

one has to encounter. It is easy to theorise about, but almost impossible to prove, the many obscure laws which govern our inheritance. It is only by a careful recognition of facts which have been accurately obtained from a large field of inquiry that one can hope to strengthen any one theory. The moment we depart from facts we at once embark on dangerous ground, and only too readily do we drift into the field of speculative assumption, making thereby any theorising, to say the least of it, most unscientific.

## REFERENCES.

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- (2) Bruce.—*Clinical Psychiatry*, p. 39.
- (3) Macpherson.—*Mental Affections*, pp. 35-39.
- (4) Darwin.—*Origin of Species*, p. 10.
- (5) De Fursac.—*Manual of Psychiatry*, p. 147.
- (6) De Fursac.—*Ibid.*, p. 9.
- (7) Dr. Urquhart.—“Morison Lecture,” *Journal of Mental Science*, April, 1907.
- (8) Clouston.—*Mental Diseases*, p. 483.
- (9) Dr. Urquhart.—“Morison Lecture,” *Journal of Mental Science*, April, 1907.
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*The Causes and Treatment of Asylum Dysentery.* By  
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UNTIL the specific causes of the various types of colitis are ascertained dysentery may be regarded as a group of symptoms which are presumably the result of microbic action, although it does not follow that the organisms which have been isolated from the intestines are invariably the specific cause of the symptoms, or that their presence will necessarily produce the symptoms; even the Shiga (or Flexner) bacillus, which is looked upon by many as the origin of non-amœbic tropical dysentery, has been found in the fæces of healthy persons (*v.* Allchin) (1). It is probable that the specific organisms are some of the various bacilli and micrococci which are commonly to be found in the intestines, and which are normally benign

in character, but through certain influences within and around the subject, become pathogenic.

This is particularly likely in the case of so-called asylum dysentery, as this ailment is almost entirely confined to a class of patients who are under the same peculiar conditions, either in public lunatic asylums, or (much more rarely) in poor-law infirmaries. The symptoms of this form of colitis may be described by Manson's (2) definition of dysentery: "A group of diseases of which the principal pathological feature is inflammation of the mucous membrane of the colon, and of which the leading symptoms are pain in the abdomen, tenesmus, and the passage of frequent small stools containing slime, or slime and blood." The only point in which asylum dysentery does not conform to this definition is in the not infrequent absence or slightness of tenesmus and tormina; this may be due to the decreased sensitiveness of the nervous system or to the patient's inability or unwillingness to give expression to his sensations because of his mental condition; for instance, only five out of thirty-six patients complained of typical tormina and tenesmus (one, H. T. R—, ascribed the latter symptom to attempts to cut him with knives), and less than half of them gave any indication of pain. The occurrence of tenesmus is also dependent upon the position of the ulceration.

It has been recently stated (*v. Hawkins*) (3) that "the evidence as regards the ulcerative colitis of asylums is almost conclusive of the identity of the British and the tropical disease." This view is to some extent supported by Goodliffe, McWeeney, and Eyre, each of whom in separate epidemics isolated bacilli having similar characteristics (*v. W. B. Knobel*) (4); these may have been different types of the Shiga or Flexner bacillus, especially as Eyre (5) in one instance obtained a positive agglutinative action against the tropical *Bacillus dysenteriae*; on the other hand, the Claybury epidemic was attributed by Durham to a small micrococcus, and the Derby County epidemic by Legge to the *Bacillus enteritidis sporogenes*, while in other epidemics large numbers of the *Bacillus coli communis* and of pyogenic cocci have been isolated. From this evidence one can only presume that different varieties of bacteria are concerned in different outbreaks of the disease, and that these organisms are often present in health, but are innocuous, except under certain

conditions, when they are rendered virulent and obtain access to the digestive tract in abnormal numbers.

There are certain conditions obtaining among lunatics in asylums, and peculiar to them, which might well foster this virulence and this increase of ingestion, and thereby lead to the frequent occurrence of the disease in such institutions. The frequency is proved by the statistics of the Commissioners in Lunacy. In 1903 there were 1,225 cases, with 257 deaths, while the deaths from dysentery throughout the Kingdom, outside asylums, were only 53; in 1908, among 94,888 asylum inmates there were 1,068 cases and 235 deaths.

From the notes of one hundred cases which occurred during seven years in Devon County Asylum, I have arrived at the opinion that the two main causes of asylum dysentery are, first, exposure to air which has been vitiated by pollution with fæcal gases and dust, combined with the contact with particles of excremental matter which is inseparable from such exposure; and, secondly, a diseased state of the gastrointestinal tract which is common in lunatics, who mostly suffer from chronic constipation and often from stomatitis; excessive ingestion of organisms is provided by the first condition, and a culture-bed where the organisms may multiply and acquire virulence is provided by the second, especially as the bacteria may have already passed through unhealthy digestive systems; by both conditions the normal physical tone of the patient is considerably lowered.

The first condition applies chiefly to those who have incontinence of urine and fæces with defective habits, and who are generally known as "wet and dirty" patients; the air around them is polluted with fæcal gas and floating particles, and by this means, aided by actual contact with their hands and linen, which must remain to some extent soiled even when a careful watch is kept over the patients, their food and feeding utensils become polluted by excremental matter, and large numbers of intestinal organisms are ingested; this pollution is increased by gnats and flies during the summer months; out of 100 patients 47 were wet and dirty in their habits, and 19 others were in wards amongst wet and dirty patients; thus 66 *per cent.* of them were exposed to fæcal contamination to a marked degree. It is because of their defective habits and not because of any pathological

condition of the nervous system that demented of all kinds are the most frequent victims of dysentery; 38 of these patients were either senile or secondary demented, and 2 others had dementia paralytica, 40 *per cent.* in all.

“Diarrhœa and dysentery are . . . sometimes caused by breathing air contaminated with excretal emanations . . . the long-continued inhalation or ingestion of tainted air may be considered to confer immunity . . . from disease spread by sewer-air” (*v.* Parkes and Kenwood) (6). This is probably why many who have been wet and dirty for years escape the disease, and why many who are exposed to a fœcal atmosphere escape altogether; it is when they have become particularly susceptible through ill-health or other cause and perhaps are exposed to some particularly virulent organisms that they fall victims. For the same reason newly admitted patients are extremely susceptible to the disease, even with very slight exposure to foul air. A certain amount of exposure is bound to occur, although there are few wet and dirty patients in the receiving wards; on the other hand, these rooms often contain a large number of persons who live in them day and night, and this prevents complete ventilation and removal of the polluted atmosphere: 35 *per cent.* of them contracted dysentery within one year of their admission, and 15 *per cent.* within two months. There was no evidence to show that any of them introduced the disease.

The second condition was present in 45 *per cent.* of the patients, forty-three of them being habitually constipated and two of them suffering from recurrent diarrhœa, supposed not to be dysenteric. Twenty were both costive and wet and dirty; several of them had stomatitis too. With such a state of stagnation prevailing in the intestinal tract it is not surprising that these patients are particularly susceptible to dysentery, although their exposure to a fœcal atmosphere may be comparatively slight; a certain degree of pollution of the air must occur even in dormitories in which no wet and dirty persons sleep, since commodes are placed beside the beds and are used frequently during the night, with the result that a great deal of foul gas must escape into the room.

The symptoms to which chronic intestinal stasis gives rise, are, “pigmentation of the skin, bad-smelling sweat, headache, mental and physical lassitude, inability to do ordinary work,

mental misery and distress" (*v. Arbuthnot Lane*) (7). This is the picture of a melancholic state in which it is difficult to say how much of the intestinal stasis is due to paresis of the muscles resulting from the mental condition, or how far the melancholia is caused and aggravated by the consequent absorption of toxins; however it may be, there is a vicious circle, and the digestive system is in a suitable state to foster an increase in the numbers and the virulence of any ingested organisms.

We have seen, then, that a fæcal atmosphere and digestive disturbances may be the chief predisposing causes of the disease, and that they may account for most of the sporadic cases. When such cases occur they are liable at any time to start an epidemic, as the organism is present in its virulent form, and, unless precautions are taken to isolate the patient immediately, and to disinfect his excrements in the same way as is done in the management of enteric fever, the disease is very liable to spread through the infected ward, and even those in charge of the patients may acquire it, although themselves in good bodily and mental health; however, it is possible that precautions will not absolutely check an epidemic because the infecting material may be carried in small dust particles in the air; for this reason typhoid patients are seldom placed in general wards nowadays, although a few years ago it was not considered necessary to isolate them.

One attendant contracted the disease while in charge of a ward in which ten cases of dysentery occurred during October, 1903; from June to October, 1905, there was an epidemic of eight cases in one ward, and from June to August, 1909, of thirteen cases in three wards.

Most of the epidemics take place in the summer or the early autumn, and in this respect there is a resemblance to infantile epidemic diarrhœa, which is a closely allied disease. This seasonal influence is probably due to an increase in the amount of dust and in the number of flies peculiar to this period of the year. The flies pollute food and feeding utensils with infected matter which they have picked up from excrements and soiled linen; in the same way much of the enteric fever was disseminated during the South African War.

In 1903 there were fifteen cases during September and October; in 1904 there were five cases from June to Septem-

ber; in 1905 there were eighteen cases from June to September; in 1906 there was one in October; in 1907 there was one in June; and in 1909 there were twenty-seven from June to August—that is, 67 *per cent.* of the cases occurred during the months from June to October; the remainder were scattered over the rest of the year.

It is possible that an outbreak is sometimes started by a patient who has a mild attack of diarrhoea which has been overlooked or has been wrongly diagnosed as non-dysenteric; and again, it is not unlikely that patients who have apparently recovered from dysentery may for months or even years pass virulent organisms in their stools, just as do the well-known “typhoid carriers.”

Chills, starvation, and indigestible food are predisposing factors, as they are to many diseases, because they lower the vitality.

The form of mental disease has no influence except in so much as it affects the conduct; thus, demented with wet and dirty habits formed a large proportion—40 *per cent.* of all the cases; 16 suffered from mania, 18 from melancholia, 6 from confusional insanity, 7 from epilepsy, 5 from paranoia, 4 from imbecility, 3 from dementia præcox, and 1 was sane.

Age has no influence; a large proportion were over 60 (38 *per cent.*), but this is because so many demented exceed that age; 17 were from 50–60, 13 from 40–50, 20 from 30–40, and 12 were under 30.

Females preponderate over males in the proportion of 65 to 35, probably because females are more frequently costive and wet and dirty in their habits; the asylum population was in the proportion of 4 females to 3 males, approximately.

The water supply was obtained from a 750 feet bore in conglomerate sandstone, and was free from animal contamination.

The drainage was in good order.

The milk and other food were in good condition.

It has been suggested that nervous degeneration may cause the lesions in the bowel through trophic changes in the mucous membrane, but there is no proof of this; the nervous sluggishness of melancholiacs and confusionals causes intestinal stasis, and this predisposes them to the disease.

Preventive measures must be directed mainly towards the

avoidance of a fæcal atmosphere and the correction of digestive errors, while the patient is to be kept in the best possible health by careful feeding and warm clothing.

It is difficult to do away altogether with fæcal pollution in public asylums where economy is a large consideration, as the staff is necessarily limited (there is usually one attendant for ten patients), and it is particularly difficult in the older buildings, where the dormitories sometimes contain as many as fifty or sixty beds ; but much may be done by segregating wet and dirty cases in small rooms, under the observation of attendants, whose duty it is to rouse them at various times during the night and to see that they deposit their dejecta into bed-pans, commodes, or closets, which should be covered immediately, and then deodorised and disinfected by some chemical, such as Jeyes' fluid ; all soiled linen should be removed at once in a covered receptacle in the same way, and should be disinfected.

Even in the wards in which wet and dirty cases are rare it is impossible to avoid some measure of fæcal contamination of the air, as the patients often use the commodes during the night, and it is too risky to leave deodorants in the pans in case any attempt should be made at suicide ; the only practical remedy is to keep a look-out for those who make a habit of going to stool during the night and to remove them to an observation ward ; or else to turn them out of bed at fixed intervals so that they may visit the closets under the supervision of a patrolling attendant. By this means commodes might be almost entirely abolished from the dormitories.

It is better to remove bed-ridden patients to a day room in the morning in order that their dormitories may be thoroughly ventilated for a few hours, but space, as a rule, will not allow this, especially in the case of large receiving wards.

To prevent actual contagion all attendants and patients who assist in the wards, and especially those who handle the bed-clothes and the lavatory utensils, must be made to wash immediately after completing their work and again before handling any food or feeding utensils ; and every patient must have his hands washed before taking food or drink and after a visit to the closet.

Each case of diarrhœa, even the mildest, should be isolated in a ward reserved for the purpose, or where this is impracticable, in a ward where such short-lived incurables as general

paralytics are kept ; patients who suffer from recurrent dysentery or diarrhœa should, if possible, be kept in a similar ward between the attacks, or at least should be kept on a caution card, as suicidals are, and their stools should be inspected weekly.

Suspected cases of dysentery must be isolated, with their clothes and bedding, in a single room until the physician has seen them and until a diagnosis is made ; any commodes or closets which they may have used recently should be well scoured with disinfectants.

Other patients in a ward in which dysentery has broken out should be kept under observation for a week, and their stools should be examined and their temperatures should be taken regularly ; the latter proceeding is important because many cases occur in which pyrexia precedes diarrhœa and blood and mucus by a day or two ; for example, I. C— (1 day), F. H. H— (2 days), C. S— (1 day), M. J. J— (1 day), H. L— (1 day).

Dysentery patients must be segregated in a ward kept only for such cases, and all the precautions must be used which are employed in the management of enteric fever ; dejecta, linen, utensils, etc., must be disinfected, and special nurses must be told off whose work is confined to the dysentery wards.

It is wise to examine occasionally the stools of each person for a week after his admission, especially if he come from another asylum or from a Poor Law infirmary.

In order to put the patients in the best possible condition to resist the disease, in case they should be exposed to infection, it is necessary to keep them warmly clothed and to regulate their food carefully. This applies especially to those who are subject to diarrhœa, and they should have a special light diet and should always wear a flannel binder round the abdomen. Each patient's mouth should be examined from time to time, and any carious teeth should be stopped or removed ; tooth-brushes should be used regularly, and when necessary the mouth should be thoroughly cleansed with an antiseptic mouth-wash, such as liquor hydrogeni peroxidi, one part in ten parts of water. Above all, the action of the bowels must be regulated by the use of a mixture containing *extractum cascariæ sagradæ liquidum*, *tinctura nucis vomicæ*, and *tinctura belladonnæ*, in doses and at times to suit the degree of constipation in each patient ; to ascertain the latter point notes should be made from time to time of each individual's habits in this



respect. The routine administration of bi-weekly purgatives in fixed doses to everybody is likely to cause intestinal irritation in those who are not naturally constipated. A regular action of the bowels is, however, rarely found in lunatics, as the lack of exercise, the good feeding, and the want of tone of the intestinal muscles all tend to constipation.

In the treatment of dysentery some success has attended the use of anti-dysenteric serum in the early acute stage of the tropical type, but its effects are uncertain (*v.* Flexner) (8), and it has proved of little benefit, so far, in the treatment of asylum dysentery, but *coli* vaccine has been more efficacious in a few instances (*v.* Allchin) (9); specific treatment is still in the experimental stage, and cannot be used as a routine in asylums until more certain results are obtained, especially as it is expensive; but where vaccines can be prepared from the patients themselves we may hope for better results.

Many drugs have been employed with effects varying in different individuals and in different epidemics; MacMillan (10) uses half- to one-ounce doses of oleum ricini with a few drops of tinctura opii, or one large dose of magnesii sulphas, or several small doses at the onset, followed by bismuth and opium if diarrhoea is excessive; he advises against the use of large rectal enemata. Robert Jones (11) gives purgatives at the onset, followed by salol, resorcin, iodine, carbolic acid, or chinisol as intestinal antiseptics, and he also condemns enemata. Stoddart (12) recommends salol or B. naphthol by the mouth, and rectal lavage with a solution of creasote or lysol; he also mentions the treatment with magnesii sulphas. Allchin (13) gives it as his opinion that ipecacuanha and salines are not so useful in the treatment of English dysentery as they have proved to be in the tropics, and advises small doses of calomel with opium, and large doses of quinine; he adds that rectal enemata are uncertain.

Intestinal antiseptics are, in my opinion, of little service, and may even prove harmful by inhibiting the growth of benign and protective intestinal organisms—that is, if they can be used in a strength sufficient to exercise such an action upon bacteria—in any case, they are irritants to the intestinal walls. Opium and other astringents are strongly contra-indicated in the early acute stage, and the same applies to rectal lavage; the latter, however, is the best treatment in chronic cases.

Buchanan obtained splendid results with salines, namely, nine deaths only in 855 cases; he gives one or two drachms of sodii sulphas every one or two hours until the patient is freely purged, and then one drachm of sodii sulphas in one ounce of fennel water four, six, or eight times a day, until a day or two after the cessation of blood and mucus in the stools; if the stools become watery he stops the salines at once (*v. A. Davidson*) (14), and (*Whitla*) (15).

I had the opportunity of seeing the good effects of the continuous use of salines on a number of people who were suffering from acute tropical dysentery in its early stages, and who were under my care in Trinidad, B.W.I., in 1905, and this led me to use it on a series of cases of asylum dysentery; no attempt was made to give ipecacuanha, although this drug is often very successful in the tropics, because in eleven of the thirty-six patients it was strongly contra-indicated owing to their feeble condition (*v. A. Davidson*) (16); four had advanced cardio-vascular degeneration, two failing hearts, three severe chlorosis with poor cardiac action, one was convalescing from erysipelas, and one was possibly pregnant; moreover, it would be quite impossible to administer the large doses of ipecacuanha (half to one drachm of the powder) to a lunatic, because intelligent co-operation is required in order to prevent the return of the drug, and the patient must be kept at absolute rest for four or five hours without speaking, moving, or taking any food or drink. Small doses are practically useless, and de-emetinised ipecacuanha has not been very successful.

The following plan of treatment was used in thirty-six consecutive cases; the patient was kept in bed as much at rest as possible, the bedpan alone being employed:

The diet for twenty-four hours consisted of three pints of sterilised new milk (preferably pasteurised), which was given lukewarm in small quantities at short intervals of time (it may be diluted with soda water or barley water if the thirst is great, and if there is gastric irritation it may be peptonised; if new milk disagrees soured milk can be given, or egg-albumen). One pint of arrowroot was added to this diet, and one teaspoonful of brandy diluted was given every hour, that is, directly after a dose of medicine; it acts as a bribe to persuade the patient to take his medicine, it helps him to

keep it down, and also gives a good deal of relief to tormina, besides having a stimulating effect. Beef-tea and meat-extracts should not be given, as they are liable to aggravate tormina and diarrhœa.

Half an ounce of the following mixture was given every hour during the day and night: *R.* magnesii sulphatis ʒj, sodii sulphatis ʒj, acidi sulphurici diluti ℥x, tincturæ cardamomi compositæ ℥x, tincturæ camphoræ compositæ ℥xx, aquam cinnamoni to half an ounce, and this was kept up until pyrexia had subsided and every trace of blood and mucus had disappeared from the stools; in the case of very feeble patients, in whom signs persist for several days, or in whom insomnia exists, the dose may be given two-hourly during the sleeping hours. The fact of the motions becoming watery need not be considered an indication to stop the mixture, so long as any blood or mucus remains; rather the large bulk of a watery stool produces the desired effect of thoroughly flushing the bowel.

In spite of eleven of the patients being in a feeble physical condition, these large doses of salines did not appear to produce any symptoms of poisoning or exhaustion. Sodii sulphas is non-toxic; the symptoms of poisoning by magnesii sulphas are paralysis, first of respiration, then of the heart, with abolition of sensation and paralysis of the motor reflex areas (*v.* Lauder Brunton) (17); but these symptoms occurred in two only of the small number of recorded cases of poisoning (18); the remainder died collapsed as a result of gastric irritation, or with signs of acute obstruction; they all took large single doses, undissolved or only partially dissolved.

Given every hour in one drachm doses dissolved in half an ounce of water, magnesii sulphas (or sodii sulphas) passes through the lumen of the gut, abstracts fluid from the intestinal blood-vessels, and very little of it being absorbed, is finally evacuated from the anus, the dilution having been too great to allow of any irritating or obstructing action; the diminution of the fluids of the blood is made up in a short time by absorption from the tissues of a nearly equal quantity of the fluids. Matthew Hay (19) found that the combined use of the salts produced a gradual but a well-marked increase in the arterial pressure; consequently, the patients who undergo this treatment can for a few days very easily withstand the call on

their body fluids if they are supplied with a liberal liquid diet, supplemented by stimulants. Should collapse threaten it may be combated by cardiac tonics and by intra-venous injections of normal saline solution.

The drugs were well borne by the feeblest of my patients; for instance, H. T. R—, who was an anæmic and emaciated chronic maniac, with weak cardiac action, took salines in these doses for nine whole days, and, over a period of twelve consecutive days, he consumed 27 oz. of magnesiæ sulphas and 27 oz. of sodiæ sulphas; he also took strychnine, digitalis, and sal volatile as cardiac stimulants every four hours; he had 160 motions, and his temperature rose to 102° F. The blood and mucus ceased at the end of this time, and after the administration of the astringent mixture during twenty-four hours, recovery was complete; two or three days later he was up to the standard of his usual poor health. W. W—, æt. 77, suffering from advanced arterio-sclerosis with cardiac failure, took 21 oz. of each salt over a period of seven days with no ill-effects, and his recovery was also quick and complete.

The saline solution accomplishes its work by keeping up a continuous draining action upon the mucous lining of the bowel, whereby the latter is somewhat depleted of blood and its cells are flushed, while all the organisms, toxins, and *débris* which are accumulated in the intestines are carried away and evacuated by the frequent purgation; this irrigation is continuous without being excessive in amount, and it is more thorough in its action and less likely to be harmful than rectal enemata, with their bulk and intermittence and their disturbance and discomfort to the patient. The removal of mucus and other particles relieves the tormina and tenesmus which are a reflex result of their irritation to the bowel.

The two drachms of salts are dissolved in half an ounce of water, roughly a 25 *per cent.* solution of each, and this abstracts sufficient fluid from the body fluids, mostly in the small intestine, to form a 5 *per cent.* or 6 *per cent.* solution, and owing to the low diffusibility of the salts very little of them is absorbed. The fluids which are excreted after secretion and osmosis (*v.* Starling) (20) accumulate in the canal, reaching their maximum bulk in the large intestine, and, partly from ordinary dynamical laws, partly from a stimulation of the peristaltic movements (which is only gentle and therefore does not unduly

disturb the rest of the inflamed surfaces), they are carried onwards and finally evacuated (*v. Lauder Brunton*) (21); too violent peristalsis is also checked to some degree by the other constituents of the saline mixture.

The earlier this treatment is adopted the sooner will the pyrexia, blood and mucus cease (provided that the treatment is not interrupted), and in an asylum where the patients are under constant observation there is no reason why the disease should not be detected in a very early stage, and thereby some of the symptoms may be prevented; for this reason it is wise to give salines, as a precautionary measure, hourly for twelve hours in all cases of diarrhoea, following them by an astringent mixture; they may be given also to any patient in an infected ward who develops a rise of temperature.

The treatment considerably shortens the course of the disease, and, if given in time, should certainly obviate chronicity. Of the 36 patients treated in this way there were mucus and pyrexia without blood for 24 hours in 1; mucus without blood (four with fever and two without) lasting about 2 days in 6 (these were all cases of simple catarrhal colitis; probably the remainder had ulcerative colitis as they all passed blood and mucus, and all except two had pyrexia): 14 of them required less than 2 days of salines; 7, 3 days; 2, 4 days (one, E. H—, died with a fatty heart); 2, 7 days (one, A. J. H—, died); 1, 8 days; 1, 9 days; 1, 11 days; and 1 (K. R—) died without taking any salines, as she vomited everything which was given to her, and, in spite of gastric sedatives, could only be made to retain a little nourishment; she was given rectal enemata containing 20 grains of quinine sulphate dissolved in dilute sulphuric acid and water; she died after eleven days, having passed blood and mucus all the time, and the highest fever being 104° F.

In 2 cases the temperature reached 104° F.; in 6, 103°; in 11, 102°; in 6, 101°; in 6, 100°; the remainder being under 100°; 3 had no pyrexia at all.

It is supposed that salines have the power of reducing the temperature in fevers although they have no such action in health (*v. Mathew Hay*) (22), and they may exert this beneficial influence in dysentery.

When the saline mixture has effected its object in clearing up the blood, mucus and pyrexia no other drugs are required,

except, possibly, cardiac tonics, as diarrhoea usually ceases in a few hours and constipation often follows. Should the diarrhoea persist it may be checked by giving one ounce of the following mixture two-, three-, or four-hourly according to circumstances :  
℞ bismuthi subnitrat̄is gr. xx, tincturæ chloroformi et morphinæ compositæ ℥v to x, tincturæ catechu ʒss, mucilaginis quod sufficat, et aquam ad ʒj.

Any recurrence of blood and mucus should be treated again with salines.

Post-dysenteric constipation should not be allowed to continue for more than twenty-four hours, and can be stopped by one drachm of oleum ricini or by a glycerine suppository.

The patient should remain in bed for at least a fortnight after the active signs have ceased, and he should be kept in a diarrhoea ward or general paralytic ward, as suggested before, for some weeks (or permanently if subject to relapses), and his stools should be inspected from time to time.

Some symptoms may occur which require special treatment, for example, tormina may be relieved by hot turpentine stupes to the abdomen, tenesmus and dysuria by morphine or cocaine suppositories, or by the rectal injection of half a drachm of laudanum in two ounces of warm starch solution (these symptoms are rarely marked in asylum dysentery), insomnia by one or two drachms of paraldehyde, and vomiting by dilute hydrocyanic acid and bicarbonate of soda.

Jaundice occurred in one patient (S. H—) about six weeks after the attack of dysentery, and it was accompanied by slight intermittent fever for a few days and by considerable hepatic tenderness. He was treated with salines and bicarbonate of soda and recovered, but relapsed again in a fortnight and finally recovered after a few days. Hepatitis is a rare complication except of the amœbic form of dysentery, so possibly this was only a simple catarrhal condition.

If salines produce no good result after a few days' trial the following powder may be given : ℞ pulveris ipecacuanhæ gr. j, hydrargyri c̄ creta gr. j, pulveris ipecacuanhæ compositi gr. ij, sodii bicarbonatis gr. iij, bismuthi subnitrat̄is gr. v, given two-, three-, or four-hourly.

Should the condition become chronic (it did not in this series of cases and rarely does in asylum dysentery), it may, after a week, be treated with injections of two or three pints of a 1 in

4,000 solution of silver nitrate in water after the bowel has been washed out with a 1 *per cent.* solution of sodium carbonate in water.

There were three deaths among the thirty-six patients ; one of them, K. R—, was unable to take salines owing to severe gastric irritability. E. H— was found *post-mortem* to have advanced fatty degeneration of the heart muscle, atheromatous deposits on the aortic valves, and a fatty liver ; the mucous membrane of the lower portion of the large bowel was swollen and congested and dotted with small hæmorrhages and punctate ulcers ; the lower part of the ileum was also slightly congested and the mesenteric glands were enlarged. She had had the disease for four days only, passing blood and mucus throughout. The highest fever was 102·6° F., and she vomited frequently. A. J. H— died after seven days' illness, passing blood and mucus all the time, the highest fever being 102·8° F. She was given salines for the first twenty-four hours ; they were then remitted for one day and continued again for twenty-four hours, and finally stopped as she was collapsed. Intra-venous injections of normal saline solution were given twice during the last day. I think she might have done better if the saline treatment had been carried on continuously in spite of her weakness, as subsequent patients, who were quite as weakly, stood the treatment well.

The remainder of the patients recovered completely, seventeen within four days of the onset, and all except two of the others (E. H— and H. T. R—) within one week.

The first 64 of the series of 100 cases were given various drugs, *ut seq.*, 25 quinine and opium enemata, 9 pulvis cretæ aromaticæ, 10 bismuth and salol, 9 some form of opium, 4 oleum ricini, and 6 catechu (or combinations of these drugs).

There were 21 deaths among the 64 who were treated by these various drugs, *i.e.*, 32·8 *per cent.* deaths ; the percentage of deaths amongst the 36 on whom salines were tried was 8·3 (3 out of 36).

In all England during 1903 there were 1,225 cases and 257 deaths, and in 1908 there were 1,068 cases and 235 deaths, that is, a percentage of 21 and 22 respectively.

In conclusion, I am of the opinion that much of the dysentery in asylums might be prevented by reducing to the smallest possible amount the fæcal pollution of the atmosphere and by

a longer isolation and more careful observation of those patients who have had the disease, while the best results in the matter of treatment of acute cases are to be obtained from the exhibition of salines in frequently repeated doses sufficient to produce purgation, continued without a break so long as active signs of the disease persist, and followed, if necessary, by a few doses of an astringent mixture. The sera and vaccines of the present time are uncertain in their action, but we may hope for a specific cure when the infecting organisms become known more accurately and when suitable vaccines and sera can be prepared from them.

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*Auto-suggestion and Delusional Insanity.* By DAVID THOMSON, M.B., Ch.B.Edin., formerly Assistant Medical Officer, Horton Asylum, Epsom.

THE presence of delusions, whether arising primarily or following other mental states, is significant of a faulty cerebral action, yet the co-existence of normal ideas suggests that the morbid process is limited to certain groups of nerve-cells. It is thus reasonable to suppose that many of the nerve-cells associated