consolidated or carnified state of the inflamed parts presenting the solidity of flesh, and without the granular appearance usually seen in pneumonia, is evidently likewise due to the pressure of the fluid in the chest, upon tissue infiltrated with adhesive lymph. The physical signs of pneumonia had been recognized only in the right lung, during life, but the marks of recent inflammation were likewise found diffused through the substance of the left, which was in the condition described by Laennec as engorgement or the first stage of pneumonia. Probably this state supervened very recently before death, caused, indeed, by the moribund state, being the *pneumonia agonizantium* of Laennec. There was some degree of tubercular disease in the lungs, which I notice is itself a mark of an imperfect state of the blood, similar to that which I consider the immediate cause of granular disease in the kidneys.

When we turn to the kidneys, we find them both larger than natural, but paler; not, therefore, at the time of death distended with blood, though, could we have examined them at the commencement of the disease, most probably we should have found them highly congested. As the kidneys were not enlarged by the blood they contained, we must suppose some morbid deposit; and this was evident enough upon examination, being the cause of the pale faded colour of the whole mass of these organs, and being likewise accumulated in patches of a still lighter tint. It was of a friable consistence, so that fragments were torn off attached to the capsule, which peels off quite clean from the healthy kidney. It is in this interstitial deposit that granular degeneration essentially consists; it is of the nature of lymph, the material of textural nutrition, or that which is poured out in excess from an inflamed part, only that here the lymph is not of a good quality; it cannot become fully organized, or if poured out in excess, it cannot be readily absorbed. When the blood is in that unhealthy condition to be capable of furnishing only this bad lymph, it may be deposited wherever inflammation occurs, or without inflammation, by depravation of the ordinary nutritive process. Thus we may have granular degeneration commencing suddenly with symptoms of inflammation, or invading insidiously without any active symptoms. Dr. Copland, taking a similar view of the pathological nature of this disease—albuminuria, calls it “cachectic inflammation of the kidney,” an appropriate name for the acute form, but not applicable to all the more chronic cases, if I am right in considering that these may occur without any inflammation of the kidney.

This morbid deposit, whilst it is still recent, occasions an enlarged and flabby condition of the organ, chiefly affecting the cortical part, which is thus rendered broader than natural, but subsequently contracting, so as to render the kidney small and dense, and ultimately, in chronic cases, causing atrophy of the proper tissue, by the pressure to which it is subjected. I have seen the kidney of a person who died of the chronic disease reduced to the weight of one ounce, which is less than a quarter of its average weight. I have, in a former lecture,* pointed out the analogy between cirrhosis

of the liver and this disease of the kidneys. These diseases have much analogy likewise, as Dr. C. J. B. Williams has pointed out, with others of a scrofulous or tubercular nature, in which we have a deposit of lymph in the substance of organs or tissues, more or less incapable of organization, invading the proper structure of the part, and frequently by its own tendency to contract and harden, shrivelling up and indurating the parts which it attacks. The grey induration of the lungs, which is considered as one form of tubercular disease, is an instance of this kind.

Other explanations have been given of the nature of this disease. Recently it has been represented as, a fatty degeneration of the kidney, similar to that by which the liver is occasionally attacked. But I do not think this view satisfactory. The granular kidney has not the greasy feel or appearance which the fat liver presents; neither would a deposition of fat have a tendency afterwards to contract, and cause the atrophy of the organ in which it took place; the fat liver goes on increasing throughout its course. I think also there are many objections to the theory of this view of the pathology of the granular kidney, but we have not time to examine these in the present lecture.

OBSERVATIONS ON ASIATIC CHOLERA.

By T. L. WALFORD, M.R.C.S., Reading.

(Read at the Reading Pathological Society, Sept. 13, 1848.)

Mr. President,—In taking part in the consideration of this important question,—viz., the nature, seat, and treatment of the disease termed Asiatic cholera, it appears to me highly desirable to obtain definite views, if possible, of so dire a malady, so as to enable one to grapple with it under the most favourable circumstances; and as there are contained in Dr. Fletcher's posthumous work on “General Pathology,” views of this disease, such as we are seeking, and which to my judgment are no less correct than they are definite, I feel that I shall not be doing violence to the rules of this Society, by endeavouring to state them as I gather them from his work.

As to the origin of that which is the cause, the exciting cause of this disease, (call it a poison if you will,) there will be little hesitation, I apprehend, in believing it to be of a malarious origin; not in the sense of its being the result of chemical decomposition, occurring either in decaying vegetable matter or animal refuse, but rather a diseased vegetable secretion. In the language of Dr. Fletcher, (page 71.) “contagious and infectious miasms consist of combinations of principles, to the production of which organized beings, animal or vegetable, alone are adequate;” “and that it is not to this or that individual principle, but to the peculiar combination of them all, which can be effected in no other way than by secretion, that their pernicious effects are to be ascribed.”

The question whether the poison be absorbed into the blood, so as to constitute a “blood disease,” appears to me so untenable, that it seems preferable to omit

* See *Provincial Med. and Surg. Jour.* for 1848, p. 509.

the consideration of it, merely quoting the words of Dr. Fletcher,—“Whether absorbed or not, (and there is no question that they frequently are absorbed,) their action is still upon the irritable solids alone; and the only difference is, that when absorbed, the blood is made subservient to the diffusion of the exciting cause, of which it may be represented therefore as constituting a part; whereas, when not absorbed, the action of such exciting causes can be diffused only in the manner of sympathy; and we do not despair of being able to prove, or at least to render it highly probable, that the latter is by far the most common manner in which their action is extended.”—Page 48. See also pages 38 &c., 72 &c., and 99 and following.

Believing then, that the poison produces its effects upon certain solids of the body rather than upon others, we come to the question, where is the disease situated? Here I apprehend we can agree to a great extent in saying where it is not. We shall not hesitate to exclude the brain, the lungs and heart, the stomach and kidneys, from being primarily the seat of the effects of the poison, and that the manner in which these organs are affected is secondarily. If, by chemistry, we could prove that the discharge from the bowels had nothing of vitiated bile in it, we might with good reason locate the disease in the intestinal canal; but as that cannot be affirmed, the question to be considered is, whether it be a disease of the bowels or of the liver? and I think the balance of the evidence is most decidedly in favour of the latter. Under the head of etiology, at page 249, Dr. Fletcher, speaking of glandular secretions, says,—“The bile, instead of being opaque, viscid, and of a yellowish brown colour, is sometimes, as in cholera, semi-transparent, thin, and of a dirty straw colour,—changes which are attributed by Orfila chiefly to a vitiation of its resin.” “So much indeed has the bile been altered in this disease, that it has even been questioned whether it be bile at all, and not rather a vitiated secretion from the intestines.” “In modern times, also, it has been generally noticed, that an evacuation of pure bile is one of the best symptoms in cholera, and generally indicates recovery. But what does this shew, except that the disease is diminished; so that what was previously vitiated is now natural. We may as well question that the mucus in catarrh or gonorrhœa is mucus, or the urine in diabetes is urine, as that the bile in cholera is bile, since it is not a whit more changed than these; and there seems to be a regular gradation in the changes which it undergoes, in proportion to the severity of the disease, from the common autumnal cholera of this country, to the most violent degree of the Indian epidemics.”

At page 252, Dr. Fletcher observes, “That the proper secretion of any gland takes place at the *radicles* alone of the ducts of which such a gland is essentially composed, consequently that it is only when such *radicles* are the seat of inflammation that such proper secretion is increased. Hence it is easy to explain the apparent anomaly, that in a proper hepatitis we have not cholera;—in a proper inflammation of the pancreas no pyrosis;—in a proper nephritis no diabetes;—and in cynanche parotidea no ptyalism: so far from it, there is a suppression, to a greater or less degree, of the proper secretion of the gland. But this supports the doctrine, that secretion is always increased by inflammation, for the seat is now the mucous membrane

of the ducts, and the increased secretion and swelling in them produces obstruction to the proper secretion of the gland, and thus gives rise to its suppression.” It will thus be seen, that cholera, in the opinion of Dr. Fletcher, is an inflammation of the secreting portion of the liver, and in proof of the correctness of that opinion, I would observe, that in proportion as we succeed in restoring a healthy secretion of bile, are we successful in treating the disease? Again, what means have been followed by the largest amount of success, small though that may be? Calomel. What medicine has been used so cautiously by all, and altogether rejected by some? Opium. Now, surely this would not be the case if the mucous membrane of the intestine were the seat of the disease. Again, is there any affinity between English and Asiatic cholera? I believe they differ only in degree. Lastly, what treatment most quickly cures our autumnal cholera? Calomel and rhubarb: at least according to my experience.

Having thus called the attention of the Society to the opinion of, (according to the late Dr. James Johnson,) one of the most original thinkers of modern times, it may be as well to run through the various symptoms of the disease, to see whether the opinion I have read will satisfactorily explain them. Of the nature of the stools, I have quoted what Dr. Fletcher had to say in defence of their hepatic origin. But this does not forbid the presence of some secretions from the mucous membrane of the alimentary canal, excited, as it would naturally be, by the passage along its tract of so much vitiated secretion. The vomiting which attends might sometimes take place as the result of the powerful contraction of the abdominal muscles, but more frequently as the result of the inordinate stimulus to which the stomach is subjected from the vitiated secretion within it. Next let us take the violent cramps, and what are these but the consequences of the impression made upon the spinal marrow, by the presence in the bowels of vitiated secretion, and by the inordinate peristaltic action going on there, thus giving rise to reflex action, similar in every respect to the same symptom occurring during the night in gouty subjects. When gouty, or during pregnancy, from irritation of the gastro-intestinal mucous membrane, as a consequence of that condition, the distressing tormina and the hurried dejections are appropriate concomitants of such a condition of the alimentary canal.

The torpidity of the kidneys, indicated by the non-voidance of the urine, is clearly dependant on the depressed state of the circulation, coupled with suspended digestion, and diminished cerebral influence. The coldness and blueness of the surface is equally plainly dependant on torpidity in the function of the lungs, whilst that torpidity itself stands as an effect of the diminished power of the heart to propel the blood throughout the system in its wonted manner. As to the heart itself, its enfeebled power must be considered as the result of the shock to the heart itself, which the presence of the disease has occasioned, whereby its irritability has been exhausted. Of the state of the blood, it is observed by Dr. Fletcher, p. 95,—“In Asiatic cholera the blood has by some, (Dr. Stevens, &c.,) been represented as primarily affected, turned into an infected jelly for one thing, and of a prodigiously dark colour for another, the latter change dependant,

of course, on too little salt in the serum. These, however, are not primary, but secondary, changes of the blood, and arise from the depression of the powers of circulation, so that through the tardy flow of the blood through the parenchyma, its molecular changes are so sparingly affected, that it undergoes a partial coagulation. The use of warm saline injections is not to dilute the jelly aforesaid, nor to impart salts, but merely to afford a transitory stimulus to the heart, and accelerate for a time the circulation."

Having glanced at the chief symptoms in this disease, it remains to notice the order in which they manifest themselves, observing that the interval between them may vary in every case. In this, as in every disease, there is a stage (the latent) which can only be recognized by its effects; so that at one and the same time, we behold the direct effects of the disease, and its indirect or sympathetic effects. Thus, within a short time of the commencement of vomiting and purging, we have also, in some cases, the depressed power of the heart; but whether this exhaustion of the power of the heart is solely caused by the disease through sympathy, or whether the disease affect the heart through the brain, perhaps, it is not possible clearly to determine; but this much may be affirmed, that only in proportion as we remove the disease, shall we remove the effects, and so likewise with regard to the state of the lungs and kidneys.

That the disease is inflammation of the secreting portion of the liver will be borne in mind, and that state existing, the process of secretion at once commences, and its products correspond with the peculiarity and intensity of the exciting cause.

For Dr. Fletcher's views of the nature of inflammation, and of the system of nerves, by means of which its sympathetic effects are produced, I must refer the reader to his work. A bare enunciation of his doctrine might not command assent, and it might deter the mind from further investigation. Those only who understand his physiology, can appreciate his pathology.

On the subject of those who are most liable to be affected, it is well known that the vast majority of cases occur in this country amongst those who belong to the poorer classes—the ill-fed, the badly clothed, and badly housed, the beverage of whom is too often unwholesome, and whose bodies have been frequently found to be the seat of various organic maladies.

The treatment of this dire malady next falls to be noticed. The gravity of the disease must be borne in mind,—the shortness of the time we have for the use of remedies,—the impossibility of the patient living many hours unrelieved. All these considerations point to the necessity for decision, promptness, and vigour. And what have we to do? If what I have stated be true, the relaxed, debilitated, exhausted, distended, overloaded capillaries of the liver have to be relieved. Here we shall be agreed I imagine. If the patient be seen in the first hour or two of the attack, a vein should be opened and a certain quantity of blood drawn, if possible, according to the bulk and stamina of the individual. This done, I should be inclined to try the effect of a bandage of flannel about a foot wide, passed some five or six times round the body over the region of the liver, that the patient should be placed in an open bath, and water as hot as could be borne should be poured over the flannel for half an hour;

he should then be removed, having an oiled cloth put over the flannel to keep in the heat and moisture. This application of caloric follows as a stimulant to these vessels, it having been attempted to relieve them partially of their load by blood-letting. Whilst the bath and water are preparing, I should give a dose of calomel and colocynth in as soft a form as can be swallowed—say five grains of each—hoping thereby to hurry from the alimentary canal any irritating matters there. An emetic where vomiting exists, I can see no necessity for. The pills should be followed by an effervescing dose of citric acid and bicarbonate of potass, to be repeated every hour. A mouthful of potass water, [?] or thin clear gruel with or without brandy, may be taken if anything be desired, to quench the thirst. When the patient has been removed from the bath, and a couple of hours have elapsed since the detraction of the blood; if the heart's action be not recovered, the warm saline injection into the veins should be had recourse to,—not, as Dr. Fletcher observes, "to dilute the jelly aforesaid, nor to impart salts," but merely to afford a transitory stimulus to the heart, and thus accelerate for a time the circulation. Throughout the treatment, all that pains the bowels and stomach should undergo the observation of the medical attendant. The calomel should be repeated in doses of two grains, in the form of a pill, made with extract of liquorice, every hour, and the effervescing dose should be repeated equally often. By this latter medicine the intestines would be excited to pass on their contents, and thereby lessen the amount of morbid impression upon the spinal marrow, the cause of the excruciating cramps. Should the bowels cease acting, it would be as well to add a little sulphate of magnesia to each, or to alternate doses of the effervescing draught. As soon as the evacuations give evidence of the presence of healthy bile, the interval between the doses of calomel should be lengthened as much as possible. In the event of the heart's action failing, recourse should be had again to the warm saline injections; and if the stomach will retain it, to some brandy in warm thin gruel. At this stage of the disease, remedies having failed to rescue the patient, the use of galvanism through the liver appears to me worthy of trial.

There is one other means which should be used from the commencement, and that is, friction with some warm stimulating liniment, say equal parts of turpentine liniment, simple camphor liniment, and soap liniment. This should be used universally when the patient is not enveloped in the hot flannel bandage around his belly, and when he can have that means, it should be omitted in that part of the body until experience has proved its uselessness. A more potent remedy may be found in the use of boiling water applied to some cloths placed over the region of the liver for the purposes of vesication. It appears to me that if some four or six hours at the furthest, have been unsuccessfully employed in combating with the disease, that no further time should be allowed to elapse without the trial of this remedy. These means failing to bring about the third stage of the disease, I must leave to empiricism to suggest what next should be done. But supposing the third stage arrived at,—viz., the secretions lessened and improved, the heart's action restored, the vomiting abated, then, perhaps, the judicious use of

morphia may be tried with good effect. But in this stage we must be on our guard against secondary inflammation; for the diminished irritation in which every organ has been, is a state liable to excessive irritation, on the recovery of the part originally affected, and which, if you produce it, will assuredly end in that degree of diminished irritation constituting inflammation. Therefore, now, the less we can do, the better. Stimulants should be withdrawn,—repose should be encouraged,—nourishment of the highest kind should be administered, and thus nature would have a fair chance of avoiding the breakers which were a-head of her, when escaping the rock on which she had been so nearly wrecked.

There are one or two other points of a secondary nature which it may be as well to notice. The position of the patient is one such: of course the horizontal position must be enjoined; but that is not all, let him lie anyhow, rather than on his back—either side, or prone, if he please. He should also be assisted in getting out of bed, in turning, and not allowed to sit upright. The heart is too weak to allow of its being benefitted by the return of the blood being hindered by the sitting posture, and the brain likewise cannot spare any of the power which the blood in its vessels receives from the enfeebled heart. The temperature of the apartment must be kept steadily high.

The treatment which I have thus sketched will be looked at as embodying a general rule. Cases will occur where it would be losing time (to say the least of it,) in attempting to bleed. Every medical man has patients which he knows cannot bear the loss of blood, and such he would not hesitate to consider unfit subjects for that remedy; and so likewise will every other suggestion be subjected to the judgment of the medical attendant, and adapted to the individual's case before him. It must also be remarked, that with such a disease as Asiatic cholera attacking certain individuals, the result must necessarily be fatal; and well will it be for the practitioner when his knowledge of his patient's constitution enables him to judge correctly of what can be borne by him. It seems hardly necessary to say anything of the treatment of any secondary affection which may arise to interrupt and prolong the recovery of the patient.

OBSERVATIONS ON SCURVY

AS IT WAS DEVELOPED

IN BATH AND ITS NEIGHBOURHOOD, IN
THE SPRING OF 1847.*

By JOHN BARRETT, Esq., F.R.C.S.

(Read at the Quarterly Meeting of the Bath and Bristol Branch of the Provincial Medical and Surgical Association, December 21, 1848.)

Of few diseases can it be more truly said that prevention is better than cure, than of scurvy. Under favourable circumstances its cure is tedious, and the means of cure are not always to be met with in the circumstances under which it occurs. But it is not

only that its cure is tedious, and sometimes for a time impossible, it is attended with consequences of a very dangerous character,—*e.g.*, the effect it produces on old surgical cases; the re-opening of wounds; the disunion of fractures; and it certainly lays the foundation of fatal chest and other diseases, by breaking down the constitution. If we judge of it by the number of deaths in its recognized appearance, we may probably consider it a matter of secondary importance, but this, I have before said, is a very inadequate manner of judging. It is not a disease of sudden occurrence, it requires months' duration of the preparatory circumstances. But as there can be no doubt that it has appeared, and frequently, (where even the profession may not have suspected, it is constantly occurring,) is there, I would ask, no reason for fearing that a disease which has decimated armies, and destroyed fleets, may in our day regain a fearful and destructive influence, if we do not remove the causes of its occurrence, or if by foolish directions we increase them. There is much wisdom in that part of the address from the College of Physicians on cholera,—"The Committee do not recommend that the public should abstain from the moderate use of well cooked green vegetables, and of ripe or preserved fruits. A certain proportion of these articles of diet is, with most persons, necessary for the maintenance of health, and there is reason to fear that if they be generally abstained from, now that the potato crop has in a great measure failed, many persons, especially among the poor in large towns, will fall into that ill condition, which, in its highest degree, is known as scurvy, and that they will in consequence be the readier victims of cholera."

There is one point to which, I am ashamed to say, I have not directed either my own, or my correspondent's, attention. The Registrar-General, in his return for the quarter ending December 31st, 1846, says,—“No mention is made of the potato disease having had any direct connection with the mortality. The potato in a state of partial disease, has no doubt, been extensively consumed, without giving rise to any specific malady in man, or indeed having any appreciable connection with the disorders of the bowels, and fever, which were prevalent about the time the last crop came into use.” I asked one gentleman, who said some of his scurvy cases had not been debarred potatoes, whether they had been good or diseased, but this he could not inform me. A poor woman, aged 76, applied to me, October 31st, this year, for griping pains in the bowels, increased on pressure; evacuations once a day, relaxed; white dry tongue, and weak pulse. Three weeks before she ate some potatoes, which were very watery and yellow, and had not been well since. She took small doses of calomel and opium for a few days, which cured her.

It is a question of much interest—what is the nature

* Continued from page 177.