

No.	Race, sex, age.	Occupation.	History, etc.	Symptoms and appearances.	Blood.	Conjunctival discharge.	Nose and throat.	General health.
V.	K. M., Hindu, male, 19	Student	One year's duration. Aggravations now and then. No sneezing.	Both eyes affected. Eyelids heavy and drooping. Eyes watery. Ocular conjunctiva appears dusky and limbal gelatinous appearance prominent. Follicular appearance of pal conj.	Poly. 55° Lymp. 35° Eosino. 9° R. B. C. 51,200,403 W. B. C. 7,760 Coagulation time 3'5 min.	Eosinophiles +++ B. xerosis ++	Slight granules in pharynx. Slight deflection of nasal septum.	Good.
VI.	G.K.R. Hindu, male, 20	"	Duration 10 years. Started with "sore eye." Condition gets worse—usually in summer but also rarely at other times. Treated in various ophthalmic and other hospitals with operation, injection and local applications. Has generally improved in symptoms.	Both eyes affected. Conjunctiva slightly congested. Typical tarsal cobble-stone pavement—Cartilaginous growths present. In other areas follicular. Slight blepharospasm and some photophobia. Sneezing prominent at times.	Poly. 51° Eosino. 29° Lymp. 29° <i>Later.</i> Poly. 57° Eosino. 18'3 Lymp. 25° Coagulation time 3'4 mins.	Eosinophiles +++	Hypertrophic rhinitis at present. Frequently suffers from colds.	Good.
VII.	A.S., Hindu, male, 17	"	Duration 18 months. Worse in summer. Itching and sneezing at times.	Both eyes affected. Thick limbal greyish growth. Photophobia slight.	Poly. 60° Lymp. 22° Eosino. 18° Coagulation time 4 mins.	Eosinophiles ++	Deviated nasal septum.	Good.

May it be that eosinophilia indicates a metabolic aberration within health limits with a predisposition to vernal catarrh, the exciting causes being climatic, seasonal or otherwise?

CONCLUSIONS.

- (1) Cases of vernal catarrh of the conjunctiva are fairly common in the table-land of Mysore and adjoining parts.
- (2) Adolescent males are most commonly affected—especially in the late summer months. Most of the patients were vegetarian Hindus.
- (3) Caustics and operative treatment seem to do no good, but calcium salts and nuclein had a perceptibly good effect.
- (4) Most of the patients had unhealthy nose and throat conditions, treatment of which seemed to improve the eye condition.

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DYSENTERY IN SECUNDERABAD.\*

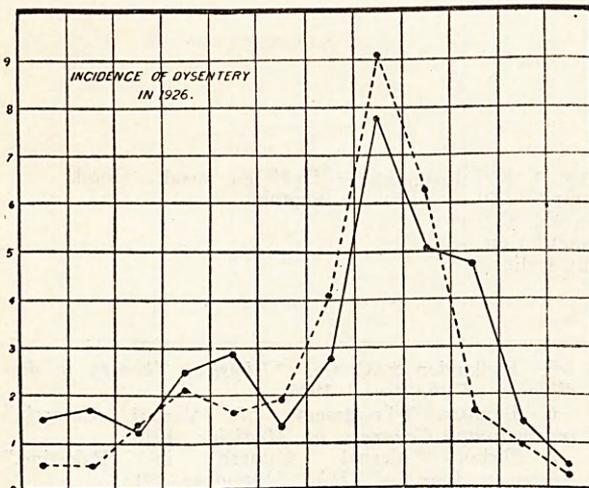
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OF all diseases that incapacitate a soldier dysentery is one of the most important. It was a scourge of the ancient armies and proved to

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be the same in the Great War, with this difference that we were much better acquainted with its ætiology and hence were in a better position to prevent and treat it. It has been fully recognised that without the aid of the laboratory the accurate diagnosis of the disease—if not altogether impossible is no easy matter, and the danger of the indiscriminate use of emetine has been fully brought home. In view of these facts an effort was made to correctly classify all cases passing blood and mucus in their stools. The following is a summary of the work carried out from January 1926 to October 1927.

*Incidence of Dysentery among British and Indian Troops.*—The ubiquitous nature of the disease is well known. We find it prevailing throughout the year to a greater or a lesser degree. The numbers per month are shown on the accompanying chart. It will be observed therefrom that the Indian troops suffered much more than the British, but in both cases a similar seasonal variation is present. From a few cases in the first six months, there is sudden jump in July which reaches its climax in August, and gradually comes down to normal in November.



	J.	F.	M.	A.	M.	J.	J.	A.	S.	O.	N.	D.
British ..	1.48	1.74	1.22	2.59	2.88	1.24	2.73	7.80	5.10	4.70	1.42	0.36
Indian ..	0.79	0.55	1.39	2.13	1.63	1.85	4.15	9.18	6.22	1.74	0.96	0.26
			British	Continuous line.								
			Indian	Dotted line.								

*Laboratory Findings.*—As the laboratory results are always judged by the technique employed, the following gives in brief the details of the procedure adopted in dealing with all stools.

1. The stool, after testing the reaction with litmus paper, was examined microscopically for its exudate. From the stool a flake of mucus was picked up on a platinum loop, introduced into a test tube of sterile saline (to remove any extraneous bacteria, etc.), and plated out on bile-salt-litmus-lactose-agar. After 24 hours' incubation, suitable colonies were picked out and tested for motility by a hanging drop preparation; on their proving non-motile they were transferred

to glucose and mannite sugar media containing Andrade's indicator. The organisms fermenting glucose or glucose and mannite were further inoculated from these tubes into lactose, dulcitol, and peptone tubes (for the indol reaction). Finally, serological reactions were used to confirm the result of the bio-chemical reactions.

2. No diagnosis of amoebic dysentery was based on exudate alone, and, if in addition to the pathogenic amoebæ, a bacillary exudate was present, an attempt was always made to isolate the causative bacilli by the cultural methods detailed above. The presence of a scanty exudate, consisting of a few lymphocytes and eosinophile cells, sometimes with Charcot-Leyden crystals, was an indication for a prolonged search, hence attention was always concentrated in such cases on finding the *Entamoeba histolytica*.

Adopting the above methods we obtained the following results:—

Total number of cases with mucus or blood and mucus .. .. .	404
Number of cases from which <i>B. dysenteriae</i> were isolated .. .. .	178
Number of cases in which <i>Entamoeba histolytica</i> was found .. .. .	43
Number of cases showing a bacillary exudate, but pathogenic amoebæ or bacilli were not found .. .. .	101
Number of cases showing an indefinite exudate only .. .. .	82

Taking the above figures into consideration, and working out percentages, we find that of all cases showing mucus or blood and mucus

69.06 per cent. were bacillary (including those from which *B. dysenteriae* were isolated and those showing bacillary exudate).

10.64 per cent were amoebic.

20.3 per cent were indefinite (no specific exudate, no pathogenic amoebic or dysentery group of organisms having been detected).

Of the 279 "bacillary" cases noted above we find that the *B. dysenteriae* group could be isolated from over 63.8 per cent of cases, or taking the indefinite cases into consideration in 49.3 per cent.

The following numbers show the variety of the organisms encountered.

Total number of cases from which successful isolation was made .. .. .	178
Number of cases showing <i>B. Flexner</i> group .. .. .	147
Number of cases showing <i>B. Shiga</i> .. .. .	22
Number of cases showing <i>B. Schmitz</i> .. .. .	9

*Serological identification* could only be carried out in a few cases of the Flexner group. The inagglutinability of the recently isolated cultures of these organisms is too well known to be discussed here. At first an attempt was made at sub-culturing, but this had to be abandoned to save confusion reigning in the laboratory and reports getting into arrears, especially in the "dysentery season" when the number of stools dealt with in a day sometimes exceeded forty.

It will be observed that the percentage of Shiga infections is fortunately small, and that the majority of the bacillary infections are due to the members of the Flexner group. It would have been most interesting to work out the actual strains, their toxicities as well as their relation to the sera from the cases themselves, but owing to lack of facilities and the rush of work this could not be carried out fully.

Seventy-nine of the cultures isolated locally were put up against polyvalent high titre serum obtained from the Central Research Institute, Kasauli, out of which fifty were agglutinated (without sub-culturing repeatedly). This 63 per cent. positive agglutination proves the futility of the method advocated by some workers of classifying the organisms after picking up colonies from the plates and doing direct agglutination. A high titre serum was also produced from two typical local strains by injections of rabbits as described by Manson-Bahr and Perry (*Practice of Medicine in the Tropics* Byam and Archibald, Vol. II, p. 1110). These sera agglutinated their respective strains up to a dilution of 1:2,500, and by putting them up against the standard Oxford emulsions of the various strains of *B. Flexner* group and doing the "absorption" test it was found that the original cultures belonged to "V" strain. Twenty out of the twenty-five cultures isolated locally were agglutinated by this serum. It is highly probable that the V strain is the leading one in Secunderabad amongst the Flexner group of organisms.

It need hardly be added that no organisms were diagnosed as *B. Shiga* unless they were agglutinated by the high titre Shiga serum.

*The Source of Infection.*—Whatever the vector of the causative organisms, the main source of infection is undoubtedly the "carrier," whose distribution must be far and wide in this cantonment. The laboratory examination for carriers is not as much of a success as one would like it to be. Our routine has been to examine three normal stools for entamœbæ, cysts, ova, etc., and three after a saline purge for bacillary dysentery. For the latter purpose the stools are plated out and dealt with as described in the first part of this paper. That this dangerous source of infection exists in the civil population will be evident from the following data:—

Total number of menials examined .. 838  
 Total number found positive for *B. Flexner* .. 28 or 3.4 per cent.

Total number in which *Entamœba histolytica* cysts were found .. 28 or 3.4 per cent.

It may be interesting to note here that *B. typhosus* was isolated from five of these cases.

The number of positive results, small though they are, show the importance of the examination of menials concerned in the handling of food: or, putting it in another way, we might say—surrounded as the troops are on all sides by the enemy (carriers), the importance of

eliminating the same from within the lines is a preventive measure of the first order.

SOME INTERESTING OBSERVATIONS.

I. *Reaction of Dysenteric Stools.*—One hundred and fifty-nine stools brought to the laboratory with blood and mucus from which *B. dysenteriae* group were isolated are especially chosen for discussion here. It was found that 144 or 90.6 per cent of these were alkaline to litmus and the rest, i.e., 9.4 per cent gave an acid reaction. The latter phenomenon was noted specially in stools which had been despatched to the laboratory after a delay of two or more hours.

The number of our amœbic cases is too small to give any definite opinion as regards their reactions, but in all the six cases of mixed infection (see below) the reaction was alkaline, so that the alkaline reaction alone would not be sufficient to eliminate the presence of pathogenic amœbæ.

2. *Exudate.*—Out of the 178 cases from which specific bacilli were isolated 129 or 72.5 per cent showed a definite bacillary exudate at the first examination, while a few exhibited it at a later date. The rest, i.e., showing no bacillary exudate, were of a milder nature containing a large amount of mucus but little blood, all being due to the Flexner group of organisms.

As has been pointed out before, no diagnostic importance was attached to "amœbic" exudate or Charcot-Leyden crystals, their presence being interpreted as a hint for prolonged search.

3. *Mixed infections* were encountered in six cases during the whole year. It may be coincidence but all six cases began as bacillary dysentery and the pathogenic amœbæ were found on or after the fourth day.

4. *The Importance of Time in Examination of Specimens.*—That time is a great factor in successful isolation is shown by the following facts:—

Total number of stools from the British Military Hospital situated quite adjacent to the laboratory ..	165
The causative bacilli were cultivated from ..	76 or 46 per cent.
The total number of stools received from the Indian Military Hospital, a mile and a half away ..	252
Total number from which <i>B. dysenteriae</i> were cultivated ..	87 or 34.5 per cent.

CONCLUSIONS.

1. From the above we can safely conclude that bacillary dysentery is a far more prevalent disease than the amœbic type. The medical officer who uses emetine or allied drugs without laboratory diagnosis would be wrong in nearly nine cases out of ten.

2. It has been possible to cultivate the causative organisms from nearly fifty per cent of cases, but with the proper co-operation of the medical officers it would be possible to obtain much better results.

3. The carrier problem, here as elsewhere, is very important in Secunderabad among the civilian population.

Finally, we would like to say that the inspiration to classify the dysentery cases scientifically was mainly derived from the paper on "Important features in the correct diagnosis of Dysentery in India" by Major J. A. Manifold, D.S.O., R.A. M.C., and our technique as detailed above is identical with the one described by him.

## A Mirror of Hospital Practice.

### A CASE OF HYDATID CYST OF THE LIVER.

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RAM CHAND MISRA, Hindu, aged 8, was admitted to the Medical College Hospital, Calcutta, on 3rd August, 1927. His home was in the Mozufferpur district of Bihar and there was nothing of importance in the previous history. He stated that his parents had dogs living in the house, but no history of any close association with them could be elicited. The history given was that one year ago a swelling had been noticed in the epigastrium. It was about 1 inch in diameter when first noticed, hard, rounded and painless. It had gradually increased in size and become slightly tender. Except for an occasional attack of vomiting and one attack of diarrhoea, there had been no symptoms. He had had no fever during this period.

The boy was well nourished and of healthy appearance, the temperature and pulse were normal and the tongue was clean. In the epigastrium was a globular swelling about 3 in. by 2½ in., it was smooth and of regular outline on palpation, fluctuating and moving freely with respiration. It extended downwards about four fingers'-breadth and the upper margin could not be defined. There was no pulsation and no hydatid fremitus. It was approximately on the middle line, extending rather more towards the right and the liver edge was barely palpable beyond the tumour. On percussion the tumour was dull, the dullness being continuous with the liver dullness, and there was no increase of liver dullness in the upward direction. The thoracic organs were normal, no other tumour could be palpated in the abdomen and there were no enlarged glands any where. The urine contained no abnormal constituent. The stools contained ova of *Ascaris* and of *Trichuris*, but no other parasites and no occult blood. The blood count was—

Total white cells	14,700	per cmm.
Polymorphonuclears	..	51 per cent.
Lymphocytes	..	24 per cent.
Large mononuclears	..	2 per cent.
Eosinophils	..	13 per cent.

An *x*-ray examination after a barium meal showed the stomach distorted into a curved form with concavity upwards, from which the existence of a tumour pressing down on to it could be inferred. The liver moved freely and no enlargement could be detected with certainty. The emptying time of the stomach was normal and the 6-hour and 24-hour radiograms showed nothing noteworthy.

From the physical signs it was plain that the patient had a cyst in the left lobe of the liver and the diagnosis lay between amœbic abscess, hydatid cyst, cavernous angioma and a tumour undergoing degeneration. The latter appeared incompatible with the good general condition of the boy, and a cavernous angioma is usually a pulsating tumour. The absence of fever is not sufficient to negative liver abscess, especially as there was a well marked leucocytosis, but a liver abscess which has reached the stage of protruding through the abdominal wall is always adherent and fixed and has the vague outline of an inflammatory swelling shading off into normal tissues. The diagnosis of hydatid cyst appeared then the most probable. The eosinophilia would have been valuable confirmatory evidence had it not been for the presence of ova of *Ascaris* in the stools. There was no history of attacks of urticaria and no hydatid fluid was available with which to perform a complement fixation test.

After the removal of the round worms in the usual manner, operation was performed on 31st August, 1927. The abdomen was opened by a right paramedian incision above the umbilicus. A tense rounded tumour, of a pale pink colour, which appeared to protrude through the gastro-hepatic omentum with the stomach wrapped round its lower border came into view. The tumour occupied the whole of the left lobe of the liver, which was converted into a cyst, with the exception of a narrow fringe of liver substance on the lower segment of the cyst. The right lobe of the liver was unaffected. After packing off the neighbouring viscera, the cyst was aspirated and 280 c.c. of clear colourless fluid was drawn off. The fluid contained innumerable solid specks, which on microscopic examination proved to be masses of scolices. An incision was then made into the liver substance and a large cavity was opened. Lying free in this was the true cyst wall, a friable white membrane looking like boiled egg albumin. By careful separation with the finger this was manipulated out of the wound and removed practically entire. Two or three daughter cysts were found floating free in the cavity. The cavity in the liver was partly sutured and a Carrel's tube placed in position for continuous irrigation. The progress of the case was uninterrupted for three weeks, by which time the wound was healed except for a small sinus. A rise of temperature and some abdominal pain then necessitated the reopening of the sinus and the evacuation of a collection of bile-stained mucus in the cavity, which was found to be still