on the method of giving the irrigation. It must be remembered that the rectum in the majority of cases is not at all or only slightly involved and that the ulceration is most extensive in the cecal pouch and in the ascending colon. One must insure, then, the irrigation fluid reaching the upper part of the colon. This is best attained by having the patient's hips well elevated on firm pillows and to have him roll occasionally from his left to his right side. The same object may be secured by placing the patient in the knee-chest position. A liter of the quinin solution should be allowed to run into the colon twice daily. The strength of the solution at first should be 1-5000, gradually increasing it until it reaches 1-1000 or 1-500. In some cases we have given the patients at intervals an irrigation of a weak solution of hydrogen peroxid with apparent benefit. Colostomy has been recommended very highly by some in the intractable cases. It was only performed once in our series. The patient was almost moribund at the time of the operation and died shortly after.

Where the dysentery is complicated by hepatic abscess, the latter should be operated on at the earliest possible opportunity after a diagnosis has been established. Five of our 17 cases operated on recovered. While these results are fairly satisfactory they leave much to be desired. The earlier the operation the better the patient's prospects will be. The unsuccessful results after operation have, in many cases, been shown to be due to the fact that the abscesses are multiple and consequently only one abscess is evacuated, the others continuing to exert their injurious effects after operation. The operation is usually done in two stages in this hospital. The first operation is to promote shutting off the peritoneal or pleural cavities, depending on the seat of the incision. The second operation is for the evacuation of the abscess, and is performed a few days later. This delay, of course, is only permissible when the patient's condition will allow it. Rogers advocates very strongly a quinin solution of about 1 per cent. strength for irrigating out the abscess from time to time. He believes that the amebæ in the abscess wall are more quickly destroyed, thus allowing of a more rapid healing.

Where the abscess opens into the pleural cavity with the establishment of an empyema, free drainage must be established. When intestinal perforation occurs the experience with typhoid perforation in recent years leads one to hope that success might follow operation if performed very early.

SUMMARY.

In nearly fourteen years 120 cases of amebic infection have been admitted to the Johns Hopkins Hospital. Of these, 119 were cases of amebic dysentery or amebic abscess of the liver, the remaining case being one of amebic abscess of the floor of the mouth. Of the 120 cases 118 were admitted to the medical wards. During this time there were 15,817 medical admissions, the amebic dysentery cases constituting 0.74 per cent. of the cases. Of the 119 cases of dysentery, 82 were apparently contracted in Baltimore and 13 in the State of Maryland outside Baltimore, or a total of 95 cases within the borders of Maryland. The largest number of cases occurred in the third decade. The youngest patient was a child two years and eight months old, and the oldest a man of 71. A point of special interest is the comparatively large number of cases in children under 10 years. Eleven cases, or 9.4 per cent., occurred in the first decade, 6 of these belonging in the first hemi-decade. There were 108 males and 11 females.

The series comprised 107 whites and 12 blacks, or a proportion of 9 to 1. The total ratio of whites to blacks in the hospital is about 7 to 1. A secondary anemia of moderate grade occurs. Occasionally there is a polycythemia. The average leucocyte count in the uncomplicated dysentery cases was 10,600. In the hepatic abscess cases it was 18,350. Hepatic abscess occurred in 27, or 22.6 per cent., of the cases. Nine of these ruptured into the right lung and 2 into the right pleura. Three opened into the inferior vena cava. In 10 cases there was a single large abscess in the upper part of the right lobe. In 8 cases there were multiple abscesses. Perforation of the colon with peritonitis occurred in 3 cases; and severe intestinal hemorrhage in 3 cases. Five cases were complicated by malaria; 1 by typhoid; 1 by pulmonary tuberculosis; and 1 by a strongyloides intestinalis infection. The agglutinative blood reaction with *Bacillus dysenteriae* was negative in all cases tried. A marked feature of the disease is the great tendency to relapse. The mortality was high; 28, or 23.5 per cent., terminated fatally. Hepatic abscess is a serious complication, 19 of the 27 cases terminating fatally. Five were cured out of 17 operated on. Two of the hepato-pulmonary abscess cases were discharged very much improved. One abscess case did not remain to be treated. Quinin irrigations still seem to give the best results in the treatment of the dysentery.

THE TREATMENT OF ACUTE DYSENTERY.*

J. M. ANDERS, M.D.

Professor of Medicine and Clinical Medicine, Medico-Chirurgical College.

PHILADELPHIA.

The subject will be considered under three heads: 1. Regiminal Treatment; 2, Internal Remedies; 3, Topical Applications.

I. REGIMINAL TREATMENT.

The regiminal treatment, properly carried out in its various details, is potent to render the course of this affection distinctly milder and more favorable. Among the eminently important measures in bacillary dysentery I should regard rest in bed throughout the attack as deserving of a prominent place, and it should be rigidly enforced in all instances, not excepting the milder sporadic cases. As a means to conserve the bodily strength and energy, absolute repose is never uncertain in its effects; its extreme importance to the inflamed and ulcerated bowel, with a view to promoting resolution and the healing process, is universally acknowledged. The efficiency of rest in bed can be appreciably enhanced by constant, careful attention to the ventilation of the sick chamber. Fresh, pure air, without strong currents, is practically important as an aid in preventing the development of dangerous asthenia.

Too close attention to the diet and manner of feeding can not be paid. Certain dietetic principles need to be kept in view. For example, it must be recollected that concentrated, soft and liquid forms of food tend to favor constipation, whereas bulky, hard articles stimulate intestinal peristalsis.

Our aim in this disease is to minimize the intestinal contents, and thus, also, the amount of decomposable material that will reach the seat of the morbid changes. To reduce the putrefactive processes in the intestines, especially during the active period of acute bacillary

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dysentery, an absolute liquid diet composed principally of milk and albumin water, is a prime requisite. The milk should be predigested and given in small quantities, and the dejecta carefully scrutinized; and the appearance of food remnants in the feces is an indication either for further dietetic restriction or a change of pabulum. Dieting must be systematically conducted. When not objected to, the albumin water is admirably suited to this disease in the early acute stage. If carefully carried out, a milk diet, however, is attended with the least degree of intestinal putrefaction. Nothing is more pernicious in its effects upon the local lesions than to overburden the much-enfeebled digestive organs.

It is doubtless true that the fats increase intestinal putrefaction, and must be allowed in relatively small amounts in this disease, if at all. This is probably also true of carbohydrates, although Bachman's experiments, contrary to the general teaching, show that they exert no marked influence on intestinal decomposition. Nutrients are of signal importance in supporting the vital powers, and may be preventive of dangerous asthenia. Finally, not all foods, even among the blandest and most nutritious forms, are equally well borne by the stomach, and several changes may be necessary during the course of a given case.

I have dwelt somewhat at length on the subject of diet in dysentery, believing that there is a lack of appreciation on the part of the general profession of its true value in the management of this disease.

Stimulants are required in the severer forms of endemic, and more especially epidemic, dysentery, to overcome the pronounced asthenic which often develops at a comparatively early period of the disease. Marked and even alarming circulatory enfeeblement may be met, and this calls for the free use of diffusible stimulants (e. g., champagne). In extreme adynamia, strychnin should be employed subcutaneously; and the timely, judicious employment of the normal saline solution is highly serviceable in similar cases. It has seemed to me that in our eagerness to find a special method of treatment (of which there are not a few from which to make a selection), agencies and elements whose efficiency has been satisfactorily demonstrated by the experience of by-gone generations of physicians, have been omitted from consideration in discussing the management of dysentery. An examination of the literature will confirm this opinion, so far as relates to the use of stimulants in this disease at least. The regimen, during the convalescing period, should receive much attention. Indiscretion in diet must be obviated; the too early use of fats, fruits and the coarser vegetables often cause a return of the dysenteric symptoms. The habits of the patient must be vigilantly looked after until full health is restored, and an abdominal bandage of wool is advised following an attack of dysentery, and may be warmly recommended.

The prophylactic measures applicable in the treatment of dysentery are much the same as those demanded by other micro-organismal diseases, notably typhoid fever, and need not be detailed here. Especial attention, however, should be paid to the disinfection of the excreta, while the drinking water must be both filtered and boiled. Unless a rigid system of disinfection of the stools be carried out during the prevalence of an epidemic, an infected individual contributes to the common source of contamination.

2. INTERNAL REMEDIES.

It is customary to speak of special methods of treatment by medicinal agents. This is unfortunate, since it

tends to lead to neglect of other most important elements of the treatment. Pre-eminent among special drugs stands ipecacuanha, and although a most valuable agent in this disease, it can not be said to possess an abortive, or even curative, action; it is not a specific for dysentery. Says Hare:¹ "So far as we know, any influence which it possesses is brought about by reason of the fact that it tends to produce a rather profuse flow of bile in such patients, and the close connection which exists between the torpidity of the liver (to use a popular phrase) and congestion of this organ, with congestion of the colon, makes its employment under these circumstances more rational than would appear at first glance." Woodhull,² however, claims that "ipecac is not, as commonly supposed, a depressant or an evacuant, except in a secondary sense. Its primary action is that of a stimulant more directly of the organic nerve." He believes that this drug thus contracts the intestinal capillaries. Treatment, therefore, should be prompt.

R. Kobert³ states that the antidyenteric action is supposed to reside in a glucocid, ipecacuanhic acid. It is probable that the use of ipecac has been less enthusiastically supported by clinicians in recent times than was formerly the case, because its mode of administration has not been of such character as to insure the highest efficacy of the drug. Kieffer⁴ gives the following method, which has been adopted in tropical dysentery: "Nourishment of every description is withheld for three to four hours. Then 15 to 25 drops of tincture of opium are administered and a small sinapism applied to the epigastrium. In from twenty to thirty minutes, when the effect of the opium begins, from 30 to 60 grains of ipecac are administered in powdered form stirred up in one or two ounces of water. The patient lies on his back in bed with both eyes covered with damp, cool compresses. The pillow is removed. The patient is carefully enjoined to make no movement. If mucus gathers in the mouth and throat, a nurse, on sign from patient, removes it with a cloth or towel. If all these precautions are rigorously carried out, the patient retains the dose."

It requires at least two hours for ipecac to produce its effect. If it be vomited within an hour, the dose is repeated as soon as the nausea subsides. When all signs of nausea have disappeared the feedings are to be resumed. The next day repeat the dose of ipecac, diminishing it by 5 or 10 grains, and continue in this way for three or four days, using always the same precautions against vomiting. Kieffer feels that if administered in this way, ipecac will prove of value in the dysentery of the United States. Although aware of the fact that most authors recommend the massive dose, in my hands quarter-grain doses administered every half hour have in some cases seemed to be quite as effective, and in children the smaller doses are to be preferred. Strassberger⁵ lauds ipecac highly in the treatment of the acute exacerbations of amebic dysentery, using one dram of the Rio article, with a full dose of opium, twice daily. The effect was prompt and permanent, and in only one instance did a real relapse occur. Upon further investigation and observation he found that while it may be a specific in amebic dysentery, it has little or no effect on the bacillary forms.

The use of saline laxatives in the treatment of dysentery is generally adopted. The best preparation is

1. Proceedings of the Phila. Co. Med. Society, Sept., 1902, p. 51.
2. Therapeutic Gazette, April 15, 1902.
3. Ther. Monatsch., August, 1902.
4. Tropical Dysentery, Philadelphia Med. Jour., Jan. 31, 1903.
5. Münch. Med. Woch., Sept. 9, 1902.

magnesium sulphate, which produces an eliminative effect, depletes the intestinal mucosa, and at the same time inhibits undue peristalsis. It is best administered in doses of one dram, diluted, every hour until free purgation is induced. This is followed by the generous exhibition of acid. aromat. sulphuric., which is given partly for its astringent effect and partly to render the intestinal contents acid. It has been shown by Cunningham of India, with reference to amebic dysentery, that if the contents of the intestines are alkaline, the amebæ thrive and multiply, while conversely, if the intestinal matter is rendered acid, their multiplication ceases for want of a suitable medium. The combined saline and acid method of treating dysentery rests on a most rational basis. I have, however, found and elsewhere expressed the opinion that if saline purgatives are employed at a late stage of the affection, or even after the full development of a given case, they are invariably attended with baneful effects. Richmond⁶ also observes: "It is of the utmost importance that cases in which the sulphate of magnesium or sulphate of sodium should come under treatment early in the attack, before much ulceration has taken place, otherwise the septic absorption continues. In some cases treated by this method at Duelfontain, little or no improvement accrued, and the "patient died in a condition of toxemia, with rapid failing pulse, delirium and profuse diarrhea, with much painful tenesmus." Opium in some form, preferably as Dover powder, is promptly effectual in meeting certain leading systematic indications, as pain irritability, restlessness and undue peristalsis. For intensely distressing tenderness, either an opium suppository or laudanum by enema exercise a beneficial effect. The preparations of bismuth are valuable, particularly in the milder sporadic cases, and in the advanced stage of the severest forms; they may be advantageously combined with Dover powder and an antiseptic substance.

Phelm,⁷ who has had an extensive experience in the treatment of this disease in Africa, advises the successive use of purgatives, calomel and subnitrate of bismuth. A suspicion of dysentery calls for 30 grams of castor oil. If the case be one of dysentery, calomel is given after twelve to eighteen hours. At the end of three days, calomel is succeeded by bismuth subnitrate, which, in turn, is kept up for three or four days, or until the stools become solid again. It may be questioned whether any of the intestinal antiseptics exercise a potent influence; and it may be safely assumed that they are without the power to destroy the infecting micro-organism. The antiseptic care of the intestinal tract in bacillary dysentery, however, should be one of the aims of treatment, and guaiacol, salol and the preparations of naphthol are the agents of choice for this purpose. They may be combined either with the ipecac or salines, or with both. Richmond,⁸ during an experience of the treatment of dysentery, found that none of the recognized methods were infallible, and the use of sulphur in the treatment of this complaint was suggested to him on the analogy of the treatment of anthrax by sulphur, as advocated by Mr. Arbuthnot Lane.⁹ He had under his care in the Imperial Yeomanry Hospital at Pretoria, 20 acute cases and 10 cases of chronic diarrhea following attacks of acute dysentery. All the acute cases were treated with sulphur and Dover powder, and the chronic cases with sulphur alone, and in every instance a cure

resulted. The ameba was carefully searched for in all of Richmond's cases, but was never found, and he believes it to be a justifiable speculation that the dysentery of South Africa was, like that of Japan and the Philippines, due to the Shiga bacillus. This observer prescribed 20 grains of sublimed sulphur combined with 5 grains of Dover powder four-hourly in the acute cases, and a like dose of sulphur alone in the chronic diarrhea resulting from acute attacks. The signal value of this remedy has been confirmed by the experience of other competent clinicians, both abroad and in this country. Although the exact mode of action of the sulphur is unknown, it is probable that the resulting sulphuretted hydrogen and sulphur acids inhibit the growth and propagation of the *Bacillus dysenteriae*. Stengel has observed the same curative effect in amebic dysentery, and it is quite reasonable to suppose that the *modus operandi* of its action is similar in this form to that of bacillary dysentery. This remedy is strongly advised on theoretical grounds, and in view of the brilliant results already reported, is worthy of a more extended trial than has as yet been accorded it. It will probably be found to be best suited to protracted or chronic forms of the complaint. Dabney has pointed out the eminently important fact that the existence of certain complicating conditions, as malaria and various intestinal worms, may occasion non-success in attempts at treatment, unless recognized and met by the use of quinin or anthelmintics according to the given case. Failure of the ipecac treatment may also be due to the unreliability of its preparations.

Another method of treatment is by the use of anti-dysenteric serum. Gay¹⁰ has prepared vaccines of uniform activity, and by means of which he could protect guinea-pigs from a multiple fatal dose of living dysentery bacilli, and also produce in the horse an active, immune serum. Gay thinks that a useful serum therapy of bacillary dysentery and of certain forms of the summer diarrheas in infants (the latter having recently been shown to be due to the *B. dysenteriae*) is rendered highly promising. Shiga has successfully employed a serum which he himself has prepared. It is both protective and curative, but not as yet available for general use.

3. TREATMENT BY TOPICAL APPLICATIONS.

The treatment of dysentery by high intestinal irrigations is doubtless of value, but quite a few recent writers are not ardent advocates of the use of large enemata in acute bacillary dysentery, believing that they may cause atony and weakening of the coats. Astringent and antiseptic solutions are used for this purpose; they must be weak, otherwise the tormina and tenesmus—distressing features of the disease—will be materially increased. The method is better adopted to the more chronic forms of dysentery, the amebic variety in particular. In the latter, a warm solution of quinin (1-2,000, 50-5,000) is almost universally acknowledged to be more or less efficacious. It may be questioned, however, whether the amebic form is curable by known methods of treatment. In the milder forms of acute bacillary dysentery, copious enemata are unnecessary. If employed in this class of cases, the same precautionary measures must be taken as in the severe types of the disease.

Among the remedies thus employed are silver nitrate, strength of solution (gr. ss. to 1 ad $\mathfrak{z}$ i); salicylic acid (1 to 2 per cent.); tannic acid ($\frac{1}{2}$ to 1 per cent.); zinc sulpho-carbolate (gr. i-ii ad $\mathfrak{z}$ i); and mercuric chlorid (1-6,000).

6. London Lancet, June 15, 1901.

7. Deutsche Medicinische Wochenschrift.

8. London Lancet.

9. The Medical Week, Dec. 8, 1891.

10. Univ. of Penna. Medical Bulletin, Nov., 1902.

It has been my custom to alternate an astringent and antiseptic solution, administering a copious clyster at twelve-hour intervals.

The mode of giving the irrigations is of vital importance. A fountain syringe should be employed, and as shown by the experiments of Hare and Martin; the pressure should never exceed two or three feet. Intestinal lavage must be a slow process in order to be successful, and to this end the flow should be interrupted at short intervals. The patient during the enemata should assume either the dorsal position or that on the left side, with the hips elevated; or if he be not too ill, he may be turned from side to side during its administration.

In conclusion, I would emphasize the fact that it is impossible to indicate a special mode of treatment that would be suitable for all cases of dysentery since each case, whether of the bacillary or amebic variety, presents certain individual peculiarities. The therapeutic measures must vary also with the particular stage of the affection and the previous condition of health of the patient.

DISCUSSION

ON PAPERS OF DRS. MASON, KNOX, BURNS, HARRIS, FUTCHER AND ANDERS.*

DR. ALEXANDER LAMBERT, New York—This is not a common disease in the North. Still, it is not uncommon among transients going through New York and who land in Bellevue Hospital. Some years ago I was surprised to find cases of amebic dysentery developing in people not 25 miles from New York; I have had four such cases in the past five or six years. It has been stated that liver abscesses were more frequent in the North than in the South. So far as a limited experience in a number of cases of amebic dysentery is concerned I have seen abscess develop in a large number.

I have found that high enemata given one week, and quinin the next week, and silver once or twice a day, have given me better results and quicker improvement than followed when I persisted in quinin or silver. In the more chronic cases I have given 1-500 bichlorid solution and run it down to 1-1000 with beneficial results. Salol and castor oil seem to give more satisfaction with some patients. Most of these cases have gone out of the hospital cured unless they died of liver abscess.

In all these cases of amebic dysentery there was one symptom that I have been unable to find mentioned in any text-book, viz., the severe amount of pain in the muscles at night; painful cramps in the muscles were found in every case of amebic dysentery. In the other cases of dysentery this was not complained of. I should like to hear from the Section on this symptom.

DR. T. S. DABNEY, New Orleans—At first I used sulphate of magnesia, but experience has taught me that sulphate of soda by reason of its action on the liver is far more efficacious. I also wish to state that the combination I use has a little morphin added, 1/6 to 1/32 of a grain to the dram; there is also dilute hydrochloric acid and peppermint water, and this combination acts well. If you take six cases of dysentery and use sulphate of soda in three, and sulphate of magnesia in the other three, you will not use sulphate of magnesia again. In conjunction I use acid drinks of dilute sulphuric acid, or nitro-hydrochloric acid. All my patients drink this all the time. Experience has taught that the bacillus of dysentery seems to thrive poorly in acid and acid medium; it seems to require an alkaline medium, hence acidulated drinks inhibit the growth of this bacillus.

While in Colombia, South America, in the summer of 1892, I was asked by Dr. Angoula, a native Colombian physician, a close observer of the endemic diseases of his country, to visit the village of Rio Frio, situated in the midst of vast banana haciendas, where a disease, characterized by severe in-

testinal hemorrhage, was at that time prevailing. In almost every thatched hut we found patients suffering from profuse bloody discharges at frequent intervals. A moderate amount of fever, but not much tormina or tenesmus was present. So great was the loss of blood that the patients seemed exsanguinated. On being asked by the Doctor for the diagnosis and treatment, I politely declined either, and remarked I was the student and he the teacher. His diagnosis was intestinal paludic fever and his routine treatment one gram of the sulphate of quinin dissolved in water acidulated with dilute sulphuric acid, this to be repeated every four hours until the character of the stools markedly changed. On our second visit, six hours later, we found the diagnosis verified by the treatment, for never in my professional life before had I seen such immediate and happy results follow so promptly on the administration of any remedy. I am inclined to believe the acid medium played an important part in the cure.

DR. T. J. MOORE, Galveston, Texas—I believe that there is not only amebic but also bacillary dysentery where I live. During the past four years we have carefully examined every malarial fever case, and, as a result, I am not ready to admit that we have malarial dysentery. I have treated during the past four years several hundred cases of malarial fever and associated with many there has been dysentery, but on closer investigation we have found, in probably all of them, some other cause for the dysentery than the malarial infection. I would rather regard dysentery as one of the symptoms of malarial fever seen occasionally. Hemoglobinuric types of fever with dysentery seem to be more common. We must admit that there is some gastrointestinal disturbances in many cases, but I am not ready at all to admit that we have malarial dysentery. Many cases of amebic dysentery get better on quinin and some better without quinin. During the past three years, at my suggestion, in the wards of the hospital we have been using the fluid extract of chaparro, a Mexican shrub. In the series of cases in which this drug was used, some ten or twenty, there was a rapid disappearance of the dysentery, and also of the amebæ from the stools. This drug is well worthy of trial.

Dr. Lambert has referred to cramps in the muscles of the arms and legs; this is especially true in the severe and acute cases where you find a great number of these amebæ, many containing red blood cells. In the severe cases the amebæ show a disposition to collect within themselves a large number of red blood cells. In the acute form there is another feature, the acute swelling of the mucous membrane which may cause a complete occlusion of the intestines.

DR. WALTER SHROPSHIRE, Yoakum, Texas—The cause of this disease has been to me an enigma for many years. Three years ago I had a case in a child nine months old. Severe symptoms were referable to the lower rectum and the disease progressed rapidly. An examination of the feces disclosed amebæ which contained red blood cells. Irrigation of the rectum and colon with quinin caused a disappearance of the ameba. When first examined I found the colon bacillus in large quantities. I called another physician in and he agreed with me in my diagnosis. The colon bacilli persisted, and the disease continued until the child began to vomit. In the vomit were found numbers of these bacilli, but no amebæ. At the autopsy, macroscopically, there was noted the characteristic undermining ulcers of the amebic dysentery. Further up in the tract were found bright red congestion of fresh inflammation. Microscopically there were found the same bacilli throughout the intestinal tract, in the mesenteric glands, liver and spleen. We then decided that this bacillus was the cause of the disease. Specimens were sent to Dr. Smith of Galveston, and he agreed that they were the colon bacilli, but said they were harmless in the intestinal tract. I am firmly convinced, though, that they were the cause of the disease. Since then I have not been able to discriminate between the two, Shiga's and the colon bacillus, and shall appreciate an accurate method of doing so.

DR. CHARLES F. MASON, Ft. Sam Houston, Texas—A great many soldiers come to me after they have passed through

* The papers of Drs. Mason and Burns appeared in THE JOURNAL, July 25; that of Dr. Knox, July 18.

several hospitals and after they have been recommended for discharge on account of disability; now, after a little experience with the following treatment, we find that these men can be much benefited. First, an anesthetic is given and the sphincter thoroughly dilated in order that a careful examination of the mucous membrane of the rectum can be made; almost always we find a little ulceration in the rectum within five or six inches from the sphincter. These ulcers are apt to be undermined, forming little pouches in the mucous membrane in which a probe can be introduced or hooked, and in which foreign matter as it comes down the bowel may gain entrance. Such ulcerations are treated by slitting them down to the bottom and curetting them or touching them with pure carbolic acid, or both. The bowel is then washed with a normal saline solution and the patient placed in bed and kept quiet on a liquid diet and preparations of milk. Irrigation with normal saline solution are used thereafter once or twice a day. Every case with one exception has been cured and returned to duty.

DR. J. H. M. KNOX, Baltimore—The work was begun last summer at the Thomas Wilson Sanitarium with much skepticism as to the relationship of the Shiga bacillus to the diarrheal cases under treatment. The dysentery organism was isolated in case after case which seemed to be quite identical clinically with the several types of intestinal disorder in infancy which are grouped together as summer diarrhea. The claim is not made that every case of diarrhea in infancy is produced by this bacillus, but our experience at Baltimore last summer would certainly indicate that a large number at least of both the acute and chronic diarrheal disorders of infants are associated with *Bacillus dysenteriae* (Shiga). It is to be emphasized that the isolation of this organism from the stools or intestinal tract requires some special skill and a bacteriologist well trained in other lines may easily overlook the specific bacillus, as indeed must have been repeatedly done.

It is to be hoped that during the coming summer a very large series of cases will be carefully studied in many localities that it may be determined to what extent the Shiga bacillus is responsible for the widespread infant epidemics which occur each summer. I should like to urge that all those who see these cases and have access to bacteriologic laboratories familiarize themselves with the special technic necessary in isolating the Shiga bacillus and then join in the effort to assist in the bacteriologic study of summer diarrhea. We shall be glad to send cultures from the sanitarium to any who wish to familiarize themselves with the organism.

DR. WM. BRITT BURNS, Memphis, Tenn.—I do not think we are any nearer a definite knowledge of the etiology of dysentery. I am aware that most all authorities at the present time do not agree that malaria has been a causative factor in dysentery. I am also aware that some cases of bacillary and amebic dysentery occur when in unison with the malarial parasite in the blood, but I do not find that those cases respond to treatment rapidly, and I do not believe that the ordinary bacillary and amebic dysentery would respond so readily to the treatment, as I have seen many cases do under the treatment ordinarily used in malarial disease.

DR. H. F. HARRIS, Atlanta, Ga.—I wish to call attention to the treatment of amebic dysentery with hydrogen dioxid, concerning which, I observe, nothing so far has been said. When, in 1891, I saw my first case of this disease, I used the treatment first recommended by Loesch, and since lauded by various writers, which consists in injecting quinin solutions into the large intestine of those afflicted with the malady in question. Although the patient showed absolutely no improvement, I employed the same treatment in the next nine cases that came under my observation, and not in a single instance was there any appreciable effect produced. This led me to make some investigations as to the power of sulphate of quinin to kill the *Amœba coli*, and I was much astonished to find that this substance seemed to exert but little influence on these parasites. In one instance the amebæ remained alive at the temperature of the room for more than twenty-four hours in a supersaturated solution of this sub-

stance. It was thus clear that quinin sulphate could not be relied on to produce the death of the amebæ, particularly when they are embedded in the tissues, nor can this substance destroy the numerous bacteria that lie in and around the ulcers and are doubtless largely responsible for many phases of the clinical picture in this disease. Failing to get any results from the quinin injections, I tried almost everything that has been recommended in the treatment of chronic dysentery, and never succeeded in securing results in any way satisfactory. Finally, at the suggestion of a student, I used daily injections of hydrogen dioxid, diluted with water from four to six times, with the result that there was an immediate and most striking amelioration of the symptoms in almost every instance—in every case, I believe, where the solution was brought in contact with the lesion. A remarkable result of this treatment is that blood is never seen in the stools after the first injection in instances where the medicament acts properly. The treatment is continued daily for a week, and after this the number of injections are gradually reduced in number until at the end of from four to six weeks no more are given. Especially at first the injection sometimes causes severe pain, and when this is the case it is well to administer morphin an hour before the treatment is given. It is absolutely necessary that the patient be placed on a strict milk and egg albumin diet, and that he should remain in bed for from two to four months. Occasionally patients recover when these precautions are not taken, but it is unusual. I have only seen muscular cramps in bad cases.

DR. T. B. FUTCHER, Baltimore—I do not recall that any of our patients complained of muscular cramps. This symptom may occur in the southern states, where a severer type of the disease probably prevails.

We have to modify our views considerably concerning the bacteriology of the amebic hepatic abscesses. Cultures have shown that the abscesses are sterile in a much smaller percentage of cases than was formerly believed to be the case. The more frequent organisms are the *Staphylococcus pyogenes aureus* and the *Bacillus coli communis*. The *Streptococcus pyogenes* was present in three of our cases and the *Micrococcus lanceolatus* and *Bacillus pyocyaneus* once each.

In the line of treatment quinin irrigations yielded the best results. The success of this treatment depends largely on the way the irrigations are given. The object sought for is the assurance that the quinin solution reaches the cecum and ascending colon, where the ulcerations are most extensive. The relapses are due to the failure of the drug to reach the amebæ buried in the deeper layers of the submucosa. In one case an infusion of a Mexican herb which had been sent us was tried with fairly satisfactory results.

DR. JAMES M. ANDERS, Philadelphia—It is probably advisable to reiterate the importance of the benefit to be derived from absolute rest until all of the acute symptoms have subsided, whether for a shorter or longer period. The question of diet in this disease is one to which too little attention has been paid. I believe that ipecacuanha is the best single remedy for treatment of this disease, but it is not a specific, and not all patients can take massive doses. One-fourth to one-half grain doses at short intervals will give excellent results in many cases. Saline treatment should not be employed in advanced cases, but only when the patients come under observation early; as the result of a considerable experience with this method I find that if employed in the advanced stages of dysentery it aggravates rather than benefits the condition. The sulphur treatment should especially be given a trial in those cases in which ipecacuanha fails. This agent seems to be well adapted for the subacute or chronic forms; better than to the acute, bacillary form of the disease.

Cathell on Medical Societies.—Independently of the benefits and improvements accruing to the members of medical societies individually, they give a sound and healthy tone to the entire profession, stimulate the growth of medical science, and also generate and keep alive a genuine professional and brotherly spirit that tends to minimize all that is unprofessional.—Cathell.