**Title**  Human omentum; a study of the processes of growth and disease as seen in the great omentum in man  
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**Qualification**  MD  
**Year**  1885

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**Digitisation notes:**
- Plate IX, XIII, XV, XVIII, XXVI, XXXIX missing from original numeration.
- Plate XXVII repeats twice in original numeration.
Collection of drawings and photographs presented along with graduation thesis. April 20th, 1886.

Charles Kennedy M. 13, P. M.

See note at beginning of thesis.
**Plate I**

*Fig. 1.* From case No. 26, age 9 years. (p. 172)

Shewing capillary network among fat cells.

Fenestrae about 50 μ broad are seen at the upper part of the drawing, separated by trabeculae from 5 μ to 20 μ in thickness, with an occasional endothelial nucleus upon them. At the foot is a large arteriole, a capillary crossed, in another at the right-hand corner one time branch, given off by each of these form an anastomosing network, curving round fat cells. One capillary runs out among the fenestrae in a trabecula double the thickness of any of the other trabeculae which contain the vessel.

The variety in size of the fat cells is to be noted and the distinctness of the nucleus in each case.

Also the nuclei composing the walls of the capillaries.

*Fig. 2.* From case No. 32, age 4½ years (p. 169)

A capillary network formed of large capillary loops, not running in the line of the convoluted fibrous bands. Several groups of fat cells on the vessels. Fenestrae in membranous portion, enclosed by many bundles of fibrous tissue, are rounded and few are larger than the individual fat cells.

Drawn with Hartnack microscope, No. 3 ocular and No. 3 objective.
Fig 1

Hartnack No. 8 ca. No. 7ct. x 240

Fig 2

non-vascular fibrous bands
membranous part, part penetrated as filled in, in drawing

capillary loops
fat clumps
capillary capillaries and arterioles

membranous part with rounded membranous

capillary loops with large curves
juxtastral
non-vascular fibrous bands
membranous part

network of capillary loops with many non
membranous trabeculae. 50 x

Hartnack 3 oz. 2 oz. Tuberc. x 60
Plate II

Fig. 1 From Case 26, age 9 years. (p 172)
Delicate penetrated membrane with here and there indications of its fibrous structure. Rounded or elliptical nuclei upon it, sometimes in groups of half a dozen or more.
These nuclei have either originally underlain the endothelium, or belong to germinating endothelial cells, remaining more closely attached to the tubular wall than the other cells which have been removed.

Fig 2 From Case 34, age 11 years. (p 176)
Part from which all cells have been removed by handling post mortem. The course of the fibres forming the membrane is traced. No bundle of fibres completely surrounds a fenestra. For opinion of Rollett, Klein and Ramoer see p. 93 of Thesis.
Plate III

Fig. 1. From case 4929, age about 20 (p. 219).

What would otherwise be fenestrae are here filled in with delicate membrane, sufficiently strong to sustain delicate small capillaries crossing it. There are two or three fenestrae not filled in in this way and they are recognised by their lighter shade.

Magnifying power about thirty diameters (X30)
(p. 29)

Fig. 2. From fetus at fifth month. (about X50)

No fenestrae. Veins obscured by a good many cells, endothelium remaining attached here and there
(p. 63)
Fig 1

- Fenestra
- Was enclosed by fibrous bands
- Filled in by delicate membrane
- Occurred by capillaries
- Fat clump

Fig 2

- Capillaries
- Occurred on artenole due to cells

"Secondary Arteriola" containing a capillary
Plate IV

Fig. 1. From case 74, age 5 1/2 years (p. 168)
Showing growing capillary vessels usually in the form of loops sometimes terminating in single vessels and pushing their way along fibrous bands. These loops form ultimately the pairs of vessels—arterioles and venules—that are always found lying side by side, and are to be contrasted with the large open loops in Fig. 2 Plate I in which is seen one of the modes of formation of the single capillaries which lie in the secondary trabeculae.

Fig. 2. From case 45, age 6 1/2 years (p. 169)
Growing capillary loop seen under a high power. The two vessels cross and each divides, one division of each pairing with one of the other, after travelling about 200 μ it unites to form two terminating loops. From the bend of one, however, a delicate capillary is seen passing further along the fibrous band. The nuclei of the endothelium of the capillaries are seen, but there are no "naso-formative cells" either at the edges or extremes showing an arrest in development.

The fenestrae even at this age are angular.
Plate V

Fig 1. From case No 17, age 2 years (H 48)
Growing capillaries. Chains of large granular cells
were formed. They are attached either to the side or extremity
of a fully grown capillary, in several of these, a channel
is beginning to form. At one place a large granular cell
is formed by a long delicate process to the extremity of
a developing capillary. Alongside some of the capillaries
are rows of similar large cells which in this specimen
gave all the capillaries a ragged appearance with the
low power. In many of these cells at other places
there were clumps of fat of various sizes. The processes
are rounded. (p 62)

Fig 2. From case 16, age 3 years (p 154)
Here two capillaries join at an angle, and at the
point of junction a tapering bud projects, formed
by a cell. The commencement of capillary development
in a new direction. Alongside the capillaries are
numerous cells similar to those in the Nebraska. Fig 1

Fig 3. From case No 36, age 4 3/4 years (p 166)
Capillary loop similar to that in Fig 2 Plate IV, only
rising at right angles from a capillary venule and
arteriole, called capillary because the vessel correspondingly
to end continuous with an arteriole, in fact striated
with being no muscle cells in its wall.
Plate V

Fig 1

Large granular cells outside capillary

Vasoformative cell composed with extremity of capillary

Chain of vasoformative cells

Similar chain apparently been channelled

Hartnack Oe. 3 Oly.7 x240

Picro Carnicie staining

Fig 2

Hartnack Oe. 3 Oly.7

Figs. 7.9

Sheath. Chord. cut & Conn. showing sheathed form

Fig 3

Hartnack Oe. 3 Oly.7

Dentate folia

Capillary head

Capsule tunic

Capsule tunicae arteriae

Connective tissue cell
Plate VI

Fig 1. from Case 34, age 11 years (p. 176)

Vein distended with large elliptical nuclei like those of the endothelium lining it, probably resulting from proliferation of that endothelium and forming a stage in the increase of size of the vein. At the point where these nuclei occur the vein is as wide again as at either end (p. 71)
Fig. 1

Fat cells
Fibrous tissue
Small fat cells
Corneal
Anterior ocular position

36°. N.B. Section dissected with endothelial cells, the nuclei of which are alone clear.

Verrich's No. 1. 11th month. Approx. about X 800.
Plate VII

Fig. 1 and 2. Low and high power drawings from case 6354, same as Plate VI.

Fig. 1 shows the cellular collections as dark stained patches at pretty close intervals in the capillaries and the absence of any cellular increase outside the vessels at these points.

Fig. 2 shows exactly the same appearances in the vessels as Plate VI. (Fig. 176 & 177)
Plate VII

Fig 1

This encircled part is drawn under a higher power in Fig. 2.

Hartnack Obj 3, Obj 3, tube out \( \times 60 \)

Peroxidase staining

Fig 2

CT cell

Hartnack Obj 3, Obj 7, tube out, slightly enlarged about \( \times 400 \)

This encircled portion is the drawn under which portion. Similar portion and also shown in the surrounding capillaries and nerves.

Endothelium of capillary

Made June 34
Plate VIII

Fig 1. From case 79, age 3 years. (p. 156)
Only the vessels are drawn with a few of the principal fibrous bands. Arteries and arteries are seen dividing and subdividing. Their ultimate divisions forming loops, these division twist on themselves, forming a spiral arrangement which in sometimes from right to left, sometimes from left to right. The twists are closer together near the termination of the loop. As the vessels grow, these parts increasing in length unwind the twists to a certain extent, or rather place a greater interval between them. (p. 156)

Fig 2. From case 78, age 22 mos. (p. 146)
Shewing a few vessels similar to the above. The membrane between them is perforated by numerous small round openings and the nuclei of a few endothelial cells remain still in contact.
Fig 1

Arteries and aseules

A few processes drawn in

Fibrous bands just indicated

Capillary loops twisting on themselves

Hematoxylin. Oct. 1. Obj. 3. About X40

Fig 2

Hematoxylin. Oct. 2. Obj. 3. X50
Plate X

Fig 1. From case 16, age 3 years. (p 154)
Large granular cells outside capillaries at point of junction
(Page 154 of Thesis)

Fig 2. From case 17, age 2½
Similar cells in same position, only in addition some contain each a single large fat globule surrounded by a complete layer of protoplasm of considerable size, the nucleus being at one side. In both 16 and 17 blood vessels are in state of active growth, and so are the fat cells and there is no difference in appearance between the RSQ-formative cells and the fat tissue formative cells, or for that matter the so-called "endothelialised cells" of tubercle. (see Plate V, fig 1)
(p 151) (p 65)

Fig 3. From case 14, age 18 (p 179)
Showing fat cells in rows along side vessels, and also separating the arteriole and venule at one place. Fat clumps of a dozen cells or so and also solitary fat cells on the single capillaries.
**Fig 1**
Battelle's cells in capillary

**Fig 2**
Large granular cells
Capillaries
Large granular cells
Tunnel oil globule

**Fig 3**
Hartnack No. 3, Oly 7
X 210

Fibrous bands with arteriole and venule and fat cells outside and between the vessels.

Small groups of fat cells in capillaries.

Isolated fat cell.

Hartnack No. 3, Oly 7

About X 50
Plate XI

Fig 1. From Case 85, age 4 years (p. 160)
Nerve fibrils lying alongside capillaries, one at the upper part of the drawing leaving the vessels. The fibrils have thickening at intervals - ampullae - some of which are larger than the rest and like nuclei - intercalate nuclei. The Tenenstare are very minute rounded openings, some not more than four or five microns across, just as if produced by the passage of a wandering cell through the membrane (Ranvier). Endothelial cells are quite loose. A few connective tissue cells lie alongside the nerve fibrils, at wide intervals

(p.45-46)

Fig 2. From same case, though different part of same nerve, modern power - 1 about X 800.
The varicosities, swellings on the fibrils, are better seen. Some appear like merely flattening. Junction is effected by what looks like branching connecting tissue cells of fibril terminus, in thin minute branches.
There are several C.T. cells with long processes, which however cannot be traced to nerve fibrils.
Fig. 1

nerve fibres

Capillaries

ampulla or "intercalated nucleus"

Hartnack Oct. 3, Obs 7 X 240

Fig. 2

primitive nerve cells

intercalated nuclei

Nucleus at point of juncture of fibres

Beissre Oct. 2, Glandular flowerion, about X 800
Plate XII

Fig 1. From same case as two preceding drawings. The membrane was pencilled before mounting.

Nerves of larger size, about the blood, like flattened bands, with a nucleus occasionally outside occasionally apparently inside, but causing no distinct swelling at the point. At the upper right hand corner is a minute ampullated branch given off.

It is to be noted that there is one of these nerve fibres on either side of the capillary.

The nuclei of the capillary endothelium are seen and also connective tissue cells, parallel with the vessel, forming a pretty complete chain - Penttinen

[p. 45-48]
Fig 1

Nerve fibres
Capillary

Small branch from layer of nerve fibres

A small vessel stained with cotton wool waxing with nerve fibres at-cuticle scale

Gaskell & G. Gundlach 1/6 inch immersion about X 850.
Plate XIV. From Case 6, Diabetes and Nephritis. 

Fig. 1. Low power drawing. Large fibrous patches with numerous black points (Acid-Orange Staining) showing presence of fat.

Fig. 2. Low power photo. Fibrous bands containing arteriole and venule. The arteriole has an irregular course as compared with the venule and its walls seem rigid. Numerous black points between the vessels and also in the fibrous tissue on either side. Similar points in another fibrous patch at the right hand side.

Figs. 3 and 4. High power photos. Arteriole at one side (a), outline of nuclei of muscle cells clearly seen. Considerable breadth of fibrous tissue separating the arteriole from bone. In this fibrous tissue are some common capillaries. Scattered pretty equally through the tissue are cells containing fat globules of various size (black-orange acid). Some occupy nearly the whole cell, but more characterize it, like the fat in the ordinary fat cell, in others a few little droplets round the nucleus. A few small black points are seen in the arteriole.

Fig. 5. High power drawing showing same thing as 3 and 4. Capillary network among the fat containing cell more clearly seen.

See description of Case 1. 150 and 150-200 of thesis.
All three photos from specimen stained only with carmine acid and mounted in balsam.
Plate XVI. From case II by age 7. Rickets. Caseous necrosis.

in lungs: general cystic disease (k 1877)

Fig 1. Low power drawing. Wet. Violet staining

Pink waxy staining in arterioles, venules, and capillaries.

In this particular part it happens that the venules is more

extensively affected than the arterioles, but that is exceptional.

Notice slight thickening at waxy points. Capillaries

waxy right up to larger vessels but often joining parts

that are not waxy. In one or two places the venules is

waxy where it is not apparent, connected with any capillary

network if waxy capillaries among fat cells.

Fig 2. High power drawing of part enclosed by a

square + pencil mark. In waxy part of arterioles, there

are little blue points: range along the sides, enclosed by

pencil circles. These are non-waxy smooth muscle cells, seen

also in the non waxy part of the arterioles. In the venules

the blue (waxy) endothelium can be seen as also

in the arteriole's capillaries. In the left-hand corner

are fat cells whose wall appear to have taken

on the waxy stain, but it will be noticed that these

lie right over the venules which they obscure, and which

is hence waxy just as it disappears; and so that

this appearance is probably produced by reflection from

the venules.
Plate XVI

Fig 1

arteriole
venule
capillaries

The cast-enclosed
is reproduced in fig 2
under a high power

Hartnack No. 3, Obj. 3. X 50

Fig 2

arteriole
wavy part

wavy capillary

fat cells with
wavy tinge

Hartnack No. 3, Obj. 7. X 240

Wet aniline violet staining

Fig 3. S2. air cell stage
Plate XVII

Fig. 1. From Case 69 (same as figs. 1 and 2 of last plate)
Only the vessels have been drawn. The penetrated membrane is unusual.
Capillary network quite free from fat cells and much opener than that in the fat clumps.
The capillaries are affected indifferently at their junctures with that from the arterioles.

Fig. 2. From Case No. 91. (Pulmonary artery and vein)
Diseased organ. Bronchi and pulmonary vessel, very wavy with many clumps.
Hepatic vein wavy down to Inferior Cava.
Arterioles wavy in nearly its whole length.
Only a faint wavy tinge in the venule here. There are many capillaries in fatty tissue close to the venule as well as to the arterioles. Many change in fibrous tissue between arteriole and venule.

See report of cases and p. 92-106 of thesis.
Fig. 1

Hartnack 3 Oc. 300x x 40

Fig. 2

C. X. 2 Oc. 144x x 70
Plate XIX. From case no. 1. One of valvular heart disease and all the evidences of backward pressure.

Fig. 1 (Picro carmine stained) Venules widely dilated, there being irregular dilatations upon it. The arteriole is only visible at one point in the lower part of the drawing. The capillaries connecting the fat clumps with the venules are also dilated. In the fat clumps, the fat cells are indistinctly seen, a thick fibrous capsule and a dense framework of fibrous tissue, giving the whole a very decided carmine colour. The fat cells are each surrounded by a brown ring. This being the capillary in relation to it, filled with blood. In this way an idea is formed of the immense vascularity of these fat clumps. They are supported by bands of fibrous tissue, which spread out to form the boundaries of these.

Figs. 2 and 3. Photom from almost exactly the same position but at a slightly different focus. In fig. 3, the individual fat cells are best seen not only in the clumps, but along side the venules. The arteriole is also dilated to pretty widely, and the dilatation of the venules though greater than in the drawing, is not so irregular, probably because a venule of larger calibre.

(107)
Plate XX

Fig 1. From Case 8, age 47. Aortia unconfined, cutting liver. 27 oz. fluid in abdomen. (p. 227)

Some congestion of vessels. Intended to show the typical arrangement of fibrous tissue in the adult. Omentum, as described p. 1. Thicker. Large fibrous band at upper part containing two vessels. Anastomosing Capillary in Secondary trabeculae and attached thence and forming the boundaries of Venous area. Primary trabeculae.
A new impression may be formed from this of the great variety in thickness of these trabeculae. Some only one or two microns and apparently just going to give way, others as much as 20 microns. The secondary trabeculae mostly over 50 microns. Many of the trabeculae 150 or 200 microns across.

There is an absence of fat, probably removed by the presence of long continued congestion. (p. 19-22)

Fig 2. From Case 27, age 19. Capillary loops & blind capillaries seen at this age, but no sign of actual development. The loops and capillaries brought clearly by distension with blood. The whole Omentum was congested. No one loop in the characteristic twist, in the other it is absent.
Fig 2

capillaries and interstitial
nucleus and stroma
white blood corpuscles
blind capillary

Hartnack 03. 0f. 17. 2X10
Plate XXI

From Case 59, age 3½ years. Tubercular meningitis. Posterior apparently normal. Part under the microscope. Coagulation of vessels and numerous clots.

Fig. 1. Shows blood both in the meningeal and anterior arteries. In the vessels are numerous bodies which are no clots. They take on a deep brownish stain and are composed of somewhat rounded masses, irregularly shaped and of varying size. In the part shown there is a difference in calibre of the vessels, wider beyond the clot than behind it in the course of the blood stream, but as a rule there is no noticeable difference.

(p. 117)

Fig. 2. Shows similar bodies much smaller, not filling the whole lumen, and having a peculiar resemblance to the spores of the yeast-plant. They are the same as those seen in the specimen of No. 6 - the case of diabetes - but they are no clots in both cases altered blood, perhaps formed post mortem.
Fig. 1. Case No. 75, age 9. Tuberculosis. Tuberde node in chest. INCREDIBLE EYE SIGN OF PERTONITIS.

Numerous blood vessels dilated and containing a large number of white blood corpuscles. Some have escaped outside and are lying in the fibrous tissue. The vessels and arteries each give off branches at right angles at the same level, both of these branches again dividing to form two capillary loops which twist upon themselves. They also contain a few white blood cells.

Fig. 2. Case No. 62, age 10 years. (Patho ramoneza in lung and subcutaneous tissue.)

The photo two sets of capillaries, one forming a number and continuous at center and with a dilated vessel and seen in photo. This set is entirely dilated each capillary 40 to 50 percent, and surrounded by a good many cells. The other set consist of the series of capillaries loops which contain few blood cells very small alongside the others, the loops, however, have the spiral arrangement seen in Plate 7 Fig.

There are a good many such compacted patches in this specimen of the vessels are all dilated.
Plate XXIV.

Fig. 1. From case No. 60, age 5½ years. Commencing peritonitis from perforation in convalescent typhoid.

Blinds & capillaries, connected with it, enormously dilated. A few cells outside the vessels. Fat cells separated and partly obscured by swollen fibrous tissue, blood vessel occlusion among them. Membrane bare of endotheliun, but a few fibrous & cellular patches lying on it. Vesicular small and round.

Fig. 2. From same case. A capillary loop twisted on itself and distended with blood; a capillary arising from its extremity contains a few blood cells, just at its origin. (x110)

Fig. 3. From case No. 51, age 4½ years. (x80, turbid fluid in abdomen. Kidney apparently in first stage atrophy.)

From Dr. Woodhead's Practical Pathology.

Shewing white blood cells inside & outside the vessel. Evidence of chylolysis. Collections of nuclei on membrane. Vesicular small and round. (x165)
Fig. 101. — Early inflammation of peritoneum. Stained with logwood. (x 300)

a. Capillaries, arterial and venous.
b. Larger venule.
c. Larger arteriole.
d. Accumulation of leucocytes at the angle formed at the junction of a. and b.
e. Fibrous trabecula of peritoneum.
f. Endothelial cells, proliferated and detached from trabecula.
Plate XXV

Fig. 1. From same case as Fig. 3, Plate XXIV. Capillary loop with complete twist. Both vessels distended with blood, and on the right-hand side numerous white blood cells are seen in and around the vessels, and at three places the leucocytes are collected in clearly outlined lymph spaces.

Fig. 2. Low power drawing from same case. Distended vessels and numerous cells in relation to capillary network, the appearance in that respect is much the same as in Fig. 1, plate XXIV, only the cells when examined with a high power are not so large, though certainly as a rule larger than unaltered leucocytes.
Plates XXVII.

Figs 4 and 5, from other parts of the same specimen as Figs 1, 2 and 3. Showing capillaries at points for a considerable distance in their course clark and thickened; these parts on examination with a high power, were seen to contain numerous large irregular cells, deeply stained, like as if produced by proliferation of endothelial cells. Capsular.

(132)
Plate XXVII. From case 11, age 25, Pulmonary tuberculosis.

Fig. 1. Rough low power drawing of a cellular lesion showing development of a large fibrous band. The part outlined in ink is that drawn by under a high power in Plate XXVIII. The unaffected part of the fibrous band can be contrasted with the affected part. There was no congestion in this case, and scarcely any change in the endothelium, most of which is shed.

Figs. 2 and 3 are photos of the same part. The reason for the slight difference in course of some of the fibrous bands is that, in the interval between the making of the drawing and the taking of the photo, pressure was accidentally made upon the specimen.

The squares mapped out represent the part, photos in Figs. 2 and 3 respectively of Plate XXVII.

(1:100 and 1:32)
Fig 1

Hartnack A.S. Oly. 3. Enlarged somewhat 70
Micro-parthenoid staining

Fig 2

Fig 3

Fibrous band infiltrated with cells and thickened

Capillary

Part of cartilage

Fibrous

Part photo 2 was high power in Fig 3, Plate 27

about x 25
Plate XXVII  From same case as Plate XXVII (p. 207)

Fig. 1, represents the part outlined in ink in Fig. 1 of previous plate, drawn under a high power. The relation of the capillary to the cellular part of the fibrous band can here be seen, and also the arrangement and shape of the cells in the capillary.

Figs. 2 and 3 are two photos of the same, mounted as compared with the drawing. Upside down, they respectively correspond to the little squares mapped out in Figs. 2 and 3 of previous plate, but in relation to them, are also upside down. The difference in course of the fibrous band as seen in photos vs. drawing is due to the disturbance of the specimen as previously mentioned.
Fig. 1

Lymphatic tissue infiltrated with cells

Cells in trabeculae

Normal fibrous tissue

Capillary widened and filled with large cells

Line marking off part shown in Fig. 2

Hartnack No. 3. All 7 take out x 280

Fig. 2

Fig. 3

Capillary

About x 150

About x 150
Plate XXIX.

Fig 1. From case 16, age 3 years. Tuberculosiis, numerous small \((2 \times 7\times 1)\)

nucleated eye nodules in corneal. (Drawing from same in Plate 7 and 8)

Arteries and vessels, with somewhat elliptical or elongated bodies, at some distance from them on either side. Each of these "nodules" is connected with the vessel by short capillaries, and correspond in position to fat clumps. Only their structure is clearer, composed of chief cells, crowded together, some of which are small round cells, others larger or endothelial cells. There are no doubt positions in which tubercle is forming, and are the early stage of the larger nodules seen by the naked eye. However, almost exactly the same appearance may be seen, where there is no tubercle, if for that matter, no inflammation.

Fig 2. From case 92. Tuberculosiis in child, small nodules seen by naked eye in corne closely crowded together. Some time the arrangement shown in Fig 1, many however, like that in upper part of photo. This is indistinguishable from a tubercle in corne, and Fig 3, is just likewise it shows the resemblance. This is from a child aged 22 mos (case 78) who died of tubercle, and in whom this was, not the slightest trace of tubercle. The tubercle, however, are seen the composed of a capillary network, enveloped by cells. The spiral arrangement of the limits of capillary lessen is well seen in Fig 2.

\((2 \times 129\) )
Plate XXX

Fig 1. From case No. 16, Age 3, Tuberculosis (See page 120 and 129)
Capillaries surrounded by cells, some of them large. This condition
found throughout the whole O. is figured also in Plate TVX.
But here alongside -

Fig 2 in which there is the same appearance, this being for
Case No. 51, from which case these also drawn in Plates XXIV
and XXV. These large cells round the vessels will help to show
for the tape'd appearance in Fig 2, Plate XXV. The child was
only 5½ years old and the vessels were growing, and there was
in addition, commencing inflammation in the Peritoneum, so that
is quite sufficient account for the cells round the capillaries
as well for space of cells on the membrane. (165)

Figs 3 and 4, are from Case No. 56, (age 19 years, female in
four years duration) and illustrate Kelpefield's Chronic
Cellular Peritonitis. The O. being covered with a thick coating
of cells, the even though many have doubtless been detached
at moment, and the fibrous tissue infiltrated with
them. High power photos are seen from the same
case in Figs 1 and 2 of the next plate. (p 120)
Plate XXXI

Figs. 1 and 2. (From same case as Figs. 3 and 4 of Plate XXX)
Both from same position only at slightly different focus and, differently treated. To show the numerous cells in the fibrous tissue and also those forming the Fenestrae. In one place there is a group of eight nuclei, the nuclei often, and well seen. The more cellular parts of this specimen were too dense to be photographed satisfactorily with the high power (p. 196 and 120).

Fig. 3. From Case 12, age 36. Chronic Phthisis. (p. 206).
That represented in the drawing is one of two or three places, in which groups of large cells project into the Fenestrae. The endothelium has not been detached, and it is difficult to say what these cells are. Perhaps modified wandering cells, perhaps adventitious proliferation of endothelium. There is a tendency to the formation of such groups of cells in cases of Chronic Phthisis.

Fig. 4. From Case 12, age 40 years. (Aorta, Anemia. Under normal pressure).
Fibrous tissue dense, vessels of present, abnormal (p. 120).
Endothelium in better, the nuclei close together. Protruding.

Fig. 5. From Case 61, age 20–40. (Aneurism, Aorta Hysterostomia)
Fibrous tissue dense, vessels of present, abnormal. (p. 220).
As in Figs. 4.
In the adult-aneurism the endothelium is less easily removed than in the child's case, the cells are more closely set.
Plate XXXII

Fig 1. From Case 41. Peritoneum adherent to other parts. (1/20)

A small but dense, deeply stained, band of fibrous tissue about 1/16 in long, stretches across the other structure and entirely unconnected with them in its course it spreads only to be attached to the membrane at either extremity, becoming flattened & thinned there.

There were numerous such bands in the specimen, and were partially vasculose. In one a vessel a vessel passed along for some distance from either extremity but the two did not meet.

Fig 2. From Case 74, age 5 1/2. (1/160)

A drawing a small but dense, deeply stained, band of fibrous tissue about 1/16 in long, stretches across the other structure and entirely unconnected with them in its course it spreads only to be attached to the membrane at either extremity, becoming flattened & thinned there.

There were numerous such bands in the specimen, and were partially vasculose. In one a vessel a vessel passed along for some distance from either extremity but the two did not meet.
Fig 1

Furcs A and B, slightly enlarged, about X 60

Piero Carnicà

Fig 2

Picro Carnicà
Plate XXXIII. From case No. 26, age 45. (Case of valvular heart disease with backward pressure.)

All the figures show nodular swelling on the trabeculae—the "bud-like structure" of Klebs. They are most numerous in Figs. 3 & 4. Pairs of the same at different forms are reversed in mounting.

Plate XXXIV. High power drawings, and photos from same case.

Figs. 1 and 2. show nodules structureless nodules enclosed in fibrous tissue with a delicate cord running through it. There is just a suspicion of concentric arrangement in the body of the periphery in lighter than the centre. Fig. 4. shows one so large, enclosing the fibrous tissue of a trabecula but with no fibrous structure in itself, a cell near the vessel in the middle, nucleus at the surface at one extremity. Fig. 5 and 6. similar ones as much smaller, round more delicate trabeculae.

Fig. 7. Elliptical nodular growth projecting into a small fenestra in it distinctly the outlines of cells and nuclei. In this drawing also a typical stroma is figured, and also what looks like nerve fibres.

Stromata are also shown in Figs. 3 and 7.

For description of these structures, see...
Plate XXXII

Fig 1

About X 2500

Fig 2

Chloric Acid

Fig 3

Figs No. 2. Jundack Tumor. x 300

Fig 4

at 46. dead 36 hrs.

Fig 5

Capillaries

Stomatata

Fig 6

Nuclear growth

Stomatata

Figs No. 2. Jundack Tumor. x 300
Plate XXXV. From case No 38. Age 51. Malignant tumour.

Pencils with secondary nodules in lines.
Papillae, in Fig 3, and arteries and nerves in Figs 1 and 2.
Thickened as points, and staining deeply as with collection of cells in their lumen.

Plate XXXVI. High power photo from same case.

Figs 1-2, as parts, mapped out in Fig 1. Plate XXXVI. Reproduced.

These are seen to be the arteries. The collection of cells is most distinctly marked in the nerve. The cells are irregular in shape and seen in Fig 2 to have broken through its wall. In Fig 1 the collection of cells stop abruptly with a rounded extremity. The vessel curving around sharply at that point. If cells present behind had collected & stuck in this position, Fig 3 is from the same part as Fig 2, but from a different negative taken with shorter exposure. The outline of the cells in it are better seen. Though the fibres of fibrous tissue are not so clear.

Fig 4, shows a fibrous band with a capillary in it, indistinctly seen but filled with cells in the upper half.

For description of case see P 134-137.
Figures 1, 2, 3, and 4 are photographs with the following captions:

- **Fig. 1**: Image with a magnification of about 200x.
- **Fig. 2**: Image showing a perforated area.
- **Fig. 3**: Image with a smooth surface.
- **Fig. 4**: Image with a labeled area indicating "Capillary network cells at point X."
Plate XXXVII. From case 92, age 40, Leucycthemia.

Vessels distended to the utmost by principally white blood corpuscles, demonstrating the great differences in caliber of capillaries and even at different parts of the same Capillary. One capillary holds at most only one row of Ieucocytes, another measures 80 or 100 μ× across. There are a good many cells in the tissues outside the vessels, but nothing proportionate to the enormous distension of the vessels. The part outlined wrapped out in side in Fig 2 is that drawn under a slightly higher power in Fig 3. Capillaries are brought out by this distension, whose presence would not otherwise have been noticed.

Plate XXXVIII. From same case.

Pincoscopic specimens were too opaque for photography with a high power. Figs 1 and 2 are from a lycopodium stained specimen, the columns are not suitable for photography. Still the outline of the vessels can be clearly seen and so can their cellular content, which coming out in the glands in small round dots points, are deeply stained in the specimen, indicating that the cells are leucocytes, at least red blood corpuscles.

For description of case see p 140.
Fig. 1

Fig. 2

Spiral tissue
filled with blood cells.

about x/40
Neg. wood stain.
Plate XI

From above, 84 (Melanoma)

7f. Plut at about thirty diameters from a grain of fucose. Patches of the arcaded fucose are seen over the side at unusual points as indicated in 7g. Fusing from a point somewhere, fuculose can be discerned in the arcades. The course of the central grain can be traced, and a single normal grain can be observed in the arcades. Correspondingly in position &c. claim...
Plate XI

Fig 2

about x 20

From case melanoma. No. 84

say.