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EUROPEAN TROOPS

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BY

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ON THE MORTALITY OF CHOLERA AMONG THE EUROPEAN TROOPS OF THE INDIAN ARMY.

One of the greatest misfortunes which can befal any inquiry is to have an individual to write its history already predisposed to regard it from a particular point of view. In such a case it is next to impossible that the subject can receive justice at his hands, and it will be the result of chance, and not of an unbiassed inquiry, if the facts coincide with the conclusions deduced from them.

With regard to the question of the mortality of cholera in the Indian army, it has unfortunately happened that all the later writers on the subject have been more or less closely connected with India. These, sincerely believing that the mortality from cholera had been over-rated, most naturally fell into the opposite extreme; and, from the limited facts they adduced, and also from not comparing its mortality with that of other diseases, concluded, that "cholera is neither so frequent nor so fatal as it is generally reported to be." Or, as is concluded by an eminent statist, "It will be a consolation to those connected with India, on referring to these facts, to find that an exaggerated view is generally taken of the diminished value of life in India, and of the loss occasioned by spasmodic cholera." In fact, the object of the late papers on this subject has been to "show the fallacy and groundlessness of the exaggerated opinions held in this part of the globe with reference to the extent and intensity of this destructive disease."

Having the highest personal regard for those gentlemen who have adopted what I believe to be an erroneous view, feeling also confident that their regard for the propagation of truth will induce them to forgive me for endeavouring to show the real state of matters, I proceed to state shortly the facts of the case, and also the principles which ought to guide us in deducing conclusions from the facts known regarding cholera.

Cholera is a disease which, though endemic to India, and forming a considerable portion of the annual mortality, yet only breaks out as an epidemic at intervals of several years. With a

disease having this peculiarity it is clearly impossible to arrive at any just estimate of its actual mean mortality from a one year's, a five years', or even a ten years' observation. For five, eight, or ten years, its mortality may be comparatively small, but when it breaks out as an epidemic it may cut off at one fell swoop a fourth of the total force, as it did with the 86th Regiment at Kurrachee in June 1846.

Again, the mortality from cholera may appear small with regard to the strength of the army, and yet be high as compared with the fatality of other known diseases. This subject must also be looked into before we can venture to affirm that the mortality of that disease is either high or low.

All the papers on the mortality of cholera in the Indian army which I have met with have had their periods of observation limited to a few years, and therefore did not fulfil the conditions which I regard as essential to the investigation of the fatality of a disease like cholera.

Three returns, however, are known to me which extend over periods of years sufficiently long to give an approximation to the mean fatality of cholera. The first is entitled "Returns showing the sickness, mortality, and invaliding in the Honourable East India Company's Armies in the Presidencies of Bengal, Madras, and Bombay respectively, from 1825 to 1844 inclusive." This was a return made to an order of the House of Commons of date 16th June 1845, and was printed 17th February 1847, being No. 76 of the Parliamentary Papers of the Session 1847.

The second return I owe to the kindness of my friend, the late Dr Henry Marshall, Deputy Inspector-General of Army Hospitals. It is a manuscript copy of an official return prepared at Madras, but not yet published, so far as I can learn, entitled, "Tables showing the comparative prevalence and mortality of the principal classes of disease amongst Her Majesty's Troops serving in the different stations in the Madras Presidency, from the year 1826 to 1843 inclusive, with a general table for the whole Command for the same period." It is dated from "The Queen's Medical Department Office, Madras, July 1844." This return does not include the force employed on field service at Rangoon; the mortality from which, in the table below, is extracted from Colonel Tulloch's excellent official reports.

The third return, though only extending over a period of twelve years, is that published by a committee of the Statistical Society of London, "On the sickness, mortality, and invaliding among the troops in the Madras Presidency." This return embraces both the Queen's troops and the East India Company's troops. The following table is constructed from these varied sources, and is limited to European troops alone.

Table shewing the Deaths from Cholera and their proportion to the 1000 *of strength among the European Troops in the Presidencies of Bengal, Madras, and Bombay.*

European Troops.	Authority.	Years.	Strength.	Total Deaths.	Cholera Deaths.	Ratio total deaths to 1000 of strength.	Ratio cholera deaths to 1000 of strength.
E. I. Co.'s Troops, Bengal.	Parliamentary Papers.	1825-44	88,380	6531	1021	73.8	11 55
Do. Madras.	Do.	Do.	101,210	3892	432	38.46	4.27
Do. Bombay.	Do.	Do.	50,987	2589	288	50.78	5.64
Queen's Troops, Madras.	MS. Tables.	1826-43	121,354	5825	1232	48.0	10.1
Do. Rangoon.	Tulloch.	1824-26	3,004	1340	48	446.0	16.0
Total European Troops, Madras.	Statistical Society.	1827-38	127,925	6621	974	48 63	7.6
Total,			492,860	26,798	3995	54.3	8.1

This table shows that, out of an aggregate strength of 492,860 European troops in all parts of India, 54·3 per thousand men died from all causes, and of these 8·1 per 1000 men from cholera.

A comparison, however, of the mortality returns of the Queen's troops, and the Hon. East India Company's troops, in the Madras Presidency, leads to the conviction that some serious error has been committed with regard to the number of deaths from cholera among the East India Company's troops there. It is not credible that the Queen's troops would lose by cholera in the proportion of 10·1 per thousand men annually, while the Company's European troops only lost in the small proportion of 4·27 men annually out of every 1000 of strength,—or less than a half by the same disease. Men who are natives of the same country, who are quartered together, and live in all respects alike, never exhibit such a marked difference under the same disease as is noticed in the above table.

Again, we know from independent sources, that cholera raged severely in the Madras Presidency during the years 1832 and 1833; and again, during the years 1837 and 1838, and still again, in the years 1842 and 1843. Yet, the mean annual mortality of cholera during these years, according to the above quoted parliamentary returns, was, among the East India Company's European troops at Madras, only 5·48 per 1000 men; whereas we have every reason to believe it was more than double that amount. Thus Colonel Sykes mentions that the mortality from cholera in the army at Madras amounted to 13·50 per 1000 men in 1842, and to 16·57 per 1000 men in 1843,—a slight discrepancy, it must be confessed, between the parliamentary return and that to which the Colonel had access in the India House. The Committee of the Statistical Society give the rate of mortality from cholera among the European troops at Madras at 21·1 deaths per 1000 men in 1832, and at 22·6 deaths per 1000 men in 1833. As these statements, therefore, are quite

irreconcilable with the parliamentary returns relative to the East India Company's troops at Madras, and seem to prove to demonstration that some serious error exists in it, it would be safer to leave it out of consideration at present.

The very fact that some error seems to exist in the parliamentary returns relative to the mortality from cholera at Madras, inclines us to look with suspicion on the returns from Bombay also. The valuable papers of Mr Edmunds in the Lancet have satisfactorily demonstrated that the mortality from all diseases is always much higher at the Bombay than in the Bengal Presidency. Yet the above table shows that the parliamentary returns make it appear quite otherwise; for, while it assigns a general mortality to Bombay of only 50·78 deaths annually in every 1000 men, it makes the average fatality at Bengal reach 73·8 deaths annually in 1000 men, Colonel Tulloch, however, sides with Mr Edmunds in showing that the mortality of Bombay exceeds that of Bengal. In his late paper "On the mortality of her Majesty's troops serving in the colonies during the years 1844 and 1845," (Statistical Journal, 1847,) he states that the mortality of the royal troops in the Bengal Presidency was only at the rate of 40 deaths annually out of every 1000 of strength, while at Bombay it was no less than 105 deaths annually during these years out of every 1000 men.

It is right these circumstances should be stated, lest we place too much reliance on the apparently small proportion of cholera among certain troops in the Madras and Bombay Presidencies, and be thereby led to arrive at very false conclusions. Of course I consider the only unobjectionable returns in the above table those of the East India Company's troops in Bengal, those of the Queen's troops in Madras, and those of the Queen's at Rangoon, which would give in an average mortality of 11 deaths annually from cholera in every thousand men. But that I may not be accused of wishing to exaggerate the mortality, the remarks which follow will apply to the mean of the above table.

The important question therefore now comes, viz., "Is a mortality of 8·1 annually out of every thousand men a high or a low proportion?"

As we are speaking of British soldiers, in endeavouring to answer this question, we must look at the proportion in which those diseases, which the world recognises to deserve the epithet of *fatal diseases*, cut off our home population.

There are certain diseases to which mankind has attached the epithet of *fatal, mortal, or deadly diseases.* Consumption, typhus fever, and pneumonia, are the diseases which cut off by far the largest proportion of adults in this country. Measles, scarlet fever, hooping-cough, and convulsions, are the diseases most fatal to our children. What then is the proportion in which these diseases prove fatal to our population?

Taking a five years' average of the mortality of England and Wales (1838-42), the following is the proportional annual mortality of the most fatal diseases to a thousand of the general population :

Consumption	cuts off	3·880	annually in every	1000 living.
Convulsions	...	1·660	...	...
Pneumonia	...	1·197	...	...
Typhus Fever	...	1·080	...	...
Dropsy	...	0·830	...	...
Scarlet Fever	...	0·816	...	...
Small-Pox	...	0·613	...	...
Measles	...	0·553	...	...
Hooping-Cough		0·517	...	...

There are no other diseases in this country which prove more fatal than these. We all acknowledge that these diseases deserve the epithet of *fatal* diseases,—they produce great ravages,—they constitute a very large proportion of the total mortality,—and are the great open doors by which our population descends to the grave. Yet how trifling is the mortality of any of these as compared with that of cholera among the European troops in any of the presidencies in India. Our most deadly disease—consumption—is less than half as deadly as the mean mortality from cholera in all the Presidencies, even taking the returns with all their errors; while in the Bengal army, no fewer than three die from cholera for every one who dies in this country from our most deadly scourge. Fever, the scourge of our towns, has a mean mortality so infinitely less than cholera in the Indian army, that we must cease to complain of it *as a scourge*, if we are to reckon its mortality and virulence by comparison with the cholera in India. Why only one dies from fever in this country for every eight who die of cholera in our Indian armies; one for every ten who die of cholera among the royal troops in the Madras Presidency; and one for every eleven who die of cholera among the Company's European troops in Bengal !

As to our other fatal diseases their proportional mortality is so trifling in comparison with the cholera in the Indian army, that it would be only waste of time to compare their fatality with a scourge like cholera.

But let us look at this matter in another light, and compare the mortality of cholera in India with that of the chief diseases to which our troops are subject at home.

Fevers (including the eruptive fevers) cut off our troops in the following proportions :

Dragoons and Dragoon Guards		1·5	men annually out of every	1000 men.
Household Cavalry	...	1·8	...	...
Foot Guards	...	2·0	...	...

All proportions infinitely less than that of the mortality from cholera in the Indian army. Stomach and bowel complaints in

all their numerous forms cut off our troops in the following proportions:

Household Cavalry	...	0·2 of a man annually out of every 1000 living.
Foot Guards	... ...	0·7 ... ...
Dragoons and Dragoon Guards		0·8 ... ...

Brain diseases cut off from 0·6 to 1·0 annually of every 1000 of our troops at home.

But the class of diseases most fatal to our troops at home is out of all proportion diseases of the respiratory organs, and notably consumption. This disease, indeed, is the fatal scourge of our troops, amounting from a third to a half of the total mortality. Thus consumption in the

Dragoons and Dragoon Guards		cuts off	5.2	per annum out of every 1000 men.
Household Cavalry,	...		7·4	... ...
East India Corps Depot,	...		8·3	... ...
Foot Guards,	... ...		10·8	... ...
Mean,	...		7·9	

In other words, the most fatal scourge of our troops at home does not come up to the average fatality of cholera in the Indian army, even according to the above under-estimated table, while it is one-half lower than its fatality in Bengal, and twice as low as its fatality at Rangoon.

But why compare the fatality of cholera in the Indian army with that of separate diseases, when we find that the above under-estimated mean mortality of that disease in India is very little below that of the mortality among the metropolitan police force, which only averages 9·0 annually per 1000 men—little below the average fatality among those insured at the Equitable Life Assurance, between the ages of 18 and 40, only 10 of whom die annually out of every 1000 insured—little below the total mortality among the males of England and Wales between the ages of 20 and 40, only 10 of whom die annually out of every 1000 living.

If, however, from the above under-estimated average of deaths from cholera we turn to that among the individual troops of the different presidencies, we find that the mortality from that single disease among the Queen's troops in the Madras presidency, or among the East India Company's troops in the Bengal presidency, exceeds the total mortality from all diseases among the metropolitan police, exceeds that among the insured at the Equitable, exceeds that among the adult males of England and Wales.

All these facts, then, demonstrate in the clearest manner that cholera in the Indian army is both a very virulent and a very fatal disease; and pointing to these facts I would appeal even to the defenders of the theory, that "cholera is neither so frequent nor so fatal in India as it is generally supposed to be," if the facts do not demonstate that cholera in India is a far more frequent and a far more fatal disease than even our most fervid imaginations supposed it to be.

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