the lung. It is apparent therefore, on theoretical grounds, that the parenchyma of the lung in or about the "hilum" may as well be the site of first infiltration. So that the "hilum" may be the first site of tuberculous involvement in the secondary and the tertiary stages of the disease.

The first infiltration having been established, the question arises how it advances in the parenchyma of the lung. It has been suggested that the flow of the lymph stream is reversed as it happens sometimes in cancer, and the infection travels from the "hilum" towards the periphery. This may be so, however there are at least two other methods, i.e., through direct contiguity and the bronchi, which can easily explain this centrifugal spread.

Conclusions.

(1) The "hilum" may be the first site of tuberculous infiltration in the clinical manifestation of pulmonary tuberculosis; and it is particularly comparatively so amongst Indians. It will be desirable to point out that it is not argued that every person who has radiologically rather a prominent "hilum" is a case of "hilum tuberculosis." Far from it, but a doctor who is in the habit of ignoring these prominent "hila" as normal to every town dweller will be far from right.

(2) That the first lesion occurring in the parenchyma of the "hilum" is quite supported on pathogenic grounds.

(3) Physical signs in the apex on the side, the "hilum" of which is diseased, may be found, without any radiologically demonstrable lesion in the apex itself.

I am greatly indebted to Dr. R. K. Kacker, Superintendent, King Edward Sanatorium, for kindly allowing me the publication of the above cases.

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UNSUSPECTED SOURCES OF LEPROUS INFECTION.

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EVERYBODY thinks himself to be at a safe distance from leprosy without knowing where he stands. The general opinion is that it is only to be found among the beggars and the lower class people, that it is an hereditary disease, it visits only those who have sinned in their life, and that the workers in connection with a leprosy clinic are the most likely persons to get this disease. So that anybody not included in these classes thinks himself to be quite safe and immune, and when the disease is diagnosed in him it becomes a hard task to convince him that he is infected, especially when there is no family history.

Times without number workers in leprosy are advised by their friends and relatives to give up this line and choose something better and safer, doctors are seen to enter the laboratory with trepidation, students of special classes develop lepraphobia after attending a few lectures on leprosy, and the public always shuns the place where an asylum or a clinic is situated as if those buildings are teeming with acid-fast bacilli which may accidentally jump on to the shoulder of an unwary passer-by. But is it a fact that persons working in connection with a leper clinic are in more danger than those who are outside it? Is there any guarantee that the disease will not visit those who are better placed in life, or who have got no hereditary taint or who have never sinned in their life? In the subsequent pages we shall cite some cases to show how fallacious is the general opinion about the occurrence of leprosy and how unsafe is the position without a clear idea about this disease.

TABLE I.

Social status of patients.

A 1 and A 2 = Non-infectious cases.
B 2 = Highly infectious.
B 1 = Slightly infectious.
B 3 = Very highly infectious.

Name.	Type.	Status of life.
P. C. R.	A 2	Professor. No family history.
J. N. D. G.	A 1	Professor of Mathematics. No history of contact.
R. C.	A 2	Physician outside leprosy clinic.
J. B.	B 2	Assistant Surgeon, outside leprosy clinic.
B. G.	A 1	Clerk of a paper mill.
K. G.	A 1	Owner of an agricultural industrial concern.
D. M.	B 1	Retired Sub-Registrar.
B. B.	A 1	Sanskrit teacher.
R. S.	A 2—B 1	Preventive officer.
J. B.	A 1	Son of an Anglo-Indian chargeman.
C. C.	A 1—B 1	Clerk, Municipal Office.
J. B., D. B. and their mother.	A 1 cases	Bengali, Hindu family.
I. C. M.	A 1	Veterinary Assistant Surgeon.
B. K.	A 1	Military Accounts Officer.
L. S.	A 1	School student.
S. C.	A 1	Pleader.
P. K.	A 1	Post-graduate student.
M. C.	A 1	Contractor, Railway Catering.
Mrs. D.	A 1	Mother of a doctor.
J. A.	A 1	Overseer of a press.
S. R.	A 1	Clerk, Excise Department.
M. G. P.	A 1	Girl typist of a Tobacco Co.
L. C.	A 1	Daughter of a doctor who himself is a B 1 case.

TABLE I—*concld.*

J. N. S.	A 1	Clerk, Audit.
P. S.	B 2	Artist.
R. H.	A 1	Record-keeper, Judge's Court.
A. C.	B 1	Kabiraj (Physician treating with indigenous drugs).
S. K.	B 2	Daughter of a librarian.
P. G.	A 1	Clerk of an oil mill.
B. M.	B 2	Travelling Inspector of a Railway Co. He travels in a second class compartment.
W. P.	B 1	Student.
R. G.	A 1	Sub-Inspector of Police.
G. R.	A 2	Cloth merchant.
Mrs. T.	A 1	Wife of an Anglo-Indian Foreman.
S. A. O.	B 1—B 2	Editor of a newspaper.
F. C. D.	A 1	Clerk, Insurance Co.
M. A. M.	A 1	Rice merchant.
G. B.	B 3	Expert musician of a Cinema Co., and supervisor of the band party.

Without dilating further I wish to point out that we can trace this disease along among the rich people like zemindars, high class merchants and other big families. As regards race, none is immune. This disease has a tendency to universal distribution. It shows no distinction of caste or creed, no tenderness for age, no preference for sex or beauty. All these clearly show that as it is a disease of contact, so long as this one factor remains, this disease will invade any susceptible person without respect to all other factors, if the personal prophylaxis is unheeded. But how do the middle and higher class people get this contact against all calculations of safety ?

Illustrative cases.

Case 1. *A boy and his servant.*—A Chinese boy, of 2 years age, was one day found on the lap of a B 3 case, while the servant in charge of the boy was sitting near by. On enquiry we came to know that a Mahommedan gentleman without any issue had adopted this Chinese boy and the boy was sent out for airing in charge of the servant. The servant happens to be a friend of this leper who is a day labourer and they meet almost daily. So this ignorant boy under the care of a foolish servant has had dangerous contact without knowledge of his parents, who will look askance when the disease develops in their son. Among the well-to-do families it is a common custom to keep their children under the care of servants or maidservants who themselves may be innocent-looking lepers, or who may meet some leper friends which will be the source of entrance of this disease in their family although there may not be any previous history.

Case 2. *Contaminated fruits.*—A very bad B 2—B 3 case of leprosy with nodules on the face and ears was found sleeping in front of a house one afternoon, and a woman fruit seller was sitting with all her commodities arranged on the ground close by this infectious leper. Some of the buyers were seen to eat these fruits without ever washing them in water, and among the buyers were found all classes of people because nobody noticed this leper as he had no deformities or ulcers. Therefore the chance of contracting infection remains the same so long as we go on recognising leprosy by name only and not by sight.

Cases 3 *to* 6. *Cooks* (3) R. S. This is a B 3—A 2 case and he has been suffering from the disease for one year. He happens to be the *bawarchi* (cook) of a European officer in the Port Commissioners' Office. A smear from his left cheek is strongly positive (+ + + +).

(4) Abraham. Cook of a European officer in a jute mill. This is a B 2 case. A smear from a patch on the face is positive (+ +).

(5) S. Rao. Cook of a Mahommedan lawyer, son-in-law of a late Justice of the High Court, and unfortunately this is a B 3 case.

(6) H. R. He is a cook in the house of a Marwari gentleman. This is a B 3 case and he is suffering from this advanced condition for six months. Smears from the nose and skin of the forehead are strongly positive. Nose + + + +. Skin + + +.

Unfortunately the lepra bacilli are tasteless, otherwise the masters of these cooks could get an idea of what dangerous food they are being served with.

Persons selling different kinds of foods.

Cases 7 *to* 19. (7) Adhar. This is a very bad case of leprosy. On taking the history we came to know that he is a veteran fruit seller of a Calcutta market. Smears from the skin and nose of this patient are strongly positive. Nose + + +. Skin + + +.

(8, 9) S. K. and J. The former is working in a grocer's shop in the district of Nadia (Bengal) and the latter in Bhowanipur, Calcutta. Both of them are B 2 cases and smears from their skin are positive (+ +).

(10) Modak. This is a B 2 case and he is working in a sweetmeat shop in Calcutta as a salesman.

(11) A. K. J. A 1 case. He is working in a butter shop in a market, Calcutta.

(12) Kokil. B 3 case. He is a fisherman. Nose + +, left ear + + +.

(13) Mr. H. A 1 case. He is working in a hotel in Calcutta.

(14) S. P. This is a B 3—A 2 case. Smears from the nose and skin are strongly positive. (Nose + + + +, right ear + + +.) He is selling *pan* (betel leaf) in a market in Calcutta.

(15) S. C. P. A 1 case. He is working in a tea-stall.

(16) Narendra. A 1 case. He is working in a cold drink restaurant.

(17) M. A. He is working in an ice factory. This is a B 2 case. Smears from nose and skin are positive. Nose +, right ear + +. Persons addicted to iced drinks should note this case.

(18) R. H. Sells pickles in the streets of Calcutta. This is a B 2 case and smears from the nose and skin are positive (nose +, left eyebrow + + +). School-boys are very fond of pickles.

(19) Goala, a milkman from the northern part of Calcutta was found to be a B 2 case. He used to supply milk to the houses of many residents in that locality.

Servants and Maidservants.

Cases 20 *to* 37. (20) A. G. Orderly of an income-tax officer. This is a B 3 case and he has been suffering for three years. Smears from nose and skin are positive (nose + +, right ear + +). Our insurance receipts pass through the income-tax office and may become contaminated.

(21) S. R. B 2 case. He is a doctor's servant.

(22) R. M. Durwan of a Rai Bahadur. This is a B 2 case. (Nose +, right arm +.)

(23) A. K. Orderly of a Senior Registrar of a High Court. This is a B 2 case and a smear from a patch on the face is positive (+ +).

(24) Kuber. A servant supplying drinking water to the officers of a limited company. This is a B 3 case. We are sure that these officers regard themselves as safe as anybody else.

(25) L. S. Durwan. This is an A 1 case.

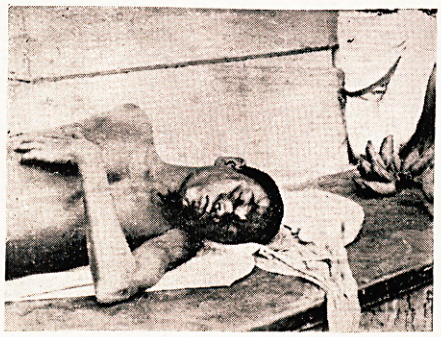
(26) Jumma. Orderly of Mr. T., an aeroplane pilot. This is an A 1—A 2 case. The pilot is in danger of becoming infected.

(27) R. H. Orderly, Divisional Superintendent's Office, Accounts Section. This is a B 2—A 2 case.

(28) Nanka. A 1 case. He is living with a durwan of the Imperial Bank.

(29) Sk. K. M. A 1 case. Orderly, Writers' Buildings.

PLATE I.



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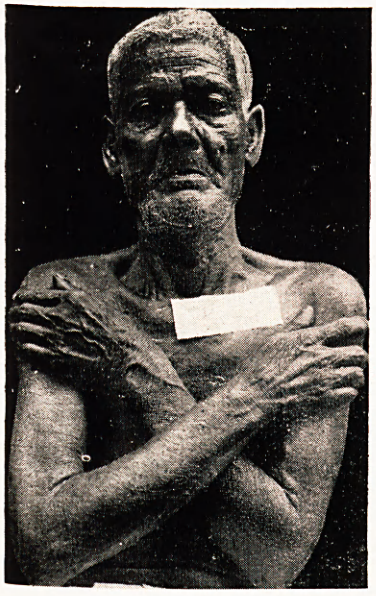
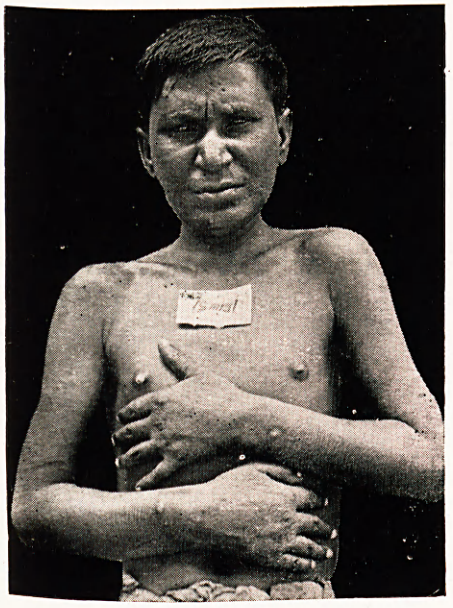


Case No. 3

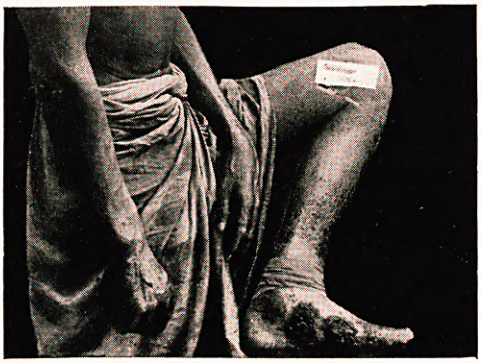
Case No. 38



Case No. 45

Case No. 46.

PLATE II.



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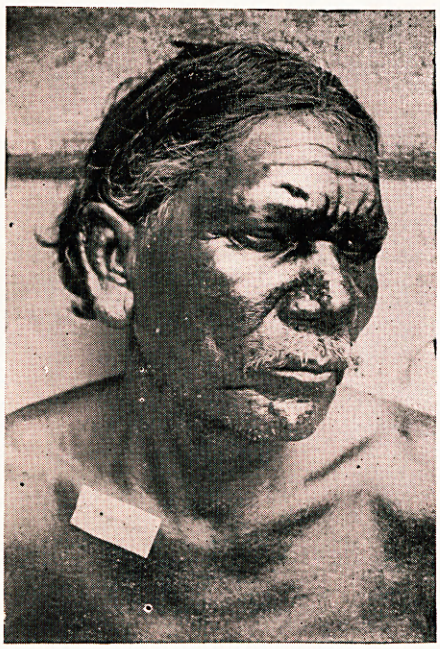

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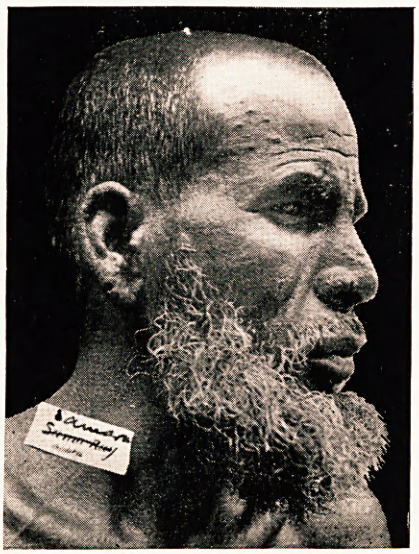

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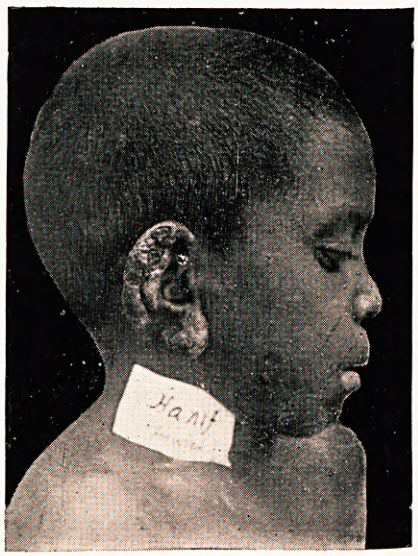

Case No. 61.

(30) Niroda. A 2—B 1 case. She is a maidservant.

(31) S. K. A 1 case. He is a club servant.

(32) S. P. A 1 case. He is a bearer.

(33) P. S. B 1 case. He is a chauffeur to a European gentleman residing in a big hotel in Calcutta.

(34) B. R. A 1 case. Outdoor durwan of a medical college.

(35) M. B. Massalchi (cook's mate) to a Chief Medical Officer. Service for 17 years, disease for 7 years. This is a very bad B 3 case. Nose + + + +, right ear + + +. A massalchi is a servant who washes plates and dishes.

(36) K. A. A 1 case. Orderly.

(37) H. M. A 1 case. A club servant.

Persons of different professions.

Cases 38 *to* 58. (38) Peary. A 2—B 2 case. A smear from the left side of the forehead is positive. She is a Hindustani *dai* (midwife) and she renders her services at the time of childbirth. The middle and even higher class people employ these *dais*.

(39) R. M. This is a B 3 case, and the smears from the nose and skin are positive (nose +, right ear + +). He is a pillow maker.

(40) R. P. A 1—B 1 case. He is a washerman of Bhowanipur (Calcutta).

(41) Jagan. This is a B 3 case. He is a cobbler by profession. He repairs old shoes and makes new ones.

(42) G. H. B 2 case. Right ear + +, nose +. He is a barber. In some instances the barber himself may not be a leper but he may shave an infectious leper along with his other customers. One barber is known to shave daily an infectious leper, in spite of being warned by the neighbours, for he receives better remuneration from this leper.

(43) S. K. H. A 1 case. He is the owner of a hair-cutting saloon. He offered his services to the writer as an expert hair cutter but unfortunately they could not be accepted. But we are sure that scores of person will have their hair cut or be shaved by this leper even when he passes into the "B" stage of leprosy.

(44) N. Ahammad. B 2 case. Nose +, left forearm + +. He is a shopkeeper in a market in Calcutta.

(45) Ismail. This a B 3 case. Nose + + + +, left ear + + + +. He is working in a jute mill with 12 other persons but possibly he is infecting many multiples of 12.

(46) C. K. This is a B 3—A 2 case. Ulcer of the left hand + + +, ulcer of the right great toe + +. He is a bullock cart driver. As he is still carrying on his work this shows that nobody is noticing anything the matter with him; on the other hand whatever he is touching or wherever he is setting his foot he is leaving something for his followers.

(47) Sadagar. B 2—A 2 case. He is a bullock cart driver. In spite of anæsthesia in his left foot and leg the ulcer on his left foot is strongly positive (+ +).

(48) B. J. B 2 case. Nose + +, right ear + +. He is a trollyman to a District Engineer.

(49) J. B. B 2—B 3 case. He is the night watchman to a market in Calcutta. In spite of all watching the thief has entered into his body. The night watchman has got the privilege to sit in any shop he likes and thus to mix with sellers and customers equally.

(50) S. A. B 3 case. Nose + + + +. Right ear + + + +. He is working as a spinner in a jute mill. He had an attack of smallpox in childhood which has disfigured his face. Leprosy is superimposed over that. The change in the appearance produced by leprosy was being regarded as the end result of smallpox. This impression was so very strong in the mind of his office master that he could not believe the diagnosis of our survey officer.

(51) Gopaloo. B 3 case. He is a sweeper by occupation. Is he sweeping a place clean or making it more dangerous?

(52) Miss B. A 1 case, booking office clerk.

(53) Sibraj. B 3—A 2 case. He is a postman.

(54) L. M. A 1—B 1 case. He is a priest.

(55) K. C. B 3 case. He is hawker of stationery articles like threads, tapes, hair pins, etc.

(56) B. T. A 1 case. Tramcar driver.

(57) R. P. B 2 case. Nose +, skin + +. He is a tram car conductor. So we have leprosy on the fore-front and leprosy behind to carry the passengers safely to their destination. Besides these, infectious lepers are often found travelling in public vehicles.

(58) Hawker. A B 3 case with cracks and fissures all over his body from which discharges were coming. He was found making door mats and selling them from house to house.

Teachers.

Cases 59 *to* 60. 59 B. M. B 3 case. Nose + +, skin + +. He is a teacher of a municipal Free School (Bengal) and for the treatment of his disease he is at present residing in a hostel for the students of a normal training school. So that he is infecting the boys as well as their would-be teachers.

(60) This is a B 3 case. He was looking like an over-ripe mango with numerous cracks and fissures on his body and extremities from which discharges were coming out continually. The ulcers on the toes and fingers were strongly positive for acid-fast bacilli. He is a District Board teacher. There are 30 boys under his care. Never before have we seen such a highly infectious case holding such a responsible post. The boys as well as their guardians will learn the best lesson in their life if some of the boys become lepers owing to this contact with their teacher.

Indirect sources.

(61) This boy is a highly infectious case of leprosy (B 2—B 3). His father is the cook of a District Magistrate and his mother is doing similar work in the house of a Police Inspector in the same locality. He is the only child in their house. His parents are free from leprosy but we cannot expect that this young boy will be staying in a lonely house when his parents are away at work. He must be visiting both the houses of these officers and may be playing with their children. As he is the only son of his parents he is likely to be caressed by his parents while they are discharging their own duties. On taking the history we found that our surmises were correct. This case was reported in the *Statesman* some time back by Dr. Muir.

Besides these cases, infectious lepers are found to visit many restaurants or to stay temporarily in hotels in Calcutta. The practice of feeding the poor always invites lepers to the door. Beggar lepers of the infectious type are seen to handle the water taps in the street and to buy their necessary articles of life in exchange for their earnings, and we cannot be quite sure that these infected coins will not be coming into our pockets during a similar exchange.

After studying all these cases, is there anybody who can think for a moment that that he is quite safe from contact with a leper? The chances of infection remain at all ages and in all times, especially in towns where close mixing with different kinds of people is bound to occur daily. So that by simple fear of the disease or loathing of the poor sufferers we cannot gain anything. In order to save ourselves from this dangerous disease we should have a clear idea about it in all its aspects.

This disease enters the body like a thief without raising any alarm (unlike many other diseases) so that a leper may be harboured in a house for years together, although the mere name of the disease will frighten people to death. In the A1 stage the disease is overlooked in most cases, and often the diagnosis is not relied upon. In the B2—B3 cases it is regarded as some disorder of the bile and blood, and it is only in the A2 stage that the patient is treated with loathing and the disease is diagnosed as true leprosy. Another erroneous idea that exists regarding leprosy is that this disease is said to visit only those persons who have suffered from syphilis or gonorrhœa. So that people usually become ashamed of this disease because the declaration of leprosy means many things.

Among all diseases this is regarded as the worst of its kind in all countries and in all communities. People would rather have any other disease than leprosy. On this account not only the patients but the doctors in this subject as well are ostracised.

Recently we have received information from a fellow worker in charge of a leper clinic that the letters sent by him are touched with great caution by the authorities concerned. He is received with disrespect and fright when he goes to his master's house as if he carried leprosy in his pocket. Doctors of the same place also are known to laugh at him as if he is an inferior being, although the treatment of leprosy is privately carried out by all of them when it becomes a paying concern.

So far we have seen that the majority of the sources of contact are outside a leprosy clinic, and most of the sufferers have got no family history. Although most of them are not connected with any medical institution and although they are full of fear of this disease and still they have got it, the reason why leprosy workers rarely get this disease through their work is the fact that they readily get into the habit of personal prophylaxis. So that there is a difference between coming in contact with a leper after knowing him to be one, and coming into contact with an unsuspected case. The eagle's eyesight that is developed among the workers in this line that identifies any suspicious case at a glance from a distance cannot be expected in any outsider, so they cannot take any precaution either before or after contact. As long as this ignorance mixed with loathing and unreasonable fear remains as it is leprosy will go on trespassing into our houses although we may think ourselves quite safe and above contracting such a humiliating disease as leprosy.

My thanks are due to Dr. E. Muir, M.D., F.R.C.S., for his kind encouragement and permission to publish this paper, and to Dr. J. M. Henderson, M.B., Ch.B., for the suggestions I have received from him.

SOME OBSERVATIONS ON HUMAN AMŒBIASIS.*

(BEING AN ANALYSIS OF POST-MORTEM FINDINGS IN 426 CASES.)

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and

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IN a communication (1) in the *Indian Medical Gazette* by one of us (P. V. G.) a rough analysis of all post-mortems recorded in the Pathology Department, Grant Medical College, Sir J. J. Hospital, Bombay, was published with a view to comparing the findings with those published by Sir Leonard Rogers in the *Glasgow Medical Journal*. It may be recalled that out of the total number of post-mortems 13.80 per cent. were cases of tropical diseases, of which amœbiasis alone formed 7.2 per cent. It is not inaccurate to state that amœbiasis is the only important tropical disease commonly seen in the post-mortem room in Bombay. During the last five years we have had the opportunity of conducting a fairly large number of detailed post-mortems on cases of amœbiasis.

With the help of the knowledge so obtained we have analysed the records of the past forty years, the results of which are embodied in this paper; we hope that material so collected will prove interesting and instructive.

The present series comprises 426 cases, of which 169 exhibited hepatic lesions and 257 intestinal lesions only.

For purposes of this paper we propose to divide our observations into the following two sections:—

I. General considerations.—Incidence of (*a*) intestinal, (*b*) hepatic, (*c*) total amœbiasis as related to (*i*) temperature and the rainfall, (*ii*) age, and (*iii*) sex; and

II. Amœbiasis of the liver.

I. *General considerations.*

In amœbiasis which is rarely an acute disease, the study of seasonal variation is obviously difficult. On a close study of the incidence of this affection in Bombay we are led to think that some seasonal variation does occur. From a table given elsewhere it will be seen that the average duration of symptoms varies from one to four months, thus giving a chance for the overlapping of the incubation period, the period of the actual infective stage and the period in which complications arise, in successive cases. There is only one case in this series in which the duration has been two years and a half.

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*A paper read before the Grant College Medical Society on 21st November, 1930.

(1) P. V. Gharpuré. Pathological evidence bearing on the incidence of diseases in Bombay. *Indian Medical Gazette*, No. 5, May 1928, Vol. LXIII.