pus only be present at the time of its administration, it may so act by killing the amœba present, and stopping a further supply from the gut, as to put the patient in such a favourable condition that encystment may occur. This latter, however, must be a race event. In the medical treatment of "hepatitis" surgeons only see our failures—those, in fact, who have come to us too late; our successes walk out of the wards. A word as to the administration of Ipecacuanha. More than 20 years ago I received the information, I believe, from the late Surgeon-General Maclean—so the idea hails from Madras,—that by combining tannic acid with Ipecacuanha, vomiting may be prevented; experience has shown the truth of this statement. I mix 20 or 30 grs. of powdered Ipecacuanha radix with 10 grs. of tannic acid, flavoured with a few drops of oleum anisi and roll loosely into 5 gr. pills. Then the patient is directed to swallow quickly with as little water as is possible and then lie prone. There may be some nausea, but in nine cases out of ten, if properly carried out, there is no vomiting. How it acts I do not know, but it may be by counteracting some of the effects of the Ipecacuanha on the stomach wall. Ipecac. is a gastric irritant and greatly increases the flow of mucus in the stomach, whilst tannic acid is an astringent and checks the flow of mucus.

EFFECT OF IPECACUANHA ON THE LEUCOCYTE CURVE IN AMŒBIC HEPATITIS.*

BY E. D. W. GREIG, M.D., D.SC.,

CAPTAIN, I.M.S.

DURING the course of an enquiry on dysentery and abscess of the liver, which I conducted last year with Captain Wells, I.M.S., at Bombay, the blood changes and effects of treatment were studied in a number of cases of these diseases. In the Report of the enquiry which I submitted to the Government of India, these and other results are dealt with in full; but, by the kind permission of the Sanitary Commissioner with the Government of India, I am enabled to contribute to the debate this evening the clinical notes, records of the blood examinations and treatment of a few of the cases observed by us, illustrating the subject under discussion, namely, the Ipecacuanha treatment of acute hepatitis.

That the problem of the treatment of hepatitis and abscess of the liver is an important one is seen from the statement that the mortality from liver abscess in the British Army in India stands next to enteric fever, which has the highest death-rate.

It is admitted generally at the present time that tropical abscess of the liver is caused by the invasion of the liver tissue by amœbæ, and is secondary to a primary amœbic infection of the large intestine. The primary lesion of the intestine may be very slight and give rise to no definite symptoms of dysentery. For the successful treatment of amœbic infection of the liver it is important that the diagnosis should be made at the earliest stage possible. Our observations have confirmed those of Rogers, that the leucocyte count gives the earliest information on this point. In ordinary mild cases of amœbic dysentery the temperature and total leucocyte count remain about normal; if a rise of the temperature and total leucocyte curves take place, it is very probable that the infection is no longer confined to the large intestine, but has extended to the liver, and sooner or later definite signs of hepatitis will develop. The leucocytosis is moderate, and the normal relative proportion of the polynuclear leucocytes is maintained as a rule. A very high leucocytosis is met with sometimes in severe cases of dysentery with extensive lesions of the bowel alone. As hepatic signs may not develop until after the leucocytosis, the importance of a blood examination in the early diagnosis of this condition is obvious.

The effect of administration of full doses of Ipecacuanha in early cases of amœbic hepatitis, which came under our observation, was to produce a fall both in the temperature and leucocyte curves, and the symptoms disappeared. In a control case no such improvement was noted. Observations were made, also, on a case, in which two amœbic abscesses in the liver had been opened, and, as the temperature still remained elevated, Pulv. Ipecac. in full doses was given, with the result that the temperature and leucocyte curves fell shortly afterwards to normal, and the patient recovered. In this case the drug appeared to have limited the amœbic infection and prevented a further extension in the liver. These observations confirm the views expressed by Rogers* on the value of Ipecacuanha in the treatment of these cases.

I now proceed to detail the records of the cases, and the first to be described illustrates all the points referred to—the elevation of the temperature and leucocyte curves; the recovery of amœbæ from the stools, although no definite history of dysentery was given; and the favourable effects of the administration of full doses of Ipecacuanha on the course of the disease.

Case No. 215.—L. D., age 40, Goanese cook. *May 17th*, 1909.—Patient was admitted on 12th May, complaining of pain in the right hypochondrium of five days' duration. The onset was very sudden with severe pain in that region, nausea and vomiting. Patient felt feverish, weak, and ill.

* Read at the meeting of the Medical Section of the Asiatic Society of Bengal on 13th July 1910.

* Fevers in the Tropics, 1910.

EFFECT OF IPECACUANHA ON THE LEUCOCYTE CURVE IN AMŒBIC HEPATITIS.

By Captain E. D. W. GREIG, M.D., D.Sc., I.M.S.

CHART I.

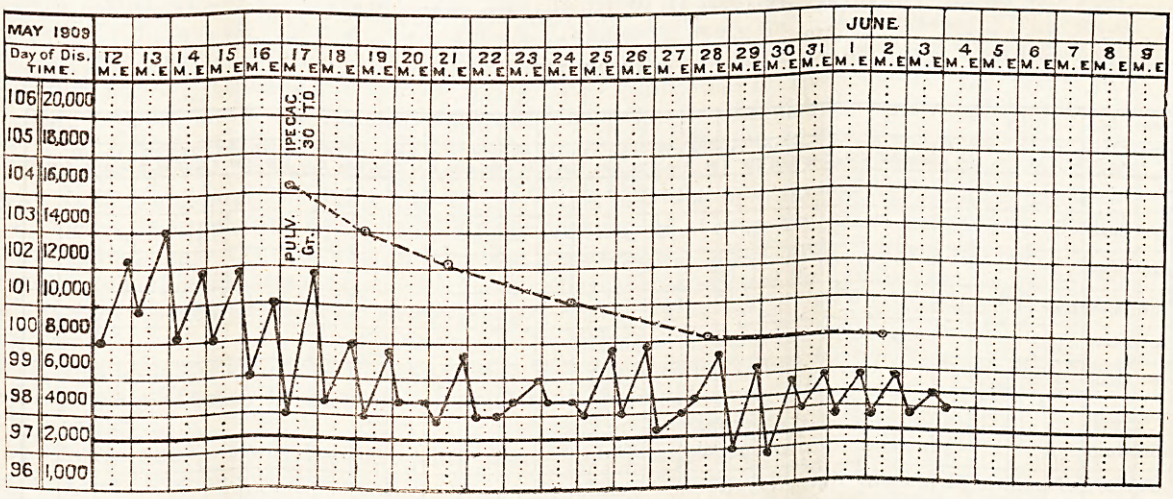
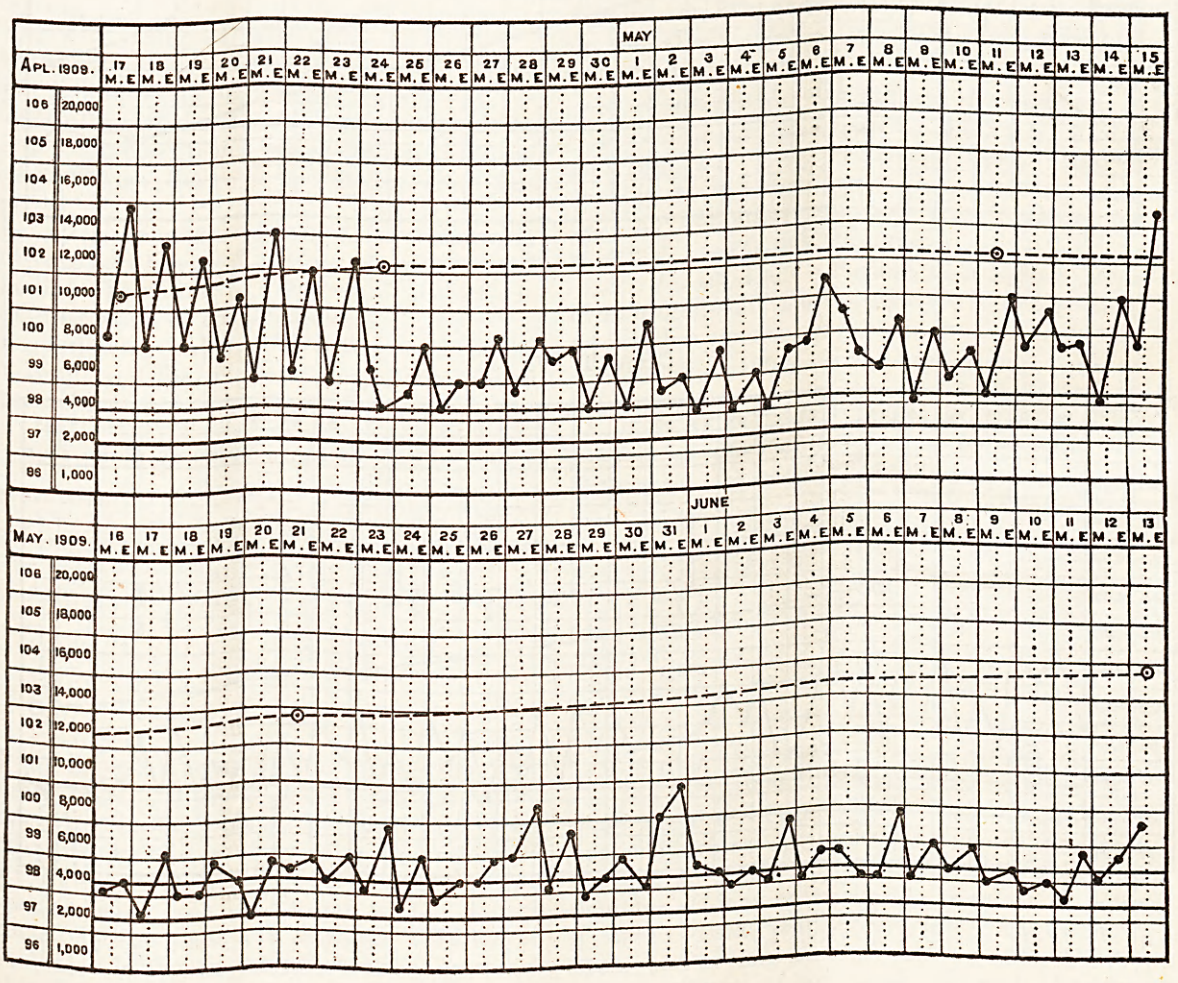


CHART II.



EFFECT OF IPECACUANHA ON THE LEUCOCYTE CURVE IN AMŒBIC HEPATITIS.

By Captain E. D. W. GREIG, M.D., D.Sc., I.M.S.

CHART III.

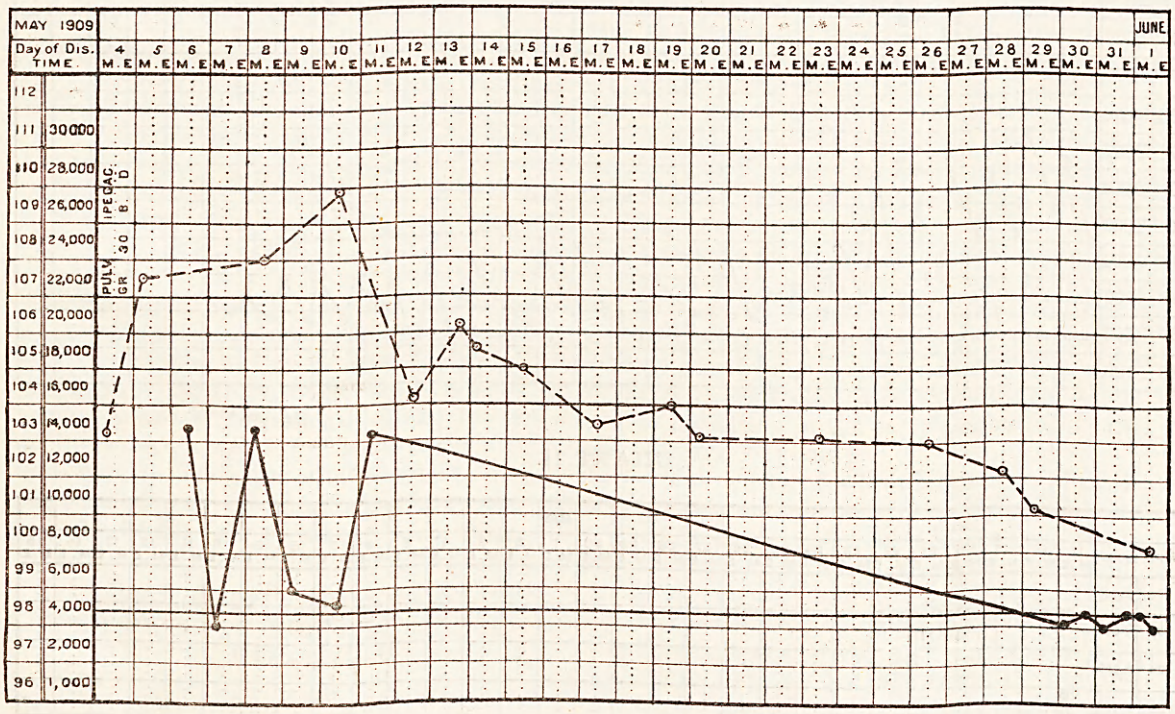
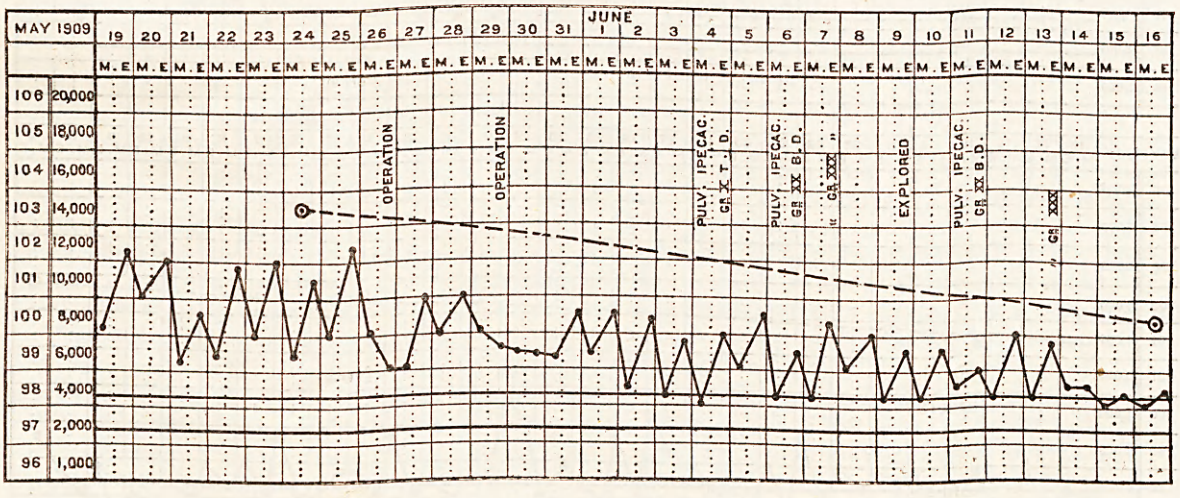


CHART IV.



Previous health.—Good; no history of dysentery.

Social condition.—Born in Mangalore; has been in Bombay for sixteen years; returned from leave from Goa ten months ago. Has habitually drunk country liquor, but does not admit excess.

Present condition.—Patient looks thin and debilitated; conjunctivæ have a faint yellow tinge. Tongue covered with a thick white fur. Abdomen is slightly retracted and moves freely with respiration; both iliac fossæ free from tenderness. *Colon*, not palpable. *Spleen*, not palpable. *Liver*, very tender; enlarged mostly downwards in front; area of dulness in middle line $3\frac{3}{4}$ inches, in nipple line $6\frac{3}{4}$ inches. Upper border of dulness cuts the mid-line in the 6th interspace and the nipple line in the 5th interspace. *Lungs*, bronchitic, râles at bases, otherwise normal.

Liver was punctured in three places in front. A small quantity of sanguineous fluid only withdrawn, no pus.

May 23rd, 1909.—Feels better; pain and tenderness over liver much decreased.

May 31st, 1909.—Temperature normal. Tongue clean. Liver mid-line $3\frac{1}{4}$ inches. Right nipple line 4 inches, upper border at 6th rib. No tenderness.

June 5th, 1909.—Discharged.

Treatment.—Pulv. Ipecac. grs. 30, twice daily. Examination of the stools showed the presence of amœbæ. An attempt was made to cultivate amœbæ from the sanguineous fluid withdrawn from the liver by puncture, but this failed.

The attached chart (1) shows the course of the disease and the total number of white blood corpuscles per c. mm. of blood and the effects of administration of Ipecacuanha.

The following table shows the result of the blood-count and the examination of the blood for parasites:—

Name and occupation.	Age.	Date of exam.	R. B. C.	W. B. C.	Percentages.				Parasites in blood. Malaria.
					P. N.	S. M.	L. M.	E.	
L. D., Cook ...	40	17-5-'09	3,990,000	16,880	57	36	4·5	2·5	.....
		19-5-'09		14,050	62·5	32	4	1·5	.....
		21-5-'09		13,320	...	...	...	...	.....
		24-5-'09		11,550	...	...	...	...	.....
		28-5-'09		9,680	..	...	...	...	.....
		2-6-'09		9,000	56	39	2·5	2·5	.....

Remarks.—This case is an interesting and suggestive one. It illustrates several important points. In the first place, the patient gave no definite history of dysentery; this is not infrequent in cases of hepatitis and liver abscess, the reason being that the lesion of the bowel produced by the amœba is, at times, very slight and situated in the cæcum; thus the symptoms produced are not urgent, and no attention is paid to them or they may escape notice entirely. The determination of the amœba in the stools in this case was of considerable interest. This patient suddenly developed fever with marked hepatitis and also some enlargement of the liver. There were no malarial parasites in the blood, but there was distinct leucocytosis, the relative proportion of the leucocytes, however, remaining more or less unaltered. The most important practical point in the case was, that, under full doses of Ipecacuanha, the fever and leucocytosis diminished, and, finally, all the symptoms cleared up and the patient was discharged well. There can be little doubt that this case was an example of amœbic hepatitis, which, if it had not been recognised and left untreated, might have passed on to abscess formation. Hence the importance of a careful blood examination and systematic treatment with Ipecacuanha in such cases.

As a control observation, the following case is given, which is, also, one of hepatitis, but in which Ipecacuanha was not exhibited, another line of treatment being adopted:—

Case No. 78.—L, European, age 25. April 17th, 1909, admitted to hospital complaining of abdominal pain with passage of blood-stained stools daily, tenesmus and straining. Left Rangoon on 9th, and shortly after noticed blood in the stools: loss of appetite, but was not severely ill.

Previous health.—Good; no dysentery.

Present condition.—Patient is somewhat pale and thin, but fairly well nourished. Tongue covered with brown fur. Abdomen, normally full, no tenderness on pressure. Spleen not enlarged. Liver not enlarged.

April 24th, 1909.—Patient feels better. One or two semi-solid motions daily without griping, no blood or mucus.

May 5th, 1909.—No diarrhœa, no pain or tenderness.

May 21st, 1909.—No noteworthy change.

June 15th, 1909.—Bowels fairly regular. Motions healthy. Complains of pain in the right hypochondrium during the past week, now tending to shift upwards towards the right shoulder. Liver enlarged downwards in front 1″ below costal margin in right nipple line; upper border normal.

Examination of the stools showed the presence of amœbæ.

Treatment.—Mag. sulphate thrice daily and quinine.

The attached chart shows the course of the disease and the total number of white blood corpuscles per c. mm. of blood.

The following table shows the result of the blood count and the examination of the blood for parasites :—

Name.	Age.	Date of exam.	R. B. C.	W. B. C.	Percentages.				Parasites in blood. Malaria.
					P. N.	S. M.	L. M.	E.	
L.	25	17-4-09	.....	10,720	66·5	24	7·5	2	.....
		24-4-09	.....	12,540	...	...	...	...	.....
		11-5-09	.....	12,201	67	23·5	6·5	3	.....
		21-5-09	4,020,000	13,400	...	...	...	...	.....
		15-6 09	3,325,000	15,800	67	26	6	1	.....

Remarks.—In this case we have the mild attack of dysentery, the presence of amœbæ in the stool. The symptoms of dysentery improve, but the temperature is irregular and there is distinct leucocytosis. At first there are no hepatic symptoms, but these develop after he has been about two months in hospital. In this case we have a control observation to the previous one ; the morbid condition was the same in both, but in the former, Ipecacuanha was exhibited, with the result that the signs and symptoms disappeared ; in the latter, Magnesium sulphate was used, and the course of the disease was prolonged and the signs and symptoms did not clear up. Such a case as this may ultimately develop liver abscess.

In the following case, unlike the two previous ones, there were no physical signs of liver enlargement, but an examination of the blood showed that the total leucocytes were distinctly increased; the temperature curve was raised also. The patient was placed on full doses of Ipecacuanha with favourable results. This is an example of a case in which the early invasion of the liver was recognised by a blood-examination, and indicates the importance of this method of detecting this condition before more obvious signs have developed.

Case No. 204.—A. D., medical student, age 28.

May, 5th, 1909.—Admitted to hospital on 4th May, complaining of pains in the abdomen with frequent motions, composed chiefly of mucus streaked with blood. Commenced about a week ago with diarrhœa without griping. No previous history of dysentery, no malaria.

Present condition.—Patient is well nourished and well developed, does not appear acutely ill. Tongue covered with a uniform white coating. Slight tenderness in right iliac fossa. Spleen and liver not enlarged.

May 10th, 1909.—Tongue coated with brown glaze. Four to five stools in the day. No pain or tenderness in hepatic region. Temperature rose suddenly to 103·8 to-day ; it is normal in the morning. Abdominal pain and tenderness very slight. Most tenderness in right iliac fossa ; no marked local resistance. Liver and spleen not palpable or enlarged on percussion.

May 13th, 1909.—Tongue still coated with brown glaze in centre, but clearing at edges. Stools two to three in a day. Liver and spleen not enlarged.

May 15th, 1909.—General condition improving.

May 23rd, 1909.—Much improved. Temperature normal.

May 26th, 1909.—Improvement maintained. Only one to two motions in 24 hours.

May 6th, 1909.—Tongue clean. One solid motion in 24 hours.

June 7th, 1909.—Dismissed well. Treatment : Pulv. Ipecac. grs. 30, twice daily.

The attached chart (3) shows the course of the disease, the total number of white blood corpuscles per c. mm. of blood and the effects of administration of Ipecacuanha.

The following table shows the result of the blood-count and the examination of the blood for parasites :—

Name.	Age.	Date of examn.	R. B. C.	W. B. C.	Percentages.				Parasites in blood. malaria.
					P. N.	S. M.	L. M.	E.	
D. A.	28	4-5-09	...	15,200	50	31	17	2	.....
		6-5-09	...	22,190	52	31	15·5	1·5	.....
		8-5-09	...	24,680	...	...	...	...	.....
		10-5-09	...	27,670	62·5	26	11	0·5	.....
		12-5-09	...	16,560	63	33	3	1	.....
		13-5-09	...	20,570	60·5	33	5·5	1	.....
		14-5-09	6,100,000	19,920	...	...	...	...	.....
		15-5-09	...	18,410	51	40	5	4	.....
		17-5-09	...	15,500	47·5	45·5	4	3	.....
		19-5-09	5,620,000	16,050	58·5	34·5	4·5	2·5	.....
		23-5-09	...	15,700	...	...	...	...	.....
		26-5-09	...	14,620	...	...	...	...	.....
		28-5-09	...	12,900	...	...	...	...	.....
		29-5-09	...	10,400	...	...	...	...	.....
		1-6-09	...	13,000	...	...	...	...	.....
		4-6-09	...	9,280	...	...	...	...	.....

Remarks.—In this case during a moderately severe attack of amœbic dysentery, leucocytosis developed, and the temperature was elevated. There were no definite signs of enlargement of the liver, although liver abscess was suspected, but the leucocytosis and fever disappeared under treatment with large doses of Ipecacuanha.

The following case illustrates the value of Ipecacuanha in a case of liver abscess, which had been opened and drained and where it was found necessary to open a second abscess. The temperature and leucocyte curves after the second operation still remained elevated, accordingly the patient was placed on large doses of Ipecacuanha, with the result that both the temperature and leucocyte curves fell to normal:—

Case No. 85.—T., European, age 28.

May 24th, 1909.—Admitted to hospital on 19th May, complaining of pains across the right hypochondrium of two days' duration; awoke suddenly in the night with pain, now constant.

Previous health.—Good; no history of dysentery; had never seen mucus in his stools.

Social condition.—Arrived from Rangoon on 16th April.

May 26th, 1909.—Operation for liver abscess; pus removed. Profuse sweating at night.

May 29th, 1909.—Operation, second abscess incised and drained.

June 22nd, 1909.—Patient is now doing well; wound healthy; temperature normal.

August 26th, 1909.—Discharged.

Examination of pus showed the presence of amœbæ and staphylococci.

Examination of stools showed the presence of amœbæ.

Treatment.—Operation; temperature remaining high. Pulv. Ipecac. was commenced on June 4th. Dose at first was grs. 10 thrice daily, which was increased to grs. 20 twice daily.

The attached chart (4) shows the course of the disease and the total number of white corpuscles per c. mm. of blood and the effect of administration of Ipecacuanha.

The following table shows the result of the blood-count and the examination of the blood for parasites:—

Name.	Age.	Date of examn.	R. B. C.	W. B. C.	Percentages.				Parasites in blood. Malaria.
					P. N.	S. M.	L. M.	E.	
T.	28	24-5-09	...	15,000	84	12	4	0	...
		22-6-09	...	9,240	50	29	16	1	...

Remarks.—This case illustrates several points of very considerable practical importance in connection with the treatment of liver abscess. The patient had two abscesses opened one after the other, but in spite of this the temperature remained high. It is noteworthy that the administration of Ipecacuanha in full doses reduced the temperature, and the leucocytic curve fell also. It is probable that this patient had an extensive amœbic invasion of his liver, as evidenced by the presence of two abscesses; and the action of the Ipecacuanha was to limit the further amœbic extension. It is important, therefore, to bear in mind that Ipecacuanha is not only of use before the formation of the liver abscess, but also after the abscess has been opened to prevent the further extension of the amœbic infection.

THE IPECACUANHA TREATMENT OF ACUTE HEPATITIS.

BY A. H. NOTT, M.D.,

LT.-COL., I.M.S.,

Civil Surgeon of Howrah and Superintendent, Howrah General Hospital.

I HAVE been, until almost within the last year, extremely sceptical of the value of Ipecacuanha in the treatment of dysentery and even of its therapeutical value at all; my results, in cases of dysentery coming closely under my observation, with the sulphate treatment, were quite satisfactory, and not a few failures to obtain any striking results with Ipecacuanha confirmed this view.

When Ipecacuanha, some four or five years ago, began in Calcutta to again come into repute, I was confirmed in my disregard of its value by a consideration of the want of confidence in it always shown by physicians in almost all parts of the tropical world other than India, which it appeared to me could not be neglected. We know that the French physicians in Further India have always used the sulphate treatment almost exclusively, that the treatment by repeated doses of calomel is in use in the French Possessions in Northern Africa, whilst Scheube in Japan declared his preference also for calomel. We also know that in South Africa, in the war, little reliance was placed in Ipecacuanha. A recent report of the Medical Department of the German Colonial Troops shows that Ipecacuanha is very little used and is in little favour in any of the German tropical colonies, calomel and various astringent drugs being the routine treatment.

We know now, as previous speakers have declared, that this want of faith is due to Ipecacuanha having been used in bacillary dysentery. In my own case, until recent years jail dysentery has been that which has come most closely under my notice, and it is now known that this is almost exclusively bacillary and practically never is followed by liver abscess.

In 1908, after reading Major Leonard Rogers' articles on the treatment of presuppurative hepatitis in his book, "The Fevers of the Tropics,"