

gases." While, however, thus far there is only the familiar case of the so-called *common chemical poison*, which hurts by instant action and direct proportion to its palpable and ponderable dose, the other and far wider possibilities of mischief which we recognise in filth are such as apparently must be attributed to *mortific ferments* or *contagia*, matters which not only are not gaseous, but, on the contrary, so far as we know them, seem to have their essence, or an inseparable part of it, in certain solid elements which the microscope discovers in them in living organisms, namely, which in their largest sizes are but very minute microscopical objects, and at their least sizes are probably unseen even with the microscope; organisms which, in virtue of their vitality, are indefinitely self-multiplying within their respective spheres of operation, and which, therefore, as in contrast with common poisons, can develop indefinitely large ulterior effects from first doses which are indefinitely small. Consequently the question what infecting powers are prevalent in given atmospheres should never be regarded as a mere question of smell. It is of the utmost practical importance to recognize in regard of filth, that agents which destroy its smell may yet leave all its main powers of disease-production undiminished."

To this we may add an observation of Tyndall's that "drains and cesspools are by no means in such evil odour as they used to be. A fetid Thames and a low death-rate occur from time to time together in London. For if the special matter or germs of epidemic disorder be not present, a corrupt atmosphere, however obnoxious otherwise, will not produce the disorder. But, if the germs be present, defective drains and cesspools become the potent distributors of disease and death. Corrupted air may promote an epidemic, but cannot produce it. On the other hand, through the transport of the special germ or virus, disease may develop itself in regions where the drainage is good and the atmosphere pure." (c)

It should ever be a matter of congratulation that sanitary improvements, and the decreased mortality from epidemics, which they have brought about, have undoubtedly tended to lessen

the average death-rate. This may well encourage us to redouble our efforts in the future, but at the same time it is desirable that we should not overlook the yearly increase of mortality in the cases of disease of the brain and heart. The total number of deaths of males from heart disease in England rose from 5,746 in 1851 to 13,428 in 1870, and while the rate per 1,000 was .755 in 1853, it was 1.085 in 1870. And this increase, let it be remembered, was altogether confined to the working years of active business and social life, warning us that in this age of steam and electricity not to kill ourselves in the race for wealth, position or power. I say *race* advisedly, because it has often been noticed that people do actually walk faster than in former times, as if to keep pace with the mental strain and excitement characteristic of the times. (d)

And so with insanity, also on the increase amongst us; and here, too, let there be no mistake regarding the method of production of this dreadful disease. "People," says a celebrated alienist, "are apt to talk as if they believed that insanity might be got rid of were only sufficient care taken to prevent its direct propagation by the marriage of those who had suffered from it, or were likely to do so. A vain imagination assuredly! Were all the insanity in the world at the present time clean swept away to-morrow, men would breed it afresh before to-morrow's morrow by their errors, their excesses, their wrong doings of all sorts." (e)

And here this recital had better end, not that the list of self-inflicted human woes is completed by those I have mentioned, but that I would fain hope enough has been said to make you reflect and act upon the inflection that man is capable of preventing, if not of curing, a majority of his ills, because he has been the main cause of them. If we refuse, as I think we may, to believe in *inevitable* evils, or rather if we feel that many of the worst afflictions that degrade the race are susceptible of elimination, it is surely our duty to inquire what *we* can do to prevent, and what we can do to permanently cure. What can medical men do towards a permanent lessening of the evil of this life? I

(d) See, for example, Sir Henry Holland's "Recollections of a Past life."

(e) Henry Maudsley in the "Fortnightly Review" for August, 1879.

(c) Fragments of Science, p. 144.