had continued to contract, some obstacle in front had prevented the onward movement of the blood.

There probably is some weakening of the heart's walls during collapse, in consequence of the defective circulation through the coronary, as through all the systemic arteries. This weakness of the heart's walls is obviously a consequence, and not the cause, of the impeded circulation through the lungs. The dark and viscid condition of the blood is a result of the defective aëration and movement of the blood. The same condition of blood occurs in all forms of apnoea. So long as the circulation and respiration are free, mere loss of water does not thicken the blood, for the reason that water is rapidly absorbed from the soft tissues throughout the body to supply the place of that which is lost by vomiting and purging. After the discharges have ceased, this borrowed water has to be restored to the tissues, and the urine remains suppressed or scanty until the loan has been repaid.

The greatly diminished, almost suspended secretion of bile and urinary solids during collapse is explained by the defective circulation, and the consequent diminished oxidation of blood and tissues. Bile, urine, and carbonic acid, are joint products of oxidation. In a nursing mother who is the subject of cholera and collapse, the secretion of milk continues, because the milk-constituents—casein, sugar, oil, and water—are not oxidised products. The marvellous temporary relief which follows the injection of a warm saline solution into the veins during collapse is due partly to the morbid blood being diluted, and thereby rendered less obnoxious to the resisting arterioles, but mainly to the relaxation of the arterial spasm by the high temperature of the injected liquid. It has been found by those who have had most experience of this method of treatment, that hot injections are more efficacious than those of lower temperature.

In the treatment of cholera and choleraic diarrhoea, which is, in fact, cholera in a mild form, the main principle to bear in mind is, that the discharges are as essentially curative as is the eruption of small-pox. The discharges are not to be abruptly stopped by opiates. Experience has abundantly proved that this is a pernicious practice. Neither are they to be permitted to accumulate in the alimentary canal. There is one remedy which is almost universally applicable in all forms and stages of the disease, and that is an abundant supply of cold water to flush the intestinal sewer, and to wash out the poisonous discharges. A copious imbibition of pure cold water will suffice for the cure of most curable cases.

Palpation and percussion of the abdomen reveal the fact that there occurs not unfrequently a painful and sometimes a paralyzing overdistension of the bowel by rapidly effused morbid secretion. This, if not promptly relieved, may even go to the extent of causing a fatal obstruction. More especially is this likely to happen when the sensibility of the bowel has been deadened by opium. The plan to prevent and to remove this accumulation is to give some quickly acting yet unirritating evacuant dose. For this purpose, castor-oil is, on the whole, better suited than any other remedy. The objection sometimes raised—that all remedies must be useless, because none are absorbed—obviously does not apply to such a remedy as castor-oil, which, by its merely local action upon the mucous surface, stimulates the bowel to expel its contents. Experience has amply proved the success of the treatment in this and kindred classes of cases.*

The time to give opium, if at all, is in small doses to soothe the bowel after the expulsion of the poisonous secretions. Opiates are useless, and even dangerous, when the blood is poisoned, or when the bowel contains offensive morbid secretions. Opiates in the early stages of diarrhoea and cholera would be more frequently and decidedly injurious, were it not for the fact that their absorption is prevented by the rapid current of liquid which is being poured from the blood into the alimentary canal; therefore they are quickly expelled, together with the morbid secretions, and they are powerless to arrest the discharges.

INTEMPERANCE AND CHOLERA.†

By ROBERT MARTIN, M.D., Manchester.

WE are assured, on tolerably good authority, that the terrible destroyer, cholera, which has already again and again ravaged this country, is once more marching towards our shores. Now, forewarned is, or should be, forearmed, and many members of our profession have done the state good service by pointing out what are the weak parts in our sanitary defences, and showing on which of these the enemy's assault is most likely to be made. It may seem somewhat presumptuous and ungracious

to say that in the letters and leading articles which have lately appeared, it is doubtful whether the greatest source of the nation's peril has not been entirely overlooked. So far as I am aware, no writer has ever alluded to intemperance as a powerful predisposing cause of cholera, yet it is certain that, both directly and indirectly, it tends to promote the occurrence, spread, and fatality of zymotic disease in its most malignant form. Now that, in the enumeration of preventable causes, this should be overlooked, would be most unfortunate. Thousands may strike on this unbuoyed rock, on which thousands have already struck and been wrecked. It will be comparatively useless to lavish large sums of money on sanitary operations, the erection of hospitals, the appointment of trained nurses, if an agent so directly provocative of zymotic disease, is allowed to operate unchecked.

The better to comprehend the bearings of this question, it will be well to give a passing glance at the sequelæ of intemperance.

1. *Indigence*.—The intemperate man burns the candle at both ends, he wastes time during which the means of providing for his family should be earned, and he squanders much of the little which he has earned. He is, therefore, miserably poor; he and his family suffer frequently from lack of food, and that which they do get is often bad in quality. It is for this class that the stink butchers—the dealers in diseased flesh-meat and tainted fish—chiefly cater. The half-famished are glad to seize on any garbage whereby the pangs of hunger may be appeased.

2. *Overcrowding* is another of the conditions most frequently associated with cholera outbreaks, where persons are found huddling together, purity of air, cleanliness of person, are all but impossible, it is in the drunkard's lair that we find this evil most strongly marked. He cannot, or will not, pay for a decent lodging, his family have to take refuge wherever they can, often in foul damp apartments. Again, not only does overcrowding favour the outbreak of epidemic disease, but more than anything else it tends to promote its spread. Until men, women, and children live like human beings, instead of herding like pigs in close pent up styes, they will be liable to be ravaged by epidemics. Until families are located in roomy dwellings, where each individual can have something like the cubical space which we give to convicts or paupers, we shall be kept in a state of alarm, shall be disgraced by the outbreaks of pestilence—amongst the surest indications of residuary barbarism. It is well-known that animal poisons are intensified by concentration. Hence, as regards effluvia, the law may be thus expressed:—As the square of the distance separating those infected diminishes, so the infecting power of the poison increases. So long as people are crowded into filthy apartments, it will be impossible for the sanitary authorities to stamp out pestilence. But if roomy dwellings are to be provided they must be paid for, but if people are to be in a position to pay they must be industrious and sober; they must also be orderly in their conduct and careful in their treatment of property. Whilst vast numbers of the working classes are addicted to habits of drunkenness they will not pay rent, their brawls and midnight revels drive away respectable tenants, the children of the drunkard are frequently recklessly destructive of property. Hence capitalists will not build cottage property, and those who possess it are glad to turn it into workshops or stables, etc., or pull it down and appropriate the ground to some other purpose. If drunkenness were less rife amongst the working classes, dwellings would be as freely provided for them as well as for the class above them. For a variety of reasons, therefore, overcrowding must be chiefly debited to intemperance.

Filth is another agent strongly favouring the development and spread of cholera. But filth is too often a direct result of intemperance. The drunkard's wife is too often a spirit-broken creature, lacking food, enduring cruelty, obliged to nurse sickly children, or having to struggle to maintain them; who can wonder that she is slatternly and dirty in her home? Is it reasonable to expect women to keep their families and homes cleanly who return at night, fagged with a day's washing or hawking, or factory or field labour, to which she is driven through the idleness of a drunken husband? But in the lowest deep there is a lower deep, when the wife and mother is herself a drunkard. An example of this was presented lately in the case of the family at Ilford, where a man was found on the floor in one apartment who had been dead a week, whilst his wife lay drunk in the next room amidst filth and stench which were sickening. Now drunkenness amongst females is terribly on the increase. A more humiliating confession, or a more ominous one, could not be made. Liverpool is the most unhealthy town in the kingdom, and in no part does female drunkenness so greatly abound or increase so fast.

But it is the poisonous effects of alcoholic liquors which most directly open the doors for pestilence to enter. The depression which follows the free use of liquor, the loss of functional balance, the retention of effete matters, the enfeebled circulation, the torpid liver, and weakened

* See a valuable paper by Drs. M'Cloy and Robertson. *Med.-Chir. Trans.*, vol. 50.

† Read before the Medical Section at the Annual Meeting of the British Medical Association, in Plymouth, August 1871.

digestion, the generally lowered tone of the system, all favour the development of zymotic agents.

During the cholera-visitation of 1832, the nurses in the Manchester Cholera Hospital were at first allowed to go home each day at certain intervals. This arrangement gave them the benefit of a certain amount of out-door exercise and change of atmosphere, as well as relieved the tedium of their duties; the mortality, however, amongst them was so great that it was feared that the supply would fail. It was discovered that, with the idea of protecting themselves against the disease, they indulged freely in liquors; they were therefore confined to the hospital, and debarred from obtaining more than a small allowance of alcoholic drink, after which not a single fresh case occurred amongst them. Here we see that, notwithstanding far less favourable hygienic conditions, there was an immunity from cholera attacks when there was a greatly diminished consumption of alcohol.

Cheerfulness is undoubtedly one of the best defences against cholera, as depression is one of its most effective allies. Nevertheless, joyousness associated with the free use of liquors, as is so frequently the case in this country, may be productive of very adverse results. When the cholera-visitation of Glasgow (1832) was dying out, the jubilee was held to celebrate the passing of the Reform Bill. This gave rise to a considerable increase of drinking and drunkenness; the result was that cholera, which was nearly extinct, burst forth afresh, causing considerably increased mortality.

During the second epidemic, a great increase in the number of deaths from cholera took place during and after the New Year's festivities. At Gateshead, the week after Christmas-day was signalled by a most terrible fatality, which was obviously attributable to the drunkenness which prevailed in the town; one of the worst streets of which was said to be swept of confirmed drunkards from one end to the other, with very few exceptions.

At the close of the cholera-visitation, as experienced in Liverpool in 1866, Dr. Shearer, in his Report to the Toxteth Park Board of Guardians, thus wrote:—

"Of all the physical causes predisposing to cholera, indulgence in intoxicating liquors is the most powerful. This was proved on a large scale by the number of applications on the Sundays, Mondays, and Tuesdays, being from seventy to a hundred daily in excess of the number of applications on other days of the week. I have no hesitation whatever in tracing this terribly significant fact to the drunken orgies of Saturday night, Sunday, and Monday, which follow the weekly receipt of wages on the part of the labouring community."

The cholera-attack on the metropolis told, in 1866, with terrible effect on the East of London, more especially over the Limehouse and Ratcliffe districts. Mr. Orton, the Medical Officer of Health, in his report, states: "Those who have been water-drinkers, teetotallers more especially, have been pre-eminently exempt." Again, in his report for the year ending Lady-day 1867, after an enumeration of the facts connected with the outbreak, he declares: "That the drinkers of stimulating liquors, both fermented and spirituous, all other conditions being equal, were pre-eminently the sufferers and victims during and arising from the epidemic."

One of the most terrible examples of the effects of drunkenness and its accompaniments in promoting the spread of cholera was associated with the terrible outbreak at Liverpool in July 1866. Dr. Trench, the Medical Officer of Health, received information on Monday, July 2nd, that a death from cholera had occurred on the previous evening. This was the first case, the victim being an Irishwoman. The friends resolved on waking the corpse. The body was laid on a board; and in the apartment, scores of persons (men, women, and children) ate, drank, and slept, the orgies being kept up, amid drunken and profane revelry, during day and night. The whole place reeked with the loathsome and disgusting emanations of drunken and unwashed bacchanals. Drunken women squatted thickly on the flags of the court, before the open door of the crowded room where the corpse was laid. Before a week had passed, the husband of the woman was among the dead; and before the end of July, forty-eight persons had died from cholera within a radius of a hundred and fifty yards from the court which had been the scene of the ill-timed revelry.

Numerous facts teaching a similar lesson could easily be added; those cited will, however, suffice to show that, in taking means for preventing the advent or spread of cholera, the utmost efforts should be used by the authorities for limiting the facilities for procuring intoxicating liquor. When an attack is impending, intemperance ought to be most stringently dealt with. The drunkard is a source of the greatest danger to himself and to the community. The utmost efforts of the authorities, and the most lavish expenditure of funds, may be neutralised by the reckless conduct of a few intemperate persons. Every means ought therefore to be taken in order to prevent drunkenness.

It is not intended to imply that the attention of the authorities should be confined to the promotion of temperance—every hygienic method should be employed; but incentives to intemperance must be especially repressed—indeed, as far as may be practicable, suppressed.

ON THE TREATMENT OF ANEURISM BY COMPRESSION.*

By RAWDON MACNAMARA, M.D., F.R.C.S.I.,

Surgeon to the Meath Hospital, etc.

It may perhaps be in the recollection of some of the members present of this great Association, that upon the occasion of their honouring my native city, Dublin, with a visit, I read a paper in the Surgical Section on the Deligation of the Femoral Artery, in what is now known amongst surgeons as Porter's space. Upon that occasion I supported my views as to the eligibility of selecting this space as the site for operation by a record of eight cases, in six of which the operation had proved eminently successful, whilst in two the results had proved fatal, but fatal from causes perfectly independent of the site selected for operation. This paper will be found in the *BRITISH MEDICAL JOURNAL* for the year 1867, vol. ii, p. 285. Since then I have had no further personal experience of this operation; but I have learned from Professor Gross that since his return to America from the visit he recently paid these countries, he also has deligated the artery in this space with success, and that it is his intention to introduce a description of this operation into the forthcoming new edition of his well known *System of Surgery*. My inability to support this mode of procedure by a further record of additional cases is to be accounted for by the fact, that all the cases of popliteal aneurism which I have witnessed in the interval have proved amenable to treatment by compression. Even within the month just passed two cases have been successfully so treated in the wards of the Meath Hospital—one by Mr. Porter, the other by Mr. Wharton; the former case being brought to a successful issue in thirty-two days, the latter in seven days.

The treatment of aneurism by compression has been attended with such happy results in the hands of Irish surgeons—results contrasting in so marked a manner with the exceptionally favourable cases occurring in the practice of English surgeons—that I have on more than one occasion been asked by eminent London authorities how I could account for this discrepancy. To enable me to answer this question at all in a manner satisfactory to myself, I shall give a brief sketch of this mode of treatment since its revival in Ireland up to the present moment, and I shall lay before the Section several of the instruments which have been employed for the purpose during that period. By such a course I hope to clothe my observations at all events with somewhat of historic interest; and here, gentlemen, I beg of you to observe that I have used the phrase "*revival* in Ireland"; to do otherwise would be but to display a gross ignorance of the literature of the subject, inasmuch as that Irish surgeons cannot lay claim to absolute originality in the matter. In our earliest surgical writings we find recorded cases so treated. Not to go further back than Galen and Rhazes, we find these worthies using pressure in the treatment of aneurisms occurring at the bend of the elbow; whilst in more modern times, in the year 1772, Guattani published a treatise on aneurism, in which he records the results of this plan of treatment in eleven cases of popliteal aneurism, in five of which there was a successful result. So that we cannot claim for Irish surgery absolute originality in the matter; but we can claim for it the merit of its revival—of unwearied study of the subject—of having established the principles whereby the cure is effected—and of the suggestion of numerous most ingenious improvements in the class of instruments suited for the successful conduct of such cases. Pre-eminent amongst these labourers must always stand the names of Bellingham, Carte, and Tufnell; and to this latter gentleman am I indebted for being able to exhibit to you many of the most interesting of the instruments now lying upon the table.

Historically, the treatment of aneurism by compression may be divided into two eras—one anterior, the other subsequent, to the year 1785—a year memorable in our annals as that in which John Hunter per-

* Read before the Surgical Section at the Annual Meeting of the British Medical Association, in Plymouth, August 1871.