India, where so many circumstances combine to favour its occurrence? The answer to this question I must leave to others who have had larger Indian experience than myself; and we must only hope that, now that more attention is being shown to the analysis of drinking-water in India, under the auspices of Dr. Macnamara and others, and that special inquiries as to the nature and spread of cholera are being systematically carried out by Dr. Cunningham, more light will be thrown upon the subject, and many of the doubts, which now surround it, effectually cleared up and set at rest.

PROPHYLAXIS OF ASIATIC CHOLERA.*

By HENRY MACCORMAC, M.D.,

Consulting Physician to the General Hospital, Belfast.

I HAVE had a good deal of experience of Asiatic cholera. In the year of its outbreak, I was physician to the Cholera Hospital in Belfast, and for some months was day and night in the midst of the malady. I do not recollect the exact statistics, but two or three thousand cases passed at that time through my hands. There is considerable resemblance between English cholera in the stage of collapse and Asiatic cholera. In English cholera—I speak of the period of collapse—the pulse ceases at the wrist, the skin becomes deadly cold, and the features shrink, but the patient does not display the blue black skin which we witness in Asiatic cholera. There is not the stench which attends the latter; and, more especially, the *zumé* or leaven which causes Asiatic cholera to be a communicable malady does not exist in English cholera.

Many, I know, do not look upon Asiatic cholera as communicable. I do not share this conviction. Within certain limits, I consider Asiatic cholera a highly communicable malady; and I have no hesitation in proclaiming, speaking of my own conclusions, that every case without exception, occurring in Europe, is, was, and will be the result of infection. All the assistants and all the servants who had not had the malady before, myself expected, contracted the disease; some of them, indeed, twice or thrice when they came to reside within the hospital boundaries. Two, if not three, gate-keepers died rapidly in succession. Out of hospital, the instances which, as I believe, I could trace to infection, were very frequent, and the negative evidence of cases where infection could not be traced, or at least was not traced, did not, at least as I most firmly believe, invalidate the direct evidence of infection. The number of those in indigent circumstances who contracted Asiatic cholera were out of all proportion greater than of those in opulent life. Wherever crowding was excessive, exposure to the malady great, and sanitary laws were otherwise violated, there cholera was at once frequent and destructive. The disease, when epidemic, followed, indeed, precisely the same law as to prevalence which plague and fever always do. The ancient motto is inverted. The rich are spared while the poor are decimated. It was, indeed, *parcere superbis, debellare subjectos*. The rich, indeed, were not all exempt, but they were very much less frequently assaulted than the poor.

It becomes then vastly desirable under these circumstances, first, if possible, or at least as much as possible, to stay the advances of Asiatic cholera altogether; and next, until that be done, or even if that cannot be done, to realise as much security as is practicable in the event of the actual invasion of the malady. No disease more strikingly attests the exceeding efficacy of early treatment than does Asiatic cholera. The evidence afforded in Glasgow, to mention no other locality, is quite conclusive on this point. Persons went daily, if not twice daily, from house to house, and wherever they found any one labouring under premonitory diarrhoea, as it was termed, they instantly administered a dose of cholera mixture, and, I believe, left other doses to be used in case of any return of the diarrhoea. The result was, that in every 1400 cases of diarrhoea thus met, there was but one death; whereas, if it had been left alone, the half of those attacked probably would have perished. It would be difficult, I think, to adduce any stronger evidence of the efficacy of remedial measures zealously, timely, and effectively administered than this. Nevertheless, numbers died in Glasgow; and the ravages of cholera, since its first introduction into Europe, have been very great indeed.

Under these circumstances, it occurred to me that it would be excessively desirable, so far as it was possible, to anticipate even the premonitory diarrhoea. For, if only we can succeed in averting the disease, were it in its mildest form, we also avert the dangers and the mortality, which more or less attend the developed malady. In 1854-5, some repairs going on, and a communication having been opened with the infected town, forty of the inmates of the District Asylum for the

Insane, to which I was visiting physician, were assailed with Asiatic cholera, and seventeen almost immediately perished. I instantly caused to be prepared a large admixture of what might be termed sulphuric acid lemonade, in the proportion of half a drachm of the dilute acid to each dose, and, zealously aided by the resident physician and my son, had this administered daily to every one of the four hundred inmates of the establishment. The twenty-three residuary cases of the forty who were attacked remained, of course, under treatment, and made good recoveries; but not a single other fresh case ensued, and the malady then and there, in fact, disappeared. In the event of the apprehended invasion of Asiatic cholera, and, *à fortiori*, when it had actually occurred, I would urge the administration, once or twice daily, to every adult member of the community, of half-drachm doses of dilute sulphuric acid, as the most generally available, in any convenient vehicle. Drinking-water, previously filtered, should invariably be raised to the boiling-point; and, while hot, flavoured with a pinch of tea or coffee, a chip of cinnamon, quassia, gentian, dried orange-peel (any of them), or else a small fragment of highly toasted bread. In China and Japan, the water, before drinking, is almost invariably cooked and flavoured with a little tea. I ascribe, indeed, much of the immunity enjoyed by the people of these countries from the ravages of Asiatic cholera to the prevalence of this most beneficial practice. To children, half or less of the above amount might be given. Of course, *il va sans dire*, that every reasonable sanitary precaution, such as burnt earth-closets and cooked drinking-water, should in addition be taken. I have been at considerable pains to make these views generally known; and, assuming that I have established the prophylactic efficacy of dilute sulphuric acid, and my experience has not been confined to the instance which I narrate, the profession, if they will only take the matter up, have it, I believe, in their power to abate the ravages of cholera, and bring the malady effectively within human control.

ON SOME RECENT RESULTS IN PATHOLOGICAL HISTOLOGY; AND ON SCIENTIFIC THERAPEUTICS.*

By EDWARD LONG FOX, M.D.,

Physician to the Royal Infirmary, Bristol.

WHILST the age of our immediate predecessors—of Brodie, of Bright, of Addison—was essentially an age of pathological anatomy in its broadest sense, the last fifteen years may be said to have been more particularly a period for the study of pathological histology. Doubtless the first effect of such study has been to split up various subjects into subdivisions so minute as to be scarcely practical in clinical medicine. But work that is real must always lead onward to truth, and succeeding generations will recognise with thankfulness the energy of the microscopists; and whilst, on the one hand, the very minuteness of the distinctions drawn may seem unpractical, on the other hand, an accurate knowledge of the primary tissues involved in disease allow grand generalisations in pathology of which hitherto we had not dreamed. Thus we find the same morbid condition in precisely the same tissue in various organs causing cirrhosis of liver, small granular kidney, fibroid degeneration of lung, sclerosis of the nervous centres, and one form at least of mamillation of the gastric mucous membrane. We recognise that symptomatic phenomena of the most varied description, differing as far as gangrene of a limb and chorea, may depend upon embolism of the smallest arteries; whilst aneurismal dilatations so minute as only to be recognised by the microscope, and so multiple as to give the idea of an aneurismal diathesis, but causing symptoms, according to locality, that have hitherto given names to a vast number of diseases, are now capable of being classified under one pathological category.

It would be tedious to multiply such examples; but this very year has been the era in England of one such generalisation, so important that it cannot be passed over in silence. The teaching of Laennec and of Louis had during the past few years received a rude shock from the dogmatic assertions of Niemeyer and his followers; and many English physicians, with that confidence in German pathology that seems sometimes to lead into error, began to puzzle their brains in the endeavour to bring their own experience into unison with the new doctrines. Without entering upon the question as to whether tubercle itself is a product of inflammation or no, there is no doubt, as Dr. Addison long ago pointed out, that many pathological conditions of the lungs were called tuberculous that were in reality the resu

* Read before the Public Medicine Section at the Annual Meeting of the British Medical Association in London, August 1873.

* From President's Address, delivered at the Annual Meeting of the Bath and Bristol Branch.