existing between the generative and intestinal mucous surfaces, gives us the key of much empirical practice, and will therefore enable us to act in future with that full confidence only to be obtained from knowledge. It explains to us why daily it is sought to insure the deficient action of the womb, in suppressed menstruation, in chlorosis, in labour, by the administration of purgatives; and why, on the other hand, we daily seek to diminish the too great activity of uterine action by the injection of opiates into the rectum in dysmenorrhœa, in irritable uterus, in diseases of this organ, as well as in those little understood conditions of the womb which so often lead to abortion.

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OBSERVATIONS ON SOME POINTS IN THE PATHOLOGY AND TREATMENT OF THE DYSENTERY OF INDIA.

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WITHIN the last few years, the profession have been favoured with some important contributions to the pathology and treatment of tropical dysentery. The researches of Professor Parkes have disclosed the fact, that ulceration affects the solitary glands of the large intestine, and that it exists during the early stages of the complaint. The standard works of Annesley, Twining, Johnson, and Martin, make no allusion to these features of the complaint, and the discovery adverted to has consequently disproved the idea formerly entertained, that ulceration was met with only as a sequence of a protracted inflammatory attack of the mucous membrane.

The acute dysentery of India is found associated with three grades of ulceration of the mucous membrane of the colon. In the first, which may be styled simple ulceration, in contradistinction to the others, the ulcers, in the earliest stage of their development, are seen as minute points affecting the solitary glands, and from this, to the size of half-a-crown, they present every intermediate variety in point of extent. They are of circular shape, having a ground of coagulable lymph superimposed upon cellular membrane, which frequently presents a variegated appearance from the presence of minute red points of the subjacent muscular fibres. The circumference is guarded all around by an effusion of lymph under the mucous membrane, which directly limits the spread of the disease. The mucous tissue for the space of an inch, or an inch and a half, in the vicinity of the ulcers, is in an inflamed state.

With reference to the ulceration originating in the glands, I may state, that shortly after Dr. Parkes promulgated his views upon the pathology of this disease, I had an opportunity of verifying the truth of his observations, by examining the intestines of a patient who died from an attack of cholera, after being three days in hospital for acute dysentery. By the aid of the microscope, I discovered the small tumefied glands with an ulcerated depression in the centre; and, with the eye unaided by optical instruments, I was enabled to trace the ulcerated specks, in different stages of advancement, to the size of

a split pea. The appearances now described have been carefully looked for by me in the colon of different subjects, but, except in those who had suffered from dysentery, I have not been able to trace them. The phenomena observed during the exhibition of mercury for the cure of the disease, would seem to argue much in favour of the ulceration being primarily located in the solitary glands. Those who have had frequent opportunities of witnessing the therapeutical effect of the medicine in this complaint, cannot have failed to remark that a perfect resolution of the disease is not effected, until the salivary glands are fully engaged by the mercury. Every one is familiar with the metastasis that takes place between the parotid gland and testes; and it would appear that the salutary operation of mercury in acute dysentery arises from the irritant action set up in the salivary glands, translating, as it were, the disease from the solitary glands to those secreting the saliva. Again, I have examined the bodies of many men who died from dysentery complicated with hepatic abscess. I do not remember a single instance in which I did not find the ulcers of the colon either healed or contracting; and I have repeatedly remarked the great relief that immediately followed, with respect to the dysenteric symptoms, on the supervention of hepatic complication, or, in other words, a rehearsal of the phenomena occasionally observed to take place between the parotid and testes.

The absence of such an affection of the glands in other cases than dysentery, coupled with what has been detailed above, are to my mind conclusive proofs that the ulcers have their origin in the solitary glands. The discovery of the fact of ulceration being present in the early stage of dysentery, has been productive of important consequences in the treatment of the disease. The morbid condition of the membrane alluded to, was supposed to be present only when the disease did not yield, or when the evacuations became watery, and the utility of mercury at this stage was much and justly questioned; but from what will be hereafter detailed, it will be observed that this remedy is one of the most valuable agents in producing cicatrisation of simple ulcers, and that it is only in asthenic forms of the complaint that it is inadmissible. The persistence of the symptoms, with loose evacuations, are indicative of the simple ulceration having passed into a more advanced stage, in which nature opposes no barrier of protective lymph to limit the ulcerative absorption, which consequently extends itself, and destroys the patient. This form of the complaint I shall consider under the head of "spreading ulceration."

The symptoms which constitute an attack of dysentery, and with which the simple ulceration is identified, are usually the following: After a premonitory diarrhoea of one or two days duration, the patient experiences a constant desire to go to stool, preceded and accompanied by severe tormina about the umbilicus. Every effort to evacuate the bowels is attended with urgent tenesmus, and nothing is passed but mucus, mixed with blood; the latter being either incorporated with it, or faint traces being interspersed throughout the secretion. In first attacks of the disease, or in subjects who have recently arrived in India, the symptomatic fever usually runs high, and, along with a small firm pulse, there is the dry strictured skin described by the late Dr. Johnson. Some tenderness may generally be felt over

the cæcum, but there is seldom much exalted sensibility to pressure over the other parts of the abdomen. Where the general fever, tormina, and abdominal tenderness are severe, they afford good guides for the employment of active treatment; but cases are frequently met with where these symptoms either singly, or collectively, afford us little information respecting the treatment to be adopted. We therefore require the presence of a symptom, which will assure the tolerance of active and decided remedies. This symptom, I think, is to be looked for in the evacuations. In the form of disease now under consideration, the mucus, however much it may vary in colour, is either viscid and adherent to the vessel into which it is discharged, or it is voided in masses firmly coherent. Where either of these appearances of the evacuations is observed, full bleeding should be at once employed for reducing the inflamed condition of the mucous membrane before mentioned, for lowering the system, and for paving the way for the salutary reception of mercury, on the action of which the healing of the healthy ulcers depends. As soon as the salivary glands are affected, the lymph which bordered the ulcers is speedily absorbed, and contraction of the various solutions of continuity takes place, leaving a visible puckering where union has been effected. Opium in large doses materially expedites this much desired termination of the disease, by restraining the peristaltic action of the bowels, and by mitigating the harassing irritability which accompanies an attack of dysentery, and which proves so adverse to the reparation of structure. When a case of the kind is seen early and is properly treated, its tendency is to terminate in resolution; and if mercury in large doses is to be approved of in this complaint, the variety under review is one above all others where it is most successful, especially should there be nothing but pure mucus in the evacuations, and if the latter are accompanied with urgent tenesmus. Mercury cannot be depended upon for the cure of dysentery, unless the tension of the blood-vessels is well moderated by appropriate depletion; as, where this practice is unattended to, it is apt to engender an unhealthy action. It should be given with full doses of opium, as their combination lessens the chance of the mineral over-exciting the system, and causing further disintegration of the affected tissues.

Between the first and second varieties of ulceration, there is what may be called the transition stage, or the transformation of the healthy into the unhealthy ulcer. A simple sore, when situated on the extremities of the body, is sometimes suddenly changed into an irritable one. The granulations first become dry and shrink, they then take on a stunted appearance, and finally disappear, leaving a ground, which, either from defective, or perverted action, does not possess sufficient vitality in itself to excite contraction of the sore. The like phenomena are observed to take place when the ulcers are situated in the mucous membrane,—with this difference, that while in those affecting the extremities, the disappearance of the granulations takes place from the border towards the centre, in the mucous tissue of the bowels this is reversed:—and it is not until the ulceration undermines the border of the intestinal ulcer, that the ring of protective lymph breaks down, and permits further extension of the disease, which then constitutes the spreading ulceration. The only symptom which can be

relied upon for giving us information of the transition stages being developed, is the discharge from the bowels, which resembles the washings of raw meat. If, during the exhibition of mercury for the cure of simple ulceration, the gums, instead of swelling, become ulcerated and excessively painful—the presumption is strong in favour of this morbid condition of the ulcers being established.

Such cases almost always prove fatal, either by extension of the disease, or by leading to the formation of hepatic abscess. The treatment which I consider most applicable is, ipecacuanha and opium in full doses, with local bleedings, and counter-irritation. Where the morbid action in this form of the complaint fails to dissipate the lymph on the edges of the ulcers, fresh layers of fibrine are deposited, and sometimes in such quantity, that the sore is prevented from contracting, simply from a redundancy of lymph; in fact, in such a case, we have presented to us, on the mucous membrane, the perfect type of the indolent ulcer on the surface of the body. This pathological state of the mucous membrane is the cause of chronic dysentery. The transition stage is therefore fraught with danger, as it is not much under the influence of any treatment; and its terminations are to be dreaded.

There is, perhaps, no disease (cholera excepted) which perplexes a young medical officer on his arrival in India, more than dysentery. When he first enters the service, he is sent to do duty in the General Hospital, where the generality of patients who are admitted suffering from this complaint, are merchant-seamen, etc., who are temporarily stationed in India. Such subjects, when seen early, usually present the symptoms of simple acute dysentery, and the disease commonly gives way to judicious bleeding, with calomel and opium, etc. In a short time, the Assistant-surgeon is ordered to join a European Regiment, where the men have been some years in the country. Cases of dysentery occur, but the men disregard its earliest symptoms; they have recourse to ardent spirits to allay their uneasy feelings, and it is not unusual to find soldiers presenting themselves at Hospital, ten days (and I have known it a fortnight) after the first symptoms of the disease have set in. On admission, they are found affected with an advanced stage of the disease, in which the time for active depletion and the internal employment of mercury has gone by, and the mucous membrane is in a state of spreading ulceration. From the circumstance of soldiers continuing to do their duty for some time after the first invasion of the disease, it would appear that the inflammatory stage of dysentery, uncomplicated with ulceration, is limited to the first few days of the disease, probably to the initiatory diarrhoea. I cannot imagine that acute inflammation could be present for days together without giving rise to corresponding symptoms; but, as soon as ulceration is established, pain is diminished, because the tension, caused by the infiltrated condition of the affected membrane, is relieved by the outlet which the ulceration affords to pent-up fluid.

I now come to the second division, or spreading ulceration. The ulcers are watery-looking and ill-conditioned; their form is irregular, and the edges are undermined from ulcerative absorption, extending some distance beneath the margin. There is no conservative lymph thrown out round the base; they are usually of much larger size than those

first mentioned, and they very often become confluent; so that, in fatal cases, it is common to find the integrity of the mucous coat of the colon completely destroyed by a continued mass of ulceration. The tormina, tenesmus, and general symptoms, give us no particular indications of the disease having advanced to this stage; but the stools no longer present the tenacity of those accompanying simple ulceration; they are loose, glairy, and gelatinous, and, in extreme cases, they become quite watery and offensive. The blood discharged is no longer intimately blended with the evacuations; it is either in loose streaks, or coagula. The treatment which has been found most efficacious in these cases, has been nitric acid and opium. Ipecacuanha and opium in full doses; and, in the adynamic forms of the complaint, three grains of the nitrate of silver every four hours, with opium, have been employed with much success by Dr. Gamble, of H.M. 4th regiment of foot.

The third and last variety is the most fatal form of the complaint; the local disease sets in with great intensity, and runs its course with fearful rapidity, to the sloughing stage. From the first, there is great depression of the system; and, in lieu of the tormina and abdominal tenderness complained of in other cases, there is often nothing more to be discovered than a sense of morbid heat along the course of the colon; pain is usually absent. In two cases of this description, which occurred in my practice in 1843, and which were published in the *Madras Medical Journal*, there was little or no attendant pain or distress. The stools are grumous and offensive, with shreds and *débris* of the affected mucous membrane. A large portion of the inner lining of the gut, or the tubular incrustation of pseudo-membrane formed by coagulable lymph, is not unfrequently discharged. When the secretions from the bowels assume a chocolate-colour, of the consistence of treacle, and are copious and offensive, it is a most fatal symptom of the disease. Very few recoveries take place from this form of the complaint. On dissection, there is found excessive softening of the gut, which breaks down under the hand, and perforation is generally found to have taken place from sloughing of the whole coats of the intestine. I know of no treatment which is of use in this stage. Everything which I have tried has invariably failed; but there is one remedy which has suggested itself to me, and which I think is deserving of trial, viz., *yeast*.

I have already alluded to the beneficial effect on the dysenteric symptoms, which attends the translation of morbid action from the solitary glands to the liver, and where this translation ends in the formation of hepatic abscess. I have been led to remark the extraordinary healing power which the fermented stools, (characteristic of abscess in the liver), possess over the ulcers of the colon. This is not to be wondered at, when we consider the efficacy of carbonic acid in irritability of the stomach and intestinal canal, and its soothing properties in ulcers generally. I therefore regret that I never gave *yeast* a trial, either by the mouth or by injection.

The various forms of ulceration have one common origin in the solitary glands. The first variety passes into the others by the advancing severity of the disease. The simple and the spreading ulceration affect the cæcum, ascending, transverse, and sigmoid flexures of the

colon. The sloughing form I have found most frequent in the ascending colon and sigmoid flexure.

Complete recovery from simple ulcerative dysentery is very common, in so far as regards the mere union of the abraded surface. In the *post-mortem* examinations of men who have been some time in India, and have suffered from dysentery, extensive cicatrices are always remarked in the colon. They seem, during life, to give rise to irritability of the bowels and general emaciation, from the functions of the glands of the mucous lining not being carried on in these cicatrized spots. They are usually dry, and destitute of the halitus which bedews the intestinal mucous surface. I would here remark, that to bring about the union of the ulcers, the case, if seen early in the simple acute stage, should be very actively treated by full bleeding, followed by a scruple of calomel and two grains of opium; a hot hip-bath, and an enema, containing a scruple of acetate of lead, and a drachm of laudanum; much relief usually follows such treatment. In spreading and sloughing ulceration, mercury is contra-indicated, as it is in all cases where there is either a deficiency of fibrine, or where the system fails to elaborate it. In the stage of convalescence, the flow of healthy bile should be solicited by nitric acid, as this secretion is a grateful stimulating corrective to healing ulcers.

These observations are thrown together for the purpose of drawing attention to the *evacuations*, as indicative of the different stages of dysentery, and as the best guides for the treatment to be adopted. I have scarcely hinted at the colour of the secretions, as it is of secondary importance to their physical properties. It will be observed, that many and valuable subsidiary remedies have been passed over, as the aim of the writer is merely to give a few hints, in the hope that some one more able than himself may be induced to take up the subject, and give it that attention which it seems to merit.

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