ORIGINAL COMMUNICATIONS.

CLINICAL NOTES ON CHOLERA.

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PREMONITORY DIARRHŒA.

I SHOULD scarcely have considered it necessary to make any remarks under this head, were it not that some practitioners have of late been strenuous in upholding the opinion that cholera is invariably preceded by a simple diarrhœa; that this diarrhœa is readily amenable to treatment; and that, therefore, if recognised and treated in time, every case of cholera must be considered as curable. They do not admit the reality of the existence of cases where the attack is sudden and not preceded by such diarrhœa, but explain their supposed existence by a want of inquiry or observation on the part of the practitioner in attendance. The point is obviously one of considerable importance to determine. The profession are pretty well agreed that, in the great majority of cases of cholera, the onset of the disease is marked by a diarrhœa of greater or less duration and intensity, which, if subjected to treatment, admits of a comparatively easy cure. But they have constantly reason to deplore that the disease is seldom or never presented to them at this curable stage; and this probably, in great measure, arises from the difficulty, experienced alike by the public and the profession, of distinguishing specific or choleraic from simple or common diarrhœa. I see, however, no reasonable ground for doubting that cases, sudden in their invasion, rapid in their course and fatal in their issue, unpreceded by diarrhœa or other premonitory symptoms, are undoubtedly met with: nay, my own experience leads me to believe they are comparatively common. I have known many persons in the full enjoyment of all their faculties, who had been healthy throughout life, suddenly seized almost simultaneously with rice-water purging, vomiting, cramps, severe nausea, and a feeling of sinking; or prostrated by the overpowering collapse, and rapidly dying of the disease. In from thirty to forty per cent. of the cases in the Edinburgh Cholera Hospital during last winter, the attack was sudden; that is, it was not heralded by diarrhœa or other symptoms, and many of the patients had been, during their lives or for considerable periods, in comparatively good health. In a considerable proportion of the cases in which the collapse was not sudden or rapid, the first invasion of cholera was marked by the sudden appearance of serous purging and vomiting, with or without cramps; these symptoms gradually abated, and the subsequent supervention of collapse was generally gradual. In other cases, the disease followed diarrhœa, which had been induced by different causes and varied in duration; in one case—a child, aged 2—it succeeded diarrhœa, which was one of several sequelæ of rubeola; in others, it followed diarrhœa caused by exposure to the inclemencies of the weather, by bad or insufficient food, or by habits of intemperance. In these cases, the merging or metamorphosis of the simple into the specific diarrhœa was often very gradual, obscure, and insidious, and was generally suspected from the occurrence of vomiting and perhaps cramps before the alvine evacuations assumed the characteristic "ricy" appearance. During the epidemic in Edinburgh last winter, simple diarrhœa was very rare. I could not, in a single instance, discover that it was common, or even at all known to exist in individual cases, in the houses or streets where cholera was prevalent. This fact it appears to me of importance to bear in mind, as directly discountenancing the idea that cholera always begins by diarrhœa. I find that my opinion is corroborated by the testimony of Mr. Marshall, of the City Cholera Hospital, Glasgow,* who states, moreover, that it is borne out by the concurrent evidence of the profession in Glasgow. I have questioned

many medical men as well as nurses and others, who have had great experience of cholera in different parts of Scotland both in the last and the preceding epidemics, with regard to the non-occurrence of diarrhœa as the precursor of cholera; and the general result has been the opinion that, though in a large number of cases, diarrhœa, apparently simple in its nature, has pre-existed for several hours, days, or weeks, cases undoubtedly occur, and occur frequently, where no such premonition of the approach of the disease has been detected on the closest scrutiny. That diarrhœa is not an essential feature of any stage of the disease is sufficiently proved by the fact, that cases have been known to run their course without the slightest rice-water purging or alvine evacuation of any kind. This is not of itself sufficient to overthrow the theory that the intestinal tract is the original seat of the disease; still I think there are strong grounds for regarding the peculiar collapse (which may in part and in some cases be due to the intestinal transudation and the consequent changes in the chemical composition and physical condition of the blood, but also depends in great measure on a dynamic condition of at least the ganglionic portion of the nervous system) as the essential feature of the disease. But I forbear, at present, entering into theoretical discussion on the nature or causes of the disease, or the relation in which it stands to other diseases with whose natural history we are better acquainted. The opinion that cholera is always preceded by simple diarrhœa is, I suspect, chiefly upheld by those who consider the intestinal canal to be the primary seat of the disease. But in many cases extreme nausea and an excruciating feeling of sinking accompanied by diarrhœa, vomiting, and cramps, appear to occur contemporaneously at the onset of the disease; or they follow each other in such rapid succession that they cannot be considered to stand to each other in the relation of cause and effect. Neither are all these phenomena necessarily present in every case; indeed those first mentioned may, though they seldom do, exist independently of the others. They appear to be merely different forms of the results or signs of the disease.

THE CHOLERA EXANTHEM.

In three cases, during the convalescent stage, I observed a distinct exanthematous eruption on different parts of the body. All the patients were females; all had laboured under a severe form of cholera; all recovered in from fourteen to twenty-one days; in each the eruption appeared on or about the tenth day after the first invasion of the disease; in each the eruption was preceded by considerable febrile disturbance, and in each the convalescence was somewhat protracted. Two of the patients stood in the relation of mother and daughter. The exanthem differed in its character in the different individuals: in one it was scarlatinoid, confined chiefly to the face, and followed by copious cuticular desquamation; in the two others it presented the combined characters of urticaria and rubeola, and was followed by very slight desquamation. In all, its duration amounted only to a few days. In a fourth case, also a female, on the fifth day after the invasion of the disease, I noticed a mixed exanthematous and pustular eruption on certain parts of the body; but this case differed from the other three in the following important particulars. The eruption occurred on the fifth day, during a well-marked typhoid condition of the patient; its characters were anomalous and chiefly pustular; its superficial extent was small, and it was confined to particular parts of the body; the issue of the disease was fatal. I am therefore inclined to believe that, in this case, the eruption was accidental so far as concerns its causative connexion with cholera, while I am equally disposed to consider it in the other three cases as depending upon, or caused by, the gastric or intestinal irritation which formed marked features of the disease in these cases.

CASE I. A woman, aged 37, of very intemperate habits, but active and healthy. On the eighth and ninth days after her first admission into hospital in a state of collapse, considerable redness of the face and arms was casually noticed; but she had naturally a somewhat florid complexion, and the redness was not such as to attract special

* Medical Times and Gazette, August 5th, 1854.

attention, nor was it accompanied by any marked disturbance of the circulatory or digestive functions. On the night of the ninth day, she complained of rigors and a general feeling of cold; and on the morning of the tenth, she had a warm bath, which had the speedy effect of developing a scarlatinoid eruption over the whole body, but best marked on the face and arms. During the two previous nights, she had been restless and sleepless, and had suffered from slight febrile heat of skin. On the tenth day, the pulse was 60 and tolerably full; and the tongue was clean. The urine was abundant, acid, of specific gravity 1008 to 1012, and albuminous; this probably depended on a copious sediment of pus, which again was probably due to a leucorrhœal discharge from the vagina. The stools had a pea-soup colour and consistence, and contained several loam-coloured scybalous masses. On the eleventh day, desquamation of the cuticle had commenced; it was best observed on the face, which was covered with a fine scurf. She stated that the skin of her face was liable to peel off in a similar way after attacks of what she denominated "rose". The urine had a specific gravity of 1007, and was phosphatic. She had passed a much better night; her appetite was now comparatively good; her pulse was 88; and her tongue clean. There was still considerable vascular injection of the ocular conjunctiva of the left eye, a remnant of the typhoid stage. The stools were well formed.

On the fifteenth day, desquamation was not completed, the face being still covered by a little scurf. The menses had appeared and were attended by rigors, insomnia, and diarrhœa. The urine still contained a copious purulent sediment.

On the sixteenth day, desquamation was complete; and on the seventeenth, she was dismissed from the hospital comparatively well.

CASE II. A girl, aged 7½, lively, active, and healthy. On the ninth day after her admission, in a nearly moribund condition, she was noticed to have a slight eruption on the wrists, consisting of small irregular patches of a vivid red colour, which readily disappeared on pressure. But there had been no febrile action on the preceding night; and convalescence was progressing most favourably. Two days previously, the condition of the bowels had been such as to require castor oil. She was restless and feverish, peevish and irritable. On the night of the ninth and next days, the greater part of the body was covered with an urticarioid rash. The general cutaneous base was a bright scarlet, over which were scattered irregularly elevated patches of a lighter colour; the redness readily disappeared on pressure. There were several large blotches on the face and hands; few on the chest or abdomen; the legs were comparatively free, while the hips were thickly covered. The pulse was 108; the tongue dry and glazed. The urine was abundant, acid, of specific gravity 1014; and contained a scanty sediment of uric acid.

On the eleventh day, the eruption had considerably extended itself, especially on the legs and back; and it now covered the trunk and upper and lower extremities. The elevated pale patches were gradually becoming flattened and acquiring a dingy purplish colour, until they assumed a darker tint than the surrounding skin, which still continued of a bright scarlet colour. The eruption had therefore now more of a rubeoloid character, and consisted of a series of circular or irregular livid blotches on a light scarlet base. Some of these had a pale central nucleus—the colour gradually deepening towards the circumference or margin; in the greater number the circumferential zone was separated from the pale centre by a distinct zone of an intermediate colour. Both the patches and the general base gradually became lighter in colour, the former coalescing and merging into the latter, until they disappeared with slight subsequent desquamation. The eruption thus varied in its character according to its stage of development, being at first essentially urticarioid, and latterly rubeoloid. The tongue was moist and clean; the appetite was good; the bowels required purgation by castor oil. There was no uric

acid deposit in the urine, which was comparatively healthy. In the evening, the rash was fast fading; the patches were coalescing, and few of them were elevated or pale.

On the thirteenth day, there was scarcely a trace of the eruption; the tongue was clean; the urine comparatively healthy; the pulse and appetite were good; the bowels continued costive.

On the fourteenth day, the rash had quite disappeared.

On the twenty-second day, she was dismissed well.

CASE III. A woman, aged 28, of intemperate habits, but active and healthy. Convalescence was progressing very favourably, when, on the night of the tenth day after her admission in severe collapse, she suffered from considerable febrile disturbance; she was drowsy and anxious to sleep, but was restless and constantly haunted by frightful dreams. During the two previous nights she had been flushed, restless, and sleepless.

On the eleventh day, an eruption was visible, chiefly on those portions of the body on which she rested in bed; it consisted of circular, slightly elevated patches of a purplish colour, which disappeared on pressure. The centre of some patches was pale, and gave them an urticarioid character; while the majority had a uniform dark tint, and were more rubeoloid in general appearance. They were most numerous and best developed on the arms and chest. Throughout her illness, bright scarlet patches, varying in size, had from time to time been observed on the shoulders, hips, back, elbows, and other parts of the body on which she rested in bed. The skin of the legs was marked by a brownish mottling. She was taking no solid food, but her appetite was otherwise good. The pulse was 80, small and soft. The tongue was moist and clean, but of a bright colour; it was cracked and fissured to a considerable degree. The bowels were costive; the stools very dark and fœtid, and half formed. The urine was acid, and of specific gravity 1014; it exhibited a mere trace of albumen.

On the twelfth day, the eruption was much more extended and distinct, but it preserved the same general features. She was still very sleepless and restless; this was due, in great measure, to painful distension of the left mamma, which required the use of the nipple-pump.

On the thirteenth day, the rash was fading on the arms and chest, but had just appeared on the legs; it consisted here of slightly elevated patches, somewhat irregular in outline, of a brownish-purple colour, which disappeared on pressure. She required purgative medicine, but was otherwise in comparatively good health.

On the fourteenth day, she was able to be out of bed. The eruption was seen distinctly only on the arms, and was fast fading even there.

On the nineteenth day, she was dismissed well.

CASE IV. A woman, aged 34, of intemperate habits, but active and healthy, was nearly five months advanced in utero-gestation. On the fifth day after the first invasion of the disease, and the second after her admission into hospital, in the reaction stage (the "consecutive fever" being well marked), a scattered irregular eruption was noticed chiefly on the arms, but also on a few other parts of the body. It consisted of small spots or patches of a deep crimson, interspersed here and there with pustules resembling those produced by the endermic application of tartar emetic. The radial pulse was 100, small and soft; the carotid pulse was distinct, but small; the beat of the femoral artery was proportionally fuller and stronger; the heart-beat was forcible, communicating a strong impulse to the ear applied medially or immediately to the cardiac region. The tongue was moist, and covered with a slight brownish fur. The stools were scanty, and of a pea-soup colour and consistence. Vomiting still continued, frequently accompanied by severe retching. The urine was small in amount, and was evacuated only after the use of the hip-bath or diuretics. There was great debility. She dozed in a semi-comatose condition. The typhoid symptoms rapidly increased, and she died on the seventh day of the disease, or the fourth after her admission.

CHARACTER OF THE TYPHOID STAGE.

The collapse stage passes by almost imperceptible gradations into reaction, which again merges gradually into what has been usually denominated the consecutive fever, or the typhoid stage. The symptoms more peculiarly characteristic of the collapse stage,—the cramps, vomiting, and purging,—gradually subside; and the reaction stage, or that intermediate between collapse and the typhoid condition, in the majority of cases, resembles a return to health. Symptoms resembling those met with in common typhus fever slowly make their appearance. The surface of the body becomes warm, and covered with a copious perspiration. It is at this stage that the peculiar odour given off by the bodies of cholera patients is most apparent; it seems to be dependent in great measure on, and to be proportionate to the amount of diaphoresis: as the skin subsequently becomes more dry, it disappears to a great extent. The areola gradually disappears from the eyes, and the features become full and ruddy; frequently the face is considerably flushed. The conjunctiva, especially that covering the eyeball, becomes minutely injected. The patient now makes no complaint of pain from cramps, of cold, of feeling of suffocation, of sensation of heat, thirst, sinking, or uneasiness of any kind: if questioned, he probably tells you he is quite comfortable, and evidently considers himself rapidly and favourably convalescing. He sleeps well at night, but during the day there is a constant drowsiness or tendency to sleep, which may gradually merge into a continuous doze. Coincident with this drowsiness there may be a considerable degree of apparent stupor and apathy: apparent, I say, because the patient can generally be readily roused, and he then speaks intelligently. In the progress of the disease, if head affection should supervene, these may become real. Anorexia exists; but the thirst, which was formerly urgent, is now moderate. The pulse may be frequent and small, or normal in frequency and full; in some cases, it is slow and soft: or it may be small and weak, while the heart-beat is strong, full, and frequent, communicating a strong impulse to the stethoscope or ear applied to the chest; occasionally it is small in the radial artery, while it is normal or unusually strong in the carotid or femoral: seldom or never, however, does the reverse obtain. In some cases, it was irregular and intermittent; but this depended on cardiac affections unconnected with cholera. There is now comparatively little tendency to faintness or syncope. The tongue is seldom normal; sometimes it is moist, but it soon becomes dry; it is usually covered with a fur or paste, sometimes scanty and light coloured, or of a leaden colour—more frequently plentiful and dark. As the disease advances, it becomes fissured and cracked, and covered with a thick brown or blackish paste. Occasionally the centre only is thus covered, while the edges are clean, preternaturally red, or covered by a thin white fur. In some instances, again, the tongue is clean, but very red, and slightly fissured and glazed: this condition, however, is rare. Towards the fatal termination, the teeth are covered with black sordes, as in the latter stages of typhus. The breath is sometimes foetid; frequently it exhales the peculiar cholera odour already so often referred to. When the patient falls into the dozing condition, the respiration becomes noisy and laboured; and towards the fatal termination of the typhoid stage, if coma and delirium should have occurred, it may become stertorous. Though, from the state of the circulation and the general appearance of the patient, we are led to believe that the physical system is in a most satisfactory condition, there is almost always a considerable and increasing amount of debility. If he makes any complaint at all, it is usually of general weakness; if he attempts to get out of bed, he sinks helpless on the floor, having greatly miscalculated his strength. In the more properly typhoid stage, which is the termination of what is usually called the "consecutive" or "secondary fever", the debility becomes extreme; the patient sinks towards the foot of the bed; he has no control over his evacuations; he may be so weak as to be unable to give utterance to his wants or ideas, though his mental

faculties remain unaffected to the last. In this condition, the muscles often feel quite flaccid and soft; and, if the hand is raised to examine the pulse, the arm drops at once by the side, as if paralysed. Rigors seldom occur, but there is a sense of lassitude, and a disinclination to mental or bodily exertion is very apparent. Headache is occasionally complained of, but this is where cerebral complication is subsequently developed. Great debility and dull aching pains in the back were sometimes complained of; but the patients were females, and the cause was probably either prolonged recumbency, uterine disorder, or spinal irritation. One patient, a male, complained of dull pains and weakness of the lower limbs, so severe that he could scarcely walk. This occurred during convalescence, after a somewhat mild attack. I have already stated incidentally that the vomiting ceases during this stage; in rare cases, it is met with to the last, sometimes repeated at short intervals. The fluid, which was generally very bilious, was occasionally ejected in as forcible gushes as during the collapse stage. There is seldom diarrhoea; when it exists, it is moderate, and the stools have a pea-soup colour and consistence, and are distinctly bilious and foetid. More usually the bowels become constipated, and require gentle purgation; and the stools acquire a very dark colour from the presence of excess of vitiated bile, and are of tolerably thick consistence. As in ordinary typhus, the urine is frequently retained, requiring the use of the catheter, hip-bath, or diuretics; in some cases, it appears to be suppressed, especially in the last stages of the disease; at least, the remedies and means just mentioned failed to bring away any fluid, and the bladder is found empty after death. Its microscopical and chemical characters have already been described, and do not differ from those of the urine of typhus. From what I have seen of the date of the retention or suppression of urine in this stage of cholera, and the date of the cerebral complication, when it exists, I do not think that the head symptoms, about to be referred to, have any necessary connexion with uræmic poisoning; but I believe both the cerebral and urinary symptoms to be common results of the disease.

With the disease, the soporific tendency increases; but the patient awakes, even after very long periods of sleep, unrefreshed. During the day, he may appear as if in a constant state of reverie or dream; when roused, he mutters unintelligibly, and stares vacantly; he answers questions by a mournful and impressive shake of the head, or he whispers he is dying. Sometimes, slowly, and apparently with great effort, he raises his eyelids, gazes into our face for a moment with his full lustrous eyes, and, without even a whisper or a recognition of any kind, he sinks again into his doze. The languor and drowsiness are often such as to resemble the effects of a narcotic; these pass into stupor and coma, accompanied or not by delirium; and the patient dies: or he may continue quite able to express his ideas, and is conscious of everything passing around up to within a few minutes of death. The dozing condition may be interrupted at intervals by restlessness and repeated attempts to get out of bed; or he may awake as if from a dream, with a sudden shriek, and continue for a little in a state of muttering delirium. If asked to extrude his tongue, he does so hesitatingly, and with apparent difficulty: when spoken to, he appears to require a few moments to become conscious that he is addressed, a few more to comprehend the question, and a few more still to frame a suitable answer. In some patients, this seems to arise from temporary deafness; in others, from mental obtuseness. In this condition, the eyes are usually heavy and suffused, the ocular conjunctiva is deeply injected, the face is much flushed, the features are plump, and the skin is very warm and moist. The pupils are sometimes much contracted, though I cannot say whether they are more or less so than in common typhus. The patient lies perhaps with his eyelids half closed, and the eyeballs turned up, so as to expose only the white conjunctiva; perchance he moans heavily, as if in pain; and draws his legs towards the abdomen. By and bye, a slight mucous rale is heard in the trachea, gradually extending to

the smaller bronchi; the face loses much of its florid appearance, and the features may even become pinched and ghastly; the respiration is very noisy, slow, and laboured, and the patient dies asphyxiated by the accumulation of mucus in the lungs.

Hiccup, in my experience, was a comparatively common symptom throughout this stage, and a very fatal one. Where it existed, the other febrile symptoms were mild, or in great measure absent; but, notwithstanding this, every case proved fatal. So invariably did this occur, that I am inclined to believe that, from the presence of hiccup alone, in the absence of all other criteria, we may be justified in giving an unfavourable prognosis in a given case of cholera in the fever stage. It is generally very slight, unaccompanied by any effort, and repeated at considerable intervals (fifteen to twenty minutes). Sometimes, however, it is loud and frequent, and causes considerable succussion of the body; this is chiefly towards the fatal termination. It often begins long before we are led, from other symptoms, to regard the typhoid condition as extreme or alarming; and it generally ceases some time before death. It seems sufficient, *per se*, to mark the adynamic character of this stage of cholera. All the ordinary anti-emetic and sedative remedies, besides local stimulants and counter-irritants, have been in vain tried to stop it; it seems at present to be beyond the reach of therapeutics. I question, however, how far it would be useful, did we possess the means, with a view to the cure of cholera, to render this hiccup amenable to treatment; it is probably but a sign of the atonic condition of the diaphragm, which again depends on the adynamic state of the nerves regulating its movements.

Cerebral Complication. In very few cases is this entirely absent. It may be marked merely by a slight degree of stupor, or there may be apparent deafness, ringing and noises in the ears, dimness of vision, spectra and muscæ volitantes, restlessness, jactitation, or low muttering delirium. Delirium, followed by coma, sometimes constitutes a crisis: these symptoms may gradually pass off, and the patient recovers after a protracted convalescence; or they increase in severity, and he dies comatose, or from asthenia or syncope, during some violent effort to get out of bed. In the latter case, we find all the ordinary characters of the last stage of typhus: the patient sinks in bed; passes his evacuations unconsciously; is disturbed by frightful dreams, spectra, and muscæ volitantes; constantly picks at the bed-clothes; becomes extremely weak, and is in a state of considerable or complete stupor for some time before the fatal issue. In one case only was the stupor immediately before death such that the patient, a female, scarcely recognised, and seemed quite unconcerned at the presence of her husband, who had come to bid her a mournful farewell. Immediately prior to death, the temperature of the body usually falls, rising again to its normal or to an increased degree subsequently. Sometimes the patient dies quite warm, the temperature having been pretty uniform throughout the febrile stage; and the corpse exhibits no unusual rise of temperature. The tendency of the body to become cold begins in the feet and in the arms, if they have been exposed by the restlessness of the patient; and the feet are sometimes comparatively cool while the remainder of the body is very warm.

I have already stated, under the head Pathology, that I met with no noteworthy lesions of the brain or its membranes. The following appearances were comparatively common, though they indicated no decided cerebral lesion, and were by no means peculiar to cholera: engorgement of the dura-matral sinuses, congestion of the choroid plexuses, unusual size and number of the puncta vasculosa of the cerebral substance, arachnoidal opacities, subarachnoid effusion, excess of serum in, or unusual dryness of, the ventricles. In one case was noted irregularity of the convolutions, which were somewhat granular on the surface.

Pulmonary Complications. In no case seen by me were there exhibited during life any symptoms of pulmonary lesions. For some time prior to death, in almost all the fatal cases, mucous râles could be heard throughout the

chest; but these were evidently due to hypostatic congestion, and in some cases to oedema, and to accumulation of mucus in the bronchi, supervening in consequence of the gradual cessation of the vital powers. At the autopsies, in almost every case, some degree of emphysema and collapse of the anterior margins of the lungs, irregularly distributed, was met with, along with great engorgement (with dark venous blood, and frequently a greater or less amount of serum) in the posterior and inferior portions of the lungs, which generally yielded, on pressure, a sero-sanguinolent juice. In several cases, the bronchi were also slightly injected, and contained a considerable quantity of mucus, which was sometimes rusty coloured, or tinged with blood. In several cases, also, there were evidences of former disease, such as phthisis, bronchitis, and pleurisy; but these of course have no connexion with our present subject.

In one case, a male, typhoid pneumonia, involving the whole of the left lung, was discovered at the autopsy to have existed during life, without the development of any symptoms. He died in the typhoid stage, which was very mild and somewhat anomalous in its characters. There was a complete absence of pain or uneasiness; he had neither cough, expectoration, nor dyspnoea; the pulse was slow and soft; and there was no febrile heat or flushing of the surface of the body. The left lung was non-crepitant, condensed, very friable, and of a dirty leaden hue, tinged with dark blood; it sank in water, and yielded a copious muco-sanguinolent juice on pressure. Under the microscope, this juice was found to consist of blood-discs, pus-cells, mucus-corpuscles, epithelium, and numerous compound granular bodies. In this case there were also traces of old bronchitis.

In another case, a female, who died in collapse, incipient pneumonic consolidation was found, along with several patches of pulmonary hæmorrhage. Portions of the right lung were non-crepitant, condensed, and friable, and exuded on pressure a copious sero-sanguinolent juice. The surrounding lung was congested and oedematous. The bronchi were also slightly congested.

In a third case, a female, who died in the typhoid stage, the postero-inferior portions of both lungs were non-crepitant, condensed, collapsed, and tough, resembling carnified lung; they were, moreover, considerably gorged and tinged with dark blood. This condition was best marked on the left side, where the finger could not penetrate the pulmonary tissue. On the right side, the lung was somewhat more friable; the finger piercing it, however, only with great difficulty: portions of the tissue sank in water, but the greater part floated. The bloody juice, under the microscope, consisted almost wholly of altered blood-discs and a few compound granular bodies.* The bronchi were also congested, and full of rusty-coloured mucus.

I have given above, somewhat in detail, the phenomena exhibited in the better marked cases of the consecutive fever of cholera; but fatal cases are constantly occurring, where the patient passes through a fever of two or more days' duration, during which few of the symptoms or conditions above referred to are seen, or are present in such mild or unusual forms as to be scarcely recognisable. The invasion of this stage is frequently very insidious, and, during the first few hours or days of its existence, its characters may be so anomalous that we cannot determine whether we have to do with a low, deceptive form of fever, or with a healthy convalescence after reaction. There may be an absence of the ordinary febrile symptoms; but the patient is much debilitated, and makes no progress towards recovery, though we can detect nothing specifically at fault; or his tongue, which is perhaps dry and brownish, may lead us to suspect that typhoid symptoms are not far distant. His pulse may be of normal frequency and strength, or abnormally slow and soft; his tongue has not yet lost its moisture, nor assumed a furred appearance; his skin is not abnormally hot or moist; he is intelligent and

* Vide "Edinburgh Monthly Journal of Medical Science", Aug. 1854, pp. 127 and 128, for the details of the pathology of this case.

happy, and assures us he is progressing favourably, and feels most comfortable; he has no great appetite for solids, but he takes his tea, milk, pudding, etc., thankfully, and with apparent relish: still, we shall remark, he is inclined to sleep, which we probably attribute to the exhaustion caused by the frightful collapse symptoms (cramps, retching, etc.); and now and then there is very slight hiccup. The latter symptom has most frequently awakened me to the true state of matters, and has enabled me somewhat confidently, and long before any danger could otherwise have been anticipated, to form my prognosis. Sooner or later, unmistakable febrile or typhoid symptoms make their appearance: then we have the ordinary difficulties of diagnosis and prognosis in typhus to deal with. It is in the earlier periods that the prognosis is often exceedingly difficult. A just recognition of the more insidious and apparently less dangerous modes in which this stage begins I believe to be of great importance to the practitioner, inasmuch as, by affecting his treatment, the ultimate result of the disease is to a great extent controlled. For instance, after a very mild attack of cholera, marked by considerable serous purging, but by very slight vomiting, and by the absence of cramps, where the condition familiarly known as collapse could scarcely be said to have existed, and without any distinct reaction stage, the patient appears in all respects (with the exception, let us say, of drowsiness or of occasional hiccup) to be convalescing. It is judged quite unnecessary to administer remedies of any kind, and alcoholic stimulants in particular are contra-indicated by the ruddy face and full pulse. The typhoid condition soon shows itself in unmistakable characters, and now stimulants are given with all speed and in large quantity; but it is too late: the vital powers are already too far exhausted, and the patient dies. I question how far the non-exhibition of stimulants during reaction and the earlier stages of the consecutive fever has contributed to the fatal issue in many cases of cholera during this and former epidemics.

[To be continued.]

Crichton Royal Institution, Dumfries, August 1854.

ON THE FUNCTIONAL DISORDER OF THE ALIMENTARY CANAL NOW PREVAILING.

By B. G. BABINGTON, M.D.

I BEG to direct the attention of the profession to a functional disorder of the alimentary canal, which, if not new in its characters, at least occurs under new circumstances, and at the present moment affects so many of the inhabitants of this metropolis as to lay some claim to being considered epidemic. Within the last fortnight, I have seen numerous cases; and I have reason to believe, from inquiries among my medical friends, that hundreds are at this time the subjects of the complaint in question. I allude to pain of a peculiar character, referred to the stomach in particular, and thence passing through to the back; sometimes extending under the false ribs on both sides; sometimes to the loins, especially over the kidneys; and sometimes to the lower bowels. It is more or less acute, being by some described as pricking or stabbing, while by others it is represented as uneasiness and general distress, necessitating a frequent change of posture. It has not affected the pulse, nor exhibited any inflammatory symptoms, in the cases which have come under my observation; but I have heard from other medical men that they have in several instances been obliged, in addition to other antiphlogistic means, to have recourse to topical bleeding by leeches. It is neither attended by vomiting and nausea, nor necessarily by relaxation of the bowels; but it seems in every instance to have been accompanied by, and perhaps in no inconsiderable degree to be dependent on, the generation of flatus. This is not constant, but in some cases occurs two or three hours after taking food; while in others it takes place only late in the evening, and during the

night. The complaint is marked by much debility and depression of spirits.

The cause of this very unusual deviation from health, as existing with so much uniformity in such numerous instances, does not appear evident. At first I was disposed to attribute it to the unusual degree of caution which the generality of persons have of late observed with respect to diet and beverage; many confining themselves up to the present time to bread and butter, fresh butcher's meat, and potatoes, as solid food; and to wine or brandy with water, as a beverage. It seemed not unlikely that the sudden discontinuance of fruits, raw or cooked, as well as of green vegetables and acids, might induce an alteration in the functions of the stomach and bowels—an approach to the scorbutic diathesis favourable to the generation of flatus, and consequently to that state of distension of the stomach and bowels which I have described; but I have since found the complaint to exist in persons who have made no change whatever in their mode of living, and I am therefore constrained to acknowledge some other cause for its prevalence. Is it not possible that this may be found in some modification or dilution of that unknown something which, in certain predisposed persons, gives rise to cholera, and, in others, to what is called choleraic diarrhoea? I am prompted to ask this question from a consideration that there are other agents, poisonous or medicinal, which produce effects somewhat analogous to the *ignotum quid*, which causes cholera, according to the quantity administered. When, for example, but a small dose of calomel is taken, it will cause only nausea, flatulence, and tormina of the bowels; a larger dose will induce purging, and perhaps vomiting; while one still larger acts as a sedative, and might, if enormous, cause even fatal collapse. The same proportionate effects have been frequently observed with other purgatives, as well as with the irritant poisons.

With respect to the treatment of this epidemic, although I have hardly as yet gained sufficient experience to speak with full confidence, yet I believe the following mode will generally be found adequate to effect its cure. If the bowels have been costive, I prescribe some such warm aperient as the following:—

R Tincturæ rhei comp. ʒss.
Tincturæ cardamomi comp. ʒj.
Infusi sennæ comp. ʒviij. M.

Fiat haustus primo mane sumendus.

But whether this be needed or not, I have known much benefit derived from the following carminative mixture:—

R Spiritus ammoniæ aromatici ʒiij.
Tincturæ lavandulæ comp. ʒiij.
Tincturæ hyoscyami ʒij.
Confectionis aromaticæ ʒij.
Aquæ cinnamomi ad ʒvj. M.

Sumat cochl. ij ampla ter in die stomacho jejuno.

In addition to these means, I have only found it necessary to recommend a light nutritious diet, with a due admixture of well-boiled vegetables and cooked fruits; sherry and water, or brandy and water, being used as a beverage, in preference to malt liquor.

It will afford me much satisfaction if these imperfect remarks on this very prevalent, and, under the circumstances, novel form of indisposition, should attract the attention of my medical brethren, and lead to a more elaborate investigation of its nature and cause.

George Street, Hanover Square, Sept. 29th, 1854.

IMPURE WATER AS A CAUSE OF DISEASE.

By ALFRED CARPENTER, Esq.,

SOME observations made by Dr. Snow, upon the influence of water in the production of disease, bring to recollection facts observed by myself, and bear out what I have for some time maintained, that water is most frequently the vehicle by which the poison of continued fever and cholera