Now, if we suppose two of these three to have been blacks, and one a white convict, the proportion of scrofulous patients amongst the two classes received in the three years will have been only 1·145 per cent. for the whites, and 7·519 for the blacks.

The foregoing facts, relative to the prevalence of external glandular scrofula amongst criminals, are adduced as supplementary evidence in support of the main position advanced in the latter part of this paper. It was there shown that the increased mortality attending the state of imprisonment is almost entirely due to the greater number of deaths caused by internal tubercular disease, and especially by

pulmonary phthisis. We now see that tubercular disease of the external glands, also, is very frequent amongst criminals in confinement, while it is by no means so common amongst the same class of persons at liberty ; we seem, therefore, to be justified in the conclusion that it is not merely pulmonary phthisis, but tubercular disease in all its forms, which is so general a result of the long-continued influence of imprisonment on the bodily health.

The length to which this communication has already extended, obliges me to refrain from further recapitulation of the facts which I have sought to establish. For the same reason I must reserve the investigation of the *causes* on which the great mortality from tubercular diseases in prisons has depended, for the subject of a second paper, and will here merely state that the most influential of those causes appear to have been,—1st, deficient ventilation ; 2nd, cold ; 3rd, want of active bodily exercise, and sedentary occupations ; 4th, a listless, if not dejected state of mind ; and 5th, poorness of the diet,—for the diet of prisons, though often perhaps more abundant than the agricultural labourer usually enjoys, yet has generally been less stimulating, and also less nutritious, than seems to be requisite for the health, under conditions so unnatural and depressing as are those almost necessarily attendant on the state of

imprisonment. There are one or two other points which deserve investigation, namely, the influence of sex and age in modifying the liability of prisoners to suffer from tubercular cachexia, and the periods of imprisonment at which the first symptoms of the disease become apparent, and at which its development is completed : these, also, are topics which must be discussed on a future occasion.

One remark, however, must be added here, in order to prevent misconception of the purport of the present paper. The facts which I have detailed are not intended to authorize, and indeed do not justify, any sweeping condemnation of imprisonment as a system of secondary punishment. For, although during the fifteen or twenty years preceding 1843, prisoners confined for periods of two, three, or four years have generally suffered a much greater mortality than persons of the same period of life out of prison, it does not follow that such will always be the effect of confinement in prisons. Many of the causes which have been most active in the production of the fatal disease of prisoners, such as cold, scanty food and confined air, have no necessary connection with the state of imprisonment. And already, in fact, as I have before mentioned, a beginning has been made in the work of freeing this mode of punishment from most of the injurious conditions which have hitherto generally attended it. In several prisons newly built, the inmates are protected against all, or almost all, those influences which have the greatest tendency to injure the bodily health, and in

many others very important improvements have been effected. These changes cannot fail to produce a good result ; and, if the statistics of penal establishments should be again collected and analysed at the end of the ensuing ten years, it will, we cannot doubt, be found that the mortality of the prisoners has been considerably lowered, and the ravages amongst them, of tubercular scrofula especially, in a great measure mitigated.

Postscript.—While the preceding pages have been passing through the press, the author has met with a paper on the Prisons of Norway, by Professor Holst. (*Om Sygepleien i Straffeanstalterne i Norge ; aftryk fra Norsk Magazin for Lægevidenskaben. Christiana, 1841.*) It there appears that the annual mortality has been only 17·646 per thousand amongst the convicts in the fortresses (Slaverier), and 16·823 per thousand in the Houses of Correction (Tugthuse) of Norway. Moreover, it would seem that these low rates of mortality are chiefly due to the small number of deaths from consumption ; the ratio of deaths from this disease having been only 3·135 per thousand convicts in the Fortresses, and 2·692 in the Houses of Correction ; whilst, among all persons of the ages of 15 to 70 in London, the annual mortality, as we have seen, is 4·374 per thousand. If these data could be relied on, they would lead us to infer, either that confinement in the ill-regulated prisons of Norway actually diminished the mortality of a disease, whose ravages have been greatly increased by imprisonment in other countries, (a supposition which can scarcely for a moment be entertained,) or that the climate of Norway itself is unfavourable to the development of tubercular disease. There is, however, much reason to suspect that the returns obtained by Dr. Holst from the different prisons were far from accurate.

APPENDIX.

TABLE I.—Showing the number of prisoners received into the Millbank Penitentiary in each year from 1824 to 1842 inclusive, the daily average of prisoners in confinement during each year, and the number of deaths, pardons on medical grounds, and removals to the Hulks for the benefit of the health.

Years.	Received during the year.			Average daily number.			Deaths.			Pardons on medical grounds.			Ratio per 1,000 of deaths to the average number of prisoners.			Ratio per 1,000 of pardons on medical grounds.			Ratio per 1,000 of deaths and pardons.			Sent to the Hulks for benefit of health.
	Penitentiary prisoners.		Female trans-ports.	Males.	Fe- males.*	Both sexes.	Males.	Fe- males.	Both sexes.	Males.	Fe- males.	Both sexes.	Males.	Fe- males.	Both sexes.	Males.	Fe- males.	Both sexes.				
	Males.	Fembs.																				
1824	106	24	..	130	167	61	228	3	..	3	..	..	18.0	..	13.1	..	..	..	32.4	43.4	34.5	
1825	130	64	..	194	339	92	431	11	4	15	..	..	32.4	43.4	34.5	..	..	..	29.5	47.6	32.8	
1826	205	21	..	226	474	105	579	9	2	11	5	3	8	18.9	19.0	19.0	10.5	28.5	13.8	29.5	47.6	
1827	142	35	..	177	503	120	623	13	3	16	7	13	20	25.8	25.0	25.6	13.9	108.3	32.1	39.7	13.3	
1828	177	74	..	251	553	136	669	13	5	18	19	20	39	24.3	36.7	26.9	35.6	147.0	56.8	60.0	18.3	
1829	61	29	..	90	453	146	605	10	3	13	20	7	27	21.7	20.5	21.4	43.5	47.9	44.6	65.3	68.4	
1830	89	67	..	156	459	149	605	6	4	10	6	9	15	16.2	26.8	18.2	15.2	60.4	27.6	30.4	87.1	
1831	149	39	..	188	394	149	543	19	6	24	27	13	40	46.8	44.4	46.2	70.3	96.3	77.0	117.1	140.7	
1832	178	42	..	220	384	135	519	18	6	24	27	13	40	46.8	44.4	46.2	70.3	96.3	77.0	117.1	140.7	
1833	198	48	..	246	440	141	581	8	2	10	15	12	27	18.1	14.1	17.2	34.0	85.1	46.4	52.2	99.2	
1834	168	31	..	199	520	117	637	15	1	16	13	15	28	28.8	8.5	25.1	25.0	128.2	43.9	53.8	136.7	
1835	87	29	..	116	467	97	564	5	..	5	27	15	42	10.7	..	8.8	58.2	154.6	74.4	68.9	..	
1836	137	25	..	172	326	70	396	2	2	4	13	4	17	6.1	28.5	10.1	39.8	57.1	42.9	45.0	85.8	
1837	227	58	58	343	353	93	446	4	2	6	6	3	9	11.3	21.5	13.4	17.0	32.2	20.1	28.3	52.7	
1838	80	40	144	264	311	134	445	8	2	10	9	9	18	25.7	14.9	22.4	28.9	67.1	40.4	54.6	82.0	
1839	91	44	163	298	254	138	392	2	3	5	16	4	20	7.8	21.7	12.7	63.0	32.0	51.0	70.8	50.7	
1840	432	100	520	1,052	385	237	622	5	1	6	7	6	13	12.9	4.2	9.6	18.4	29.5	20.9	31.1	29.9	
1841	126	40	10	176	498	194	692	11	2	13	7	7	14	22.0	10.3	18.7	14.0	36.0	20.2	36.1	48.8	
1842	131	40	3	183	456	160	616	16	4	20	16	2	18	35.0	24.8	32.2	35.1	12.5	29.4	70.1	37.3	
Whole period.	2,913	869	808	4,681	7263	2325	9588	159	46†	205	213	142†	356	..	..	..	..	..	..	..	..	
Annual average.	155-944	46-944	128-285	252-835	403-500	129-166	532-666	8-833	2-555	11-388	11-833	7-888	19-722	21-891	19-784	21-380	39-326	61-076	37-025	51-217	80-869	

* Including the females under sentence of transportation.
† Including three female transports who were pardoned, one in 1839 and two in 1840.

TABLE II.—Showing the daily average number of criminal prisoners confined during the five years 1838 to 1842 inclusive, in each of 16 County Prisons, in which no Debtors, or a very inconsiderable number, were confined; and likewise the mortality of each of those Prisons during the same period.

	Average daily number of criminals.			Number of deaths.			Annual mortality per thousand prisoners.		
	Male.	Female.	Both sexes.	Male.	Fe- male.	Both sexes.	Male.	Female.	Both sexes.
Salford House of Correction	525·	150·8	675·8	46	11	57	17·523	14·720	16·868
Wakefield House of Correction	516·6	82·2	598·8	78	5	83	30·778	12·141	27·722
Kirkdale House of Correction	338·6	50·6	389·2	31	2	33	18·310	7·905	16·957
Knutsford House of Correction	242·8	57·	299·8	27	2	29	22·240	7·017	19·346
Exeter County Gaol	66·	20·4	86·4	6	3	9	18·181	29·411	20·833
Exeter House of Correction	114·4	28·	142·4	13	2	15	22·709	14·857	20·224
Springfield County Gaol and House of Correction	181·	—	181·	13	—	13	14·364	—	14·364
Winchester House of Correction	149·8	15·	164·8	18	2	20	24·032	26·666	24·271
Coldbath-fields House of Correction	770·6	280·8	1,051·4	82	17	99	21·282	12·108	18·832
Brixton House of Correction	199·2	68·2	267·4	13	5	18	13·052	14·633	13·462
Guildford House of Correction	96·	18·2	114·2	10	—	10	20·833	—	17·513
Warwick House of Correction	206·2	33·2	239·4	29	2	31	32·953	12·422	25·876
Devizes House of Correction	162·2	19·8	182·	9	1	10	11·097	10·101	10·989
Preston House of Correction	185·4	39·4	224·8	4	2	6	3·358	1·779	5·338
Tothill-fields City Gaol.	188·2	114·6	302·8	33	7	40	35·069	12·216	26·418
Lancaster County Gaol	242·8	58·4	301·2	17	7	24	14·003	23·972	15·936
The 16 Prisons	4,184·8	1,036·6	5,221·4	429	68	497	20·454	13·111	19·033

TABLE III.—Showing the average number of criminal prisoners, and their mortality during the five years 1838 to 1842, in 20 County Prisons, into which more or less considerable numbers of Debtors were received.

	Average daily number of prisoners.			Number of deaths.			Annual mortality per thousand prisoners.		
	Male.	Female.	Both sexes.	Male.	Female.	Both sexes.	Male.	Female.	Both sexes.
Reading County Gaol and House of Correction	104·4	15·4	119·8	21	1	22	45·977	13·000	41·873
Maldstone County Gaol and House of Correction	312·6	56·2	367·8	35	4	39	22·392	14·456	21·207
Horsemonger Lane County Gaol	90·	14·8	104·8	5	3	8	11·062	40·540	15·019
Chester County Gaol	83·	17·2	100·2	8	4	12	19·277	46·511	23·483
Bodmin County Gaol and House of Correction	88·	23·2	111·2	6	1	7	13·636	8·620	12·589
Derby County Gaol and House of Correction	148·8	11·	159·8	7	3	10	9·408	54·545	12·516
Durham County Gaol and House of Correction	122·8	33·8	156·6	9	2	11	14·658	11·834	14·049
Gloucester County Gaol and Penitentiary	196·6	20·4	217·	10	3	13	11·729	29·412	11·981
Liverpool Borough Gaol	297·4	191·4	488·8	20	15	35	13·450	15·674	14·734
Newcastle Borough Gaol and House of Correction	62·8	22·	84·8	6	1	7	19·108	9·090	16·509
Shrewsbury County Gaol and House of Correction	102·2	18·8	121·	7	2	9	11·743	21·276	14·876
Stafford County Gaol and House of Correction	372·8	50·6	423·4	23	3	26	12·875	11·856	12·749
Warwick County Gaol	151·8	30·8	182·6	29	2	31	38·208	12·987	33·954
Worcester County Gaol and House of Correction	161·2	29·6	190·8	18	2	20	22·332	13·513	20·964
York County Gaol	54·4	6·8	61·2	9	5	14	32·573	147·059	45·751
Kingston-on-Hull Borough Gaol and County House of Correction.	67·8	19·2	87·	4	5	9	11·800	52·032	20·689
Dorchester County Gaol and House of Correction	90·8	11·6	102·4	10	1	11	22·026	17·276	21·584
Oxford County Gaol and House of Correction	109·8	14·4	124·2	14	3	17	25·500	41·666	27·326
Bristol City Gaol	98·2	23·8	122·	7	2	9	14·256	16·806	14·590
Aylesbury County Gaol and House of Correction	—	—	110·2	—	—	16	—	—	29·038
In all the 20 prisons	2,715·4	610·	3,435·6	248	63	326	17·898	20·000	18·622
In the 16 prisons named in Table II.	4,184·8	1,036·6	5,221·4	429	68	497	20·454	13·111	19·033
In all the 36 prisons	6,900·2	1,646·6	8,557·0	677	131	823	19·622	15·790	18·874

TABLE IV.—Number of Prisoners confined in Coldbath-fields Prison and Westminster Bridewell, and the number of Deaths in those Prisons, from the year 1825 to 1839 inclusive.

Years.	Coldbath-fields County House of Correction.					Westminster Bridewell, or Tothill-fields City Gaol and House of Correction.				
	Total number of prisoners during the year.	Greatest number of prisoners at one time.	Number of prisoners at Michaelmas.	Number of deaths during the year.	Number of deaths per 1,000 prisoners.	Total number of prisoners during the year.	Greatest number of prisoners at one time.	Number of prisoners at Michaelmas.	Number of deaths during the year.	Number of deaths per 1,000 prisoners.
1825	3,987	589	582	11	18·9	2,328	182	149	4	26·8
1826	4,922	723	642	15	23·3	2,829	186	180	3	16·6
1827	5,264	778	732	14	19·1	2,918	225	147	1	6·8
1828	5,884	886	860	10	11·6	3,742	211	131	2	15·2
1829	6,625	879	815	26	31·9	3,828	224	154	2	12·9
1830	7,485	909	859	13	15·1	4,604	271	160	2	12·5
1831	10,162	1,184	1,133	16	14·1	4,966	255	181	3	16·5
1832	12,543	1,325	1,184	64	53·2	3,857	226	108	3	27·7
1833	10,456	1,309	965	37	38·3	3,313	206	121		
1834	10,596	1,245	967	18	18·5	2,912	355	250	1	4·0
1835	7,598	968	825	26	31·5	5,604	464	295	6	20·3
1836	7,931	1,105	953	23	24·1	5,562	468	354	4	11·2
1837	8,760	1,240	1,238	42	33·9	5,771	438	435	16	36·7
1838	8,021	1,238	1,136	31	27·2	5,979	463	395	19	48·1
1839	8,689	1,228	1,142	12	10·5	6,378	476	340	8	23·5
Whole period	118,923	15,606	14,033	358	..	64,591	4,650	3,400	74	
Annual average	7,928	1,040	935	24	24·7	4,306	310	226	5	20·0

The data for the construction of this table were obtained in the year 1840 from the Home Office. Deaths from Asiatic cholera are included.

TABLE V.—Showing the number of convicts on board the Hulks in England during each of the several years, 1825 to 1839, with the number of Deaths in each year.

Years.	On board 1st January.	Received during the year.	Total number during the year.	Average number during the years.	Deaths in each year.	Deaths per 1,000 of average number of convicts.
1825	3,230	2,184	5,414	3,438	108	31·4
1826	3,159	2,776	5,935	3,610	108	29·9
1827	3,994	3,748	7,742	4,362	166	38·0
1828	4,446	3,464	7,910	4,414	125	28·3
1829	4,185	4,230	8,415	4,446	158	35·5
1830	4,250	4,087	8,337	4,142	126	30·4
1831	4,071	4,551	8,622	4,152	133	32·0
1832	4,139	4,627	8,766	4,211	262*	62·2
1833	3,898	4,556	8,454	3,530	164	46·4
1834	3,060	4,374	7,434	3,015	142	47·0
1835	2,556	4,063	6,619	2,487	137	55·0
1836	2,202	4,102	6,304	2,244	117	52·1
1837	1,935	3,970	5,905	1,971	120	60·8
1838	1,789	4,138	5,927	2,130	113	53·0
1839	2,047	3,841	5,888	2,697	111	41·1
Aggregate numbers during the entire period 1825 to 1839 inclusive.	48,961	58,711	107,672	50,849	2,090	41·10
Annual average of the entire period, 110 deaths from cholera being excluded from the calculation.	3,264	3,914	7,178	3,389	132	38·938

* 110 deaths from cholera in this year.

TABLE VI.—Showing the number of prisoners confined in the Penitentiary of *Geneva*, and the mortality suffered by them during the 16 years, 1826 to 1841 inclusive.

Years.	Number received.	Average daily number.	Deaths.	Ratio per 1,000 of deaths to the average number of prisoners.
1826	258	36·30	2	55·1
1827		47·69		
1828		49·36		
1829		49·73	2	40·2
1830		59·30	1	16·8
1831		56·23	1	17·6
1832	64	54·66	1	18·2
1833		64·20	1	15·5
1834	75	62·44	3	49·4
1835		60·85	1	16·4
1836		60·82	2	32·8
1837		60·98	3	49·1
Period of 12 years ; aggregate numbers	397	662·56	17	
1838	—	62·14	2	32·185
1839	—	56·41	2	35·454
1840	—	65·98	2	30·312
1841	—	62·69	1	15·951
Whole period of 16 years ; aggregate numbers	—	909·78	24	
Annual average.	—	56·911	1·5	26·380

TABLE VII.—Showing the number of prisoners confined in the Penitentiary of Lausanne, and the mortality suffered by them during the period of 15½ years, from October 1, 1826 to December 31, 1841.

Years.	Number received.	Average daily number.	Deaths.	Ratio per 1,000 of deaths to the average number of prisoners.
Year ending Sept. 30, 1827	42	78	3	38·461
1828	37	84	4	47·619
1829	41	82	3	36·585
1830	41	75	6	80·000
1831	47	74	2	27·027
1832	73	77	1	13·000
15 months ending Dec. 31, 1833	} 111	93	5	43·103
Year ending Dec. 31, 1834	} 58	91	4	43·956
1835	84	83	2	24·096
1836	72	84	1	11·905
1837	71	82	6	73·170
1838	86	94	3	31·915
1839	78	106	5	47·169
1840	88	113	3	26·548
1841	76	105	4	38·095
Whole period; aggregate numbers	1,005	1,344	52	
Annual average	66	88·144	3·409	38·690

TABLE VIII.—Showing the number of prisoners of the White and Dark Races who were confined in the Eastern Penitentiary of Pennsylvania during the fourteen years, 1830 to 1843 inclusive, and the mortality amongst each of these classes of Prisoners.

Years.	White Prisoners.				Coloured Prisoners.				All Prisoners.			
	Received during the year.	Average daily number.	Deaths.	Ratio per 1,000 of deaths to the average number of prisoners.	Received during the year.	Average daily number.	Deaths.	Ratio per 1,000 of deaths to the average number of prisoners.	Received during the year.	Average daily number.	Deaths.	Ratio per 1,000 of deaths to the average number of prisoners.
1830	107	21-81	1	45-80	35	9-19	—	—	58	31	1	32-2
1831		47-75	2	41-88		19-25	2	103-89	50	67	4	59-7
1832		69-42	1	14-40		21-58	3	139-01	34	91	4	43-9
1833		89-30	1	11-12		33-70	—	—	77	123	1	8-0
1834	76	123-58	1	8-09	42	59-42	4	67-31	118	183	5	27-3
1835	121	157-74	2	12-67	96	108-26	5	46-17	217	286	7	26-3
1836	84	202	2	9-90	59	148	10	67-56	143	360	12	33-3
1837	101	233	7	30-42	60	154	10	65-93	161	386	17	44-0
1838	115	241	7	29-04	63	161	19	118-01	178	402	26	63-1
1839	99	245	2	81-59	80	173	9	53-02	179	418	11	26-3
1840	88	232	9	38-79	51	162	13	80-24	139	394	22	55-83
1841	83	201	4	19-40	43	134	13	97-01	126	335	17	50-74
1842	102	212	3	14-15	40	119	6	50-42	142	331	9	27-19
1843	113	235	5	21-27	43	124	6	48-38	156	359	11	30-64
Whole period	1,144	2,310-60	47	—	634	1,426-40	100	—	1,778	3,737	147	39-33
Annual average	81-71	165-04	3-36	20-34	45-29	101-88	7-14	70-10	127	266-92	10-5	39-336

TABLE IX.—Showing the number of prisoners and the mortality in the Auburn State Prison (New York) during the sixteen years, 1825 to 1840 inclusive.

Years.	Number received during the year.			Number on the 31st of December.	Deaths.	Ratio per thousand of deaths to the average number of prisoners.
	White prisoners.	Coloured prisoners.	All prisoners.			
1825	146	8	154	427	6	14·051
1826	123	10	133	427	7	16·394
1827	172	18	190	525	9	17·142
1828	156	18	174	571	9	15·761
1829	150	20	170	639	6	7·824
1830	102	12	114	620	18	29·032
1831	154	20	174	647	15	21·483
1832	157	35	192	683	12	17·569
1833	176	17	193	679	11	16·200
1834	161	27	188	679	11	16·200
1835	202	26	228	654	10	15·290
1836	160	23	183	648	18	27·777
1837	227	30	257	705	19	26·950
1838	185	33	218	616	15	24·350
1839	228	16	244	670	10	14·925
1840	—	—	228	695	14	20·143
Whole period	2,499*	313*	3,040†	9,885	190	19·220
Annual average.	166·60	20·866	190·	617·86	12·75	19·019

* During fifteen years.

† During sixteen years.

TABLE X.—Showing the number of prisoners and the mortality in the Maryland Penitentiary (at Baltimore) during the twelve years, 1830 to 1840, and 1843.

Years.	Number received during the year.			Average daily number.	Deaths.	Ratio per 1,000 of deaths to the average number of prisoners.
	White prisoners.	Coloured prisoners.	All prisoners.			
1830	59	58	117	363	13	35·812
1831	44	61	105	370	24	64·864
1832	46	69	115	269	22	81·784
1833	50	70	120	356	16	44·382
1834	47	76	123	369	10	27·100
1835	84	60	144	390	11	28·205
1836	45	59	104	401	6	14·962
1837	55	73	128	391	13	33·248
1838	46	45	91	370	11	29·729
1839	41	46	87	340	11	32·352
1840	44	60	104	328	14	42·073
1843	—	—	—	387	21	54·263
Whole period	561	677	1,238	4,334	172	
Annual average	52·33	60·77	113·11	361·16	14·33	39·686
Annual average mortality when 17 deaths caused by Asiatic cholera are excluded from the calculation					12·916	35·763

TABLE XI.—Showing the number of prisoners and the mortality in the State Prison of Charlestown (Massachusetts) during the 12 years, 1829 to 1840 inclusive.

Years.	Received during the year.	Number in prison on the 30th September in each year.			Deaths.	Ratio per 1,000 of deaths, to the number in prison.
		White prisoners.	Coloured prisoners.	All prisoners.		
1829	79	230	32	262	6	22·90
1830	115	252	38	290	5	17·241
1831	71	215	41	256	7	27·343
1832	76	192	35	227	11	48·458
1833	119	219	31	250	6	24·0
1834	119	243	34	277	4	14·440
1835	116	247	32	279	3	10·752
1836	97	250	28	278	4	14·388
1837	99	267	24	291	5	17·113
1838	114	277	26	303	7	23·102
1839	104	291	27	318	5	15·723
1840	103	285	33	318	2	6·289
Whole period.	1,212	2,968	381	3,349	65	
Annual average.	·101	247·33	31·75	279·08	5·41	19·408

TABLE XII.—Showing the number of prisoners and the mortality in the State Prison of Wethersfield (Connecticut) during the 13 years, 1830 to 1839 inclusive, and 1842 to 1844 inclusive.

Years.	Received during the year.	Number in prison on the 31st March in each year.			Deaths.	Ratio per 1,000 of deaths to the number of prisoners.
		White prisoners.	Coloured prisoners.	All prisoners.		
1830	73	128	39	167	4	23·952
1831	55	..	..	182	4	21·978
1832	65	156	36	192	2	10·411
1833	52	..	..	186	3	16·129
1834	54	137	52	189	1	5·291
1835	75	157	50	207	4	19·323
1836	66	153	48	201	8	39·800
1837	57	165	42	207	1	4·831
1838	57	142	49	191	4	20·942
1839	50	135	48	183	9	49·180
1842	..	159	52	211	10	45·300
1843	..	155	48	203	8	39·408
1844	..	146	49	195	10	51·282
Aggregate.	604	1,633	503	2,514	68	
Annual Average.	60·40	148·454*	45·727*	193·38†	5·23	27·048

* During 11 years.

† During 13 years.

TABLE XIII.—Showing the number of prisoners and the mortality in the State Prison of Sing Sing (New York) during the 13 years, 1828 to 1840 inclusive.

Years.	Number received during the year.	Number discharged, pardoned, escaped, removed, or died.	Number in prison on the 30th September in each year.	Deaths.	Ratio per 1,000 of deaths to the number in prison.
1828	146	151	512	16	31·250
1829	168	90	590	14	23·728
1830	363	143	810	16	19·753
1831	359	189	980	28	28·571
1832	289	437	832	153	183·894
1833	219	240	811	25	30·826
1834	258	215	843	18	21·352
1835	213	260	796	31	38·944
1836	182	252	726	11	15·151
1837	291	236	781	20	25·608
1838	323	262	842	33	39·192
1839	209	246	805	34	42·236
1840	254	232	827	17	20·556
Whole period.	3,274	2,953	10,155	416	
Annual average.	251·846	227·149	781·153	32·0	40·960
Annual average mortality, where 103 deaths caused by Asiatic cholera are excluded from the calculation.				24·07	30·822

TABLE XIV.—Showing the proportion borne by the prisoners of the dark or coloured races to the whole number of prisoners in the Sing Sing State Prison at different periods.

Years.	Number of prisoners received.						Discharged during	In prison at one time in
	1828	1829	1830	1831	1832	Whole period.	1839	1836
White prisoners.	123	136	332	289	244	1,124	194	616
Coloured prisoners.	23	32	31	70	45	201	52	201
All prisoners.	146	168	363	359	289	1,325	246	817
Proportion per 100 of coloured prisoners to the whole number.	15·75	19·04	8·54	19·49	15·53	15·17	21·13	24·60

TABLE XV.—Showing the total number of prisoners received into 15 county prisons during five years, the average number of prisoners constantly in each of these prisons, and the average term of confinement in each prison.

	Total numbers of prisoners received in the 5 years, 1838 to 1842 inclusive.	Aggregate of average daily numbers of prisoners in the 5 years.	Average term of confinement of the prisoners in each prison.
Knutsford House of Correction.	7,858	1,499	69
Exeter County Gaol.	3,449	432	45
Exeter House of Correction.	3,908	712	66
Springfield County Gaol and House of Correction.	5,225	905	63
Winchester County House of Correction.	4,306	824	69
Preston County House of Correction.	8,223	1,170	58
Kirkdale County House of Correction.	11,034	1,946	64
Salford County House of Correction.	29,035	3,379	42
Coldbath-fields County House of Correction.	47,778	5,257	40
Tothill-fields City Gaol and House of Correction.	26,994	1,529	20
Guildford County Gaol and House of Correction.	2,886	571	72
Brixton County House of Correction.	13,055	1,337	37
Warwick County House of Correction.	5,933	1,198	73
Devizes County House of Correction.	4,634	910	71
Wakefield County House of Correction.	17,665	2,994	62
The 15 prisons.	191,983	24,663	46

TABLE XVI.—Showing the number of military offenders who were confined in the Millbank Penitentiary between the 18th November 1837 and the end of 1842, the number who died, and the number who were pardoned on medical grounds.

Years.	Number received.	Average daily number.	Deaths.	Pardons on medical grounds.	Deaths and pardons.	Deaths per thousand prisoners.	Pardons per thousand prisoners.	Deaths and pardons per thousand prisoners.
1837	55							
1838	611	92						
1839	697	125						
1840	760	140	1	1	2	7·142	7·142	14·287
1841	728	145	2	2	4	13·793	13·793	27·586
1842	741	130	—	1	1	0·000	7·692	7·692
Aggregate for the whole period of 5 years.	3,592	652	3	4	7			
Annual average.	707·4	130·4	·6	·8	1·4	4·601	6·135	10·736

TABLE XVII.—Showing the diseases which caused death, or formed the grounds of pardon amongst the military offenders in the Millbank Penitentiary during five years.

Years.	Deaths.					Pardons.					Aggregate deaths and pardons due to each disease.	Ratio per 1,000 of deaths and pardons from each disease to the average number of prisoners.
	1838	1839	1840	1841	1842	1838	1839	1840	1841	1842		
Erysipelas	..	..	1	..	..	..	..	..	..	..	1	1·533
Chronic dysentery	..	..	..	..	..	..	..	..	..	1	1	1·533
Weakness of mind	..	..	..	..	..	..	..	..	1	..	1	1·533
Consumption	..	..	..	1	..	..	..	1	1	..	3	4·601
Bronchitis	..	..	..	1	..	..	..	..	..	..	1	1·533
All causes	..	..	1	2	..	..	..	1	2	1	7	10·736

TABLE XVIII.—Showing the number of deaths, and the annual rate of criminals in the Millbank Penitentiary, from the

Years.		1825	1826	1827	1828	1829	1830	1831	1832
Average number of prisoners.		228	431	579	623	669	605	543	519
Fevers.	Continued fever.	1	2	2	4	4	2	1	3
	Ague.	..	..	..	..	..	..	1	..
Asiatic cholera.		..	..	..	..	..	..	..	17
Other epidemic diseases.	Smallpox.	..	..	..	..	..	..	..	..
	Erysipelas.	..	2	..	1	..	..	..	..
	Influenza.	..	..	..	..	..	..	..	..
Consumption.	Consumption.	..	5	7	8	7	10	4	..
	Hæmoptysis.	..	..	..	..	..	..	..	..
Other tubercular diseases.	Tubercular arachnitis.	..	..	..	..	..	..	..	..
	Tubercular pleuritis.	..	..	..	..	..	..	..	..
	Tubercular peritonitis.	..	..	..	..	..	..	..	..
	Mesenteric disease.	..	..	..	..	..	..	..	..
	External glandular scrofula.	..	2	2	..	..	..	..	..
Diseases of the brain and nervous system.	Phrenitis.	..	..	..	1	..	..	..	..
	Acute Hydrocephalus.	..	..	..	..	1	..	..	..
	Apoplexy.	..	..	..	..	..	..	1	..
	Epilepsy.	..	..	..	..	1	..	..	..
	Hydrophobia.	..	..	..	..	..	..	..	..
	Insanity.	..	..	..	..	1	..	..	..
Diseased heart.		..	1	..	..	..	..	..	..
Diseases of the respiratory organs, exclusive of consumption.	Asthma.	..	..	..	..	..	..	..	..
	Pneumonia.	..	..	..	..	..	..	..	..
	Pleuritis.	..	..	..	..	..	..	..	..
	Hydrothorax with diseased lungs	..	..	..	..	..	..	..	..
	Inflammation of chest.	..	..	..	..	1	..	..	..
Diseased liver.		..	..	..	..	1	..	..	..
Bowel complaints.	Dysentery.	..	..	..	..	..	..	..	..
	Tetanic cramps, with dysentery	..	..	..	..	..	..	..	..
	Common cholera.	1	..	..	..	..	..	..	..
	Diarrhœa.	..	..	..	..	..	1	..	..
	Enteritis.	..	..	..	..	..	1	..	..
Other diseases of the abdomen.	Ulceration of bowels.	..	..	..	..	..	..	..	..
	Obstruction of bowels.	..	..	..	1	..	..	..	..
	Hernia.	..	..	..	..	..	..	..	..
	Peritonitis.	..	1	..	..	..	..	..	..
Other diseases not classified.	Dropsy, with asthma.	..	1	..	..	1	..	..	..
	Acute rheumatism.	..	1	..	..	..	..	..	..
	Abscess.	..	..	..	..	..	..	..	..
Diseases of undefined nature.	Visceral disease.	..	..	..	1	1	..	..	3
	Debility.	..	..	..	..	..	..	1	..
Suicide.		1	..	..	..	..	..	1	1
All causes.		3	15	11	16	18	13	10	24

mortality caused by different diseases and classes of diseases amongst the 1st January 1825 to 31st December 1842.

1833	1834	1835	1836	1837	1838	1839	1840	1841	1842	Whole period.	Annual ratio of deaths per thousand prisoners from each disease.	Total number of deaths from each class of diseases.	Annual ratio of deaths per thousand prisoners from each class of diseases.
581	637	564	396	446	445	392	622	692	616	9,583			
2	4	4	1	..	1	..	2	1	..	34	3·546	35	3·650
..	..	..	..	..	..	..	..	..	..	1	·104		
5	9	..	..	..	..	..	..	..	..	31	3·233	31	3·233
..	..	..	..	..	..	..	..	1	..	1	·104		
..	..	..	..	1	..	..	..	..	..	4	·417	8	·834
..	1	..	..	2	..	..	..	..	..	3	·313		
2	1	..	2	2	3	4	4	7	6	72	7·509	73	7·613
1	..	..	..	..	..	..	..	..	..	1	·104		
..	..	..	..	..	..	..	..	..	1	1	·104		
..	..	..	..	..	..	..	..	..	1	1	·104	8	·834
..	..	..	..	..	..	..	..	..	1	1	·104		
..	..	..	..	..	1	..	..	..	..	1	·104		
..	..	..	..	..	..	..	..	..	..	4	·417		
..	..	..	..	..	..	..	..	..	..	1	·104		
..	..	..	..	..	..	..	..	..	..	1	·104		
..	..	..	..	..	..	..	..	..	1	2	·208	7	·730
..	..	..	..	..	..	..	..	..	1	1	·104		
..	..	..	..	..	1	..	..	..	..	1	·104		
..	..	..	..	..	..	..	..	..	..	1	·104		
..	..	..	..	..	..	..	..	..	..	1	·104		
..	..	..	..	..	..	..	..	..	..	1	·104	1	·104
..	..	1	..	..	..	..	..	..	..	1	·104		
..	1	..	..	..	..	..	..	..	1	2	·208	6	·625
..	..	..	..	..	..	..	..	1	..	1	·104		
..	..	..	..	..	1	..	..	..	..	1	·104		
..	..	..	..	..	..	..	..	..	..	1	·104		
..	..	..	..	..	..	..	..	..	..	1	·104	1	1·04
..	..	..	..	..	..	..	..	2	8	10	1·043		
..	..	..	..	..	..	..	..	..	1	1	·104		
..	..	..	..	..	..	..	..	..	..	1	·104	18	1·877
..	..	..	..	..	2	..	..	1	..	4	·417		
..	..	..	..	..	..	..	..	..	..	1	·104		
..	..	..	..	..	1	..	1	..	..	1	·104		
..	..	..	1	..	..	..	..	..	..	1	·104	3	·312
..	..	..	..	..	..	..	..	..	..	1	·104		
..	..	..	..	..	..	..	..	..	..	2	·208	4	·417
..	..	..	..	..	..	..	..	..	..	1	·104		
..	..	..	..	1	..	..	..	..	..	1	·104		
..	..	..	..	..	..	..	..	..	..	6	·625	7	·730
..	..	..	..	..	..	..	..	..	..	1	·104		
..	..	..	..	..	..	..	..	..	..	3	·313	3	·313
10	16	5	4	6	10	5	6	13	20	205	21·380	205	21·380

TABLE XIX.—Showing the total number, and the annual ratio, of par-
the criminal prisoners in the Millbank Penitentiary, from the

Years.		1825	1826	1827	1828	1829	1830	1831	1832
Average number of prisoners.		228	431	579	623	669	605	543	519
Ague.		..	..	..	..	..	..	..	..
Consumption.	Consumption.	..	..	1	5	3	9	5	8
	Hæmoptysis.	..	..	..	..	1	..	..	..
Scrofula.		..	..	5	3	6	9	4	10
Diseases of the brain and nervous system.	Chronic hydrocephalus.	..	..	..	..	..	..	..	..
	Hemiplegia.	..	..	..	..	..	..	..	..
	Paraplegia.	..	..	..	..	1	..	..	..
	Paralysis.	..	..	..	..	..	..	1	..
	Chorea.	..	..	1	..	..	..	..	..
	Epilepsy.	..	..	1	..	4	1	..	1
	Hysteria.	..	..	..	..	..	..	1	1
	Unsound or weak mind.	..	..	..	1	..	..	..	..
	Neuralgia.	..	..	..	..	..	..	..	..
	Disease of the head.	..	..	..	..	..	..	..	..
	Pain in the head.	..	..	..	..	..	..	..	1
Diseases of the heart.	Diseased heart.	..	..	..	2	1	1	..	1
	Pericarditis, with debility.	..	..	..	..	..	..	..	..
Diseases of the respiratory organs, exclusive of consumption.	Asthma.	..	..	..	1	1	1	..	..
	Aphonia.	..	..	..	..	..	..	..	..
	Diseased lungs.	..	..	..	1	1	..	..	1
	Chest affection, with debility.	..	..	..	..	1	..	..	..
	Spasmodic affection of chest.	..	..	..	..	1	..	..	..
Diseased liver.		..	..	..	..	1	..	..	..
Bowel complaints.	Dysentery.	..	..	..	..	..	1	..	..
	Diarrhœa.	..	..	..	..	..	..	..	2
Other diseases of the abdomen.	Hæmatemesis.	..	..	..	..	1	..	1	..
	Hæmorrhage from bowels.	..	..	..	..	..	..	..	..
	Stricture of intestine.	..	..	..	1	..	..	..	..
	Diseased rectum.	..	..	..	..	..	..	..	..
	Hernia.	..	..	..	..	..	..	..	..
Disorder and debility of dig. org.		..	..	..	..	..	..	..	..
Diseases of the urinary and generative organs.	Diseased bladder.	..	..	..	..	..	..	..	..
	Cancer of uterus.	..	..	..	..	..	..	1	..
	Prolapsus of uterus.	..	..	..	..	..	1	..	..
	Diseased uterus.	..	..	..	1	..	..	..	1
	Menorrhagia.	..	..	..	..	..	..	..	..
	Uterine complaint.	..	..	..	..	..	..	..	1
Other diseases not classified.	Chronic rheumatism.	..	..	..	1	1	..	..	1
	Gout.	..	..	..	..	..	..	..	..
	Diseased joints.	..	..	..	..	1	..	..	2
	Diseased hand, with debility.	..	..	..	..	..	..	..	..
	Stone in the bladder.	..	..	..	..	..	..	..	..
	Abscess.	..	..	..	..	..	1	..	..
	Fistula in ano.	..	..	..	..	1	..	..	..
	Necrosis.	..	..	..	..	..	..	..	..
	Ulcers of legs.	..	..	..	..	1	..	..	..
	External tumours.	..	..	..	..	..	..	..	..
	Internal abdominal tumours.	..	..	..	..	..	..	..	..
	Disease of spine, with debility.	..	..	..	..	..	..	..	1
Diseases of undefined nature.	Visceral disease.	..	..	..	..	3	1	1	3
	General ill health.	..	..	..	2	7	..	1	4
	Debility.	..	..	..	1	1	2	..	1
	Declining health.	..	..	..	1	2	..	..	1
All causes.		..	..	8	20	39	27	15	40

dons granted on account of different diseases and classes of diseases, to 1st January 1825 to the 31st December 1842.

1833	1834	1835	1836	1837	1838	1839	1840	1841	1842	Whole period.	Annual ratio of pardons per thousand prisoners, on account of each disease.	Total number of pardons on account of each class of diseases.	Annual ratio of pardons per thousand on account of each class of diseases.
581	637	564	396	446	445	392	622	692	616	9,588			
..	1	..	..	..	..	1	..	..	..	2	·208	2	·208
3	4	13	3	1	2	8	8	7	9	89	9·282		
..	..	..	..	..	..	..	..	..	..	1	·104	90	9·387
3	6	13	4	3	7	1	2	1	1	78	8·135	78	8·135
1	..	..	..	..	..	..	..	..	..	1	·104		
1	1	..	..	..	..	..	..	..	..	2	·208		
..	..	..	..	..	..	..	..	..	..	1	·104		
..	..	1	..	..	..	..	..	..	..	2	·208		
..	..	..	..	..	..	..	..	..	..	1	·104		
3	..	3	..	..	..	..	..	1	..	14	1·460	31	3·233
..	..	..	..	..	..	..	..	..	..	2	·208		
..	..	..	2	..	..	1	..	..	1	5	·521		
..	..	..	..	1	..	..	..	..	..	1	·104		
..	1	..	..	..	..	..	..	..	..	1	·104		
..	..	..	..	..	..	..	..	..	..	1	·104		
2	..	..	..	..	..	..	..	..	..	7	·730	8	·834
..	..	..	..	..	..	..	..	..	1	1	·104		
..	..	1	1	..	..	1	..	..	..	6	·625		
..	..	1	..	..	..	..	..	..	..	1	·104		
..	..	..	..	..	..	..	..	..	..	3	·313	14	1·460
1	..	1	..	..	..	..	..	..	..	3	·313		
..	..	..	..	..	..	..	..	..	..	1	·104		
..	..	..	..	..	..	1	..	..	..	2	·208	2	·208
..	..	..	..	..	..	..	..	..	1	2	·208	14	1·460
2	2	..	..	..	2	1	2	1	..	12	1·251		
..	..	..	..	..	..	1	..	..	..	2	·208		
..	..	..	..	..	..	..	..	..	..	1	·104		
..	..	..	..	..	..	..	..	..	..	1	·104	10	1·043
1	..	..	..	..	..	..	..	..	..	1	·104		
..	..	..	1	..	..	..	..	..	..	1	·104		
..	..	..	..	2	..	2	..	..	..	4	·417		
1	1	..	..	..	..	..	..	..	..	2	·208		
..	..	..	..	..	..	..	..	..	..	1	·104		
..	..	..	..	..	..	..	..	..	..	1	·104		
..	2	..	1	..	..	..	..	..	..	5	·521	11	1·147
..	..	..	..	1	..	..	..	..	..	1	·104		
..	..	..	..	..	..	..	..	..	..	1	·104		
1	..	3	1	..	..	..	..	..	..	8	·834		
..	1	..	..	..	..	..	..	..	..	1	·104		
..	..	..	..	..	..	..	..	1	..	4	·417		
..	..	..	..	..	..	..	..	..	1	1	·104		
..	..	..	..	..	..	..	..	..	1	1	·104		
..	..	..	..	..	..	..	..	..	..	1	·104		
1	..	..	..	..	1	..	..	..	..	2	·208	27	2·616
..	..	..	..	..	..	..	..	..	..	1	·104		
..	..	1	..	..	..	..	..	..	1	3	·313		
..	..	..	..	..	..	..	1	..	..	1	·104		
..	..	1	..	..	..	..	..	1	..	2	·208		
..	..	..	1	..	..	..	..	..	..	2	·208		
..	..	..	1	..	..	..	..	..	..	2	·208		
2	..	1	1	1	4	..	..	..	..	17	1·772		
4	8	1	1	..	..	1	..	..	..	29	3·025	68	7·091
1	1	2	1	..	2	..	..	2	2	16	1·668		
..	..	..	..	..	..	2	..	..	..	6	·625		
27	28	42	17	9	18	20	13	14	18	355	37·025	355	37·025

[illegible]

TABLE XXI.—Showing the mortality caused by different diseases amongst the prisoners in 17 county prisons (the debtors who were received into these prisons not being included).

Prisons.	Periods.	Mortality per thousand from each class of diseases.																				Deaths from each class of diseases.	Mortality per thousand from each class of diseases.		
		Reading County Gaol and House of Correction, 3 years 1839 to 1841.	Malstone County Gaol and House of Correction, 1839 and 40.	Horsmonger Lane County Gaol, 3 years 1839 and 40.	Chester County Gaol, 4 years 1839, 40, and 41.	Bottom County Gaol and House of Correction, 1838 and 39.	Derby County Gaol and House of Correction, 1837, 38, and 39.	Gloucester County Gaol and Penitentiary, 1837, 38, and 41.	Liverpool Borough Gaol, 5 years 1837, 38, and 42.	Stafford County Gaol and House of Correction, 1 year 1839.	Warwick County Gaol, 1 year 1839.	Worcester County Gaol and House of Correction, 1 year 1839.	York County Gaol, 8 years 1832 to 39, 1840 and 41.	Hull Town Gaol and County House of Correction, 3 years 1840 and 41.	Dorchester County Gaol and House of Correction, 2 years 1839 and 40.	Oxford County Gaol and House of Correction, 3 years 1838 to 40.	Bristol Common Gaol, 3 years 1837, 38, and 40.	Aylesbury County Gaol and House of Correction, 2 years 1840 and 41.	Aggregate number of prisoners and of deaths.	Mortality per thousand from each disease.					
Aggregate of the annual averages of prisoners.		379	705	202	471	218	997	602	2347	389	153	178	397	169	250	365	325	280	8427	181	21	478	181	21	478
Total number of deaths.		17	9	2	10	3	13	9	41	11	4	2	27	3	2	7	18	3	16	16	1	898	16	1	898
Fever.		..	1	..	3	..	1	..	5	1	..	1	..	1	..	1	2	..	2	2	..	5	..	593	
Epid. dis. notclassified	Erysipelas. Smallpox.	..	..	..	..	..	1	..	..	..	..	..	2	..	..	..	..	..	3	3	..	5	..	593	
Consumption.	Consumption. Hemoptysis.	5	1	1	4	1	2	3	16	3	1	..	7	..	1	1	4	..	50	4	5	54	6	6	407
Scrofula.		1	2	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..	4	1	..	1	..	118	
Diseases of the brain and nervous system.	Brain fever.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	1	..	118	
	Effusion on the brain	..	..	..	..	..	..	1	1	..	..	..	..	..	..	1	..	..	2	2	..	2	..	237	
	Diseased brain.	..	1	..	..	..	1	1	1	1	..	..	..	..	..	1	..	..	5	5	..	5	..	593	
	Apoplexy.	1	1	..	..	1	..	2	1	1	1	..	1	..	..	..	3	..	11	11	1	305	25	2	964
	Epilepsy.	..	..	..	..	..	..	1	1	1	..	..	..	..	..	..	..	..	3	3	..	3	..	356	
Depress. of the nerv. sys.	Tetanus.	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	1	..	1	..	118	
	Depress. of the nerv. sys.	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	1	..	118	
Paralysis.		..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	1	..	1	..	118	

Diseased heart.		..	..	..	..	..	..	1	1	1	2	1	..	..	..	..	1	..	6	712	6	712	..
Diseases of the respiratory organs, exclusive of consumption.	Asthma.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	6 <td>712</td> <td>..</td>	712	..
	Inflam. of the lungs.	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	1	..	1	..	..
	Inflam. of the chest.	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	2	..	1	..	..
	Diseased lungs.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..
	Hydrothorax.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..
	Disease of the chest.	3	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	5	593	..
Sore throat.		..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..
Diseased liver.		1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5	593	5	593	..
Bowel complaints.	Dysentery.	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	3	356	3	356	..
	Diarrhoea.	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	2	237	2	237	..
	Enteritis.	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	4	474	4	474	..
	Ulceration of the bowels	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	118	1	118	..
Other diseases of the abdomen.	Obstructn. of the bowels	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	237	2	237	..
	Diseased stomach.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	118	1	118	..
Diseases of the urinary organs.	Peritonitis.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	..
	Diseased bladder.	2	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	4	474	4	474	..
Diseases of the urinary organs.	Inflam. of the bladder.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	118	1	118	..
	Stricture of urethra.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	237	2	237	..
Dis. of the gen. appar.	Puerperal fever.	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1	118	1	118	..
	Childbirth.	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1	118	1	118	..
Other diseases not classified.	Hæmorrh. in abdomen.	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	118	1	118	..
	Dropsy.	1	..	..	..	..	..	..	..	2	..	..	..	..	..	..	2	..	4	474	4	474	..
Other diseases not classified.	Gangrene of foot.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	237	2	237	..
	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diseases of un-defined nature.	Debility.	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	3	356	3	356	..
	Decay of nature and old age.	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	2	237	2	237	..
	Broken constitution.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	2	237	2	237	..
	Mass of disease.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	118	1	118	..
	Accidental injury.	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	2	237	2	237	..
Found dead in bed.		..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	118	1	118	..
Suicide.		..	..	..	1	1	3	..	1	..	1	..	..	..	..	..	1	..	12	1423	12	1423	..

TABLE XXII.—Showing the mortality caused by different diseases amongst the criminal Prisoners in the Wakefield House of Correction in the nine years, 1835 to 1843.

Years.		1835	1836	1837	1838	1839	1840	1841	1842	1843	Whole period.	Mortality per 1,000 from each disease.	Deaths from each class of diseases.	Mortality per 1,000 from each class of diseases.
Average no. of prisoners.		415	354	423	506	495	606.9	677	408.3	769	5,050	26.732	135	26.732
Deaths.		12	10	14	24	12	21	17	14	11	135	26.732	135	26.732
Fevers.	Typhus fever.	3	1	1	10	...	5	2	4	2	28	5.554	29	5.742
	Debility after severe fev. & diar.	...	...	...	1	...	...	...	...	...	1	.198		
Epid. diseases not classified.	Erysipelas.	...	...	1	...	...	2	1	1	...	5	.990	6	1.188
	Influenza.	...	...	1	...	...	...	...	...	...	1	.198		
Consumption.	Consumption.	...	2	1	2	4	1	3	2	3	18	3.564	20	3.960
	Hæmoptysis.	...	1	...	...	...	1	...	...	...	2	.396		
Other tuberc. dis.	Scrofula.	...	...	...	...	...	...	...	...	1	1	.198	2	.396
	Mesenteric dis.	...	...	...	...	...	1	...	...	...	1	.198		
Diseases of the brain and nervous sys.	Effusion on, or congest. of, brain	1	...	...	...	...	3	2	...	...	6	1.188	9	1.782
	Apoplexy.	...	1	...	...	...	...	...	...	...	1	.198		
	Tetanus.	...	...	...	...	...	...	1	...	...	1	.198		
	Paralysis.	...	...	...	...	1	...	...	...	...	1	.198		
Diseases of the heart.	Diseased heart and dropsy.	1	...	...	...	...	...	...	...	...	1	.198	3	.594
	Angina pectoris.	...	...	...	...	1	...	...	...	...	1	.198		
	Hydropicard.	...	...	...	...	...	...	1	...	...	1	.198		
Diseases of the respiratory organs, exclus. of consumption.	Chro. laryngitis.	...	...	...	1	...	...	...	...	...	1	.198	29	5.752
	Bronchitis.	...	...	3	3	...	2	2	2	...	12	2.376		
	Pneumonia.	1	1	...	...	1	...	...	...	...	4	.792		
	Inflam. of chest.	1	...	...	...	...	...	...	...	...	1	.198		
	Pleurisy.	1	...	...	...	...	2	...	...	...	3	.594		
	Hydrothorax.	...	...	...	1	1	...	1	1	2	6	1.188		
	Congest. of lungs	...	...	...	...	...	...	1	...	...	1	.198		
	Diseased lungs.	...	...	...	...	...	...	...	...	1	1	.198		
Jaundice.		...	...	...	...	...	1	...	...	...	1	.198	1	.198
Bowel complaints.	Dysentery.	...	...	1	1	1	...	1	...	...	4	.792	16	3.168
	Diarrhoea.	1	2	1	...	...	1	...	...	1	6	1.188		
	Cholera.	...	...	...	...	...	...	...	1	...	1	.198		
	Enteritis.	...	1	...	1	...	1	...	...	...	3	.594		
	Ulceration of bowels.	1	...	...	1	...	...	...	...	...	2	.396		
Other diseases of the abdomen	Gastritis.	1	...	...	...	...	...	...	...	...	1	.198	2	.396
	Peritonitis.	...	...	...	...	...	1	...	...	...	1	.198		
Other diseases not classified.	Dropsy.	1	...	1	...	3	...	...	...	...	5	.990	10	1.980
	Atrophy and marasmus.	...	...	1	1	...	...	1	...	...	3	.594		
	Phagedæna of leg with debility.	...	...	...	...	...	...	...	1	...	1	.198		
	Diseased joint.	...	...	...	...	...	...	...	1	...	1	.198		
Diseases of undefined nature.	Debility.	...	1	2	1	...	...	...	...	1	5	.990	6	1.188
	Debility from diseased heart and stomach.	...	...	...	...	...	...	...	1	...	1	.198		
Violent deaths.	Suicide.	...	...	...	...	...	...	1	...	...	1	.198	2	.396
	Accidental suffocation.	...	...	...	1	...	...	...	...	...	1	.198		

TABLE XXIII.—Showing the mortality caused by different diseases amongst the criminal prisoners in the Devizes House of Correction in the twelve years, 1829 to 1840.

Years.	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	1839	1840	Whole period.	Mortality per 1,000 from each disease.	Deaths per 1,000 from each class of diseases.	Mortality per 1,000 from each class of diseases.
Average number of prisoners.	161	159	126	186	233	233	186	126	159	161	164	202	2,096			
Deaths.	4	7	2	3	3	2	0	5	4	1	2	2	32	15·267	32	15·267
Typhus fever.	2	3	1	...	...	...	...	2	...	1	...	...	9	4·293	9	4·293
Consumption.	...	1	...	1	...	...	...	2	2	...	1	...	7	3·335	7	3·335
Diseases of the brain and nervous system.	Apoplexy. Paralysis. Hydrocephalus.	...	2	...	1	...	...	1	...	...	...	...	4	1·908	7	3·335
		...	...	1	1	...	...	...	...	...	...	...	2	·954		
		...	...	...	...	...	...	...	1	...	...	...	1	·477		
Dis. of respir. organs, exclus. of consumption.	Inflammation of the lungs. Disd. liv. & lungs	...	...	...	...	...	...	...	...	...	...	1	1	·477	2	·954
		...	...	...	...	...	...	...	...	...	1	...	1	·477		
Bowel complaints.	Dysentery. Enteritis.	...	1	...	...	...	...	...	1	...	...	1	3	1·431	4	1·908
		...	...	...	...	1	...	...	...	...	...	...	1	·427		
Dropsy.		2	...	...	...	...	...	...	...	...	...	...	2	·954	2	·954
Old age.		...	...	...	...	1	...	...	...	...	...	...	1	·477	1	·477

TABLE XXIV.—Showing the mortality caused by different diseases amongst the criminal prisoners in the Knutsford House of Correction, in the seven years, 1834 to 1840.

Years.		1834	1835	1836	1837	1838	1839	1840	Whole period.	Mortality per 1,000 from each disease.	Deaths from each class of diseases.	Mortality per 1,000 from each class of diseases.
Average number of prisoners.		213	213	236	232	232	266	33	1,725			
Deaths.		6	5	3	3	3	6	8	34	19·710	34	19·710
Typhus fever.		2	...	...	1	...	...	...	3	1·739	3	1·739
Consumption.	Consumption. Hæmoptysis.	1 1	... ...	1 ...	... ...	3 ...	3 ...	2 ...	10 1	5·797 ·579	11	6·376
Diseases of the brain and nervous system.	Diseased brain. Apoplexy.	... 1	... 1	... ...	... 1	... ...	1 ...	... ...	3 1	·579 1·739	4	2·318
Dis. of the respiratory organs, exclusive of consumption.	Inflammation of the lungs. Inflammation of the chest. Water in the chest.	... ... ...	... ... 1	... ... ...	... ... ...	... ... ...	... ... ...	2	2 1 1	1·159 ·579 ·579	4	2·318
Dysentery.		... ...	... ...	... ...	... ...	... ...	... ...	3 3	3 3	1·739	3	1·739
Other diseases of the abdomen.	Diseased stomach. Spasm of stomach. Colic.	1	... 1 ...	1	 1	... ... ...	... ... ...	... ... ...	2 1 1	1·159 ·579 ·579	4	2·318
Diabetes.		... ...	1 ...	... ...	... ...	... ...	... ...	... ...	1 1	·579	1	·579
Cancer of uterus.		... ...	1 ...	... ...	... ...	... ...	... ...	... ...	1 1	·579	1	·579
Other diseases not classified.	Psoas abscess. Diseased knee-joint.	... ...	... ...	... ...	... ...	... ...	1 1	1 1	1 1	·579 ·579	2	1·159
Broken constitution.		... ...	... ...	... ...	... ...	... 1	... ...	... 1	1 1	·579	1	·579

TABLE XXV.—Showing the mortality caused by different diseases amongst the criminal prisoners in the Lancaster County Gaol in the 19 years, 1825 to 1843.

Years.	1825	1826	1827	1828	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	1839	1840	1841	1842	1843	Whole period	Mortality per thousand from each disease.	% of deaths from each class of diseases.	Mortality per thousand from each class of diseases.
Average number of prisoners.	213	248	249	172	228	251	250	247	273	289	274	169	239	298	318	340	334	340	271	5011	20-355	102	20-355
Deaths.	2	10	5	12	11	8	5	3	2	5	5	5	4	8	5	3	3	3	3	102	20-355	102	20-355
Fever.	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	1	4	798	5	798
Typhus fever.	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	199	5	199
Bilious fever.	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Erysipelas.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Consumption.	1	..	1	3	4	4	2	2	1	1	1	1	1	6	3	..	1	..	..	32	6385	32	6385
Scrotula.	..	..	..	..	..	..	2	..	..	..	..	..	1	..	..	..	..	1	..	4	798	4	798
Dis. of brain	..	1	..	..	..	..	..	..	1	..	2	..	..	..	..	..	..	..	..	4	798	4	798
Effus., or conges. of, and nerv. sys. Paralysis. [brain.	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	4	798	7	1395
Dis. of the re- spiratory or- gans, exclud. of consumption. [bronchitis.	..	..	..	..	..	1	..	..	..	..	1	..	..	1	..	..	..	..	..	3	597	..	597
Diseased lungs.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	199	11	199
Hydrothorax.	1	1	..	3	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	6	1196	..	1196
Diseased liver.	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	199	..	199
Dysentery.	..	4	1	5	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1	199	1	199
Diarrhoea.	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	10	1923	..	1923
Cholera.	..	1	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	2	398	16	398
Ulcerat. of bowels.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	3	597	..	597
Diseased stomach	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	199	..	199
Hernia.	..	..	..	..	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	199	2	199
Diabetes.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	199	..	199
Other diseases not classified.	..	..	..	..	3	..	1	..	..	..	..	1	..	..	..	..	1	..	..	1	199	1	199
Dropsy.	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	5	997	6	997
Debility.	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	199	..	199
Atrophy or maras- Cachexia. [mus- nature.	..	1	2	..	1	..	..	1	..	1	..	1	1	..	..	1	..	1	1	7	1395	15	1395
Found dead in bed.	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	2	398	..	398
	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	199	..	199

TABLE XXVI.—Showing the mortality caused by different diseases amongst the prisoners (both white and coloured) in the Eastern Penitentiary, Pennsylvania, during the fourteen years, 1830 to 1843.

Years.	1830	1831	1832	1833	1834	1835	1836	1837	1838	1839	1840	1841	1842	1843	Whole Period.	Mortality per thousand prisoners from each disease.	Deaths from each class of disease.	Mortality per thousand prisoners from each class of disease.
Average daily number of prisoners.	31	67	91	123	183	286	360	386	402	418	394	335	331	359	3,737			
Fevers.	Cont. fev.	...	...	...	...	...	...	1	...	...	...	...	1	...	2	535	4	1-070
	Remit. fev.	...	...	...	1	...	...	1	...	...	...	...	...	...	2	535		
Epd. dis. not classified.	Erysipelas	...	...	...	...	...	...	...	...	...	...	...	...	1	1	267	3	802
	w. syphil.	...	...	...	...	...	...	...	2	...	...	...	...	...	2	535		
	Smallpox.	...	...	...	...	...	...	...	...	...	...	...	...	...	2			
Consumption.	Consumpt. Chron. infl.	1	...	1	...	2	2	3	6	7	1	12	4	2	7	48	61	16-322
	lgs. w. scro.	...	...	...	...	...	...	...	3	3	...	...	...	...	6	12-844		
	Ch. pulm.	...	...	...	...	...	...	...	...	...	...	5*	...	...	5	1-337		
	dis. wh scf.	...	...	...	...	...	...	1	...	...	...	...	...	...	1	267		
	Brain fev. with scrof.	...	...	...	...	...	...	...	...	...	...	...	...	...	1			
	& dis. lgs.	...	...	...	...	...	...	...	...	...	...	...	...	...	1	267		
	Ser. of chest	...	...	...	...	...	...	...	1	...	...	...	...	...	1	267		
Other tubercular or scrofulous diseases.	Scrofula.	...	...	...	...	1	...	1	...	2	2	1	3	...	8	2-140	20	5-352
	Chro. pleu. with scro.	...	...	...	...	...	...	...	...	2	...	...	...	...	2	535		
	Disd. me-sent. glands	...	1	...	...	...	...	...	...	...	...	...	...	...	1	267		
	Ser. perito.	...	...	...	...	...	...	...	1	1	1	...	...	2	5	1-337		
	Ser. perito. & pleurit.	...	...	...	...	...	...	...	2	1	...	...	...	3	3	802		
	Sc. enterit.	...	...	...	...	...	...	...	...	...	...	...	...	1	1	267		
Diseases of the brain and nervous system.	Brain fev.	...	...	...	...	...	...	...	2	...	...	...	...	...	2	535	9	2-408
	Apoplexy.	...	...	1	...	...	1	...	...	...	...	...	...	...	2	535		
	Paralysis.	...	...	...	1	...	1	...	...	...	...	...	...	...	2	535		
	Tetanus.	...	...	...	...	...	...	...	...	...	...	1	...	...	1	267		
	Epilepsy.	1	...	...	...	...	...	...	...	...	...	...	...	...	1	267		
	Mania.	...	1	...	...	...	...	...	...	...	...	...	...	...	1	267		
Enlarged heart.	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	267	1	267
Diseases of the respiratory organs, exclus. of consumpt.	Drop. & ast. Infl. of lgs.	...	...	...	...	1	...	...	...	...	...	...	...	...	1	267	29	7-760
	Chr. infl. & dis. of lgs.	...	...	...	2	3	3	5	...	...	...	5*	...	...	18	4-817		
	Chr. pleur.	...	...	...	...	...	...	...	2	3	...	1	...	...	6	1-605		
	Hydrothx.	1	...	1	...	...	...	...	...	...	...	...	...	...	2	535		
	Bronchitis	...	...	...	...	1	...	...	...	...	...	...	...	...	1	267		
Bowel complaints.	Diarrhoea.	...	...	...	...	...	...	1	...	...	...	...	...	...	1	267	3	802
	Infl. of sto. & bowels.	...	...	...	...	...	1	...	...	...	...	...	...	...	1	267		
	Chron. inflammat. of bowels	...	...	...	...	...	...	1	...	...	...	...	...	...	1	267		
Other dis. of the abdomen.	Infl. of sto.	...	...	...	...	...	...	...	...	...	1	...	...	...	1	267	3	802
	Chro. infl. ditto.	...	...	...	...	...	...	1	...	1	...	...	...	...	2	535		
Chr. cystitis w. paral.	...	...	...	...	...	...	...	2	...	1	...	...	...	...	3	802	3	802
Other diseases not classified.	Rheumat.	...	...	...	...	1	...	...	...	...	...	...	...	...	1	267	6	1-605
	Dropsy.	...	...	...	...	...	...	...	...	...	1	...	...	...	1	267		
	Syphilis.	...	...	...	...	...	1	...	...	...	...	...	...	...	1	267		
	Disd. hip.	...	...	...	...	...	...	1	...	...	...	...	...	...	1	267		
	Frac. neck thigh bone	1	...	...	...	...	...	...	...	...	...	...	...	...	1	267		
	Hæmorrh.	...	1	...	...	...	...	...	...	...	...	...	...	...	1	267		
Debility.	...	...	...	...	...	1	...	...	1	2	...	...	...	...	4	1-070	4	1-070
{Suicide.	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	267	1	267
Total Deaths.	1	4	4	1	5	7	12	17	26	11	22	17	9	11	147	39-336	147	39-336

* In the official report for the year 1841, ten coloured prisoners are stated to have died from "chronic pulmonary disease combined in some instances with scrofula and syphilis." Half these cases have been classed with consumption, and half with other affections of the lungs.

TABLE XXVII.—Showing the mortality caused by different diseases and classes of diseases amongst the white prisoners in the Eastern Penitentiary, during eight years.

Years.	1830	1833	1837	1838	1839	1841	1842	1843	Whole period.	Annual mortality per thousand prisoners from each class of diseases.	Deaths from each class of diseases.	Annual mortality per thousand prisoners from each class of diseases.
Average number of prisoners.	21	89-90	233	241	245	201	212	235	1,477			
Fever.	..	..	..	..	..	..	1	..	1	·677	1	·667
Epidemic diseases, not classified.	..	..	..	2	..	..	..	1	2	1·354	3	2·031
Consumption.	1	..	5	3	..	4	1	4	18	12·186	19	12·864
Brain fever. Brain fev. with scrof. & dis. lungs.	..	..	1	..	..	..	..	..	1	·677		
Dis. of brain and nervous system.	..	1	..	..	1	..	..	..	1	·677	2	1·354
Apoplexy.	..	..	..	..	..	..	..	..	1	·677		
Enlarged heart.	..	..	..	..	..	..	1	..	1	·677	1	·677
Chronic pleurisy.	..	..	..	..	1	..	..	..	1	·677	1	·677
Diarrhœa.	..	..	..	1	..	..	..	..	1	·677	1	·677
Chronic cystitis.	..	..	..	1	..	..	..	..	1	·677	1	·677
Syphilis.	..	..	1	..	..	..	..	..	1	·677	1	·677
All diseases.	1	1	7	7	2	4	3	5	30	20·311	30	20·311

TABLE XXVIII.—Showing the mortality caused by different diseases and classes of diseases amongst the coloured prisoners in the Eastern Penitentiary, during eight years.

Years.		1830	1833	1837	1838	1839	1841	1842	1843	Whole period.	Annual mortality per thousand prisoners from each disease.	Deaths from each class of diseases.	Annual mortality per thousand prisoners from each class of diseases.
Average number of prisoners.		9-19	33-70	154	151	173	134	119	124	907-99			
Fevers.	Fever.	..	..	1	..	..	..	..	..	1	1-101	2	2-202
	Remittent fever.	..	..	1	..	..	..	..	..	1	1-101		
Consumption.	Consumption.	..	..	1	4	1	..	1	3	10	11-013		
	Chron. inflam. of lungs with scrof.	..	..	3	3	..	..	..	..	6	6-607		
	Chron. pulmonary dis. with scrof.	..	..	..	..	..	5*	..	..	5	5-506	22	24-227
	Scrofula of the chest.	..	..	..	1	..	..	..	..	1	1-101		
Other tubercular or scrofulous diseases.	Scrofula.	..	..	1	..	..	1	3	..	5	5-506		
	Chronic pleurisy, with scrofula.	..	..	..	..	2	..	..	..	2	2-202		
	Scrofulous peritonitis.	..	..	..	1	1	..	..	2	4	4-405	15	16-521
	Scrof. peritonitis and pleuritis.	..	..	..	2	1	..	..	..	3	3-303		
	Scrof. enteritis.	..	..	..	..	..	..	..	1	1	1-101		
Dis. of brain and nervous system.	Brain fever.	..	..	..	..	1	..	..	..	1	1-101	2	2-202
	Tetanus.	..	..	..	..	..	..	1	..	1	1-101		
Dis. of the respir. org. excl. of cons.	Chron. inflam. & disorg. of lungs	..	..	3	5	..	5*	..	..	13	14-316	15	16-521
	Chronic pleurisy.	..	..	..	..	1	..	1	..	2	2-202		
Bowel compls.	Chron. inflam. of the bowels.	..	..	..	1	..	..	..	..	1	1-101	1	1-101
Other dis. of the abdomen.	Inflammation of stomach.	..	..	..	..	..	1	..	..	1	1-101	2	2-202
	Chronic ditto.	..	..	..	1	..	..	..	..	1	1-101		
Chronic cystitis, with palsy.		..	..	..	1	..	..	..	..	1	1-101	1	1-101
Other diseases not classified.	Dropsy.	..	..	..	..	..	1	..	..	1	1-101	2	2-202
	Diseased hip.	..	..	..	..	1	..	..	..	1	1-101		
Debility.		..	..	..	..	1	..	..	..	1	1-101	1	1-101
All diseases.		..	..	10	19	9	13	6	6	63	69-372	63	69-372

• See note to Table XXVI.

TABLE XXIX.—Showing the mortality caused by different Diseases amongst the prisoners in the *Sing Sing State Prison* (New York) from the 1st October 1829 to the 30th September 1840.

Years.		1830	1831	1832	1833	1834	1835	1836	1837	1838	1839	1840	Whole period.	Annual mortality per thousand prisoners from each disease.	Deaths from each class of diseases.	Annual mortality per thousand prisoners from each class of diseases.
Number of prisoners on the 30th September.		810	980	832	811	843	796	726	781	824	805	827	9,053			
Fevers.	Typhus or congestive fever.	1	1	6	1	1	...	1	6	5	6	...	28	3·093	28	3·093
Asiatic cholera.		...	...	103	...	...	...	...	...	...	...	...	103	11·377	103	11·377
Epid. diseases not classified.	Smallpox. Erysipelas.	...	...	...	1	...	3	...	...	...	...	...	4 1	·442 ·110	5	·552
Consumption.	Consumption. Hæmoptysis.	4	9	12	10	8	15	5	5	10	8	5	91 2	10·051 ·220	93	10·271
Scrofula.		...	3	1	...	...	...	1	...	1	1	2	9	·994	9	·994
Diseases of the brain and nervous system.	Apoplexy. Paralysis. Epilepsy. Insanity.	...	1	...	...	...	...	...	...	2	...	...	3 2 5 1	·331 ·220 ·552 ·110	11	1·215
Diseases of the heart.	Hydrops pericar. Aneurism.	...	...	...	...	1	...	...	...	...	...	...	1 1	·110 ·110	2	·220
Diseases of the respiratory organs, exclusive of consumption.	Pneumonia typhoides. Hydrothorax Adhes. of lungs. Asthma.	...	...	...	...	...	...	...	...	...	...	1	1 11 1 1	·110 1·215 ·110 ·110	14	1·546
Hepatic diseases.	Diseased liver. Jaundice.	...	2	...	1	...	...	...	...	...	...	...	3 4	·331 ·442	7	·773
Bowel complaints.	Cholera. Diarrhœa. Dysentery. Enteritis.	...	...	4	...	3	2	...	2	1	...	1	1 14 24 5	·110 1·546 2·331 ·552	44	4·860
Other diseases of the abdomen.	Gastritis. Organic disease of stomach. Colic.	...	...	...	1	...	...	...	...	...	...	1	1 1 1	·110 ·110 ·110	3	·331
Other diseases not classified.	Dropsy. Syphilis and ulcers. Leprosy. Internal absces. Ulcer.	...	5	11	3	2	4	...	2	2	4	2	35 1	3·866 ·110	41	4·529
Diseases of undefined nature.	Debility. Diseases not named.	...	...	...	1	...	...	...	...	...	...	1	1 1	·110 ·110	2	·220
Violent deaths.	Suicide. Accident.	1	...	2	2	1	3	...	...	1	1	...	9 7	·994 ·773	16	1·766
Deaths from all causes.		16	28	145	25	18	31	11	20	33	34	17	378	41·754	378	41·754

TABLE XXX.—Showing the mortality caused by different diseases and classes of diseases amongst the prisoners in the Auburn State Prison (New York) during thirteen years.

Years.		1826	1827	1828	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	1839	1840	Whole period.	Annual mortality per thousand prisoners from each disease	Deaths from each class of diseases.	Annual mortality per thousand prisoners from each class of diseases.
Number of prisoners at the end of each year.		427	525	571	639	620	647	683	679	679	648	705	670	695	8,188					
Fever.	Fever.	...	2	1	1	...	...	...	...	...	...	...	2	1	1	8	1	·977	9	1·099
	Remitt. fever.	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	·122		
Erysipelas.		...	...	...	...	...	...	...	...	...	...	...	...	1	1	2	2	·244	2	·244
Consumptn.	Consumption.	4	4	5	2	10	12	9	4	2	8	5	5	7	77	77	1	9·402	78	9·526
	Hæmoptysis.	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	·122		
Scrofula.		...	...	...	...	1	...	...	1	...	...	...	...	...	1	3	3	·366	3	·366
Diseases of the brain & nervous system.	Chron. inflammation of the brain.	...	...	2	...	...	...	2	...	...	...	...	...	...	...	4	4	·488		
	Hydrocephalus	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	1	·122	8	·977
	Apoplexy and paralysis.	...	...	...	...	...	...	...	...	...	1	1	...	...	...	2	2	·244		
	Mania.	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	1	·122		
Dis. of heart.	Diseased heart.	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	1	·122		
	Hydrops peric.	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	·122	2	244
Diseases of the respiratory organs, exclusive of consumptn.	Inflammation of lungs.	1	...	...	...	1	1	...	...	...	2	3	4	...	1	13	13	1·587		
	Asthma, and Asthma with Dropsy.	...	...	...	...	...	...	...	...	...	...	3	1	...	...	4	4	·488	22	2·687
	Hydrothorax.	...	...	...	...	...	...	...	...	1	...	1	1	...	...	3	3	·366		
	Quinsey.	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	1	·122		
	Bronchitis.	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	1	·122		
Hepatic diseases.	Chronic hepatitis.	...	...	...	...	...	1	...	...	...	...	...	1	...	...	2	2	·244		
	Chron. abscess of the liver.	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	1	·122	3	·366
Bowel complts.	Dysen. & Diarr.	...	1	...	...	...	...	...	...	1	1	...	...	...	...	3	3	·336		
	Enteritis.	...	...	...	...	1	...	...	...	...	1	...	...	...	...	2	2	·244	5	·610
Other dis. of abdomn.	Infla. of stom.	1	...	...	1	...	...	...	...	...	1	1	...	...	...	4	4	·488		
	Hæmatemesis	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	1	·122	6	·782
	Peritonitis.	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	1	·122		
Scirrhus of the testes.		...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	1	·122	1	·122
Other diseases not classified.	Dropsy.	...	...	...	...	...	...	...	1	...	...	...	1	...	1	3	3	·366		
	Syphilis.	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	1	·122		
	Diseased spin.	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	1	·122		
	Lumbar abscess.	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	1	·122	8	·977
	Fever after an operation.	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	1	·122		
	Hæmorrhage.	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	1	·122		
Dis. of undefin. nature.	Atrophy and gen. debility.	...	...	...	...	1	...	...	...	...	...	...	2	...	...	3	3	·366		
	Hectic fever.	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	1	·122	4	·488
Violent deaths.	Compound fracture of the leg.	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	1	·122		
	Suicide.	...	...	...	1	...	1	...	...	...	...	...	1	...	2	5	5	·610	8	·977
	Accidental suffocation.	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	1	·122		
	Homicide.	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	1	·122		
Deaths from all causes.		7	9	9	6	18	15	12	11	11	18	19	10	14	159	19 418	19 418	159	19 418	

TABLE XXXI.—Showing the mortality caused by different diseases amongst the prisoners in the Charlestown State Prison (Massachusetts) during eleven years.

Years.*	1829	1831	1832	1833	1834	1835	1836	1837	1838	1839	1840	Whole period.	Mortality per thousand prisoners from each disease.	Deaths from each class of diseases.	Mortality per thousand prisoners from each class of diseases.
Average number of prisoners.	262	256	227	250	277	279	278	291	303	318	318	3,059			
Fever.	..	..	1	1	2	1	..	..	..	1	..	6	1·961	6	1·961
Consumption.	4	4	7	3	2	2	2	3	3	2	1	33	10·787	33	10·787
Diseases of the brain and nervous system.	..	..	..	..	..	..	1	..	..	..	..	1	·326	3	·980
Apoplexy.	..	1	..	..	..	..	..	..	..	..	..	1	·326	..	..
Paraplegia.	..	1	..	..	..	..	..	..	..	..	..	1	·326	..	..
Mania.	..	1	..	..	..	..	..	..	..	..	..	1	·326	..	..
Ossification of arteries.	..	..	..	..	..	..	..	..	..	1	..	1	·326	1	·326
Diseases of the respiratory organs, exclusive of consumption.	..	..	..	..	..	..	..	..	1	..	..	1	·326	5	1·634
Pneumonia.	..	..	..	1	..	..	..	1	..	..	1	3	·980	..	..
Hydrothorax.	..	..	..	..	..	..	1	..	..	..	..	1	·980	..	..
Empyema.	..	..	..	..	..	..	..	..	..	..	..	1	·980	..	..
Chronic diarrhoea.	2	..	..	..	..	..	..	..	..	..	..	2	·653	2	·653
Other diseases not classified.	..	..	2	..	..	..	..	..	..	..	..	2	·653	4	1·307
Dropsy.	..	1	..	..	..	..	..	..	..	..	..	1	·326	..	..
Syphilis.	..	..	..	..	..	..	..	..	1	..	..	1	·326	..	..
Abscess.	..	..	..	..	..	..	..	..	..	..	..	1	·326	..	..
Diseases of undefined nature.	..	..	..	..	..	..	..	..	..	1	..	1	·326	4	1·307
Cachexia.	..	..	1	..	..	..	..	..	2	..	..	3	·980	..	..
Old age.	..	..	..	..	..	..	..	..	..	..	..	2	·653	2	·653
Suicide.	..	..	..	1	..	..	..	..	1	..	..	2	·653	..	..
Deaths from all causes.	6	7	11	6	4	3	4	5	7	5	2	60	19·614	60	19·614

* The causes of death during the year 1830 are not stated in the Reports.

TABLE XXXII.—Showing the mortality caused by different diseases in the Baltimore Penitentiary (Maryland) during five years.

Years.		1831	1832	1833	1834	1837	Aggre- gate of the 5 years.	Mortality per thou- sand prisoners from each disease.	Deaths from each class of disease.	Mortality per thou- sand prisoners from each class of disease.
Average daily number of prisoners.		370	269	356	369	391	1755			
Asiatic cholera.		..	17	..	..	..	17	9·686	17	9·686
Consumption.	Consumption.	19	2	14	8	6	49	27·920	50	28·490
	Hæmoptysis.	..	1	..	..	..	1	·569		
Diseases of the brain and nervous system.	Inflamm. of brain.	..	..	1	..	..	1	·569	1	·569
Hydrops pericardii.		..	1	..	..	..	1	·569	1	·569
Lymphathic bilious catarrh.		..	1	..	..	..	1	·569	1	·569
Hepatitis.		..	..	1	..	..	1	·569	1	·569
Bowel complaints.	Chronic diarrhœa.	..	..	..	..	1	1	·569	3	1·709
	Dysentery.	2	..	..	..	..	2	1·139		
Other diseases of the abdomen.	Gastritis.	..	..	..	1	..	1	·569	3	1·709
	Hernia.	..	..	..	1	..	1	·569		
	Abdominal dis.	..	..	..	..	1	1	·569		
Other diseases not classified.	Dropsy.	1	..	..	..	..	1	·569	2	1·139
	Rheumatism.	1	..	..	..	..	1	·569		
Diseases of undefined nature.	Acute disease.	..	..	..	..	4	4	2·279	6	3·418
	Drinking cold water, when heated, and diseased lungs.	..	..	..	..	1	1	·569		
	Debility.	1	..	..	..	..	1	·569		
All causes.		24	22	16	10	13	85	48·433	85	48·433

TABLE XXXIII.—Showing the number of deaths, and annual rate of mortality caused by different diseases and different classes of diseases in the *Geneva* Penitentiary from the 1st of January 1826 to the 31st December 1841.

Average number of prisoners.... 57		Number of deaths from each disease.	Annual mortality Per thousand prisoners from each disease.	Number of deaths from each class of diseases.	Annual mortality per thousand prisoners from each class of diseases.
Aggregate of the annual average numbers during sixteen years } 909·78					
Fever (continued).		1	1·099	1	1·099
Consumption.		9	9·892	9	9·892
Other tubercular diseases.	Tubercular peritonitis.	1	1·099	2	2·198
	Scrofula.	1	1·099		
Diseases of the brain and nervous system.	Apoplexy.	1	1·099	5	5·496
	Paralysis.	2	2·198		
	Insanity.	2	2·198		
Dis. of the respir. organs, excl. of consumption.	Catarrh and sudden death in an old man.	1	1 099	4	4·396
	Chronic bronchitis.	3	3·297		
Chronic diarrhœa.		1	1·099	1	1·099
Contraction of the stomach.		1	1·099	1	1·099
Suffocation from goitre.		1	1·099	1	1·099
All causes.		24	26·380	24	26·380

TABLE XXXIV.—Showing the mortality caused by different diseases in the Penitentiary of *Lausanne*, during the ten years and eight months from May 1st, 1826, to January 1st, 1837.

Average number of prisoners....		83	Number of deaths from disease.	Annual mortality per thousand prisoners from each disease.	Number of deaths from each class of diseases.	Annual mortality per thousand prisoners from each class of diseases.
Aggregate of the annual averages for whole period }		882				
Consumption.			6	6·802	6	6·802
Diseases of the brain and nervous system.	Apoplexy.	2	2·267	5	5·669	
	Congestion of brain.	2	2·267			
	Arachnitis.	1	1·134			
Diseased heart.			2	2·267	2	2·267
Diseases of the resp. organs, exclus. of consumption.	Hydrothorax.	1	1·133	2	2·267	
	Affection of chest.	1	1·133			
Bowel complaints.	Dysentery.	1	1·133	2	2·267	
	Chronic enteritis.	1	1·133			
Affection of the bladder.			1	1·133	1	1·134
Other diseases not classified.	Dropsy.	2	2·267	5	5·669	
	Syphilis.	2	2·267			
	Caries of backbone & ribs	1	1·133			
Diseases of un-defined nature.	Old age.	1	1·133	9	10·204	
	Marasmus.	8	9·070			
All causes.			32	36·281	32	36·281

TABLE XXXV.—Showing the mortality caused in 1842 by different classes of diseases amongst white persons of the ages of 10 to 70, and amongst the inhabitants belonging to the African and other dark races above the age of 10 years, in the city and county of New York. The mortality per 1,000 is calculated from the census of 1840, for the dark inhabitants, and from Dr. Griscom's* estimate of the population in 1842, for the whites.

	Absolute no. of deaths in 1842.				Mortality per thousand living.						
Races.	Whites.		Blacks.		Whites.			Blacks.			
Ages.	10 to 70.		Above 10 years of age.		Males.	Females.	Both sexes.	Males.	Females.	Both sexes.	
Sexes.	Males.	Fem.	Males.	Fem.							
Fevers.	149	154	10	19	1·380	1·299	1·338	1·866	2·462	2·294	
Epidemic diseases, not classified.	84	57	11	8	·778	·481	·622	2·053	1·037	1·453	
Consump. & Hæmop.	508	537	58	58	4·706	4·531	4·107	10·825	7·515	8·871	
Other tuberc. diseases.	18	11	1	5	·167	·093	·128	·186	·647	·458	
Diseases of brain and nervous system.	234	179	11	22	2·167	1·510	1·823	2·053	2·850	2·523	
Diseases of the heart.	51	48	5	8	·472	·405	·437	·933	1·037	·994	
Dis. of the resp. org. excl. of con.& hæmop.	150	150	26	22	1·389	1·265	1·324	4·852	2·850	3·666	
Hepatic diseases.	34	38	2	4	·315	·320	·317	·373	·515	·458	
Bowel complaints.	101	133	3	10	·935	1·112	1·033	·559	1·295	·994	
Other dis. of the abd.	26	60	3	1	·241	·506	·335	·559	·129	·305	
Dis. of the urinary organs.	13	6	..	..	·120	·050	·083				
Dis. of the generative organs.	1	90	..	5	·009	·759	·401	..	·647	·382	
Other diseases, not classified.	84	94	5	12	·778	·793	·781	·933	1·555	1·300	
Diseases of undefined nature.	25	17	7	13	·231	143	·185	1·306	1·684	1·529	
Violent deaths.	139	51	10	11	1·288	·430	·834	1·866	1·425	1·606	
All causes.	1617	1625	152	198	14·980	13·712	14·317	28·369	25·654	26·776	
Causes not specified.	8	14	4	2	·074	·118	·097	·746	·258	·458	
Total deaths.	1625	1639	156	200	15·054	13·814	14·405	29·115	25·913	27·225	

* See the Annual Report of the Interments in the City and County of New York, for 1842, by John H. Griscom, M.D.

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TABLE XXXVI.—Showing the mortality per thousand living, amongst the dark inhabitants of New York, above the age of ten years; calculated from other data than those on which the estimate in Table XXXV. is founded.

		Mortality per thousand from consumption and hæmoptysis.	Mortality per thousand from marasmus and scrofula.	Mortality per thousand from all diseases.
Calculated from the population of 1840, and the deaths in 1838.	Males.	9·891	·933	31·732
	Females.	7·644	·388	22·933
Calculated from the population of 1840 and the mean of the deaths in 1838 and 1842.	Males.	10·358	·559	30·421
	Females.	7·579	·518	24·423

TABLE XXXVII.—Number of the white inhabitants of New York from 10 to 70 years of age, and of the dark inhabitants above the age of 10 years.

	White Males.	White Females.	Black Males.	Black Females.
In 1840 according to the census of the United States.	103,885	112,913	5,358	7,718
In 1842 according to Dr. Griscom's com- putation.	107,941	118,502		