compound with many trees, plenty of shrubbery, and a vegetable garden. There are no cattle sheds or live-stock in the compound or in the vicinity of the Home. Most of the roads within the compound are neither metalled nor cemented, and small stagnant collections of water can occur near the wards. The latter, for the most part, are of the nature of hutments to accommodate some 20 to 30 patients in each. The roofs and the walls of the hutments show many dark corners and cracks. The place appeared to be well-suited for the breeding of sand-flies.

By means of 'light-traps' over 1,100 'flies' of all kinds were trapped and examined. Among them were 47 sand-flies (33 males and 14 females). It may be recalled that Sinton (1927), and Young and Chalam (1927) have previously recorded the presence of many species of sand-flies (including *P. argentipes*) in the City of Bombay. No information, however, is available on the prevalence and the distribution of sand-flies in Bombay at the present day. The insect-vector proved responsible for the transmission of the disease from one patient to another was demonstrated to be present in the locality affected.*

(3) *Presence of sand-flies infected with* Leishmania donovani.—With the exception of a few mounted as permanent specimens every sand-fly that was caught was dissected and smears were prepared from the material obtained by crushing the pharynx and the mid-gut. The smears were stained with the Leishman or the Giemsa stain and searched carefully for the presence of *L. donovani*. Up to now we have been able to demonstrate at least 5 female sand-flies infected with *L. donovani*. In the smears studied we could see various developmental stages of the parasites from the typical Leishman-Donovan bodies to the leptomonad form (Bhende *et al.*, 1949). Morphologically these forms appear identical with those seen in human material. We did not make cultures of the material from sand-flies.

Comment

In a previous paper (Bhende *et al., loc. cit.*) we have discussed in detail the implications of the above findings. The additional data gathered since support all the conclusions drawn previously. These latter may be briefly reiterated as follows : (1) In the outbreak investigated the primary source of infection could only be human. (2) When and how exactly was the infection introduced in the Home could not be stated definitely, but probably the infection was brought by some of the inmates who came from Madras—a heavy endemic focus of kala-azar. (3) The sand-flies existing in the compound of the Home caught the infection and transmitted it to new hosts. (4) Due to the diminished resistance of the patients suffering from leprosy such transmission was facilitated.

It would appear that a reservoir of kala-azar cases has been built up in Bombay. And, with the presence of the insect-vector in the vicinity, it can serve as an endemic focus for disseminating the infection to the general population of the city. That such a spread has actually occurred either from this or some other hidden foci is evidenced by the recent reports of undoubted indigenous cases of kala-azar (Row and Patkar, 1947; Raghavan, 1949).

*The sand-flies are being studied further to identify the species to which they belong.

Summary

1. An outbreak of kala-azar in the Acworth Leper Home, Bombay, is described. In all 20 cases were encountered : 12 were diagnosed at the autopsy and 8 in living patients.

2. The comparison of the figures for those persons' uninterrupted stay in the Home with the incubation period of kala-azar showed that some of the patients were certainly infected locally.

3. The insect-vector—sand-fly—was demonstrated to be present in the compound of the Acworth Leper Home.

4. Some of the sand-flies caught were shown to be infected with the Leishman-Donovan bodies.

5. It is pointed out these cases may serve as an endemic focus for spreading the infection to the general population of Bombay.

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TUMOURS OF ENDOTHELIAL ORIGIN

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THIS large group of neoplastic tumours arises from the cells lining the blood vessels, lymph vessels and spaces, sub-dural spaces and serous

cavities. The history of development of the present state of our knowledge of this group of tumours is full of controversies, incompleteness and confusion. Kettle (1925) observed that 'in entering upon a description of the tumours derived from endothelium we are confronted with quite exceptional difficulties for in respect to no other class of neoplasms is there so much divergence of opinion'. Harvey and others (1940) in their discussion on debatable tumours remark about this group of neoplasms that 'the use of the term endothelioma, not merely for purposes of discussion but as an accredited tumour, may seem a retrograde step, considering the extent to which the term has been condemned by disuse and disapproval. Our study on the question, however, has convinced us that both morphologically and embryologically the term can logically be used for a definite tumour group which otherwise lacks unity of interpretation'. Ewing (1948) wrote an exhaustive and admirable discussion on the physiological and biological placing of the endothelium and pointed out the dual rôle of the endothelium as epithelial and connective tissue. He produced the following histological types of the endothelial tumours :—

(1) Perivascular.
(2) Adenoid.
(3) Angio-endothelioma.
(4) Diffuse endotheliomata.

Willis (1948) challenged and put forward strong arguments against the histological entity

Endotheliomata—125 cases

TABLE I

Age	Number of cases
1–10	7
10–20	20
20–30	23
30–40	25
40–50	23
50–60	13
60–70 and onwards	1
Age unrecorded	13
TOTAL	125

TABLE II

Sex	Number of cases
Male	69
Female	47
Sex unrecorded	9
TOTAL	125

TABLE III

Site of origin

Region	Number of cases
(1) Scalp	3
(2) Vertex of head	1
(3) Forehead	2
(4) Back of head and occipital region	2
(5) Antrum of Highmore	1
(6) Left temporal region	1
(7) Region of orbit, eyeball and ethmoid	8
(8) Nose	9
(9) Mouth (floor 2, palate 6, angle of mouth 1, tongue 1).	10
(10) Lips	4
(11) Pharynx and nasopharynx	3
(12) Neck	4
(13) Mandible	1
(14) Region of jaw	1
(15) In front of left external and auditory meatus.	1
(16) Cheek	4
(17) Axilla, scapula, deltoid region	3
(18) Brain	1
(19) Thyroid	1
(20) Small intestine	1
(21) Large intestine	2
(22) Cæcum	1
(23) Omentum	1
(24) Retroperitoneal region	1
(25) Medial to left clavicle	1
(26) Chest wall	2
(27) Forearm	5
(28) Broad ligament	1
(29) Uterus (cervix 6, body 4)	10
(30) Ovary	5
(31) Bones (humerus 1, femor 1, frontal 1, tibia and fibula 1).	4
(32) Artery (popliteal)	1
(33) Thigh	4
(34) Scrotum	1
(35) Breast	2
(36) Vagina	1
(37) Recto-vaginal septum	1
(38) Knee	2
(39) Glands—	3
Cervical	1
Femoral	1
Inguinal	1
Preauricular	1
Near elbow joint	
(40) Region unrecorded	12
TOTAL	125

TABLE IV

Histological types according to Ewing's classification

Types	Number of cases
A. Perivascular perithelioma	10
B. Adenoid	9
C. Angio-endothelioma—	
Hæmangio-endothelioma	18
Lymphangio-endothelioma	14
Undifferentiated	5
D. Diffuse synovioma	1
E. Unclassified—	
Diffuse arrangement of cells, endothelial in appearance, not fitting with any of the above patterns.	68
TOTAL	125

as endothelioma and finally observed 'that for well differentiated growths of the mesenchymal tissues which happen to possess surfaces we already have adequate distinctive names, and that for poorly differentiated sarcomatous growths of these tissues the name "endothelioma" is still unnecessary and in view of what we know of the plasticity of the multiple mesenchymal cells inappropriate'. Hastings-James (1949) discussed the points raised by Willis with regard to the pathological entity of the angiomatous tumour and described one such tumour which originated from the hepatic structure and described it as 'hæmangioblastoma of liver'. So long as the ætiology of neoplastic tumours and the complete understanding of the biological relationship of different tissues are not worked out, the divergence of opinion will continue to exist. More knowledge of essential to clear up these controversies. On going through our records for the last twenty years we find that altogether we have reported 125 cases as tumours of this origin. We are giving in short the summary of these cases (*see* tables I to IV) and describing in detail the four recent cases that we have come across.

Case 1

Clinical notes.—European male, aged 44 years, history of gradual loss of weight since February 1941 with weakness and malaise. In April 1941 enlargement of the abdomen was noticed which led to paracentesis in June. There was no enlargement of the liver or jaundice and the fluid drawn was highly albuminous. Tapping was repeated on several occasions at intervals of 2 weeks or so till August when the fluid drawn was found to be blood-stained. There was no general anasarca at any time, no cardiac sign or hepatic deficiency nor could there be found any evidence of intestinal growth. The abdomen was opened on 23rd August and an omental tumour like grapes in appearance was removed. Since removal there has been a steady improvement under deep *x*-ray treatment and there has been but one tapping. The patient continued making good progress and gained in weight. Four years after he was found enjoying good health and continuing his usual work.

Naked eye examination.—The omental tissue was studded with cystic growths and solid greyish white tumour nodules of different sizes. The big cysts were of the size of a marble and the small ones were smaller than peas. The cystic growths were seen to be connected with the solid tumour masses. The cyst contained thin gelatinous material (figure 1, plate XXXVI).

Histology.—Sections from one of the small nodules (figure 2, plate XXXVII) showed collection of empty tubular spaces lined with endothelial type of cells; at certain areas these endothelial cells showed proliferative changes forming clusters of cells. Sections from the bigger nodules (figure 3, plate XXXVII) showed almost complete absence of empty tubular spaces but a compact mass of cells showing the characteristics of embryonic nature and plenty of mitosis. Sections from the cysts showed quite a different picture (figure 4, plate XXXVII), *viz,* large cystic spaces containing structureless material, possibly coagulated lymph. In some of the cysts the lining walls had undergone much thinning due to pressure.

Comments.—The origin of the tumour is obviously from the endothelial lining of the peritoneal lymphatics. We find two types of changes—one forming solid nodules and the other cysts. The bigger nodular areas show characteristics of a malignant tumour formation (figure 3, plate XXXVII). The other change, *viz,* the cyst formation, is a well-known phenomenon of the endothelial tumour of peritoneal origin.

The patient was found quite fit for four years after the operation. This goes against the high malignancy of the tumour. The deep *x*-ray therapy also might have been responsible for the non-recurrence or further spread. When the abdomen was opened this mass protruded and was cut and the abdomen was closed. So the possibility of other foci remaining inside was there, and how far the deep *x*-ray could reach the remnant of the tumour is a matter of conjecture. The possibility of a low and locally malignant nature of the tumour can also be thought of.

A case of large epigastric endothelioma possibly of lymphatic origin, growing between the layers of the great omentum, causing acute retention of urine by being impacted in the pelvis, has recently been recorded by Guthkeleh (1948). His specimen also showed both firm and cystic areas though not so conspicuously as in our case. The Pathologist (Professor S. L. Baker of Manchester University) opined in the case of Guthkeleh thus : 'It is difficult to assess the grade of malignancy; cytologically it is not highly malignant, but would no doubt recur locally if not completely removed'. Although a few tiny transparent cysts were seen scattered over the remainder of the great omentum and in the pouch of Douglas, the patient was free from recurrence and was at work and in normal health 4 years after the operation, without any post-operative treatment.

Case 2

A. J. C., Indian, aged 60 years, a retired School Inspector, was admitted into the hospital for swelling and pain in the right arm. About a year and a half before his admission he first felt pain in the arm which was intermittent in nature. Within a few weeks of the onset of the pain he noticed that the arm got swollen at the upper part. Subsequently he injured the same arm and his forearm got flexed at right angles to the arm. According to him this was due to the trauma that he sustained. The swelling gradually increased. On examination a large

swelling extending over the lower two-thirds of the right arm was seen. The tumour was reddish in colour and there were prominent veins over it. The head of the humerus seemed to be dragged out of the socket. Above the main swelling there was another small swelling which was softer in consistency than the main swelling. The forearm was found to be thinner than its fellow, the patient could move his fingers and hand. The main swelling was hard, irregular, tender and pulsating. At certain areas egg-shell crackling could be elicited. A skiagram was taken (figure 5, plate XXXVII) and the following was seen. The whole of the bone was involved in a fusiform swelling. In place of normal osseous structure there were a number of thin bony lines forming several compartments. The bony outline of the humerus was lost. A provisional diagnosis of osteoclastoma was made. The arm was amputated. A sagittal section of the tumour was made which showed the following (figure 6, plate XXXVI). The tumour was composed of fleshy masses which were found to be in several compartments which were outlined by thin bones. These areas were of different colours—some deep red, others dull red, chocolate and pale cream. The tumour process ended rather abruptly. The microscopic picture was studied from different portions of the tumour mass and showed the following structural patterns. Certain areas were composed of large cubical or cylindrical cells arranged in cords or columns. The cells were large with clear cytoplasms, sharp cell membrane and small nucleus (figure 7, plate XXXVII). The appearance here was very similar to a picture produced by Ewing (1940). In other areas, the picture was dominated by the presence of large cystic spaces filled with blood (figure 8, plate XXXVIII). The cyst-like blood spaces were found to be lined with a fine layer of connective tissue but had no lining endothelial cells. In others, there was scarcity of such blood spaces but there were collections of groups of cells scattered without any definite arrangement (figure 9, plate XXXVIII). These large blood spaces and collections of groups of cells formed the main picture of the most dark red areas whereas the pale areas were mainly composed of material depicted in figure 3, plate XXXVII. The patient got well and was discharged from the hospital. Six months after his discharge he died of a febrile condition.

Comments.—According to Ewing's contention this case has been labelled as hæmangioma of the bone. Willis (1948), however, opined thus : 'No modern pathologist should be so misled by finding blood within adenocarcinomatous spaces that he mistakes renal or other carcinoma for " hæmangio-endothelioma " as was once done; yet as Stont points out the last edition of Ewing's textbook (1940) contains an illustration labelled " angio-endothelioma of bone " which almost certainly perpetuates this old error and Thomas has made a similar mistake'. So the question arises whether this case should be described as a carcinoma, a hæmangio-endothelioma or a sarcoma. During the patient's stay in the hospital there was no suspicion of any primary growth anywhere else but in the absence of a complete post mortem this question cannot certainly be ruled out. Willis raises the question about the degree of vascularity which will decide whether a particular growth should be an angioma or a vascular carcinoma or sarcoma. In this case the points are in favour of an angiomatous condition. The large blood spaces (figure 9, plate XXXVIII) lined without the endothelial layer and the presence of cluster of cells without any arrangement (figure 5, plate XXXVII) may be explained by the fact that from the developmental point of view the endothelium and the red blood cells have different origins. So it is possible that in the course of atypical formation of the growth these two elements have been separated. Though rare, this tumour has been found in other bones as well. A fair number has been recorded in the vertebræ by Schmorl (1932) and Ghormley and Adson (1941), majority of which had no clinical symptoms. Radiologically some of these vertebral tumours presented similar appearance, as our case, *i.e.* 'ballooning of vertebral body' with typical honeycombed rarefaction, which may lead to collapse and wedging. Those of the long bones give a characteristic, loose, soap-bubble appearance, and longstanding lesions may cause extensive destruction and pathological fracture.

Case 3

A. L., male, aged 25 years, occupation, sweeper, admitted into the hospital on 18th September, 1948.

Complaints.—Pain and vomiting after taking food, duration 1 year.

History of the illness.—The patient used to get irregular colicky pain in the upper abdomen (epigastrium) about 1½ years back. During the last one year, pain increased and the patient used to vomit intermittently. The vomited matter was of foul odour and sour in taste and contained food material 3 to 4 days old. The patient had black coloured stool 3 to 4 times during the period (not definitely tarry). He noticed a lump in the abdomen for 1 year. He gave past history of dysentery.

On examination.—The patient was found to be considerably wasted. Heart, lungs, liver, spleen, no abnormality. P/R, 80/20 per minute. Temperature, normal. Tongue, coated and moist. Teeth and gums, unhealthy.

Locally, abdomen soft, moving with respiration. Visible peristalsis from left to right was seen in the hypogastrium and lower part of umbilical region on taking food or water. No lump felt in the abdomen. Three days after admission, patient had dental trouble for which 3 teeth were extracted.

Results of investigation : Barium meal examination of gastro-intestinal tract showed obstructive dilatation of stomach. Gastric analysis showed no significant findings.

Clinical diagnosis of pyloric stenosis was made.

Operation done on 17th October, 1948. Anæsthesia, intercostal block and local novocaine infiltration.

Abdomen was opened by right paramedian incision. Some air-containing cystic tissue was found occupying the space between the anterior surface of the liver and the diaphragm as well as the subhepatic region. On exploration it was considered to be composed of pneumatic cysts on the serous surface of the small intestine. The cysts were present from 4 inches of the ileocæcal junction to about 2 feet from the junction. One cyst was present on the cæcum. The stomach was considerably dilated with thickening of the pyloric region with no obvious evidence of ulceration. Resection of 20 inches of affected small intestine with end to end anastomosis was done. A posterior retrocolic, isoperistaltic gastrojejunostomy was also done. Abdomen was closed in layers. Post operative : The patient was given small milk feeds 2-hourly from 48 hours after operation.

On 22nd October, 1948, the patient was having frequent loose motions for which sulphaguanidine was given and loose motion stopped. He made an uneventful recovery although he complained of a little distension of the upper abdomen due to taking of a larger quantity of solid food at a time secretly than was prescribed. By taking smaller quantity more frequently this discomfort passed off.

On 23rd November, 1948, barium meal examination showed stomach functioning and still dilated.

On examination of the peritoneal surface of the specimen (figures 10*a*, plate XXXVIII, and 10*b*, plate XXXVI) numerous cysts of different sizes could be seen. This specimen differed from that of case 1 in having no hard nodules. The cysts were of different consistency. Some felt hard but on cutting open they were found to be cystic. The walls of these were definitely thicker than those of the softer cysts. Histological sections were made from both types of cysts, soft and hard, from different portions of the specimens. Section from the wall of the hard cystic areas (figure 11, plate XXXVIII) showed numerous blood vessels of different sizes stuffed with red blood cells. The histological appearance of the case was different from that of case 1. In this case no purely cellular areas could be found. All the sections that were studied from the comparatively hard cysts showed the presence of a very large number of young capillaries. Sections from the soft and thin cysts showed large empty spaces containing thin mucinous material (figure 12, plate XXXIX). At the base of these cystic spaces numerous capillaries could be found.

Comments.—So far as the multiple cysts are concerned this case was similar to case 1 but in other features it differed. In this case no purely cellular areas could be found. The study of all the sections that were made from the comparatively hard cysts showed only numerous capillaries. These hard cysts were so numerous that a malignant angiomatous process was to be suspected. Following even Willis' contentions this picture cannot be explained as merely a state of increased vascularity in a malignant tumour of connective tissue or epithelial origin. These tumours may occur in practically any tissue of the body. Recently an angio-endothelioma in the gluteal muscles (a rare site) has been recorded by Ewing (1948). Numerous similar cases were collected from the literature by Shallow, Eger and Wagner (1944). In the majority, the tumour is wholly or partially diffusely infiltrating. Although the infiltrating characteristics of the diffuse type suggest potential malignancy, metastasis occur in less than 1 per cent of cases (Geschickter and Keasbey, 1935).

'They are probably congenital tumours, due primarily to an incomplete maturation of some of the elements in the developing vascular tree' (Ewing).

One year after the operation the patient was doing his usual work.

Case 4

R. P., female, aged 22 years, admitted into the hospital on 4th May, 1948.

Complaints.—(1) Swelling in the left axilla and scapular region, duration 1 year. (2) Pain in the swelling, 15 days.

History of the illness.—About 3 years ago, the patient developed a fleshy swelling over the left scapula, which increased to 3 inches in diameter in course of a year. She was operated upon elsewhere and the growth was removed. For 1 year after the operation, she was well without any lump. During the last year, a swelling reappeared in the same region and has been increasing rapidly in size. Formerly, she used to feel intermittent pain in the swelling, but for the last 15 days, she has been feeling marked pain continuously in the swelling. For the last 1 month, the swelling has been hot and red in colour. No history of fever, hæmoptysis or pain in the chest.

On examination, patient moderately anæmic. Heart, lungs, liver and spleen, no abnormality. Locally, a sessile irregular swelling about 6 inches in diameter extending from the left anterior axillary fold to the scapular region, consistency firm, no fluctuation, margin fairly well defined, adherent to skin, mobility over the scapula doubtful. Swelling not compressible. Superficial veins prominent. Movements of the shoulder joint normal but for the mechanical

block due to the swelling (figure 13, plate XXXIX).

A clinical diagnosis of fibrosarcoma was made. *X*-ray (figure 14, plate XXXIX) showed some osseous tissue in the growth of the soft parts. The axillary border of the scapula was somewhat irregular. Radiological diagnosis was fibrosarcoma.

X-ray of lungs showed no evidence of metastasis. Calcified lymph nodes in the hilar regions.

Operation done on 13th May, 1948. Anæsthesia, rectal paraldehyde with gas and oxygen. A longitudinal incision parallel to 3rd part of axillary artery was made in the left axilla and the growth carefully dissected off important vessels and nerves of the axilla. The incision was extended inwards along the anterior axillary fold, and the dissection further proceeded with in the axilla. A solid band slightly darker in colour than a muscle, rectangular in cross section with the corners rounded off, extending from the lower part of the growth at the inferior angle of the scapula and gradually tapering towards the axillar vessels, was found. It appeared as an accessory slip of muscle. This structure was clamped and divided between clamps. (After cutting, it was found to be a vein filled with solid material which was found to be dirty white in colour. Later it was found to be the subscapular vein, solidly packed with extension of growth.) The incision was continued around the growth. At the upper part of the axillary border of the scapula, the scapular circumflex vein was found to be dilated and solid. It was ligated and divided, and the contents showed yellowish-white solid material (extension of growth). The growth was loosely adherent to articular capsule of shoulder, from which it was dissected without difficulty. Muscles arising from the axillary border of scapula were divided and the growth removed. The axillary border of the scapula was snipped off with bone cutting forceps as it was found rough and bare. As the skin was short to cover the wound, the arm was fixed to the side of the chest by making skin flaps in both and suturing them. Patient had blood and plasma transfusion to tide over the operative shock.

The patient became very boisterous and unconscious, with high temperature of 103°F. to 104°F. which persisted for 3 days, in spite of every kind of sedative including repeated doses of morphia and high doses of penicillin. Lungs were found to be clear; no localizing neurological signs. Blood count showed marked leucocytosis. Total W.B.C. 25,900, polymorphs 91 per cent. No hæmoptysis. Clinically, the condition resembled acute encephalitis. Lumbar puncture showed clear fluid under tension. The patient died on 16th May, 1948. Her husband refused post-mortem examination.

On cutting open the tumour (figure 15, plate XXXVI) the inner surface was found to be irregular, pale brownish in colour excepting two areas which appeared to be homogeneous, pale and slaty in colour, quite different in appearance from the main bulk of the tumour. Fine gritty calcarious areas were found scattered through the growth. Histological studies of the several blocks from different portions of the pale brownish areas showed spindle-shaped cells. In many areas these cells were seen taking a pseudo-alveolar form (figure 16, plate XL). The homogeneous slate coloured areas were found to be due to mucoid degeneration in the tumour. The vein which was found to be blocked with solid material (figure 17, plate XL) was on histological examination found to contain an extension of the tumour process within it.

Comments.—This tumour was evidently a synovioma which Willis describes as synovial sarcoma. The widespread distribution of synovial tissues in the body and their possible development from other mesenchymal tissues, when appropriately stimulated, such as adventitious bursa and inner lining of a pseudo-arthrosis, etc., undoubtedly explain the occurrence of a synovioma in areas which are well away from articulations.

These tumours seldom form within the cavities of the joints, instead they lie in close proximity to tendons, tendon sheaths, and outer walls of bursæ or joint capsules.

The tumour in the case referred to was loosely attached to the articular capsule of shoulder joint.

Tumours which are situated in areas where normally synovial tissues do not exist, such as middle of thigh or arm, are not suspected as synovioma until after the histological examination of the tumour. Usually these tumours present two histological patterns: (*a*) diffuse cellular type and (*b*) cystic and papillary formations giving the appearance of a pseudo-epithelial papillary adenocarcinoma. The histological appearance of this tumour appears to fall on the second type because the *pseudo-alveolar* appearance was the dominant feature. The terminal signs of encephalitis are probably due to showers of metastasis in the brain, from clamping of the infiltrated vein.

Summary and conclusions

1. One hundred and twenty-five cases of tumour believed to be of endothelial origin are reported.

2. Four recent cases of such tumour are described in full.

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PNEUMOCOCCAL MENINGITIS WITH ATYPICAL FEATURES

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WHEN meningitis is suspected we look for signs of meningeal irritation. Great importance is naturally placed on neck rigidity and positive Kernig's sign. If they are present we proceed to do a lumbar puncture. In their absence it is often argued that it could not be a case of meningitis as there were no neck rigidity and positive Kernig's sign. In most cases the conclusion may be right. But the following cases suggest that negative Kernig's sign and absence of neck rigidity do not always invalidate the diagnosis of meningitis. Those signs depend on the degree of irritation of the meninges, hence in the period of septicæmia and initial stage of meningeal involvement, sufficient changes may not occur in the meninges to produce the signs. Moreover, in cases where shock is a prominent feature, either due to toxæmia or adrenal cortical involvement, or coma is pronounced due to the main brunt of the disease falling on the brain the above signs may be absent. Further, those are the signs where personal factors count, at least in the early stage of the disease. It is well known that the confirmation of the disease is by examination of the cerebrospinal fluid, and that the prognosis in meningitis depends mainly on the promptness of the institution of specific treatment. Hence it is suggested that absence of neck rigidity or negative Kernig's sign should not prevent one from making a lumbar puncture in cases of suspected meningitis. It should also be noted that in the fulminating type of meningitis producing adrenal syndrome, encephalitic syndrome or mixed encephalitic-adrenal syndrome (Banks and McCartney, 1943) there may be no neck rigidity or Kernig's sign and abnormalities may not be found in cerebrospinal fluid due to absence of changes in the meninges.

Case 1

K. C., female, aged 27 years, was admitted on 30th November, 1949, in a state of deep coma. Patient's relatives said that she fell down while walking on the afternoon of 29th November, 1949. She had complained of constant headache for two days before the accident. After the fall she could not speak properly and hinted at pain in the chest. She became unconscious from the midnight of 29th November, 1949. There was nothing of importance in the past or family history.

On examination : Well-built young person in deep coma. No signs of injury were present on the head. Corneal reflex was absent. Pupils were moderately dilated and reacted very sluggishly to light. No abnormality was detected in the nostrils or ears. Neck was soft and the limbs flaccid. Deep reflexes were sluggish. Plantar reflex showed weak flexor response. Kernig's sign was negative. Liver and spleen were not palpable. Heart sounds were feeble. A few basal crepitations were heard in the lungs. Temperature was 98.4°F., pulse 72 and respiration 20 per minute. Blood pressure was 112/85 mm. of Hg. Lumbar puncture was done. 25 cc. of turbid fluid came out under moderately increased tension. Cell count : 40 cells per c.mm. consisting chiefly of polymorphonuclear cells. On culture, pneumococci were grown. Blood : leucocytes 20,500 per c.mm., polymorphonuclear cells 86 per cent, lymphocytes 12 per cent, monocytes 2 per cent, eosinophils nil. No malarial parasites were found.

Catheter specimen of urine showed a trace of albumen and a few pus cells.

Clinical course : She was put on penicillin 50,000 units intramuscularly every three hours and soluble sulphadiazine 1 gm. intravenously every eight hours.

The patient gradually became deeply unconscious and expired at 5 a.m. on 1st December, 1949. No post-mortem examination could be held.

Case 2

K. C. D., male, aged 11 years, was admitted on 14th December, 1949, with a history of continuous fever and pain around umbilicus for six days. There was no chill or rigor at the onset but he vomited once. There was nothing of importance in the past or family history.

On examination, the patient was found to be dull and toxæmic. Temperature 103°F., pulse 120 and respiration 30 per minute. Heart and lungs were normal, abdomen was soft with no tenderness. Liver was enlarged 3 fingers' breadth below costal arch and the spleen was just palpable. Neck was soft and Kernig's sign was negative. Reflexes were normal and

Fig. 1.—Case 1. Coloured diagram of the specimen. Note the pale yellowish nodular areas of different sizes.

Fig. 10*b*.—Case 3. Coloured diagram of the specimen showing the nature of the numerous cysts in detail.

Fig. 8.—Case 2. Coloured diagram of the sagittal section of the tumour showing different coloured areas in the tumour mass.

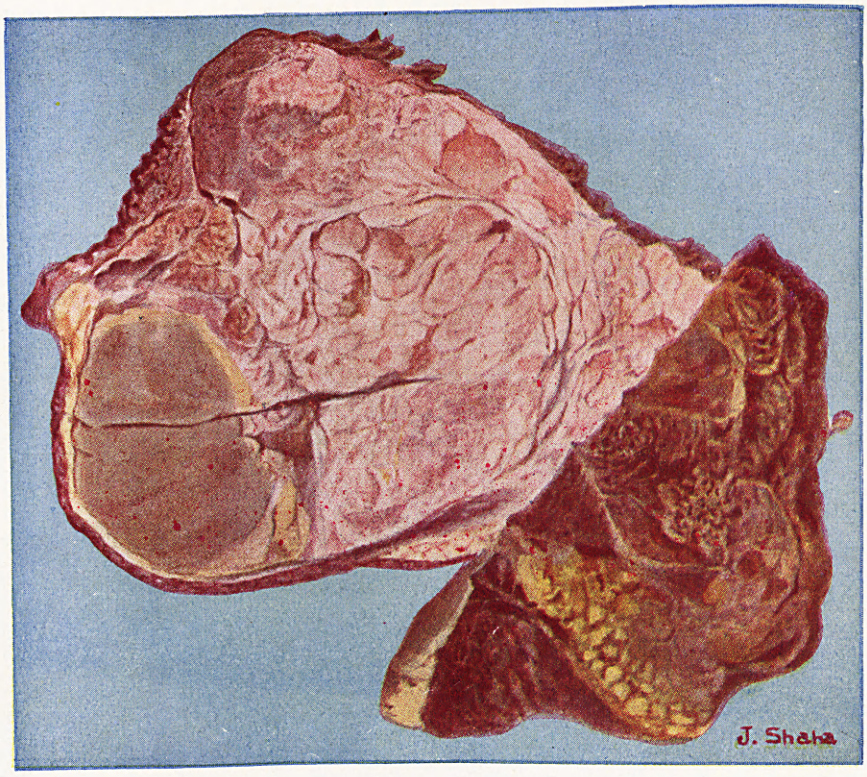


Fig. 15.—Case 4. Coloured diagram of the tumour showing the appearance of the tumour substance.

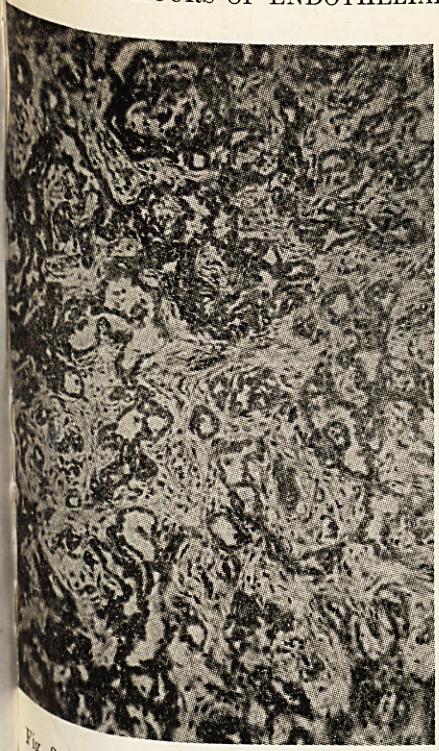


Fig. 2.—Low power photomicrograph from a section made from the smaller nodules. Note the empty tubular spaces lined with cells, some of which show proliferative changes.

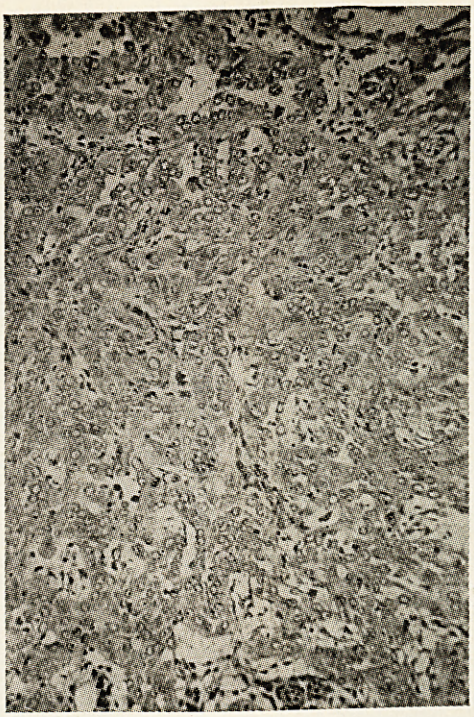


Fig. 3.—High power photomicrograph of a section made from one of the bigger nodules, showing compact cellular pattern with mitosis.

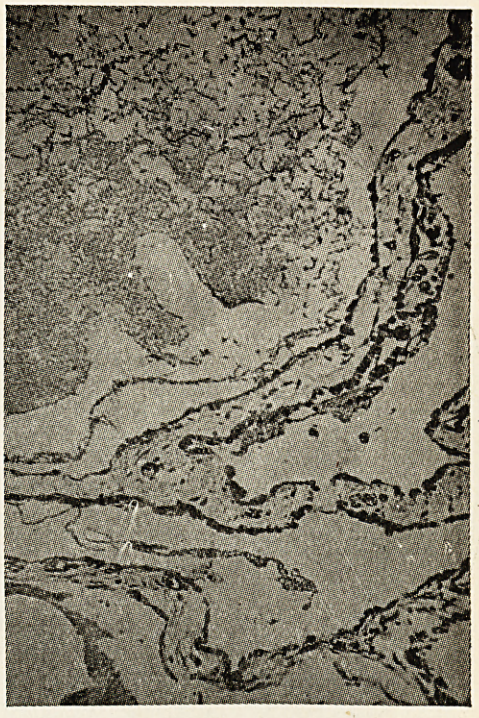


Fig. 4.—High power photomicrograph from one of the bigger cysts showing the structure of the cyst wall and the structure contents of the cyst.

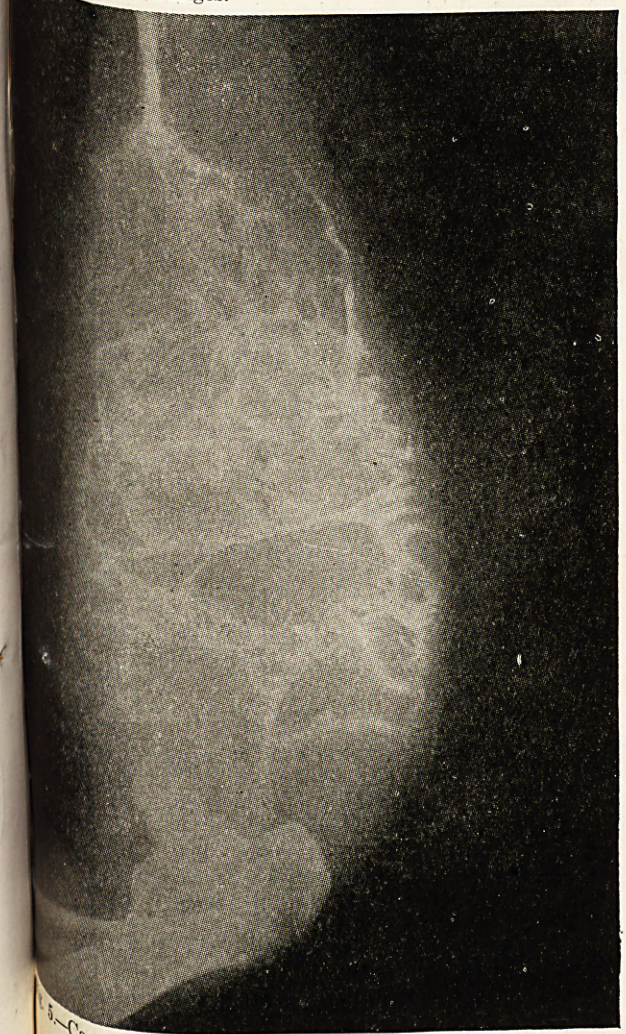


Fig. 5.—Case 2. Skiagram of the tumour showing the thin bony lines in place of the usual bone.

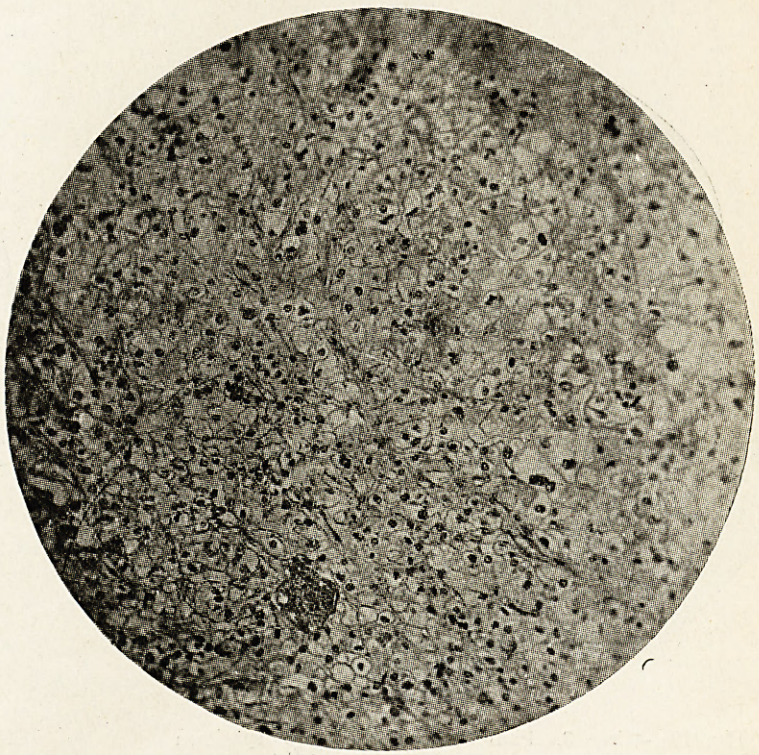


Fig. 7.—Case 2. High power photomicrograph of section showing the appearance of the tumour in the pale areas.

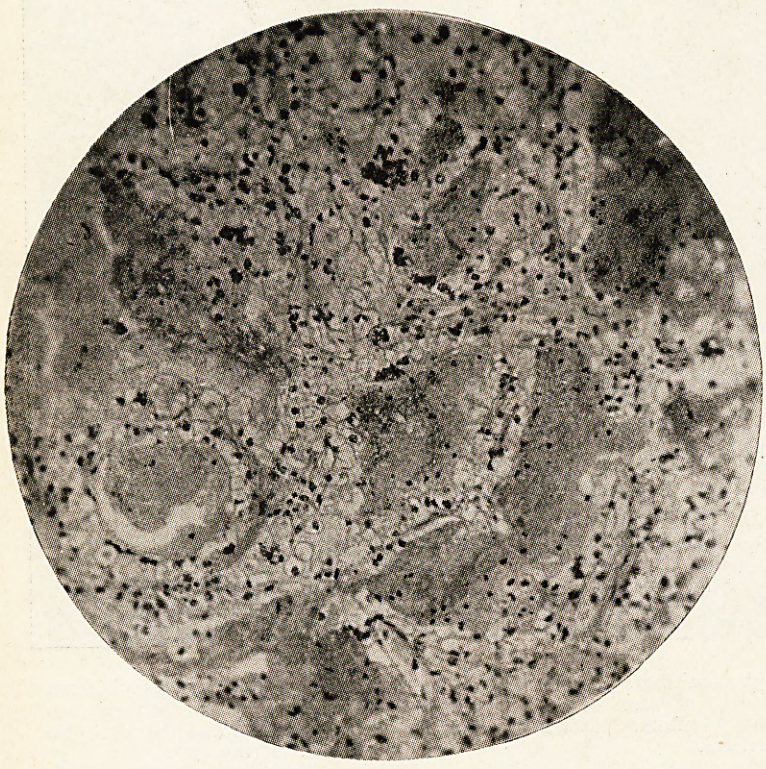


Fig. 8.—Case 2. High power photomicrograph showing large irregular spaces containing blood but without any living endothelium.

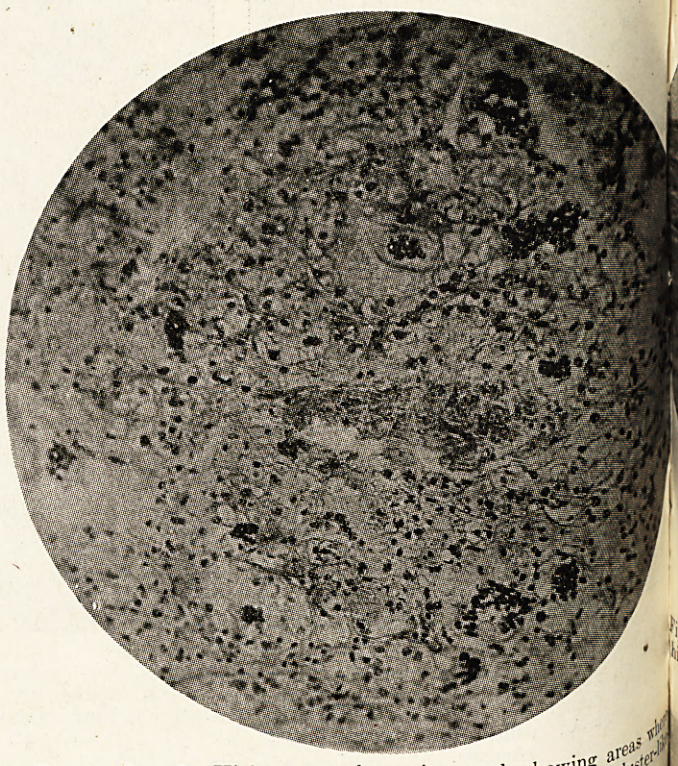


Fig. 9.—Case 2. High power photomicrograph showing areas where there was absence of large blood spaces but irregular clustered collection of cells was the dominant feature.

Fig. 10*a*.—Case 3. Photomicrograph of the specimen showing numerous cysts (mottled).

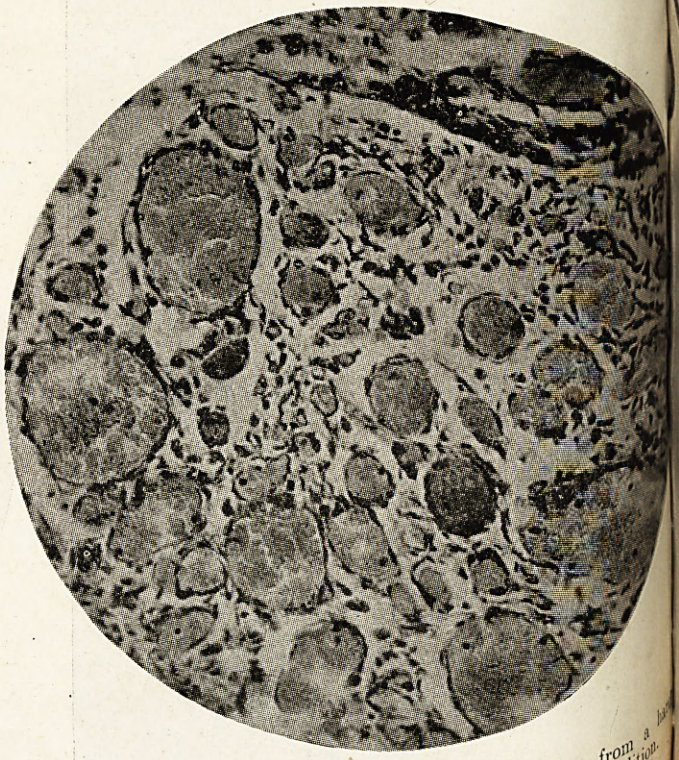


Fig. 11.—Case 3. Photomicrograph of the section from a cystic area. Note the pronounced angiomatous condition.

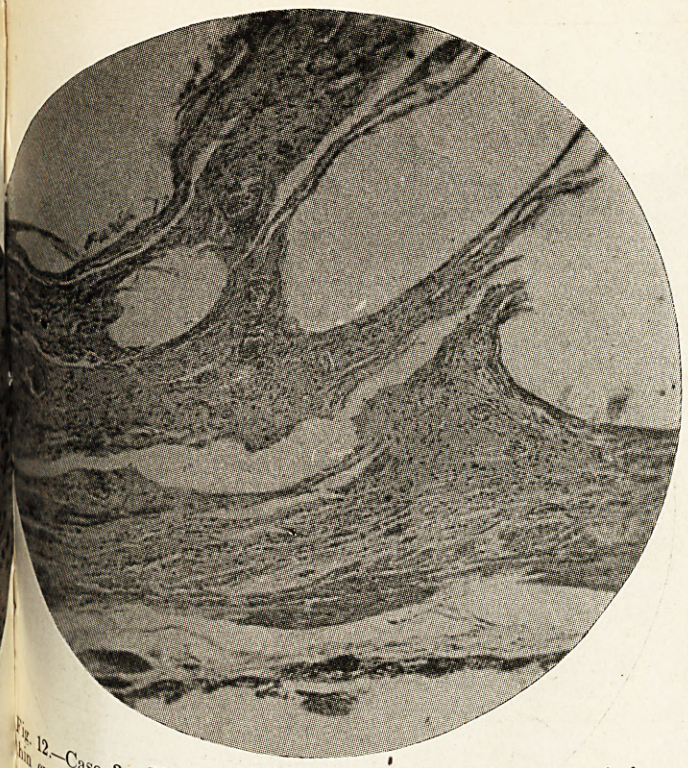


Fig. 12.—Case 3. Photomicrograph of the section from one of the thin cysts showing large cystic spaces. At the base note the dark stained angiomatous layer.

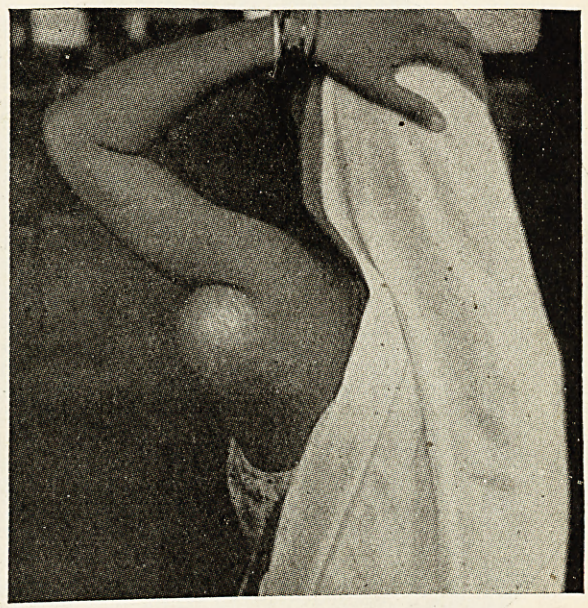


Fig. 13.—Case 4. Photograph of the tumour mass showing its position and size.

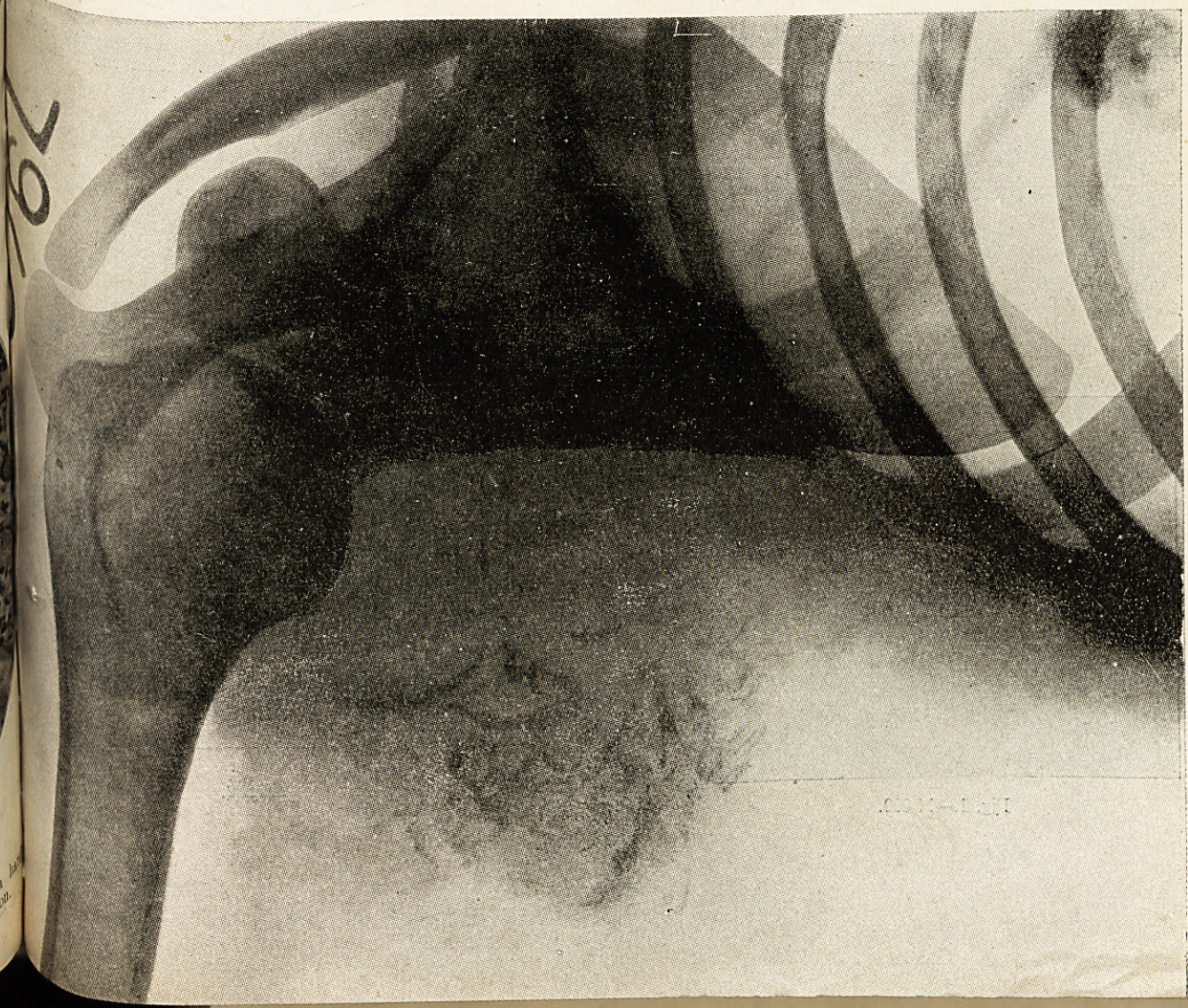


Fig. 14.—Case 4. X-ray picture of the area. Note the irregular scattered osseous tissue in the tumour mass.

TUMOURS OF ENDOTHELIAL ORIGIN : B. P. TRIBEDI & A. K. DUTTA GUPTA. (O. A.) PAGE 239

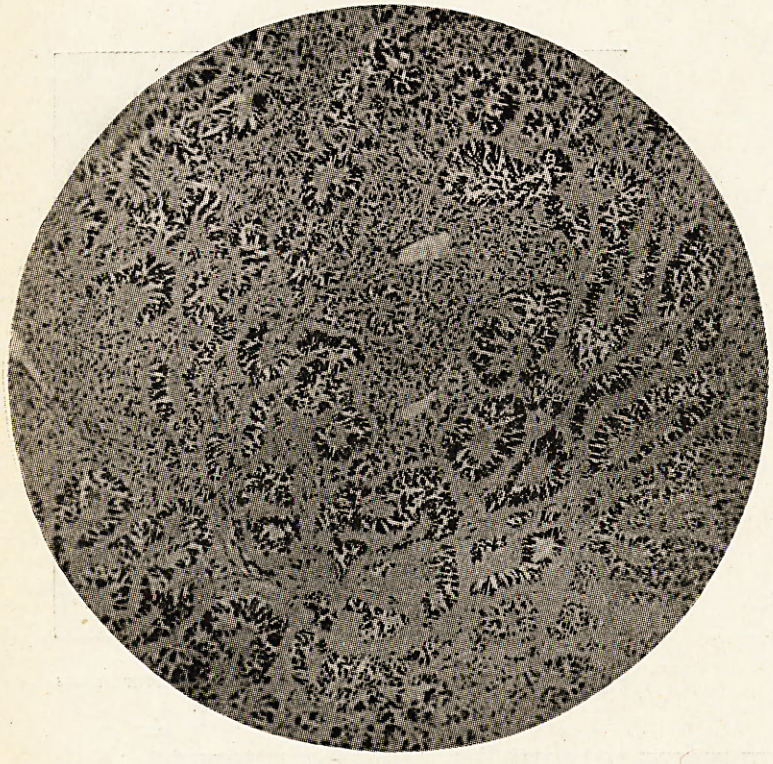


Fig. 16.—Case 4. Photomicrograph of a piece of the tumour mass showing the spindle cells taking a pseudo-alveolar pattern.

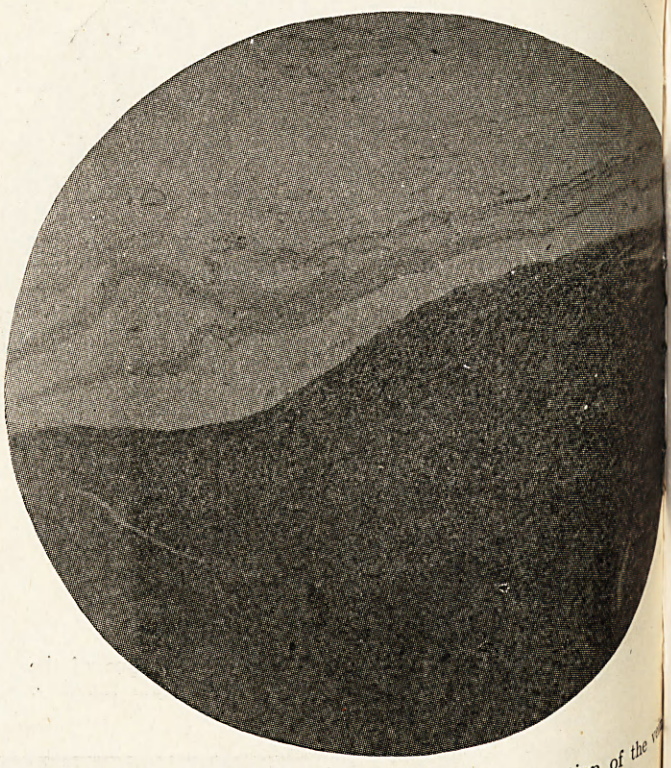


Fig. 17.—Case 4. Photomicrograph of the cross section of the vein showing solidly compact cells within the vein.

A CASE OF INTESTINAL INFESTATION WITH *HYMENOLEPIS DIMINUTA* IN MAN : A. S. PARANDE. (M. H. P.) PAGE 256

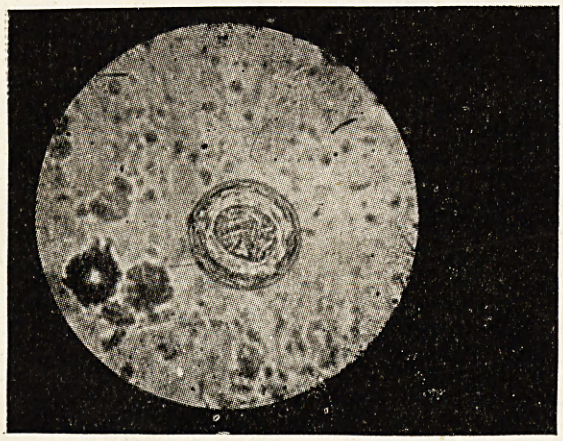
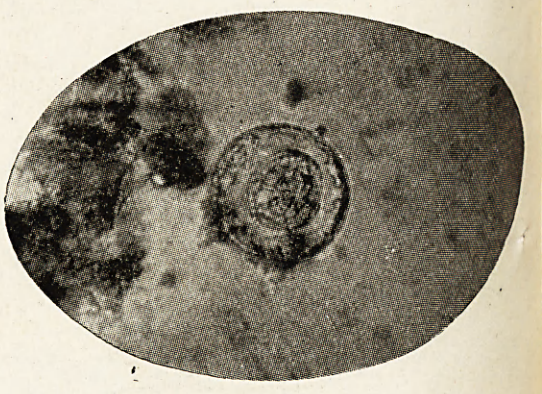


Fig. 1.—× 600.



100 μ

Fig. 2.