

Remarks on the nature and treatment of cholera; being the substance of a paper laid before the Medico-Chirurgical Society of Edinburgh. Addressed to the Right Honourable the Lord Provost of Edinburgh / [John Argyll Robertson].

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REMARKS
ON THE
NATURE AND TREATMENT
OF
CHOLERA;

BEING THE SUBSTANCE OF A PAPER LAID BEFORE THE
MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

ADDRESSED TO
THE RIGHT HONOURABLE
THE LORD PROVOST OF EDINBURGH.

STIRLING & KENNEY, EDINBURGH;
ATKINSON & CO., GLASGOW; THOMAS DICK, PAISLEY;
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E. CHARNLEY, NEWCASTLE; AND
JAMES DUNCAN, LONDON.

MDCCCXXXII.

REMARKS

ON THE

NATURE AND TREATMENT

OF CHOLERA.

BY

THE LORD PROVOST OF EDINBURGH,

AND
OF THE FACULTY OF PHYSICIAN,
IN ANSWER TO
A REPORT
PRESENTED TO THE
FACULTY OF PHYSICIAN,
BY THE
FACULTY OF SURGEON,
ON THE
18th OF AUGUST 1817.

Edinburgh:—DUNCAN STEVENSON,
Printer to the University.

MDCCLXXII

REMARKS, &c.

MY LORD,

I HAVE taken the liberty of addressing to you the following observations upon Cholera, read at the Meeting of the Medico-Chirurgical Society on Wednesday last. As they differ materially from the opinions generally entertained by the profession, both with regard to the nature and treatment of the disease, I conceive it to be my duty to make them publicly known, for, if correct, they may be the means of mitigating human suffering, and of lessening the ravages of the pest with which this country is afflicted.

The most prominent symptoms of Cholera, are diminished circulation through the skin, the surface of the body being generally cold, the skin, especially on the hands, fingers, and feet, remarkably shrivelled, cold, and blue. There is great depression of the powers of life, and oppressed action of the heart, as shewn by the feelings of the patient, and the loss of pulsation in the arteries of

the extremities.—Accumulation of blood in the stomach and bowels, and increased and altered secretions from their coats, as is indicated by the vomiting and purging, the evacuations being “squirting out with great violence, and often in immense quantities. The matter evacuated is thin and pale, like rice-water, sometimes like pure water, with a little mucus or flocculent matter diffused through it, and often without any smell. *Pain*, or a most severe *burning* uneasiness, is often complained of at the pit of the stomach; the breathing is in some cases soft and easy, in others oppressed and sonorous, and the voice is entirely changed, questions being answered in a whisper, or with a peculiar squeaking sound.” “The symptom (says *Mr. Annesley*, at page 36, octavo ed.) which I have always looked for as particularly marking this disease, and I have never seen a case of the epidemic wherein it did not exist, is a burning sensation between the scrobiculus cordis and umbilicus, precisely over that spot where the vermilion blush is invariably found on examination after death. This is one of the first symptoms the patient is sensible of, and it is generally felt before vomiting or purging takes place. Whenever this painful sensation is accompanied with an anxious look, and a general feeling of weakness or oppression, even without vomiting or purging, we may be certain the disease is at hand; and at this stage it is generally manageable, if boldly and decidedly treated.”

Upon opening the body after death, the omentum,

and peritoneal covering of the intestines are found much injected and florid, the small intestines containing a reddish viscid fluid resembling raspberry cream in colour and consistence. The stomach is externally pale, and considerably distended with reddish coloured fluid, the mucous membrane vascular and red, and a portion near the cardiac dark-coloured. *Mr. Davidson.*

Stomach of a scarlet colour, blood-vessels of intestines and omentum loaded with blood. The veins through the outer surface of stomach and intestines tinged with blood. *Dr. Badenach.*

Some cases occurred where the vascularity was so great as to resemble a successful injection of the intestines with fine size-coloured reddish brown. *Mr. Marshall.*

It appears to me that the following explanation may be admitted of these phenomena, which will lead to important practical deductions. From some unknown cause, the balance of the circulation is lost, the *immense* quantity of blood, usually circulating through the skin, is driven inwardly upon the heart, larger arteries, stomach, and intestines; hence arises the paleness and coldness of the surface; hence also the weakness of the circulation, and depression of the powers of life, for the heart is so overloaded that it cannot act; hence also the increased secretion, which takes place from the stomach and bowels; for every secretion is increased or diminished according to the quantity of blood contained in the

secreting organ ; and from the same cause arises the increased muscular action of these parts.

Keeping these views before us, we shall now proceed to the consideration of the treatment to be adopted :

When we find our patient in the stage of oppression, or *congestion*, as it might with greater propriety be termed, our first object is to restore the balance of the circulation. This is usually attempted to be done by the administration of *internal* stimuli, such as brandy, mustard, ether, camphor, &c. There is no doubt that this practice will *occasionally* be followed by success, but I consider it hazardous in the highest degree. By having recourse to the lancet we accomplish the same end, and without the same risk ; we diminish the load, and the heart propels the blood to the extremities. *Dr. Abercrombie* states, with regard to blood-letting,—“ It seems to relieve an oppression of the circulating system, as is indicated by the pulse becoming stronger under the evacuation, and the patient expressing himself as delivered from an insufferable load, which he felt in the region of the heart.”

Of the beneficial effects of blood-letting in this disease, ample testimony may be collected from the practice of Messrs. Corbyn, Burrell, Henderson, Annesley, and others, in the late epidemic Cholera in India: Mr. Burrell, in particular, having noticed the striking fact, that of a hundred patients, of eighty-eight who were bled, two only died, while, of

the remaining twelve who were not bled, no fewer than eight fell victims to the disease. Indeed we are told in general, that when a patient can be made to bleed in this stage (of collapse) he almost invariably recovers.

“ I beg to give my testimony (says *Dr. Daun*) in favour of bleeding. So far as my experience enables me to form an opinion, bleeding, early and copious bleeding, is the only means of cure yet discovered on which any reliance should be placed.” Again, “ in the cases successfully treated by bleeding, it was remarked, that the pulse, though *feeble* and intermitting when the vein was opened, became stronger and more equal in its pulsations as the blood flowed; the patients also expressed their receiving the greatest relief from bleeding. In two cases the pulse, about 20 or 30 minutes after the first bleeding, (which was to the extent of 32 oz.), began to sink again and to intermit, and the cold perspiration and indescribable anxiety peculiar to the complaint to return. The vein was in both cases again opened, and greater relief was discovered from the second abstraction of blood than from the first: an equal or even larger quantity being lost by the second than by the first bleeding.” *Dr. Molison* observes, “ Bleeding relieves the pain at the pit of the stomach; and I have observed that the pulse becomes stronger as the blood flows.” *Mr. G. H. Bell* says, “ Early bleeding is of so much importance in this disease, that if possible it should be resorted to, even before the arrival of the regular

medical attendant of the family. The rule is to bleed until the blood, which is black and thick when a vein is first opened, assumes a red and more natural colour, and until the oppression of the patient is relieved."

In North Shields the most remarkable success attended blood-letting; almost all that were treated without bleeding and by stimulants died.

There is no doubt that in the stage of oppression this disease puts on so appalling an appearance that many will be deterred from bleeding, from the fear of causing instant death, and they are naturally led to the employment of stimuli; but I beg to refer the profession to the "cases of bleeding in the cold stage of intermittent fever," by * *Dr. Mackintosh*, that they may learn the success of the practice in a disease, which, in so many points, presents strong analogies to Cholera; and deeply indeed is the profession and the public indebted to this gentleman, for the additional light that he has thrown upon the disease and its treatment.

If, however, from the state of extreme congestion, in which the patient is frequently found, blood cannot be obtained, then stimuli *must* be applied to force the heart to increased action. The question occurs, What kind of stimulants is to be employed, and to what parts are they to be applied?

Every stimulant, besides rousing the general sys-

* *Practice of Physic*, Vol. I. Carfrae & Son, Edinburgh.

tem, acts *locally* on the part with which it is brought in contact. Is it not therefore manifest, as long ago observed by the Broussaists, that provided we can rouse the general system by other means, *every stimulant* to the stomach and intestines ought to be withheld. Surely the vomiting and purging, the burning pain at the pit of the stomach, the large evacuations, their altered nature, and the force with which they are ejected, and the morbid appearances found in the abdomen after death, are amply sufficient to shew the great degree of accumulation of blood which has already taken place in the stomach and bowels in this disease, and to put us on our guard against running any risk of increasing it. I am convinced, that the great mortality which has attended the march of Cholera, is to be attributed in a great measure to the use of *internal* stimulants. A fearful commentary is afforded to the practice at present followed, by the fact, that of three thousand cases of Cholera which have already occurred in Great Britain, upwards of one thousand have terminated fatally. Surely *any* change of practice is worthy of a trial.

To shew that the patient will even have a better chance of recovery from being altogether neglected, than from the present mode of treating the disease, by means of brandy, camphor, &c., I may mention, that it is stated by *Sir W. Crichton*, that among the most miserable peasants in the neighbourhood of St. Petersburg, a considerable number of what appeared to be the very worst cases recovered with-

out any medical assistance,—a common practice among them was drinking freely of *warm milk*. *Dr. Abercrombie* states,—“ A case has been communicated to me from Sunderland, in which an individual recovered from apparently the worst state of the disease, who was left without any other medical aid than one or two moderate doses of the London paregoric, and I have conversed with the intelligent captain of a merchant vessel, who, when the disease broke out in his ship, soon after he sailed from Cronstadt, treated himself and four or five of his crew, who were affected, by large doses of castor oil. He commenced by clearing their stomachs with warm water, then gave his doses of castor oil generally twice a-day, and all his patients recovered.” In a letter in the *Edinburgh Evening Courant*, it is stated, that a person in Russia treated 200 individuals with diluents and small doses of castor oil,—of this number only eight died. These facts alone appear to me amply sufficient to shew the destructive effects which *must* arise from the adoption of the present mode of practice, that of exhibiting internal stimuli.

As we know that the patient cannot remain long in the stage of oppression without imminent danger, and as it is extremely difficult, nay, often impossible, to remove the congestion, and as every moment is of importance, we must at once have recourse to the most powerful stimulants, but they are to be applied to an *external* organ,—to the skin. For this purpose may be employed a metal plate,—such as a

common door plate,—previously dipped in boiling water, to the abdomen, or a blanket wrung out of boiling water to the limbs, or any other means that will attain the same end. I am aware that this may be considered severe practice ; but in the treatment of a disease which is not only so fatal, but so rapidly so, we must not be chary of the means we possess to effect a cure. No doubt a sore will be produced which may require some weeks to heal, but surely this is not to be put in comparison with life itself. In *mild* cases of the disease, stimulant embrocations, as heated oil of turpentine, mustard cataplasms, blisters, the warm air bath, and diaphoretics, as recommended by the Boards of Health, may be sufficient ; but the immense mortality which has attended the disease will show how *completely inefficient* such measures are in the treatment of the severer cases of Cholera. Perhaps they might be more successful were not every symptom of the disease aggravated by the use of internal stimuli. After we have succeeded by the above means in relieving the patient from the stage of oppression, the sores and blisters will have a most material effect in preventing a relapse, by keeping up, by their irritation, a free circulation in the surface.

To shew the powerful effects which arise from the application of boiling water to the skin, I shall quote the following case, abridged from *Dr. Mackintosh's Practice of Physic*, vol. ii. p. 36.—*Cornelius Harvey.—Fever.* “ On the 23d day of the disease, when he was reduced to a state of

great weakness, he became delirious. The extremities were cold, pulse weak at the wrist, of thready smallness, and beating 160 in the minute. During the two following days, four leeches were applied to the head, and afterwards ten, without any mitigation of the symptoms, and he was thought to be too weak to bear any further loss of blood. Ice was assiduously applied to the head from the commencement, hot fomentations to the legs, sinapisms to the feet, and hot bricks were placed round the extremities. Still his legs and feet were cold. The sinapisms, although frequently renewed, had not produced the *least* redness, the pulse had become more feeble, he raved incessantly, there was subsultus tendinum to a great degree. As the usual means had failed to produce heat in the extremities, hot spirit of turpentine, both separately and conjoined with aqua ammoniæ, was applied to the legs and feet, but without producing the *slightest redness*; blisters had been applied to each leg and thigh the night before, but they had produced no effect. As a last resource, a towel was dipped in boiling water and applied to each foot. This measure succeeded in producing a *considerable* degree of redness, but only one small vesication about the size of a sixpence. At the moment of the application of the boiling water, he looked about him as if he had awakened out of a sleep, and knew every one in the room, which he had not done for several days, and he complained of great pain in his feet. The *pulse* soon became more *distinct* and less fre-

quent,—a relapse took place,—the extremities, particularly the feet, were quite cold, although warm fomentations and hot bricks were alternately applied, and although the scalded feet were dressed frequently with hot spirit of turpentine, to keep up the action which had been excited in these parts. The blisters, which had been renewed on the thighs, had not risen—boiling water was again applied to both legs, from the knees to the ancles. The relief was as instantaneous and perfect as had been produced previously by the same means, but it was permanent, for, from this time, his recovery went on without a bad symptom. A superficial slough separated from each leg in the course of ten days, and there was some constitutional irritation produced during the course of that process, but the ulcerations healed kindly.” This important case shews the powerful stimulus imparted to the system by the application of boiling water, even when blisters, mustard sinapisms, and heated oil of turpentine, exerted no influence whatever. Ought not this means to be used in Cholera, which is so rapid in its progress, and has so often set at nought all the measures usually resorted to,—a remedy which fulfils the two great indications, that of stimulating the system, and drawing the blood to the surface and extremities. It has the advantage of being within the reach of every one.

Dr. Lange, chief physician at Cronstadt, cured *twelve* out of fourteen aggravated cases of Cholera, by the application of the actual cautery to the nape of the neck. The view with which it was applied was, that

it might affect the spinal marrow ; its effects, however, would be the same as the application of very hot water to the abdomen or extremities, viz. the direct stimulus to the system by its application, and the derivation of the blood to the irritated part. It appears to be almost a matter of indifference to what part of the surface the stimulus be applied. If the circulation be entirely gone from the extremities, then it ought to be to the trunk of the body. If there be little or no circulation in the part to which the hot water or hot plate be applied, no blistering will ensue, but still the stimulus will affect the system. If the patient be so far gone, that no effect be produced by the above means, then in addition, and as a last resource, the actual cautery and galvanism may be applied.

Again, with regard to the evacuations from the bowels, it appears to me that far too much attention has been paid to these, and to the appearance they present, tending to direct the attention of medical men to the removal of the *effect* instead of the *cause*. The increased and altered evacuations are altogether dependent on the state of the circulation through the stomach and intestines. The vessels of these parts are so overloaded, that a quantity of fluid, partly effused, partly secreted, is thrown out, and this tends to relieve their congestion, so that even if we had the power of at once arresting the discharge by any other means than that of altering the state of the circulation, it would be exceedingly doubtful whether we ought to employ them. I am inclined to think not ; for these evacuations, instead of being

injurious, will, as I have stated, tend to relieve the over-loaded vessels of the intestines, and diminish the quantity of circulating fluids, thereby lessening the weight that oppresses the heart: Nevertheless there is a point at which such evacuations must cease to be beneficial. *Mr. Greenhow*, of North Shields, states, "If the vomiting and purging be checked without bleeding in the first instance, death speedily ensues."

The vomiting and purging are generally at once removed, as soon as a free circulation takes place through the skin; does not this at once point out the nature of the remedies to be employed?

Opium appears to possess both stimulating and sedative powers; but the former are so slight and transient, when compared with the latter, that it is from its sedative operation only that benefit can be expected in this disease. Hence its use is evidently contraindicated in the stage of oppression, in which we find it necessary to excite the powers of the system. Opium has been brought into use in Cholera for the purpose of allaying the irritation in the bowels; and what is somewhat surprising, it is generally given combined with brandy, camphor, or some other stimulant—the one evidently tending to counteract the effects of the other.

We must keep in mind, that opium not only acts locally on the parts with which it is brought in contact, but upon the whole system, so that even allowing that it were of use in allaying the morbid irritation of the stomach and bowels, which is a mere

symptom, it would have the injurious effect of lessening the action and power of the organs which move the blood. For these reasons I am of opinion that opium ought not to be given in the stage of oppression. When, however, the stage of reaction has commenced, when the pulse has become strong at the wrist, opium will be productive of the best effects. Even when the circulation through the surface is restored, some degree of irritation remains in the stomach and bowels; and the heart, recovered from the load which oppressed it, acts with too great power and velocity. Opium in such circumstances becomes one of our best remedies, tending to subdue the increased and morbid action of the circulating and digestive systems. It may with great propriety be combined with antimony or ipecacuanha to keep up the regular flow of blood in the surface, and thereby prevent the danger of a relapse.

The free use of warm demulcents, such as warm milk, barley-water, lintseed-tea, water-gruel, &c. may be advised during every stage of the disease; they will act as an internal fomention, and assist in removing any source of irritation that may exist in the bowels themselves: and as the secretions into the bowels in this disease are generally of an acid nature, a little chalk may be combined with them during the period of vomiting and purging, and magnesia when we wish to evacuate the bowels. In no period of the disease are active purgatives or *emetics* admissable, for the same reasons that brandy and other stimulants are injurious. Thirst is a most

distressing symptom of this disease ; the drinks should never be cold, and always of a mild nature.

The symptoms of feverish reaction in Cholera differ but little, if at all, from those of ordinary fever, except perhaps in the greater rapidity with which they too often run to a fatal termination.

Being perfectly aware that the opinions and practice above recommended were *totally* at variance with the system at present pursued and recommended by the different Boards of Health, I thought it my duty to read to the Medico-Chirurgical Society a statement of these opinions at their meeting on Wednesday last, at which were present many distinguished members of the profession and of the Board of Health. My object in doing so was, that if the doctrines I have laid down were incorrect, their fallacy might be exposed. Only two objections were made, the first, that on the principles I have adopted, it would be impossible to explain the suppression of urine which takes place in this disease. This objection is in fact a corroboration of the opinions, for it is universally found that a great accumulation of blood in one set of organs diminishes the quantity sent to others, and hence their secretions are suppressed. The second objection was the occurrence of perspiration during the stage of oppression, when little blood is circulating through the skin. This does not in fact take place till the previously constricted state of the capillary vessels of the skin has been followed by a corresponding degree of relaxation, although they still, owing to diminished action of the

heart, receive less than their usual supply of blood. It is not the perspiration which occurs in health, or in the natural state of the vessels of the skin; it is a cold clammy sweat, such as occurs immediately before death, when the powers of life are gone,—when the skin is almost without circulation, and cold to the touch,—in fact, it is not a secretion, such as occurs in health, but an effusion from the extremities of the vessels.

I have the honour to remain,

Your Lordship's most obedient Servant,

J. A. ROBERTSON, M.D.

58, QUEEN STREET, 7th February, 1832.

The following general Directions with regard to the means to be employed in cases of Cholera, when Medical aid cannot be immediately procured, may prove useful:—

WHEN there is a threatening of the disease, indicated by a burning sensation over the stomach, by nausea, vomiting, or purging, cramps of the toes or fingers, coldness of the surface, and pulse falling in strength, accompanied by languor and lassitude; the patient is to be immediately placed in bed between warm blankets; allowed to drink freely of water-gruel, barley-water, &c., as hot as can be conveniently swallowed; bottles or bladders filled with warm water are to be put round the patient; the feet are to be immersed in water as hot as can be borne; mustard plasters, made of mustard moistened with hot water, or vinegar, spread thin on linen cloths, and applied to the stomach and legs; strong friction by means of heated *linen* to all parts of the body, particularly to the extremities. If, notwithstanding these measures, the heat of surface be not restored, and the pulse still continue to fall in strength, an attempt is to be made to open a vein—a ribbon is to be tied moderately tight, immediately above the elbow, and the vein which is outermost at the bend of the arm, is to be opened; by choosing this vein, and avoiding the *innermost* one, under which the artery may generally be felt beating, all danger of wounding it is guarded against; the blood is to be allowed to flow till the pulse is felt strong and distinct, and the patient relieved of feelings of oppression at the heart. Should the pulse not increase in strength, but on the contrary become weaker, in proportion as the blood flows, (which will rarely happen) then the vein is to be instantly closed by removing the ribbon and applying a bit of rag, folded up, to act as a compress, and tied on, but not too tightly. It will seldom be advisable to take above two breakfast cupsful of blood, unless a medical practitioner be present. Should the skin become colder, and the pulse fail, notwithstanding the friction, bleeding, &c., then a towel or a piece of flannel

dipped in *boiling water* is to be immediately applied to the legs of the patient. If this be not sufficient to rouse the powers of life, the same application may be made to the chest and pit of the stomach. When the circulation and heat of the skin return, five grains of Dover's powder may be given every third hour: the temperature of the skin must continually be watched, and kept up by means of friction, warm bottles, and bladders, or sand, salt or bran well heated and put into bags. Should a relapse take place, the same means are to be repeated.

The best preventatives of the disease, are great moderation in diet, avoiding raw vegetables, fruit of every kind, and whatever has been found to disagree with the stomach; fermented and spiritous liquors, more especially when taken in *excess*, are particularly injurious, and very apt to bring on an attack of Cholera—flannel to be worn next the skin—the feet to be kept dry and warm—the bowels to be kept regular; if medicine be necessary for this purpose, a pill, containing three or four grains of rhubarb and one grain of ipecacuanha, may be taken once or twice a-day, as may be necessary; or a little castor oil or magnesia: the latter medicine is to be preferred whenever there is any heartburn or acidity of stomach present. If there be pain and uneasiness at the pit of the stomach, more especially if it be increased by pressure, a little of the following ointment should be rubbed over the stomach three times a-day, to bring out an eruption:—Tartar emetic, two drachms—hogslard, one ounce, mixed well together. The above ointment will not only act as a preventative, but should the disease appear, will render its progress milder.