

Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*A Comparison of the Mortality, from Different Causes, in Australia and in England.* By JOHN BEDDOE, B.A., M.D.,
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SOME months have elapsed since the public attention was called, by paragraphs in the *Times* and other newspapers, to the rate of mortality among infants in the Australian colony of Victoria, and particularly in the city of Melbourne, where it was stated to be alarmingly high. The few facts vouchsafed us, however, were by no means of a strength to bear the weight of assertion and comment raised upon them. Wishing for further light on the subject, I wrote to Melbourne for statistics bearing upon it, and in due time received some numbers of a publication styled *Facts and Figures*, conducted by Mr Archer, an able statistician, who holds the office of Registrar-General in the colony. These contained sufficient data to prove that the rate of mortality among infants in Victoria, in 1856-7,¹ did not exceed the English rate, while that of Melbourne itself fell below the proportions of most of our own large towns. It is true that dysentery, diarrhœa, etc., carry off numerous victims during the hot months, but their ravages are counterbalanced by the comparative infrequency or mildness of the exanthemata, and of thoracic inflammations.

Mr Archer's carefully compiled papers have furnished me with materials for the formation of comparative tables of the mortality from different causes, in Australia and in the mother country. The Fourteenth Annual Report of the Registrar-General for England and Wales exhibits the proportional numbers dying in 1851, from various causes, in England generally; and I have calculated per-

¹ From July to June inclusive, *i. e.*, from winter to winter.

centages from the reports of 1851, for the agricultural, mining, and maritime counties of Cornwall and Devon, and from those of 1857 and 1858, for the eight principal towns of Scotland.

The comparison of these has led me to results some of which were unexpected, and will, I hope, prove interesting. To any who may be disposed to undervalue them on account of the imperfection of mortality statistics in general, and of those of a newly-settled colony like Victoria in particular, I would reply that Australia is now pretty numerously supplied with practitioners, some of whom are thoroughly educated, and almost all of whom are alumni of our own schools; and that the common errors in diagnosis are therefore likely to run in the same directions in the colony and in the mother country, so as not to vitiate materially the comparison we are about to make between their respective registers. The death-rate of Victoria, which appears to have been gradually diminishing with the advance of the colony in civilisation and order, amounted in the year 1856-7 to 1·6720 per cent. This contrasts very favourably with the English rate, 2·1987; with that of the Scotch towns, 2·6824; and even with that of Scotland at large, 2·0548; and with that of Cornwall and Devon, 2·0153. It corresponds pretty closely with that of the country districts of Scotland, which is estimated by Dr Stark at 1·6438, but is almost certainly a little higher, his calculation having been made, almost unavoidably, on the not very probable hypothesis, that the rural population has of late years maintained a uniform rate of increase. It exactly equals that of Tasmania in 1856, according to the best estimate of the latter that I have the means of forming, but considerably exceeds those of New Zealand and South Australia, which, if the registers are even approximately correct, must be among the lowest in the world.

That the Victorian register is tolerably accurate I have very little doubt, as births appear at least as likely as deaths to escape registration; and the very high birth-rate recorded (4·0864) renders it probable that the former almost all come to book.

One important qualification should here be applied. The population of Victoria is known to consist mainly of adults in the prime of life, with a considerable proportion of children, aged persons being comparatively few. The effect of this must obviously be to lower the actual death-rate unduly, in comparison with that of the mother country, with its normal proportion of old people. For example, let us suppose the present population of Victoria to consist exclusively of persons from 0 to 50 years of age, in such proportions as occur in England.¹ Then, the actual death-rate being 1·6720, if we suppose individuals of 50 years and upwards to be added to the population in the normal ratio, and to die off at a rate accelerated

¹ This of course can only be, and is meant to be taken as, an approximation to the true state of things. No doubt there are a certain number of elderly and old people, and probably there is an excess of persons aged from 20 to 35. See Table II., at the end of this paper.

as in England, it would be raised to not less than 2·0432, or pretty nearly that of Scotland.

We may now proceed to compare the statistics of mortality from particular maladies.

Zymotic diseases, though they furnish nearly one-fourth of the mortality in Victoria, cause less destruction in proportion to the population than even in Devon and Cornwall, far less than in England generally, and not two-thirds of what occurs in the Scotch towns. Small-pox is absent: two deaths, reported from a country district in 1854 and in 1856, probably indicate mistakes in diagnosis, for it is hardly conceivable that this pest, if once imported, could have failed to spread and establish itself. Measles and scarlatina committed great ravages in Melbourne in 1854, but have since lapsed into insignificance. The annual mortality from hooping-cough¹ is small, and pretty uniform, whence we may fairly presume that the climate has some merits with respect to that disease. The same may be said of croup. Typhus, which some years ago committed great ravages in Melbourne, continues rife throughout the colony, destroying more lives than in England, and almost as many as in the Scotch towns. I have not been able to procure any information as to the prevailing type, nor do I know whether all the forms of continued fever have been observed.

True Asiatic cholera has never visited Australia, but, as might have been expected, alvine flux, under its three divisions of diarrhœa, dysentery, and cholera, furnishes a large number of victims, not less than 2379, or more than double the English proportion, and almost double that of the Scotch towns. More than half of the deaths from diarrhœa, and nearly half of those from dysentery, occur in infants under twelve months old, among whom they constitute a fourth of the whole mortality. Their dependence, direct or indirect, on elevation of temperature, is clearly exhibited by the fact that considerably more than half (55 per cent.) of these infantile deaths occur in the three summer months of January, February, and March (av. temp. about 67° Fahr.), and only 13½ per cent. in the six cooler months from May to October (av. temp. about 53° Fahr.).

The great excess over English rates is ascribed in the returns wholly to dysentery, which appears, as compared with diarrhœa, to be more frequent in the country districts than in Melbourne; but it would be too exacting to look for much accuracy in the diagnosis of the two, the presence or absence of blood in the stools being the only point likely to be taken into consideration. Ague is absent, and it is not likely that the few deaths ascribed to remittent fever are really due to malaria. To this important subject I will return presently.

Notwithstanding the almost exclusively animal and farinaceous

¹ Hooping-cough was once introduced into Van Diemen's Land, and for a short time extended as rapidly and widely as in England, but gradually became milder, and in a few months disappeared.

diet of a great part of the colonial population, the deaths attributed to scurvy are exceedingly few. So are those set down to syphilis, contrary to what might have been looked for in a country where the sexes are so unequal in number, and where miners are congregated into disorderly armies. Erysipelas, a disease more rife in colder climates, seems to be rare in Victoria. Hydrophobia is happily unknown. The number of deaths under the miscellaneous class of hæmorrhages is somewhat remarkable. Great and sudden barometrical changes are said to be not infrequent. The number of deaths ascribed to carcinoma is very small, but it is quite unnecessary to seek the cause of this fact in climate, diet, or modes of life. It may be sufficiently accounted for, I think, by the great numerical preponderance of the male sex, and by the fact, already referred to, that the colony contains very few old people. Carcinoma is, to a great extent, a disease of declining years. I take for elements of the calculation the following data: that in Victoria males outnumber females in the ratio of 25 to 14, while in London the proportions are as 1000 to 1134; that in the latter place females furnished, in 1851, about 20 out of 27 cases of cancer; that about two-thirds of the male and four-sevenths of the female cases, occurred in persons above 50 years of age, though these latter formed but 118 and 130 per 1000 of the population of the two sexes respectively. If now we assume, as before, that the Victorian community consists of persons from 0 to 50 years of age, in the proportions met with in England, but contains no older people, we obtain 314 per million as the number of deaths that would occur in Victoria from cancer, if the sexes were equal in numbers and the distribution of ages were as in England. This is about equal to the proportion observed at home. By another calculation, based on the returns for all England in 1851, I make out that such a community as that of Victoria should not lose more than 94·5 per million annually by carcinoma, whereas the actual loss appears to be at the rate of 110.

Cancer has been supposed not to exist among the Maoris of New Zealand;¹ whether it has been met with among the native Australians I am not aware. Its apparent increase in this country of late years, lends some colour to their opinion who consider it to be eminently a disease of civilised life. Might not some further light be thrown on this subject by an examination of the records of insurance offices, etc., with a view to determining its relative frequency among the upper and lower ranks of society?²

By an analogous train of reasoning to that which has been employed in treating of cancer, it may be shown that the infrequency of dropsy is rather apparent than real, being due mainly to the absence of aged persons.

Widely discrepant opinions have been broached and maintained

¹ See Dr A. Thomson's papers on their diseases, in the *Med.-Chir. Rev.*

² *Walsh on Cancer*, p. 159.

as to the influence of the Australian climate on phthisical cases. These tables amply suffice to prove that it is, at all events, very unfavourable to the production of tubercular disease in any form. By no conceivable latitude of error can their evidence be explained away. The mortality from all kinds of tubercular disease, taken together, is less than that from phthisis alone in any county in England. This advantage on the side of Australia is most distinctly marked in the cases of pulmonary phthisis, and of scrofula (expressly so called); young children fall victims to hydrocephalus and tabes mesenterica in greater numbers than in some agricultural parts of England, but not nearly to the extent that they do in Scotch and English towns. A very great number of deaths of infants, especially in the city of Melbourne, are ascribed to atrophy and debility; in these ill-defined classes no doubt are comprised, in Victoria as at home, very many cases of tubercular disease.

In some of the warmer regions of the temperate zone, the comparative infrequency of phthisis is counterbalanced by the great fatality of inflammatory diseases of the respiratory organs; and I was fully prepared to find this the case in Victoria. However, it is not so, notwithstanding the great and frequent changes of temperature of which we have heard so much. The rarity of fatal bronchitis may in part, but in part only, be accounted for by the fewness of old people. In England, fully half the deaths from this cause are those of persons above 50 years of age.

Diseases of the nervous system, in the aggregate, are not particularly destructive. "Convulsions" furnish a large quota, but not so large as is the average of England. Dr Greenhow¹ combines deaths ascribed to convulsions and teething with those from hydrocephalus, under the title of "nervous diseases of children;" and this arrangement has at least the merit of convenience, as under the present classification cases identical in their pathology are set down sometimes under one, sometimes under another of these heads, and ultimately find their way into three different groups. Thus teething seems to be a favourite refuge of certifiers at Glasgow, Greenock, Paisley, and Perth; and convulsions at Aberdeen and Dundee, as in most parts of England; whereas hydrocephalus is boldly diagnosed in Edinburgh and Leith.

In England, the mortality ascribed to these causes collectively seems to vary very greatly in different districts, and to be highest among the mismanaged and neglected children of the operatives in manufacturing towns, especially in those where women are largely employed in non-domestic industrial pursuits. The rather low rate exhibited by Victoria, when the number of births or of living infants is made, as obviously should be, the basis of calculation, may be taken as evidence, *quantum valeat*, for the domestic habits of the

¹ "On the Different Prevalence of Certain Diseases in Different Districts" (*Parliamentary Paper*), pp. 113-122.

women of the colony, which seem to have partaken of the general improvement in its *morale*.

The rarity of apoplexy and paralysis is probably only apparent, and due to the same cause as that of dropsy and carcinoma. Tetanus is decidedly frequent, but perhaps not more so than may be accounted for by the frequency of external injuries, which we are entitled to infer from the great number of violent deaths. The combined effects of spirit-drinking and a hot climate are exhibited in the frequency of delirium tremens, a common sequel of the periodical drinking-bouts of stockmen and diggers. It is gratifying, however, to observe that the number of deaths from this disease has gradually declined during the last three years. The same causes that produce it have probably much to do with the excess of deaths ascribed to "insanity" and miscellaneous diseases of the brain, etc.

Diseases of the digestive organs are comparatively seldom fatal in middle life, but they nevertheless yield a large portion of the mortality in Victoria. Here occurs the indefinite and unsatisfactory head of teething. The frequency of gastritis would be remarkable, if we could at all depend on accuracy of diagnosis. That of liver diseases becomes so, when we consider that in England half the deaths ascribed to them occur in people above 50. Almost all the hepatic cases are enrolled under the name of hepatitis; but as this appears to have too wide a signification given to it, I have thrown it and jaundice together, and the sum may roughly represent the fatality of diseases of the liver.

The frequency of disorders of this class is probably to be ascribed to—*1st*, A too full and too highly animalised diet. An ordinary weekly ration consists of 10 lbs. of flour, and 10 or even 12 lbs. of meat, with tea and sugar. *2dly*, The enormous consumption of alcoholic liquors. *3dly*, The heat of the summer, acting either directly or through the intermediate production of dysentery.

Of splenic disease only one case is mentioned; this is corroborative of the absence of malaria.

Diseases of the urinary organs belong chiefly to old people; their rarity in Victoria is probably only apparent.

The deaths in childbed, though they appear numerous with respect to the female population, are not so in relation to the cipher of births, which, as has been stated, is very high.

Rheumatism is said to be common in Australia, as the habits of life of the population would have led us to expect. It is so in New Zealand, among both Europeans and Maoris.

The registered deaths in Victoria are, however, few. Possibly its influence, though not directly shown, may go for something in raising the mortality from cardiac affections, which, for so youthful a community, is very high.¹ Intemperance in drinking is probably,

¹ Some of the deaths returned under "heart disease" in the colony, would probably have appeared under the head of "sudden death" in England. But,

however, a more extensive agent in this way. The preponderance of the male sex is not enough to account for the remarkable frequency of aneurism. Probably the equestrian habits of the pastoral and other settlers may have something to do with it.

A few, but of course very few, deaths are ascribed to old age. But the number attributed to external causes is something prodigious. After subtracting a considerable proportion due to intemperance and exposure, I find that from direct violence to amount to nearly one-eighth of the total mortality from all causes. No particulars are given in the returns as to the nature of the violence that causes death; but it is easy to comprehend that in a country where a large portion of the population is engaged in digging and mining for gold, and in herding cattle on horseback; where building and public works are being actively carried on; and where the high value of labour, and the feverish excitement of a new colony, induce, as they do also in the Western States of America, habits of severe exertion combined with a certain amount of recklessness, the number of fatal accidents must necessarily be very great.

The principal features of the medical geography of Victoria may now be summed up shortly as follows:—

1. Excess of violent deaths.
2. Excess of deaths from diseases of the bowels (alvine flux) and of the liver.
3. Excess of diseases of the heart.
4. Excess of some affections of the nervous system.
5. Small proportion of deaths from tubercular and pulmonary diseases and from croup.
6. Small proportion of deaths from the exanthemata and from hooping-cough.
7. Absence of malarial fever.
8. Gradual decrease of mortality from dysentery, typhus, measles, etc.

The unfavourable aspect of the 3d and 4th, if not of the 1st, of these points, will, it may be hoped, be somewhat lessened with the continued advance of the colonists in habits of temperance and order; and sanitary improvements may have some effect upon the 2d. On the other hand, we must recollect that the importation of small-pox may at any time diminish the advantage under point 6, and that the comparative infrequency of phthisis is probably as much, if not more, due to the cheapness and abundance of food, and the active out-door life of the colonists, than to any peculiar advantage in the climate. In the early days of the colonisation of New England, its climate was extolled, probably not without apparent grounds, for its anti-consumptive virtues; yet we know that at the

after making every allowance for this probability, the proportion of cardiac disease still remains remarkably high.

present day the disease is at least as frequent and fatal there as in our own country.

At present, however, it is enough to state, that in none of those countries from which we have reliable statistics, has so small a mortality from phthisis or from other respiratory diseases been authenticated among the civil population.

Evidence drawn from our army reports, though of great value, is of course not direct or conclusive as to what occurs in civil life; but the inference I should draw from what we have of this kind would be, that in the Cape Colony, particularly in its eastern division, both phthisis and other pulmonary diseases are still more rare than in Australia, and that in some parts of India the same may be said of the former, but not of the latter.

With these exceptions, I know of no country that can be spoken of more favourably. The climate of Algeria has been much and not undeservedly praised, on the ground of the rarity of pulmonary affections there; but the evidence of M. Boudin¹ and of Dr Mitchell,² both advocates of its claims in this respect, is enough to show that inflammatory diseases of the chest do not partake of the rarity of phthisis, and that even the latter, though far less destructive than in most parts of Europe, is more so than in Victoria.³

These facts speak very decidedly in favour of the Australian climate, and its adaptation to the constitutions of the Anglo-Celtic family. Only the experience of generations can decide, indeed, whether these races can permanently establish themselves in Australia, without much degenerating from their pristine vigour and energy of body and mind. This deeply interesting ethnological problem will not be wrought out in our day. Several generations have not sufficed for the thorough demonstration of a similar one in North America. But this much at least is certain, that our countrymen can do in Australia what the French have hitherto failed to do in Algeria: they can endure severe agricultural and other labour, and at the same time not only maintain their numbers, but increase and multiply rapidly.

This comparison suggests itself to me as one peculiarly appropriate. In each case, the difference of temperature between the climates of the mother country and the colony may be estimated at 10 or 11 degrees, putting the average mean temperature of the British Isles at

¹ *Géographie Médicale* and other works.

² "On the Climate of Algiers," in *Med.-Chir. Rev.*

³ If we estimate the population of Algiers at 50,000, M. Boudin's figures will yield the following results for that city:—

	Per million living.
Deaths from phthisis,	2570
Do. other pulmonary diseases,	4800

Dr Mitchell's would give about 1470 and 3040, at the lowest possible estimate. False impressions have arisen in this, as in other cases, from taking the number of deaths from all causes, instead of the number of the living, for the basis of calculation.

48°30' Fahr., of France at 54°30', of Melbourne at 59°, and of the French settlements in Algeria (average of 13 towns) at 65°. In each case the change is from a cool and comparatively moist to a warm and dry climate. In each case, the colonists are chiefly composed of young adults, among whom males greatly preponderate, with a considerable number of children. The Algerine French have certain advantages over the Australian English: from the vicinity of their native country, invalids are more easily sent back thither; and from the presence of a large indigenous population, by whom the chief part of the agricultural labour is performed, the colonists have less occasion to expose themselves to any injurious influence the climate may have. Nevertheless, the mortality in Algeria is prodigious. The military and civil, French, Spanish, and Moorish populations, are so jumbled together in the colonial statistics, that it is difficult to give a correct estimate of the death-rate among the French, but it is calculated by Dr Boudin as high as 61·9 per 1000. This estimate, however, includes epidemics of cholera. In 1854, the latest year for which he gives the statistics, it seems to have been 48·893, including the Spaniards, Maltese, etc., who stand the climate better than the French. The births, which in only one year since the conquest had exceeded the deaths, were in 1854 at the rate of 42·619. Young children are said to be "impitoyablement moissonnés."

We can hardly, I think, refer this superiority, to any great extent, to the differences in the habits of the French and English colonists. If any such differences operated very powerfully, they would be apt to make themselves evident in other regions, where French and English settlements are found side by side; but it does not appear that in Pondicherry, in Senegal, or in the West Indies, the French population dies off faster than in those neighbouring British colonies with which a comparison may fairly be made. The more temperate habits of the one people may perhaps be set off against the superiority of the other in cleanliness and sanitary precautions.

The greater frequency of inflammatory diseases of the chest in Algeria does not go far towards constituting the excess of its death-roll. But there is one important differential element which has hitherto been but lightly touched upon. The southern provinces of Australia are almost if not altogether free from the intermittent and remittent fevers which in the northern hemisphere render many comparatively cool climates so deadly, which decimated British troops in the marshes of Walcheren, which make the European emigrant pay so heavily for the fertility of the fat plains of Illinois, and which render Sardinia¹ a more deadly abode for the neighbour-

¹ Boudin (*Geographie Medicale*) states the mortality of the Piedmontese garrison of Sassari at 269·6 per 1000!!

ing Piedmontese than are the hottest stations in India for the "toto divisos orbe Britannos." It is doubtless this absence of malarial disease that chiefly constitutes the salubrity of the Australian climate, as it does that of others in the southern temperate zone, such as those of the Cape,¹ of Tasmania, of New Zealand, and of Southern Chili. In the present state of our knowledge, or rather of our ignorance, as to the causation of malaria, we are not able positively to predict that this happy exemption will continue, when the introduction of European plants, and the extension of agriculture, have in some degree modified the present telluric conditions; but, at least, we have no reason to expect that that complete cultivation, which in Southern Europe generally goes far towards annihilating malaria, will in Australia have an opposite effect. And we have surely much reason to congratulate ourselves, that while other European nations have to send out the overplus of their population to regions where the individual and the race must wither, as do France and Holland, or to sever all connection with them, and yield them as a tribute to the growth of alien nations, as do the German and Scandinavian States, we have open to us lands, broad, healthy, fertile, and beautiful, where the English race—English in name, language, and politics, as well as in blood—may continue to settle, to multiply, and to thrive, for generations to come.

TABLE I.

METEOROLOGY OF MELBOURNE.

Annual Mean Temperature,	59° Fahr.
Rain-fall,	25·76 inches.
Number of days on which rain falls,	104.
More rain falls in winter than in summer.	

MEAN MONTHLY TEMPERATURE.

September	54·6	} Spring	March	65·8	} Autumn
October	58·2		April	60·3	
November	62·2		May	54·5	
December	65·7	} Summer	June	50·7	} Winter
January	67·55		July	48·9	
February	68·8		August	50·7	

The temperatures are the means of those given by Sir James Clark, Archer, and Smyth; the rain-fall is taken from Sir James Clark (*On Climate*).

¹ British soldiers and civilians enjoy even better health in the Cape colony than in Great Britain.—(Aitken, *Handbook of Medicine*, p. 736.)

TABLE II.

ANNUAL DEATHS FROM DIFFERENT CAUSES TO ONE MILLION PERSONS LIVING.

Causes of Death.	1.	2.	3.	4.	5. 6.	
	England and Wales, 1851.	8 Scotch Towns, mean of 1857 and 1858.	Cornwall and Devon, 1851.	Victoria, year 1856-7.	No. of Deaths in England, in a population resembling that of Victoria in age and sex.	
All causes,	22,055	26,688	20,153	16,720	18,422	17,571
Specified causes,	21,987	25,432	19,901	16,495		
1. Zymotic diseases,	4,897	6,773	4,306	4,023		
Small-pox,	396	442	393	0		
Measles,	530	845	80	12		
Scarlatina,	771	1,067	1,271	23		
Hooping-Cough,	447	1,112	468	120		
Croup,	236	437	191	151		
Thrush,	66	17	33	92		
Typhus,	969	1,143	892	1,095		
Remittent or infantile fever,	80	89	46	48		
Diarrhœa,	333	908	397	818		
Dysentery,	124	327	107	1,451		
Cholera,	64	53	41	110		
Alvine flux (total),	1,021	1,288	545	2,379		
Scurvy and purpura,	14	17	11	25		
Syphilis,	34	60	45	33		
Erysipelas,	113	105	80	30		
2. Diseases of uncertain or variable seat,	1,098	903	1,285	607		
Hæmorrhage,	78	70	111	130		
Carcinoma,	295	290	320	110	122	122
Dropsy,	558	436	698	225	222	243
3. Tubercular diseases,	3,625	5,008	3,227	1,738		
Scrofula,	147	124	116	23		
Tabes mesent.,	255	423	159	179		
Phthisis,	2,781	3,476	2,621	1,192	2,724	2,808
Hydrocephalus,	442	983	322	343		
4. Diseases of the nervous system,	2,820	2,156	2,278	2,202		
Cephalitis,	205	183	157	87		
Apoplexy,	450	418	472	266	297	345
Paralysis,	429	509	508	66		
Delirium tremens,	28	35	17	82		
Epilepsy,	100	62	125	48		
Tetanus,	7	17	6	20		
Insanity,	31	22	9	79		
Convulsions,	1,391	574	700	1,048		
Sunstroke,				23		
Disease of brain,	175	328	170	456	135	134
5. Diseases of heart, etc.,	668	828	569	584		
Pericarditis,	32	20	19	46		
Aneurism,	16	37	14	86	15	14
Disease of heart,	620	767	536	453	332	352
6. Diseases of the respiratory organs,	2,759	3,405	2,326	1,171		

TABLE II.—Continued.

Causes of Death.	1. England and Wales, 1851.	2. 8 Scotch Towns, mean of 1857 and 1858.	3. Cornwall and Devon, 1851.	4. Victoria, year 1856-7.	5. 6.	
					No. of Deaths in England, in a population re- sembling that of Victoria in age and sex.	
Bronchitis, . . .	978	1,653	629	333	563	550
Pneumonia, . . .	1,245	1,134	1,273	673	1,235	1,122
Pleurisy, . . .	56	103	80	23		
Asthma, . . .	277	297	207	28	89	102
7. Diseases of the diges- tive organs, . . . }	1,314	2,021	970	1,528		
Teething, . . .	249	722	91	571		
Gastritis, . . .	41	49	40	141		
Enteritis, . . .	218	490	176	302		
Peritonitis . . .	71	79	50	97		
Disease of liver, Disease of stomach } (see gastritis), }	365	318	245	299	226	220
Disease of spleen, Hernia, . . .	4	5	6	2		
Colic, ileus, etc., }	40	31	26	20		
8. Diseases of the urin- ary organs, . . . }	78	73	80	59		
9. Diseases of the organs of generation, }	194	250	155	71	104	119
Do. including metria, Childbirth, incl. do., }	188	192	156			
10. Diseases of the organs of locomotion, }	245	257	209	192		
11. Diseases of the skin, etc., . . . }	186	191	156	192		
12. Malformations, . . .	137	92	96	59		
13. Debility, . . .	47	25	77	10		
14. Atrophy, . . .	45	58	30	72		
15. Age, . . .	1,072	1,294	1,241	1,397		
16. Sudden (cause un- certain), . . . }	690	251	600	464		
17. External causes, Intemperance, . . .	1,471	1,350	1,912	90		
Exposure, . . .	196	110	150	5		
Violent deaths, Pulmonary diseases, }	766	719	629	2,256		
including phthisis, }	16	39	5	90		
	?	?	?	113		
	712	623	610	2,054		734
	5,540	6,881	4,947	2,363		

Column 5 has been constructed by taking as a basis the supposition that there are in the colony no persons aged more than 55 years, but that below that period the proportions at the various ages are as in England.

Column 6, which is probably a much nearer approximation, though, of course, it can be but an approximation, to the truth, has for basis the following data: that there are in the colony twice as many persons between 25 and 35, one half as many between 45 and 55, and one quarter as many between 55 and 75, as in England; that there are none above 75, and that at the other ages the proportions are normal.

In both columns the males and females have been reckoned as 25 to 14.

TABLE III.

RELATIVE ORDER OF THE PRINCIPAL CAUSES OF DEATH IN ENGLAND AND WALES, AND IN VICTORIA.

Proportion dying annually per million living.	In England.	In Victoria.	In Victoria, as it probably would be, were the population normal as to age and sex.
Above 2500	1. Phthisis.	1. Violent deaths.	1. Violent deaths.
Above 2000		2. Dysentery.	2. Dysentery.
Above 1500		3. Debility.	3. Debility.
Above 1000	2. Age.	4. Phthisis.	4. Phthisis.
	3. Convulsions.	5. Typhus.	5. Typhus.
	4. Pneumonia.	6. Convulsions.	6. Convulsions.
	5. Debility.		
	6. Bronchitis.		
Above 750	7. Typhus.	7. Diarrhœa.	7. Apopl. and paral.
	8. Apopl. and paral.		8. Diarrhœa.
	9. Diarrhœa.		9. Disease of heart.
	10. Scarlatina.		
Above 500	11. Violent deaths.	8. Pneumonia.	10. Pneumonia.
	12. Atrophy.	9. Teething.	11. Bronchitis.
	13. Disease of heart.	10. Atrophy.	12. Disease of brain.
	14. Dropsy.	11. Disease of brain.	13. Teething.
	15. Measles.	12. Disease of heart.	14. Dropsy.
		13. Hydrocephalus.	
Above 250	16. Hooping-cough.	14. Bronchitis.	15. Disease of liver.
	17. Hydrocephalus.	15. Apopl. and paral.	16. Atrophy.
	18. Small-pox.	16. Disease of liver.	17. Hydrocephalus.
	19. Disease of liver.	17. Enteritis.	18. Enteritis.
	20. Carcinoma.	18. Carcinoma.	19. Carcinoma.
	21. Asthma.	19. Carcinoma.	
		19. Carcinoma.	
		17. Enteritis.	

ARTICLE II.—*On the Use of Saccharated Lime in Medicine.* By JOHN CLELAND, M.D., Demonstrator of Anatomy in the University of Edinburgh.

THE great solubility in water of lime, in the presence of sugar, first came under my attention in Paris, four winters ago, in the laboratory of M. Würtz, in the Ecole de Médecine, where solution of saccharated lime is used in determining the amount of nitrogen in organic substances, by the sulphuric acid method. It then occurred to me that this solution would be a useful agent in medicine; for it was evident that, while the lime-water in use was far too weak a preparation to develop to advantage the therapeutic properties of