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—
CHOLERA
AT HULL

1832

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A BRIEF OUTLINE

OF

THE HISTORY AND PROGRESS

OF

CHOLERA AT HULL.

BY

JAMES ALDERSON, M.D.

From the Author

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BRIEF OUTLINE

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HISTORY AND PROGRESS

OF

CHOLERA

AT

HULL;

WITH SOME REMARKS

ON THE

PATHOLOGY AND TREATMENT OF THE DISEASE.

BY

JAMES ALDERSON, M. D.

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A BRIEF OUTLINE,

ETC. ETC.

On the appearance of any new disease there are always two great objects, towards the attainment of which the efforts of the medical world are directed. First, the discovery of a specific remedy; secondly, the establishment, by observation and comparison, of such just views of the pathology of the disease as may form the basis of a rational plan of treatment. That the first, so much more immediate in obtaining credit to the discoverer, should be eagerly pursued by many who thus hope to find a short and easy road to public favour is only to be expected, and accordingly so inundated are we with infallible modes of cure, that a stranger, on viewing the publications which

teem from the press, must turn with astonishment to the daily returns of deaths, and marvel at the wilfulness of hundreds who perish with the antidote within their reach. Whether the discovery of this specific for Cholera has been made, or whether it is possible that it ever should be, I shall not now consider. It is to the attainment of the second object that I propose to contribute, and I consider that it is less likely to be arrived at by the labours of one individual than by the united operation of many. The observations of a large number of unprejudiced and competent witnesses, collected from various parts of the kingdom, presenting the history, progress, pathology, and treatment of Cholera, is a great desideratum as a groundwork on which to found just conclusions, both theoretical and practical; and I am led to offer the local history of the disease in my neighbourhood, together with such practical deductions as I have been enabled to make, from believing that if, in every town in the kingdom, the same were to be done by some member of the profession, who, not having pledged himself to the validity of any particular mode of cure, would give a candid and intelligent statement of the facts observed in his district, much good might be effected.

Accordingly, in laying before the public my

own contribution, I shall first give a brief outline of the early history of the disease in this place—a history which is not unmarked by incidents of curiosity and interest; for without entering into the long debated and profitless subject of dispute, Contagion, I may remark that some of the facts that I have to relate, appear so intimately to affect that question, that they may probably be ranged in evidence by some future champion on either side.

In a great commercial town like Hull, the medical men were necessarily on the alert, not only to detect the first existence of the disease, but to investigate and dispel illusive reports, so as to protect the place from being erroneously marked as an infected port.

The first serious alarm arose in December, from the death, attributed to Cholera, of a respectable farmer in Holderness, at Goxhill, towards the sea-coast, sixteen miles from Hull. The case was promptly inquired into, and the result having been reported to the Central Board in London, was published by them in the Medical Gazette of the 31st of December, 1831.*

* "*Curious Case simulating Cholera.*"

["The following is an extract of a letter from Dr. Alderson, the official correspondent of the Central Board of Health,

The next alarm was the death of Mrs. Hey, in Collier street, reported also to be Cholera. The result of the Coroner's inquest was alike confirmatory of the absence of Cholera, and of the habitual intemperance of the individual. The post mortem appearances left no doubt

addressed to Dr. Barry. We think great credit is due to Dr. Alderson and the gentlemen who assisted him, as well for the zeal they displayed, as for their acuteness in detecting so unexpected a cause of the symptoms."]

"About three weeks ago a case of suspected Cholera was reported to me by a magistrate about sixteen miles from Hull, on the road to the coast; and without loss of time, before daylight, and in company with Mr. Craven and Mr. Fielding, I repaired to the village (Goxhill, near Hornsea), and minutely inspected the case. A farmer, Peter Cross, aged 64, had been seized with symptoms of Cholera, (vomiting and purging, with spasms in the legs,) at half past nine in the evening, and died at seven the following morning (nine hours and a half only). Every part of the body was minutely inspected, and a rusted needle was found in the pancreas, projecting half an inch *into* the duodenum. The stomach was like that of a person having taken arsenic, and the inflammatory appearance of the mucous membrane ceased about two inches below, beyond the situation of the needle. The needle was about an inch and a quarter long, and had the appearance of having been in the body some time, for that part of it which projected into the intestine was thinner than the rest, so much so as to shew quite a shoulder at the surface of the membrane: by some accidental cause its position may have been *altered*. We had no hesitation, of course, with such a local cause of inflammation, in pronouncing this as the real cause of the death of the individual."

that the cause of death was an inflammation of the mucous lining of the stomach and small intestines, brought on by the inordinate use of ardent spirits. The third case occurred in a young woman, who died after a short illness, with vomiting and purging, under circumstances which, connected with the appearances after death, indicated sufficient cause of death, without referring it to Cholera. I shall have occasion to allude to these three cases when I proceed to remark on the pathology of Cholera.

The disease now appeared decidedly at Goole, a port situated at a distance of about twenty-eight miles from Hull, on the river Ouse, from which there is daily communication by steam-boat.

On the 6th of April a suspicious case occurred in the practice at the Dispensary at Hull. The man (J. Todd) is reported to have had many symptoms of Cholera. The case terminated favourably, and to it therefore may be applied an acute observation, made to me by a physician of repute in Lincolnshire, regarding a similar case of cure, detailed to him by a country practitioner: it was, he said, wanting in one symptom only of the disease in the earlier cases, viz. *Death*. I offer no further remarks on the case of Todd, except that a difference of opinion did exist as to the

nature of the attack, in the minds of those who saw the case.

On the 13th of April, I visited Goole, to witness the disease, which I had ample opportunity of doing; and on the day of my absence from Hull, a man (Read) died of Cholera in the Pottery, the south-western suburb of Hull. An examination of the body was made; and a report of the case, together with that of Todd, transmitted to the Board in London. Both the cases were marked by the Central Board, as Cholera, and the port considered infected, from the 6th of April.

Wm. Read was seized on the 13th of April, and died on the same day. He was a reduced tradesman, without employment, and in very distressed circumstances. His case was unanimously allowed by all who saw him, to be one of Spasmodic Cholera. On Sunday, the 8th of April, Joseph Blake landed from the Prince Frederick steam-packet, from London, in a state of delirium; and with the assistance of one of the crew, walked home to his mother's, in Castle-street. He died on Sunday the 15th. He was buried on the Wednesday, and a great number of friends attended his funeral. On investigating the circumstances attending the death of his mother, who died suddenly of Cholera, without any medical attendance, it

appeared that Blake, whose case at the time was not suspected to be Cholera, had been in some hospital in London, having been taken ill on board his vessel in the Thames. By the assistance of the Central Board of Health, he was traced to the St. Olave's Cholera Hospital, into which he was admitted on March 29th; and from which he was discharged on the 6th of April, supposed convalescent, after a severe attack of Cholera. It is ascertained, therefore, that Blake was, in Hull, labouring under delirium, in the consecutive fever of Cholera, before the case of Read, which was the first

Page 9—*Ninth line from bottom*, insert—A case (Douglas, a blacksmith) occurred on the 17th of April, which recovered, and which could not be traced to have had communication with any infected individual.

She died in the course of the night. It was not until the 23d of April, that another case occurred. A woman (Ann Pashby) in the vicinity of the last two cases, finding herself attacked in the night with bowel-complaint, walked at day-break for assistance, to a Cholera Hospital, which was not then ready for the reception of patients, and afterwards called up Mr. Casson, who immediately sent for me.

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The next two cases were those of an aged man and woman (Brown) in Scott-street, near the west bank of the river Hull, a mile distant from Read, and half that distance from Blake. The old man had been dead three days, and the woman was in collapse when I saw her. She died in the course of the night. It was not until the 23d of April, that another case occurred. A woman (Ann Pashby) in the vicinity of the last two cases, finding herself attacked in the night with bowel-complaint, walked at day-break for assistance, to a Cholera Hospital, which was not then ready for the reception of patients, and afterwards called up Mr. Casson, who immediately sent for me.

She was bordering on collapse when she arrived at home, having walked nearly a mile and a half. The case terminated fatally on the 25th, and she was buried on the following Friday the 27th. Blake's mother, (Pashby's aunt) saw her during her illness, and attended the funeral. The following evening Mrs. Blake was seized with Cholera, and died in a very short period. I must not omit to say, that two fatal cases occurred on the 23d of April, in the eastern suburb of the town.

A great intimacy existed between a young woman, Fanny Ware, and the half-brother of the young widow Blake. On the 29th of May, Mr. Rounding, residing in the eastern suburb, was seized with the disease in the most violent form, and died on the 30th. He was attended by his wife's sister, Fanny Ware, who also died of Cholera. She was attacked on the 4th of June.

I could trace no distinct chain of communication respecting the Browns; but in the square just opposite, and in habits of intimacy with them, lived a fine-looking young sailor, Twydale,* who told me he had been in all the infected districts, at home and abroad, and had escaped, whilst most of his shipmates were

* This young man was afterwards seized with Cholera, in its most malignant type, and died.

attacked. Mrs. Broadwell, who laid out the Browns, was attacked, and went into consecutive fever, and died.

The nurse who waited upon Pashby, and who attended the inspection of the body, died of Cholera. Several more in the same square suffered from the complaint; and it was in this district that the disease for a long time raged with great violence and fatality.

At the latter end of June, Cholera again broke out with virulence in the north-western suburb—a part filled with lodging-houses, and occupied by all the tramps and paupers, and Irish labourers, who infest the town. The mortality in one square (Bellamy-square, *one whole side of which consisted of pig-styes*) was very great. The whole district *was* without drainage, and the inhabitants altogether in the most destitute condition.

The old town of Hull, by far the most populous district,—an island, included between the rivers Humber and Hull, and the three docks,—perfectly drained, and periodically sluiced from the docks, has been hitherto but slightly visited by Cholera. There have been a few cases on board vessels lying in the river Hull.

The citadel was closed on the breaking out of the disease. It is situate on the eastern bank of the river Hull, and on the northern bank of

the Humber, and completely insulated. No case of Cholera has as yet appeared within it.

In the General Infirmary there have never been any restrictions with regard to out-patients, or the friends of the in-patients. There are from 60 to 70 patients in the house, and 300 out-patients on the books; many of whom reside in the infected districts, and during their attendance at the hospital have had parts of their families actually labouring under Cholera. Three or four cases of diarrhœa have occurred in the house, which have all given way to chalk mixture with laudanum, but no case of Cholera has been met with.

The gaol was in quarantine until the last Quarter Sessions, which were held in July. On the Thursday the Sessions were held, and, of course, intercourse between the gaol and the courts. On the Friday, Cholera first shewed itself in the person of a soldier confined there.

The gaol is new and spacious.

The Hull workhouse, situated in the Old Town, contains from 350 to 400 persons. The greatest care and caution have been used to prevent communication and infection from the buriers of the dead.

The first case within the walls of the establishment, was a pauper employed daily to fetch

medicine for the use of the house. He was known to have been in communication with a sick person, whose illness proved to be Cholera.

The Sculcoates workhouse, situate in the district first attacked, has also had its share of cases.

Many of the inmates of these establishments are aged persons,—some reduced by intemperate habits, from a state of comparative affluence, and consequently bad subjects for resisting the fatal malady.

The Asylum for the Insane, containing between eighty and ninety persons, was early placed under surveillance. The patients were put on a fuller and more generous diet from the commencement of the disease, which first broke out in its immediate neighbourhood, and flannel waistcoats were given to all those over whose clothing the medical attendants had control. No case of Cholera has as yet appeared.

CHARACTERISTIC SYMPTOMS.

Of all the symptoms which, as far as my experience goes, can be relied on as characteristic of the disease, the discharge of a serous fluid resembling water, or barley-water,—or chicken broth, with flocculi of albumen suspended in it, is the most infallible, exactly as

it was in India. So great in some cases is this discharge, that it is not unusual to find the apartment completely inundated with watery fluid, which has passed from the bowels without noise, and almost without smell, through the bed of the patient. A somewhat fishy smell has been noticed by some; but of all diseases, cholera is that which from odour, excites the least repugnance in the attendant.

When vomiting occurs, it is of a peculiar character—sudden, without retching, and ejected in large quantities, as if pumped from the stomach. Great depression follows the act of vomiting, the features shrink, the eyes become more depressed, and the dark areola round them more marked; nor need this excite our surprise, when we consider that this fluid is a true secretion from the coats of the stomach, eliminated rapidly from the blood.

The cramps, though in some cases very severe, have not been so generally marked or so violent, as from the reports they appear to have been in other places.

It is worthy of remark, that whilst in the upper extremity the flexors, in the lower extremity the extensors, have been the chief seat of spasmodic action.

Collapse has come on at various periods of the attack. The cases are few in which diar-

rhœa has not been *fully ascertained* to have preceded collapse, and we have at least only negative evidence against the supposition that it has always been the case. After a denial of any previous illness on the part of the patient, we frequently discover, on narrow investigation, that looseness of the bowels has existed, the character of which it is obviously impossible ever to ascertain.

The cold moist tongue and the hoarse whisper, peculiar to the disease, have been well marked in the bad cases, as well as the dark purple hue of the face and extremities, and corrugation of the skin of the hands and fingers. The real pulseless state, in which the extremities are cold and moist and shrunk, and the skin corrugated—the tongue cold—and the surface of the face and extremities of a deep brown colour, washed over as it were with a purple bloom, like the surface of an Orleans plum, seldom has been recovered from. In these cases the eyes have been much depressed, and the voice almost lost; what remains consists of a peculiar whisper, with, in some cases, a shrill syllable now and then involuntarily escaping.

There is, however, a stage bordering on collapse, in which the pulse is scarcely perceptible—the hands, nose, and feet, *inclined* to cold—the eyes much sunk, with a dark areola, and the

voice very weak—the patient lying upon the back, extended, and disinclined or unable to move, and the discharge from the bowels passing off involuntarily but in no very great quantities. These cases have, many of them, recovered; and they usually have passed through the stage of subsequent fever before becoming convalescent.

The urine in some cases has not been altogether suppressed. The suppression, however, has been a very frequent symptom, and in fatal cases I might almost say universal.

I have frequently noticed a delusive appearance of rallying, when the pulse has appeared for a while to return, and the blue colour to give way to a reddish hue, in cases which have soon after terminated fatally.

EVACUATIONS.

There has been a good deal of variation in the appearance of the discharge from the bowels. In some of the cases they have consisted of clear water, with portions of consistent matter exactly resembling well-boiled rice—this always lies at the bottom of the fluid—in others, thin hasty pudding, without the slightest tinge of bile—the latter chiefly seen in children, and now and then a speck of blood is observed. Again in others the thicker part of the evacua-

tions are precisely like the shreds of flat-boiled macaroni; and, at the same time, the same character pervades the fluid that is ejected from the stomach; this latter occurs in old people, and appears to indicate a more active state of inflammation in the mucous lining of the alimentary canal: they are cases which quickly pass into the blue stage and prove fatal.

In by far the greater number the discharge resembles exactly chicken broth, or barley-water with flocculi suspended in it. The flocculi keep the centre of the vessel containing the fluid, and form a column from the bottom to the top, gradually narrowing as it reaches the surface. As the patient progresses to a state of convalescence, the first change is to spiral-looking shreddy substances of a brownish cast, which are somewhat suspended in the fluid—their number gradually increasing until the discharge becomes like thin linseed-meal poultice, held together by mucus; sometimes greenish moss appears, as in dysentery; at others, a greenish deposit in the fluid, with here and there a little feculent matter. In the consecutive fever the discharge becomes bilious, gingerbread coloured, but usually remains, when the disease is not to terminate favourably, of the consistence of treacle, rather adherent to the bottom of the vessel. These motions pass freely

whilst the urine often remains very scanty, particularly in those cases where there is much head affection, followed by death.

When the suppression of urine is complete, then the best symptom of returning health is a free secretion of urine, which, in these cases, is abundant, limpid, and inodorous—evidently recent; but in cases in which the urine has been scanty all along, or the suppression of short duration, returning convalescence is accompanied by a *gradually increased* secretion only.

The blood drawn from Cholera patients has been not only black and thick, but, after standing, has almost universally shown the buffy coat, though frequently in patches only, on the surface. The serum is scanty; the clot is *light* and spongy; it floats on the small portion of serum which is separated, and the upper surface is in many places dry; in others, it contains a large spread-out drop of serum. The under surface of the clot is soft, and easily broken down.

Hiccup has been a frequent symptom in consecutive fever: though it has been alluded to as a favourable symptom, all the cases in which I have most observed it, and where it was the most distressing, have terminated fatally.

Sometimes furious delirium has come on towards the termination of consecutive fever.

A puffiness of the integuments of the face, following great depression of the eyes, has been observed in young persons recovering from an attack.

More women have been attacked than men, but more in proportion have got through the collapse. Children, generally speaking, have done well.

I am aware of three cases only having occurred during pregnancy—they all proved fatal—two of them having aborted and gone into consecutive typhoid fever.

Before the actual irruption of the disease in this place, I mentioned three cases of death taking place after a very short period of illness, which simulated Cholera. The *post mortem* examinations that were made in every instance, displayed a remarkably inflammatory state of the mucous membrane of the stomach and intestines, and besides this inflammatory state no other morbid appearance could be detected. Whether, therefore, the exciting cause of the inflammatory action be the presence of a foreign body, or the use of ardent spirits, or poison, it is possible that death may be produced in as short a time as in Cholera, and with symptoms equally violent and equally urgent. I will now detail the appearances which have been ob-

served by myself in those cases which have been examined in Hull, after death by Cholera.

ELIZABETH BROWN, æt. 65, April 15th.

An asthmatic subject; had all the characteristic symptoms of the disease.

Examination of the body eleven hours after death.

Chest.—Old adhesions; right lung adherent throughout. Heart; blood in the left ventricle, fluid and dark.

ABDOMEN.

Slight blush on the peritoneal coat of the small intestines. Colon contracted: stomach small, contracted. Lining membrane pale, with viscid mucus covering the membrane. Duodenum somewhat injected. Ilium contracted at its termination in the cœcal valve. Slight spots of inflammatory blush in the mucous membrane of the cœcum caput coli, with viscid mucus lining the whole of the mucous membrane. A large quantity of gruelly fluid in the colon.

Liver.—Acute margin somewhat obtuse. Gall-bladder half distended with dark sienna bile;—bile ducts very contracted.

Urinary Bladder quite contracted. Head not examined.

ANN PASHBY, æt. 45; seized on 23d April; died on 25th April. Had all the characteristic symptoms of the disease.

Examination of the body fifteen hours after death.

CHEST—No appearance of decomposition.

Lungs—No adhesions. Mucous membrane of the bronchia lined by a thin layer of mucus.

Heart—Rather large; ventricles gorged with blood; that in the right ventricle partly coagulated, that in the left wholly so.

ABDOMEN.

Stomach partly distended, with a greyish brown offensive fluid; the internal coat lined by viscid mucus, with here and there spots of inflammatory blush. Pyloric orifice without any apparent diseased action. Small intestines distended with flatus and fluid, similar to that found in the stomach. Internal coat lined with dark mucus, with occasional patches of inflammation, and of venous engorgement. Ileo-cœcal valve, an inflamed surface of some extent. Lesser omentum considerably injected, with a spot corresponding to it on the peritoneal coat of the stomach.

Liver—Natural. Gall-bladder much distended by dark bile.

Urinary bladder contracted to the size of a fig, its external surface slightly reddened.

Uterus.—Peritoneal surface injected.

Kidneys.—Cortical part highly vascular; no urine in the pelvis, or in the tubuli uriniferi.

JOHN DIXON, æt. 51. A sailor.

Died twenty-four hours after being first seen. Acknowledged to have had "bowel-complaint" for three or four days.

Examination of the body four hours after death.

No blueness or discoloration of the surface of the body.*

Head.- Great quantity of treacly blood oozed out over the dura mater, which adhered strongly and was much thickened. Jugulars quite filled.—Blood freely oozed from numerous points on the brain being cut into—arachnoid somewhat opaque—on the right hemisphere, a patch of the surface of the medullary matter discolored and somewhat softened.

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* This man was peculiarly deep coloured; not *blue*, but a deep purple-brown over the face and extremities, during life.

CHEST.

Lungs healthy—left lung containing rather more blood when cut into than natural.

Heart.—Large, somewhat hypertrophied. Much black coagulated blood in the right ventricle and auricle—a coagulum also in the left ventricle.

ABDOMEN.

Small intestines injected through the peritoneal coat.

Stomach.—Mucous membrane, especially at the pyloric extremity, a deep Modena red, with ecchymosed spots here and there. Duodenum, less red, containing a greenish-coloured mucus,—lining membrane of the ilium but slightly injected.

Colon.—Contracted, over the whole transverse arch. Mucous surface deeply injected, as well as great vascular engorgement of the mucous surface of the head of the colon, which is of a deep purple hue all over.

Liver.—Healthy, not gorged.

Gall bladder, three parts full of dark bile.

Urinary bladder, quite contracted.

MRS. BROADWELL. æt. 53. April 24th.

Had diarrhœa some days before the discharge became serous. Passed into consecutive fever, and died on the tenth day.

Examination of the body twelve hours after death.

No signs of decomposition. Parietes loaded with fat.

CHEST.

Lungs, partly adherent to the costal pleura—not much gorged with blood.

Heart.—Healthy; blood, fluid and dark.

Abdomen.—External coat of the stomach, natural. Mucous coat, pale rose colour. Small intestines; lining membrane,

pale, containing adhesive-looking matter, like meconium, both in colour and consistence.

Colon.—Much contracted:—the cells being well marked —whilst the caput coli is distended. Mucous lining of colon here and there red, and spotted with deep brown. The mucous glands enlarged (hypertrophied?), the surface of the glands glossy and shining, here and there deep brown patches of distinct spots; as if a deep brown fluid had oozed forth from the mouths of distinct vessels or follicles — in many places not coalescing. The lining membrane of the appendix V. C. having its mucous coat a deep greenish-brown colour, somewhat mottled.

Liver.—Somewhat more gorged than natural.*

Gall bladder distended with bile.

Urinary bladder contracted, though urine had been secreted during the fever, and drawn off frequently in small quantities.

Attached to the right ovary a small cyst—the size of a child's head, filling the pelvis, and containing a pint of limpid fluid—left ovary, healthy.

Head not examined.

Here, then, we are furnished with four dissections of the disease,—in all of which there appears to have been very considerable determination of blood to the mucous membrane of the whole alimentary canal, from the stomach to the sigmoid flexure of the colon.

It was not probable that disorganization would be found to have taken place, in cases which had proved fatal after only a few hours' illness: and hence I was led to seek an examination

* The stools were highly bilious, during the fever.

of a case in which the disease had advanced through the consecutive fever. Mrs. Broadwell's case furnished the desired evidence; and I think we are justified in inferring that the appearances in the other cases, are the precursors of the peculiar state of the membrane, and of the glands found in Mrs. Broadwell's case: *i. e.* that all the cases are only in different stages of the same morbid action. On the mode in which the morbid poison is first introduced into the system, it is not my intention to speculate. Its *effects* appear to be primarily shewn upon the mucous coat of the large intestines, and chiefly perhaps, of the cœcal portion of them, and the transverse arch, in the same way as dysentery has its seat in the lining membrane of the rectum, or intestinal fever in the ileo-cœcal portion of the intestines. An increased determination of blood takes place to the membrane, and after the contents of the colon have been hastily evacuated, and diarrhœa, for a day or two perhaps, set up, a discharge of serous fluid takes place, which is freely poured out, or secreted by the exhalants of the membrane, as well as from its mucous glands and follicles.

In Mrs. Broadwell's case, which was protracted to the tenth day, the mucous glands were seen in groups much enlarged, and here and there occur patches of dark brown spots, indicating the presence of diseased mucous

follicles, with the appearance of a deposit of the red particles of the blood beneath the membrane, whilst the rest of the membrane, with the exception of occasional spots of pink blush, presents a pale surface, blanched by the free and continued discharge of serous fluid from its exhalants. So long as the disease is unsubdued will the discharge continue, at least to a certain point, for the very secretion then becomes itself the means by which the membrane is relieved of the over-supply of blood to its surface.—By this continued drain, the general mass of blood becomes deteriorated or robbed of its thinner and saline particles, in consequence of which the circulation is impeded by the want of fluidity; and the energy of the brain being, at the same time, diminished by the absence of a due supply of healthy blood, the heart's action can be no longer kept up, and the patient becomes exhausted, and sinks into collapse.

Although the pouring out of the fluid be a natural process for the relief of the membrane, yet the loss is so great, that nature is not able to support the debilitating effects, and the patient dies from exhaustion, whilst antiphlogistic remedies can no longer with safety be used for reducing the original congested state of the mucous membrane, and subsequent inflammatory

action. All that art is capable of doing is to support the powers of life through the discharge, and leave nature to effect her own work. Hence it is, that few recover from the collapsed state. Hence, also, we find an explanation of the apparent anomaly, of an inflammatory disease sometimes getting through without depletion of blood by art. A similar process is gone through in the various dropsies of the serous membranes of the body, which are the consequences of unsubdued inflammation.

When inflammation attacks the serous membranes, which constitute the shut sacs of the body, and remains unsubdued by treatment, the exhalants of the membrane pour out a serous fluid; and in these cases the secretion itself, by its pressure, offers resistance to the further exhalation of fluid. I confess I cannot regard the serous discharge in Cholera, in any other light than as similar to the exhalation which takes place in dropsy of the serous membranes, of the peritonæum, for example; but as the mucous membranes freely communicate with the open air, the fluid secreted rapidly and readily passes off as soon as it is poured out by the mucous surface: both are alike the consequence of unsubdued inflammatory action of the membranes.

Cases of collapse are reported to have been

met with where there has not been any apparent cause of the exhaustion by inordinate discharge from the bowels. I have already alluded to the more than probable universality of a previous, though occasionally concealed, diarrhœa; and in all the cases which I have examined after death, where the purging has been arrested by opiate injection, or by suppository, or even where it has ceased spontaneously, the bowels have invariably been found filled with the same peculiar fluid, passed during life; and hence, though the secretion may cease to pass off, the fluid may still be poured out by the membrane, and exhaustion ensue, as in cases of internal hæmorrhage.

The suppression of urine, and absence of bile in the evacuation, present no difficulties for their explanation, according to the views now before us. The blood, by the inordinate secretion from the bowels, is so deprived of its thinner and saline particles, that the liver and kidney are no longer supplied with the *materiel* wherewith to furnish their proper secretions. The absence then, of these secretions, is the consequence, not the cause, of the disease: the lining membrane of the bowels pours out those very elements which, if turned into their proper channel, would have furnished the bile and the urine, and the reproduction of these

secretions, though certainly the most cheering symptoms in a case of Cholera, is only a consequence of the disease having been arrested either by treatment or the powers of the constitution, and of the elements of which these secretions are formed having again stepped into the right channels, and the machine going on as it ought to do.

The head affection, and other symptoms of the consecutive fever, from being altogether secondary, require no consideration whilst examining the primary disease.

TREATMENT.

Premonitory symptoms. The cases which have come under this head have been very numerous; those which have fallen to my care, as well as those which have been treated by the Cholera Hospital Surgeon,* have not been reported as cases of Cholera. The practice adopted by myself and many others, has been, early venesection, followed by a dose of calomel and rhubarb; or calomel over night with castor oil with laudanum in the morning. If this did not allay the diarrhœa, chalk mixture with laudanum, in nearly all the cases, has been sufficient to arrest the complaint. The blood has gene-

* Mr. Clay.

rally shewn the buffy coat. It is to be lamented that, in many cases, application for relief has not been made until the stage of collapse was fully entered on, and the disease had attained that point when antiphlogistic treatment becomes inapplicable.

It is quite evident that, as in all other diseases, discrimination and care are required in the treatment of Cholera; and that no one plan of treatment can by possibility be of service in all cases, nor even in all stages of the same case, except in the hands of a charlatan or empyric.

When the stage of collapse is only impending —whilst there is a good pulse, and the evacuations, characteristic as already described, are not in great quantity—even though there may be blueness round the lips and in the extremities, venesection may with great safety, and in many cases with the happiest result, be resorted to: but if the evacuations are profuse, the serous secretion will have so relieved the membrane, and so depressed the powers of life, that general bleeding is not only not borne but not required.

Among the most destitute and intemperate class, the most urgent symptoms appear to come on with the greatest rapidity, and it requires the greatest discrimination in these cases in the use of the lancet. The sudden and rapid

approach of a state of collapse, occurring in an individual already debilitated by defective nutriment and intemperance, would naturally contra-indicate the use of depletory measures, and oblige us to turn to the alternative of counter irritants. Large mustard plaisters or poultices to the chest and abdomen continued for an hour and then applied to the back, with poultices to the extremities, have been attended with most success. Where the stomach and duodenum are much affected, vomiting is a very prominent and very distressing symptom, rapidly depressing the vital powers. In these cases a dose of calomel, (from two to twelve grains), with half a grain to a grain of opium, have appeared to allay the irritability of the stomach, particularly when aided by a simple saline effervescing draught every half hour, (the citrate of potass). When the colon and lower intestines are the chief seat of disease, the serous purging becomes the most prominent and most alarming symptom, the first object has been to arrest the inordinate discharge of fluid from the bowels; for this purpose a suppository, consisting of two grains of opium, with ten or fifteen grains of the acetate of lead,* has been found of the greatest service.

* Proposed by Mr. Cafson.

Opiate injections answer the same end, but are not so readily administered; and, with the view to induce a more healthy action of the membrane, and to dislodge the viscid mucus which invariably lines the mucous membrane of the whole alimentary canal, mild aperients have, from time to time, been exhibited. Of these, rhubarb and castor oil, with a few drops of laudanum, are decidedly to be preferred.

The successful use of nitrate of silver, locally applied in leucorrhæa and in ophthalmia, led me early on the visit of the epidemic to administer it in the form of injection. Fifteen grains of the nitrate of silver, with a dram of laudanum in a pint of rain water, were in several cases injected by Read's syringe into the rectum. I never, however, was able to perceive any advantage, beyond that which has attended the use of laudanum only. I attribute the failure, in some degree, to the difficulty of bringing it into contact with the diseased part of the lining membrane of the colon.

During the stage of collapse, or from the local use of opium, or other sedatives, the bowels frequently no longer pour out their contents; which, however, from the dissections after death, appear still to be secreted. In the latter cases, the specific action of the sedative

renders the sphincters inobedient to the usual stimulus of the presence of stimulating fluid in the rectum; whilst in the former it would appear, that the muscular coat of the intestines partakes so much of the exhausted state of the patient, that it is no longer capable of propelling the contents along the canal. In collapse, absorption appears to be almost at its minimum; but the surface of the body has always been observed in Hull to be sensible to the stimulus of mustard.

The cry for cold water has been most frequent. It may be indulged, provided small quantities be taken at a time; a table spoonful only. Where the thirst for cold water has been gratified by large potations, the result has been the vomiting of ten times the quantity of fluid immediately. Small pieces of ice, in one case, and iced water, have afforded the most grateful feeling, and quenched the desire for liquids.

The most agreeable medicine is the common effervescing draught, a scruple to half a dram of the citrate of potass. When, however, the system has appeared to be sinking under approaching collapse, the citrate of ammonia has been preferred, with from three to five grains of free ammonia every half hour, or hour, according to the rapidity with which the stage of collapse has gained ground.

As the canal is always lined with viscid mucus, which not only keeps up irritation, but prevents the due action of remedies, a mild aperient at this period has been apparently useful: it has been given in the form of castor oil with laudanum, or of blue pill, in combination with rhubarb, or with ammonia.

CONSECUTIVE FEVER.

When the patient recovers from the pulseless and powerless stage of the disease, which is termed collapse, reaction more or less takes place; and, as in all inflammatory affections, where this reaction is powerful, and remains unsubdued by treatment,—a stage of low, typhoid fever ensues. The experience of the disease in Hull has shewn the head at this stage of the complaint to be very early affected. The symptoms consisting in,—the conjunctiva of the eye being injected with red blood, sometimes before the pain in the head has been complained of, or even admitted, when inquired into; drowsiness, difficulty of rousing the patient, with a sensation of apathetic satisfaction, followed by wandering and delirium.

At the commencement of this stage, leeches freely applied to the temples, and a blister on

the back of the neck, with the loss of a few ounces of blood, when practicable, have given great relief. As the fever continues, there has generally been experienced pain in full pressure of the abdomen ; particularly in the scrobiculus cordis, and in the course of the colon ; for the relief of which, leeches and blisters to the painful part have been successfully applied, and the treatment continued identical with that pursued in common typhoid fever. I have always preferred the use of nitrate of potass with a little magnesia,—together with effervescent and mild aperients, alternating occasionally with small opiate injections if the bowels become too soluble. Experience has indicated the necessity of attending to the state of the bladder at this period of the disease.

A very great proportion of the cases where the head affection has been fully developed have terminated fatally.

As in other places, a large majority of the cases appear to have been pre-disposed to the disease by habits of intemperance, insufficient food and impure air, or ill-ventilated apartments. To these may be added,—fatigue, want of usual repose and sleep, and lastly, *errors in diet.* To the latter appear to be referred some cases which have occurred in the

better ranks of life; and such of these in my own practice, which have been seen early, have, although exhibiting the characteristic symptoms of the disease, given way to antiphlogistic treatment.

In no place have the various modes of practice, which have been given to the world as specific, been more fully and fairly tried, than at Hull. Each remedy has, I believe, been tried with a genuine desire on the part of the practitioners to find in them that resource against suffering and impending death which their respective discoverers or promulgators have so confidently promised. I cannot record the result of the trial of these remedies without sincere regret at their inefficacy, nor without remarking that each specific hitherto proposed, appears to have given a favourable result only in the hands of its own inventors.

Mercury and opium ever have been, in all obscure diseases, the sheet anchor of the quack; and on the first appearance of Cholera, when the medical world were alike unacquainted with its nature and treatment, there was a great disposition to employ them, and particularly mercury, that most severe as well as efficacious remedy. It appears at present, that ample experience has brought the practice much into disrepute in Cholera; and although both calomel

and opium still continue to be given in all doses, and at all intervals throughout the disease, there are few advocates found for their indiscriminate use. The constitutional effect of Mercury in severe cases cannot be expected, in consequence of the rapidity of the disease, and of the comparative absence of all absorption in the system. When it is given in frequently repeated doses, it has been too often found that the accumulated effect of the inordinate quantity thus poured in, takes place at once, and horrible ptyalism is the result. Years of pain and misery are thus laid up for the unhappy sufferer, whose strength of constitution we would the more unwillingly impair, since he is generally in that class of life where the daily bread is earned by bodily labour, and where there are few opportunities of protection from the vicissitudes of the weather.

SALINE TREATMENT.

The saline treatment which was introduced to the notice of the profession in this place, by the most favourable testimony,* was cordially received and very extensively tried. Its claim as a specific cure is certainly unsubstantiated,

* Sir David Barry wrote to me an account of the reported success of this plan of treatment, and without any other remark, requested me to give it a full and complete trial.

as a large proportion of cases in which it has been used, either alone or in conjunction with calomel, have died. Some slighter cases have recovered, and even a few more urgent ones. But whilst taking into consideration the value of any mode of treatment, it is necessary to bear in mind, that cases, not only of slight but occasionally of severe form, have got through under every mode of treatment, and some without any treatment at all. The really candid observer cannot help acknowledging, that in many cases of recovery, he is compelled to attribute more to the strength of the constitution in resisting the attack, than to the remedies administered. My own testimony, as regards the saline treatment, is, that it is of no more value than any other which is of itself innocuous. I believe the only evidence that I can obtain in its favour is from Mr. Craven, the surgeon to the Hull workhouse, who informs me that he has used it with advantage. Without the slightest wish to deprive the plan of the advantage of any such highly respectable testimony, I confess that I myself attribute somewhat of the reported advantage gained, to the assiduity with which (having the means of doing so in a closed establishment) he watched all the incipient cases, and bestowed the earliest possible attention upon them.

The saline injection* into the veins was tried here in four cases—in all of them rallying took place, when the strongest stimuli had been of no avail: there was, for a short time, every symptom of recovery from the collapsed stage, but in all the cases death very speedily ensued.

HOT-AIR BATH.

The hot-air bath has so seldom been found of any service, that its use is now almost superseded. The most distressing feeling of suffocation is always excited by its use; and although the temperature of the body is for the moment increased, on the removal of the apparatus it immediately sinks.

* See Medical Gazette.

Fig.1.

Fig.2.

Fig.3.

J.Perry lithog. Published by Longman & C.º 1832. Printed by C.Hullmandel.

Fig 2.

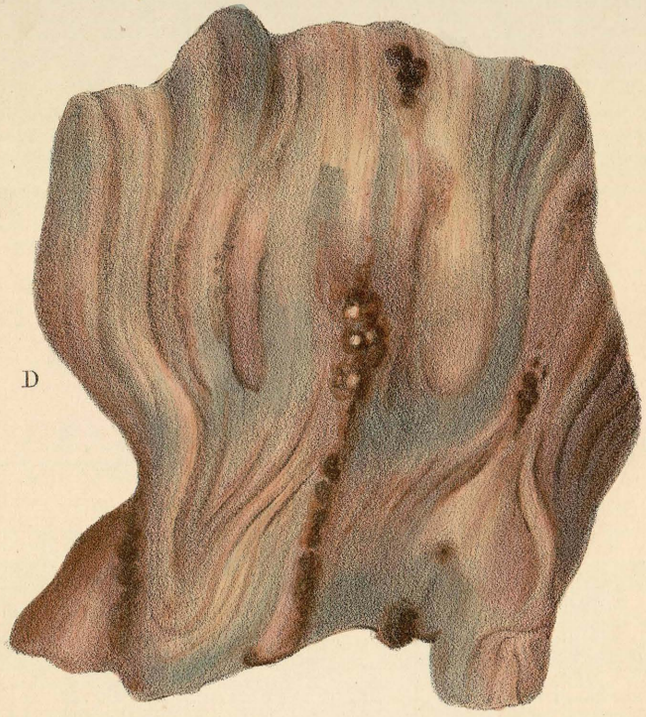
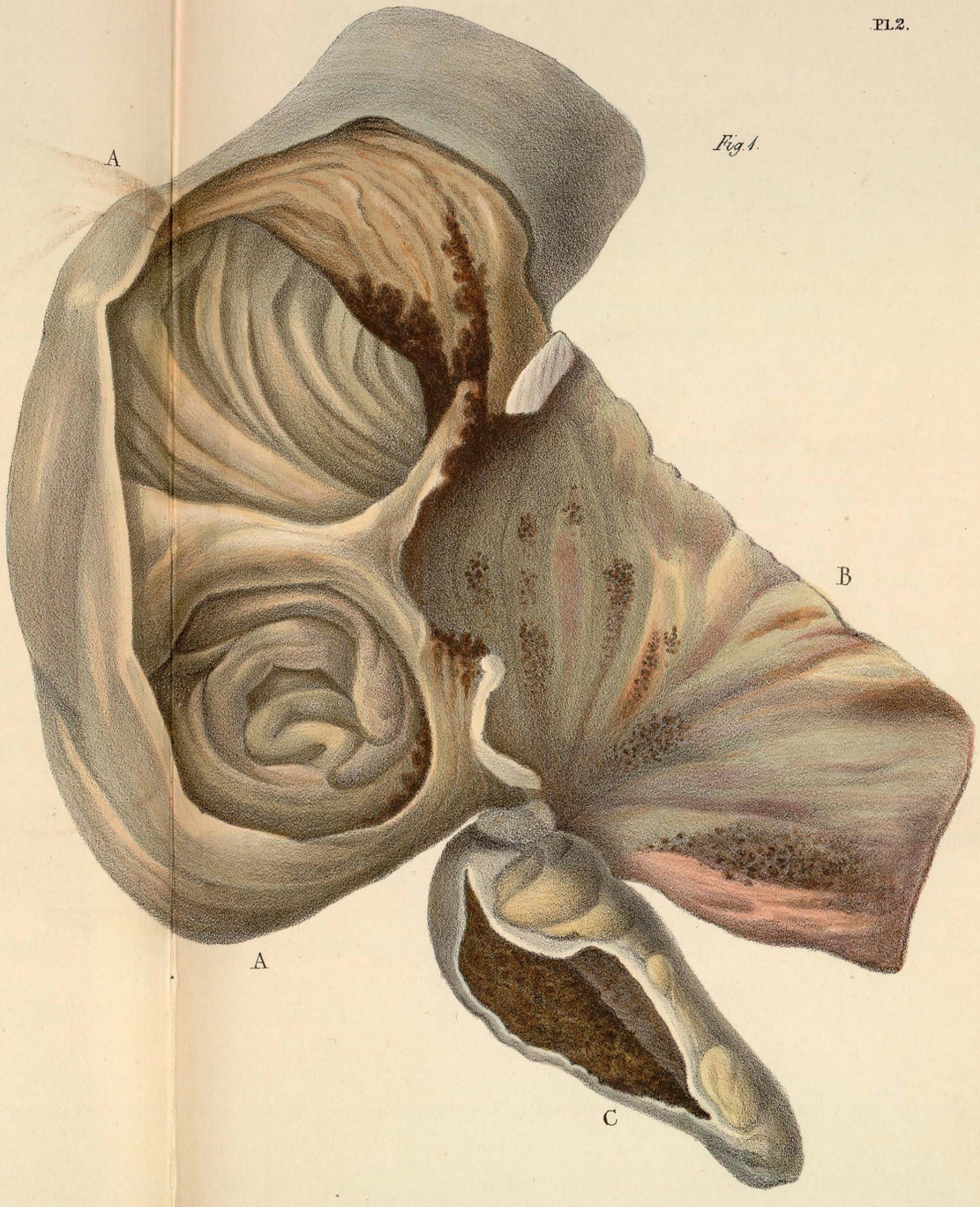


Fig 1.



J. Perry lithog.

Published by Longman & Co. 1832.

Printed by C. Hullmandel.

EXPLANATION OF THE PLATES.

PLATE I.

Represents the Parts, on Dissection of the Body of John Dixon.

Fig. 1. A.—The internal surface of the Pyloric end of the Stomach.

a. The Pyloric extremity.

Fig. 2. B. B.—The Head of the Colon cut open from behind: showing the congested state of the Vessels of the Mucous Membrane.

C.—The inflamed Mucous surface of the Ilium.

D.—Appendix Vermiformis Cœci.

Fig. 3. E.—An inverted portion of the contracted transverse Arch. Some spots of inflammatory blush, as well as much vascular engorgement. The size of the Drawing is that of the Intestine.

PLATE II.

Fig. 1. — Represents the Parts on Dissection of Mrs. Broadwell.

A.—The Head of the Colon cut open anteriorly: showing the appearances minutely described in the text, page 22.

B.—The Ilium cut open.

C.—The Appendix, also laid open to show the Mucous surface.

Fig. 2. D.—A portion of the contracted transverse Arch; cut open, to show the Glands enlarged. The Drawing is the size of the Intestine when cut open.

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