Thesis for the degree of M.D.

A Study of the Histology of certain Skin Diseases.

with list of microscopical slides
& scope collection of drawings

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In submitting my Thesis for the degree of M.D., I beg to state that I have made a special study of Skin Diseases at Vienna where I worked out their histology in the pathological laboratory there. under Dr. Baltzfuf.

In describing these disease I have taken for a basis on which to work Kaposi’s “Hautkrankheiten,” and the following is a list of Skin disease written upon.

1. Molluscum Contagiosum
2. Variola
3. Typhus
4. Measles
5. Syphilis
6. Anthrax
7. Psoriasis
8. Lichen Ruber Planus
9. Eczema
10. Impetigo herpetiforme
11. Erythroderma
12. Addison’s Disease
13. Elephantiasis
14. Xeroderma Pigmentosum
1. Alibas Xeroid
2. Molluscum Fibrosum
3. Carcinous Angioma of Skin
4. Lumen Cavernosus
5. Rhinosclerome
6. Lupus Vulgaris
7. Tuberculosis Cutis
8. Tuberculosis verrucosa Cutis
9. Leprosy
10. Lymphogranuloma Pernicosa

3. Sarcoma of Skin
1. Rodent Ulcer
2. Epithelioma
3. Eczema Marginatum
4. Scabies
5. Actinomycosis

I have made use of the following authorities, and quoted from them:


The specimen and Plates have been arranged as conveniently as possible.

The microscopic powers used have been in most cases, for lens power, 1 or 2 inches, for high 3/4 inch, with either A, B, or C eyepieces.
Molluscum Contagiosum.

or Molluscum Epitheliale.

Molluscum contagiosum has its origin from a sebaceous gland, or more likely from the cells of a hair root, the hair of which has fallen out.

The structure of the tumour is as follows. It is surrounded by a wall of connective tissue, which sends in septa toward the central depression, dividing up the tumour into lobules. (Fig. 1.) Blood vessels run along the septa.

The cells of the tumour proper nearest the septa are the most highly developed.

The cells at the periphery are like those of the Reit at its deepest part. (Fig. 2.) Passing toward the centre, they become much changed in appearance, becoming swollen, granular, cloudy-looking, their protoplasma does not stain so well (more brownish with microcarmine)}
The nuclei are not so clear—being also swollen—often divided or pushed to the side. (Compare with this the changes which occur in the transformation of a connective tissue corpuscle into a fat cell.)

The nucleus has lost its oval or circular shape and become elongated.

Many of these grouped together become an almost indistinguishable mass, whose nuclei scattered about are of various shapes, much shrunk, can scarcely be referred to their individual cell.

Further changes in the cell occur. They lose their nuclei, become homogeneously looking, they are of various shape, 'pear-shaped,' or more or less polygonal when pressed against one another. There seems to be a loose connective tissue binding the cells together.
THE CELLS.

They are enclosed within a sheath in some places, the contents escape and the epidermic sheath (often with the remains of a nucleus) is left behind. These are the Molluscum Corporules, they are evidently only altered Reti cells, and are simply a continuation of the horny layer of the skin (see Fig. 2 Specimen.)

In the connective tissue round the growth there is very slight leucocyte or lymph cell exudation.

Description of Plate Specimen.

Fig. 1. X 2 inche + B eyepiece.
Stained with Carmine Pink acid.
The central aperture is evident, with the capsule, the arrangement of the Tumor into lobules. The dotted line indicates the part from which the high power drawing has been made.

Fig. 2. X 1/2 inche + A eyepiece.
Shows the cells, and their transformation into the so-called mollusc.
Molluscum Contagiosum.

Came Capsules. This drawing shows the continuation of these cells with those of the horny cells of the normal epidermis.

Fig. 3. Low Power.

Shows septa, and the Molluscum capsule.
Variola

Specimens

1. Commencing Suppuration - stained with Haematoyx.
   
   Figures 1. Low Power 1 inch + A eyepiece.
   
   2. High " 1/5 " " "
   
   3. " " 1/5 " C "

2. Ulceration - Stained with Picrocarminine
   
   Figure 1. Low power. 2 inch + A eyepiece.

In the earliest stage of variola eruption there is congestion and dilatation of the vessels in the papillae of the Corium.

Then certain changes occur in the Rete Malpighii (see Fig. 3 & Section 1.) - they cell in the upper part of the Rete become cloudy & swollen. There is effusion of fluid round the nuclei and the nucleus is set free in a cavity in the cell. Then various cells get pressed together, they coalesce into a common cavity. It forms the...
Varicela

Beneath two or more cells, the nuclei being set free into the cavity, the protoplasm of the cell, their envelope forming a meshwork (to be spoken of afterwards) and which separates the cavities.

This process extends, the wall, between the smaller cavities, becoming dissolved, till one large cavity is formed, usually, with numerous small ones around it. (Figs. 1-2).

The cells around the cavity proliferate, and are pressed against one another, forming a sort of side wall (Fig. 2 W) for the vesicle. The roof of the vesicle being formed of the horny layer (Fig. 1) or there may be some flattened Retzius cells, interposing between it and the vesicle (Fig. 2 R).

The floor is formed of Retzius cells (Fig. 2).

The cavities, above mentioned, are separated from one another by a meshwork (Fig. 2) which is.
Variola.

Composed of the remains of the Reit cell, their protoplasm and envelopes.

See Figure 3. M. + Fig. 2.

In the cavity is a clear fluid, in which are Leucocytes, derived from the papillae of the Corium, and epidermic remains.

Dissolution is produced by minute spaces connecting the roof and floor in the centre, this probably caused by hair follicle or ascorbicaceous gland retaining its attachment to the subjacent tissues.

In the Corium there is also much inflammation, exudation - Leucocytes, etc. (Fig 1. 15.), especially in the papillae. One can trace these Leucocytes making their way upwards, between the Reit cells, or into the Vesicle.

Slate of Ulceration Fig. 4.

The Reitcellae are destroyed and a cavity is left, with raised
Variola.

margins.
The base of
which is

composed

of Rete cells (see Spec o F)
or of the cells of the Corium -- some
lines of both --

In the 1st case
there will be no scar left, in the
2nd there will

In Spec 2. Drawing 4. (× 2 in + A exposure)
The hairy layer has been completely
lifted off (H) The base of the
area is composed of Rete cells (B).
The remains of trabecular network
is seen at x. There is consid-
erable small-celled exudation in
the papillary layer of the
Corium.
Typhus + measles.

Eruptions.

Specimen shown — No. males.

Very little is to be made out under the microscope —

In both there is dilatation of vessels in the upper part of the Corium, and slight lenticular exudation around them, especially in the region of hair follicle or sebaceous glands.
Epipsipelas

Section stained with Haematoxylin & Eosin.

Fig. - High Power - 5 x A magn. 

Microscopic examination shows changes in the epidermis, corium and fat cell layer of the skin.

In the epidermis, the cells are swollen or cloudy (fig. C510) and there is leucocyte exudation between these cells of the BKH.

In the corium - c. the connective tissue bundles are swollen, and the lymph space enlarged - there is considerable leucocyte and lymph cell migration between the connective tissue bundles. This exudation being especially well marked around the hair follicles, sweat glands, also around the blood vessels, which last are widely dilated.

There is leucocyte exudation also in the substantia granulosa layer.
Anthrax.

Specimens 1. *Haematoxylin + Eosin*

2. Anilin

Figs. 1. Low power 2 in. + Anilin

2. High ¾ + Anilin

3. ¾ + Anilin

There is great inflammatory exudation in the cutis and subcutaneous tissue, with numerous haemorrhages and necrotic areas. These areas are seen not to be stained properly by the *Haematoxylin*.

In the specimens (see Figs 2 and 3), there is seen a fibrinous exudation, which extends throughout the tissue, entangling leucocytes, red blood corpuscles, etc., in its meshes.

*Anthrax* bacilli are seen in considerable quantities in the lymph space, around the blood vessels and between the connective tissue fibres.
Psoriasis.

Old Case.

Sect 1. Picrocarmine

1. Low Power 1 inch
2. High 1/5".

Sect 2. Haematoxyline Eosine.

Change in the Epidermis:

The Retzius malschii is much hypertrophied. There is great thickening and lengthening of the inter-papillary portions of the malschian layer of the Epidermis. The Retzius cells being increased in size as well as in number.

The meshwork of this part of the skin is opened out and the corresponding papillary portion of the Corium is also increased in size. In this part too the capillaries and blood vessels are much convoluted, dilated and filled with blood. There is also marked leucocyte extravasation (1) around these vessels.

The Corneous layer of the Epidermis is considerably thickened. (H. Taf. 1, 2)
Psoriasis

The lower portion of the Corium also shows the dilatation of its vessels, and round cell migration into the meshes of the connective tissue.
Lichen Rube Plenus.

Lecture 1. Microcarmia

Fig. 2 m + 4 p. exsence

Leaf 2. Scaenatophyceae odonis.

The chief change to be noticed is the thickening of the Reit with an increase in the thickness of the horny layer covering it.

The upper part of the Corium shows an infiltration of cells in the papillae, and round the hair follicles, a thickening of the sebaceous glands.

There is an hypertrophy of the cells of the outer root sheath especially in the lower part of the hair follicle (seen well in sect. 1). There is an evident deposit of pigment in the lower cylindrical cells of the Reit.

The appearance vary at different parts of the section. In some parts the horny layer...
Lichen Rubra Planis:—

is much thickened and consists of cells larger than ordinary, as described by Dr. Allan Jamieson.

In other parts the inter-papillary meshwork is opened out just as in Psoriasis.

Hyaline degeneration of the vessel walls is described, but I have not been able to notice it.

**Old Case of Lichen Rubra**—

1. Picro carmine

2. Haematoxyline o stoleine.

The overgrowth of the inter-papillary cones, and corresponding hyper trophy of the papillae is well seen.

The papillae likewise show well-marked defect of leucocytes.

The Cornious layer of the epidermis is seen to be still more hypertrophied & the pigment is in larger amount.
Eczema

Eczema Universalis.

Section 1. Picro Carnine

2. Haematoxyline - Sonne

ρημ. Low Power - 2 inch + 0 eyepiece

ρημ. High - $\frac{1}{2} + 15$

With the Low Power (ρημ.) the most marked change is the tremendous infiltration of the papillae and deeper layers of the true skin with leucocytes and lymph cells (X).

The vessels (V) too, throughout the carmin are much dilated and congested.

The Papillae (P) are elongated and distorted.

The horny layer of the epidermis is mostly shed.

Under the High Power, see Drawing 2.

The horny layer is being shed - the

Retic cells X are swolten and
degenerated, separated at parts by

leucocytes and lymph cells making

their way between them from the
papillae beneath.
The papillae themselves show the great infiltration with leucocytes, and the fibrous tissue formation. The pigment in the lower Retzius cell is more marked than normal.

__Erosion after Eczema__

1. Haematoxylin and Eosin.
2. Haematoxylin and eosin.

The same changes are seen here, except that the erosions are more complete — often capillaries are seen on the surface.

__Eczema Infected__

Sections 1 and 2. Haematoxylin and Eosin.

The same change is seen, but not so marked.

The horny layer of the epidermis is partly shed. The cells of Retzius are swollen.

Slight exudation also seen in the Canini.
Impetigo Herpetiformis
Lehrm 1. a 2. F. Haematuxylin Gomé
2. Scorcoamín.

Impetigo herpetiformis is a rare particular disease of the skin, described by Mebra, occurring almost constantly in parturient women during the last months of utero-gestation.

The histological characters of the disease are: great dilatation of the vessels in the corium, and great exudation especially in the upper part of the corium and its papillae. This exudation, as in Eczema, passing up from the papillae between the Retz cells, a lifting the horny epidermis from its attachment. The accumulation of horny cells, leucocytes, pus, capsule, the forming a crust covering the surface of the Malphighian layer. The Retz cells are swollen and degenerated as in Eczema. There is no ulceration.
Pemphigus

A. of Foot
   Sect 1. Prilocaine
      | Fig. 1. Low Power, 2 inch. A
   Sect 2. Haematoxyline Acrine

B. Syphilitic
   Sect 1. Haematoxyline
      | Fig. 2. Low Power, 2 inch. A
   Sect 2. Prilocaine
      | Fig. 3. High Power, 1 inch. A

The changes are seen to be of a superficial nature mostly—exudation separates the horny layer (4) from the stratum granulosum beneath it. The floor of the blister being formed of Retzius cells (RM) is the roof of horny cells. On the underside of the roof are many processes (Fig. 2 x), which are the remains of sweat gland ducts; these get torn away from their inferior attachment as the blister increases in size. The Retzius cells are polynuclear, and their nuclei do not take the staining respects at all. There is considerable leucocyte exudation in the Corium.
Pemphigus.
Both series of sections show the same character —
in the 2nd specimen - Fig 3. The Reti has got detached from the papillary layer below. In this specimen. H = the horny layer not quite separated from the malfishian layer below (R.M.)
S.D. = remains of a sweat gland duct —
Addison's Disease

Lect 1. Renal Carcinoma

Fig. High Power 50 x A section

Lect 2. Haematoxylin & Eosine

Show pigmenitary defect in the youngest layers of the epidermis, that is to say in the deepest, cylindrical cells of the Reck's Malpighii. The deposit is a diffuse coloration in the cells, a also a granular deposit in them.

Pigment is also seen in the connective tissue corpuscles in the capillary and in the upper part of the Corium, especially round the blood vessels.
Elephantiasis Arabum.

Spec A. 1. Haematoglycine + Gum (Fig. 1.) Low Power. 2 in + Argunum.

B. Elephantiasis Micronum et Vermicunum
   1. Microcaeruleum
   2. Haematoglycine

C. Elephantiasis from inflammation
   1. Microcaeruleum
   2. Haematoglycine

D. Reticularium from Alum. Crusta.
   1. Haematoglycine.

In Elephantiasis, the most marked change, are to be found in the subcutaneous tissues. The epidermis presents varied conditions. It is usually not much changed (Fig. 1. + drawing) or it may be thickened - see Spec. 2. This was a case where the skin had a wart-like appearance, & in it, the microscope shows an almost ichthyoid appearance; the papillae in the specimens are also much.
Elephantiasis.

Increased in size or length. The malfiphanian layer shows some
- time an increase in pigment (fig. 741).
Subcutaneous tissues also vary greatly.
The main change is in the nerve, a great hypertrophy of the fibrous
- elements. This fibrous tissue may be very poor in cells (as in
- figure) or may contain numerous round cells. 2. Connective tissue con-
- stitutes.
The lymph spaces are everywhere
much widened out.
The adventitia of the artery and
veins are hypertrophied.
Fat cells and muscular tissue is
pressed upon and often is
scarcely to be recognized.
Xeroderma Pigmentosum.

A disease described first by Napier i1870. Napier says... it begins with proliferation of the Connective tissue of the papilla or endothelium of the vessels, with later shrinking of this connective tissue.

At other parts there is a new formation of vessels, and an irregular formation of pigment, and down growth of claws of the Reti-also one growth of sweat glands, and degeneration of their epithelium.

Section 1. Microscopic

Fig. 1. Hemat. 2 x 4.

Fig. 2. High 3 5.

2. Hematoxylin & Eosin.

See Fig. 2. There is an overgrowth of the Reti-cells in which pigment is accumulated. Both drawings show heaping up of the Epidermis, also the shrinking of the Connective tissue of the Corium.
Alberts Aloid

Section 1. Micro carmine

Section 2. Haematoxyline + cosine

Figs. 1 and 2 show the size of the growth running deeply in the corium, having normal layers of corium (C^1) + epidermis (E) above, and normal corium below (C^2).

The structure of the growth in old parts - is that of very dense fibrous tissue, with a few compressed blood vessels running through it. - In the young growing part of the tumour there are more cells. These cells are seen in the blood vessel, and following their course in the corium - Fig 2. shows the growing part with these blood vessels, taken from Y of the 1st drawing.

The epidermis, as said above, is normal so are the papillae.
The compressed lymph vessels running parallel with to one another from
the tumor or towards the surface
as described by Babcs, are well
seen at L Fig 1.
Figs 1 & 3 show the peculiar
hyaline degeneration of the fibrous
structure, with the swollen connective
tissue corpuscles between them—also
described by Babcs.

SYPHILITIC CONTRACT

1. Microcannine

2. Haematoxyline—Eosine

To contrast with true Relaid.

Shows the superficial situation of
the cicatrix, with absence of
papillae...


Molluscum Fibrosum
Soft Fibroma.

Section 1 to 2 Picrocarmine
Fig. 2 rich + A cresyl.

The structure of the Tumor under the microscope closely resembles that of Echinococcus canabin.

The Epidermis is unchanged – but
is rough.
The Corium is replaced by a soft
wrinkly fibrous tissue, rich in
cells, at many parts.
The adventitia of vessels is increased
in amount, a many nerve
fibres are present in the Section.
Cavernous Angioma of the Skin
Sections 1. & 2. Microcarsine

Fig. Dye-Power. 2 mic. + Arginina.

The Tumour is situated in the Corium, either superficially in the papillary or deeper layers, or in its deeper layers, as in this case, in which it also extends into the subcutaneous fatty layers.

It is composed of blood spaces (B.S.) of different sizes or shapes, separated from one another by a thin fibrous tissue of tolerable thickness, in which lie the blood cells filling the spaces.

It is more or less encapsulated as a whole (F.C.) and the formation tends to be into different lobes. (L) or (L).

The Epidermis is normal.

The upper layer of the Corium contains many dilated capillaries.
Yueen Cavernous

Section 1. Picricaraine

2. Haematoxyline

The microscope shows a tumour situated deeply in the cavern, surrounded by a dense capsule of connective tissue from which septa pass, dividing up the tumour into a number of different sized spaces. These spaces are filled with blood.

The Epidermis is normal.
Rhinosclerome

Section 1. (4 specimens): Gram x Saffronine
Figure 2: \( \frac{1}{2} \times \frac{1}{2} \) x Acetone

2. Haematoxylin: 1% in a little Carbol
Fig. 1: \( \frac{1}{2} \times \frac{1}{2} \) x Acetone

3. Haematoxylin Alum

4. Biocromine

Fig. 3: \( \frac{1}{5} \times \frac{1}{5} \) x Acetone

\[ \frac{1}{5} \times \frac{1}{5} + C \]

[...I am sorry to say, though the 1st 2 sets sections were stained at the time for bacilli, they no longer show them, as it is some time since they were done...]

Rhinosclerome according to Mikulicz, Frisch & others is a chronic inflammatory process, with the production of round cells, which partly become developed into fibrous tissue, partly become absorbed.

Frisch discovered in this rhinoscleromic tissue a bacillus, which he...
Rhizocoelium says most probably produce, the retrograde metamorphosis to be described.

The bacilli, he says, lie abundantly, almost exclusively within the cell, and have very much the same characters as Friedländer's pneumococcus. They have a rod-like shape, bat the individual rods are very short; they are usually found in rows of 2 - are 2-3 μ long, and are encapsulated.

Cornel and Alosor found them lying in the interstice of the tissues and in the lymph vessels, where they are generally free.

In the large cells, they are arranged in groups of from 10-20.

Kaposi describes the growth as a small celled infiltration of the Conium, of its papillae, approaching more the nature of a small celled sarcoma than of an inflammation.
Rhinoseleome -

The Specimen from which my remarks are made, was taken for a case of Rhinoseleome of the nose. June 1. Stained with Haematoxylin. shows the nature of the growth under the low power - it consists of a small cellular infiltration (ss.) of the Canin, spreading right up to the Epidermis. These cells being separated held together by a framework of fibrous tissue. (See Fig 2 also.)

The Fibrous tissue, commencing in the Papillae, passes downward in a direction usually perpendicular to the surface. Stained good pink with - Picrocarmine.

The Fibres do not extend for any distance, though they may be of quite a considerable thickness, - often terminating quite abruptly. See Fig 2.
In many places under the high power this meshwork is seen to be of a very delicate nature, in the form of fibrils on which and between which the round cells lie. The cell—though mostly round—there is a great variety in their size and shape, when different parts of the section are looked at. Fig. 4, is taken from a special part of the section and shows some of the cell, are swelled out to 3 or 4 times their natural size. The nuclei of these cells generally disappear. This figure also shows what is quite common, namely the colloid degeneration of the contents of the cells. The colloid globule lying between the cells Frisch says the bacilli are to be found in greatest numbers in the above distended cells, so they no doubt cause this change.
Rhinocerous

The epidermis has undergone much degeneration. The nuclei scarcely stain with haematoxyline, and near the surface, the cells are vacuolated and swollen, their nuclei are lost and they have become converted into large hyaline spindly or pear-shaped cells such as are found in other conditions when the epidermic cells have undergone much degeneration (Molluscum contagiosum).
Lupus Vulgaris

Sect. 1. Prococamine

Fig. 1. 1 thick + 2 thin lines

A. Haem atrophicae - Acne

B. Haem aciformis - Rosacea

C. Haem atrophicae Skin - Haemorhagic

D. 2. Hyphophichnus

Haem. = Acid

Fig. 2. 1 thick + Acetate

3. 1 thin + B. Acetate

E. Cancer or Lupus Vulgaris

1-2. Haem + Prococamine

The microscope shows a small cell infiltration in the Corium - the infiltration being congregated into masses (Lupus Nodule) or scattered more generally throughout the tissue. The masses are situated at different levels - the papillae as a rule appear normal.

In Fig. 1. Specimen, 1-2 these changes are well seen - there is the general diffusion of the round cell infiltration through the corium a slightly into the subcutaneous tissue, between the
Lupus

Fat cells -

There are many small capillaries in the early stage -

Giant cells (H.) are seen scattered here and there. The Epidermis is normal -

In other parts of the section the epidermis is involved in the small cell infiltration, and again at other parts it is atrophied.

In Section 2, the same change are seen but not so advanced.

Section 3 shows atrophy of the epidermis a cicatricial formation following Lupus.

Section 4 - Figs 2 & 2(a)

Lupus hyperkeratosis -

There is the same infiltration in the Corium - as it is a giant cells system with the giant cell at the centre, with carpish spindle cell lying in a reticulum passing from the giant cell, a belief there are many small round cells.

In this specimen, there has been great oedema growth of the epidermis.
Lecture 5—shows another condition described by Kaposi—in which there is a downgrowth of the Reti in the form of single or branches processes into the Corium, causing an epithelial network which is becoming transformed into epithelium.
Subcutaneous Tuberculosis of the Skin.

Sections
1. Picro-carmine
2. Haematoxylin

A rare skin disease — the microscope shows round cell infiltration in the Corium, which is undergoing caseation at parts. The deposit seems to be especially marked round the base of the hair follicles.
Scurvesulosis verrucosa cutis. a disease described by Richt and Pafftau. It is a chronic inflammation of the skin on the back of the hand, with the production of warty growths and also the formation of fis; this last condition constituting the peculiarity of the affection and differentiating it from lupus verrucosus, verruca necrogenica.

The microscope shows the tubercular nature of the disease, which consists in a small celled infiltration in the corium with the production of caseous and necrotic tissue, which is being cast off at 0... (see Fig. 1.)

Fig. 1. Low Power - 2 &c. A ereat. 200.

Fig. 2. High - 5... 4...

Section 2. Microcarminio.
Leprosy of the Skin.

Specimens X figures, decalcified afterwards, are characterized by the formation of circumscribed nodules in the skin. These nodules, under the microscope, just as is the case in Lupus vulgaris, are situated principally in the Corium, and are caused by an infiltration of cells. The infiltration, extending also into the Subcutaneous fatty layer, is infiltrating and replacing the normal tissues.

This infiltration is composed principally of small round cells, separated by a fine connective tissue framework. They are most numerous in the regions of the blood vessels, sweat glands and hair follicles.

These cells do not differ in any way from leukocytes, and do not always contain any bacilli. In many cases, they have become very much modified and are increased greatly in size,
Leprosy.

reaching even to 4 or 5-6 or 7 lines their original size. The nuclei in these are likewise increased in number, some cells containing as many as 13 or 14.

Various intermediate sized shapes of cell, are met with.
The youngest formation being formed of small round cells.

This small cell formation can very well be seen fanning along the lines of the vessels - there is great proliferation of the cells within and on the outside of the walls of these vessels. Some vessels are occluded by the growth of the endo the linin.

The cells of the sweat glands have also undergone considerable proliferation.

The Bacillus Leprous was discovered by Hansen in 1874.

Neisser describe them as minute rod-like bodies, from 1/2 to 3 1/2 the length of a red blood corpuscle —
Lepry.
These bacilli swarm in the cells of a lepra nodule (see sect. 203 under the low power). They are contained principally in the large lepra cell, and are arranged usually in a ray-like form—sometimes, but almost unrecognisable on account of their numbers.

In the more recent parts of the leprous tissue, where the small round cell, abound, the bacilli are not to be seen, only here or there are a few cells larger than the rest, with 2 or 3 nuclei, these contain bacilli.

The connective tissue between the cells is almost destitute of bacilli, but not quite; some spiral-shaped connective tissue capsules are seen, enlarged, with the bacilli in them.

The sweat glands, as has been said, show their endothelium much proliferated, but these cells never contain any bacilli; but in the connective tissue surrounding them...
There and there a bacillus is to be found.

The epithelium of the skin is likewise destitute of bacilli, and there is a distinct subepithelial unaffected zone of fibrous tissue separating the affected corium from the unaffected epithelium.

There are likewise no bacilli in the cells of the hair follicles.

(Bates says that bacilli are present both in the hair follicles and in lymphatic glands.)

Description of Plate 1 Specimen

Plate 1 Spec 1

X 2 inches + C eyepiece

Shows very much the same characteristics as is seen in an early stage of lupus - infiltration of small cell in corium (SC1) also in the subcutaneous adipose layers, absence of the papillae, subepidermal lines of unaffected
Infiltation most marked along line of vessels and around sweat glands.

Specimen 1. With high power, shows the cell infiltration round the vessels also the large lepra cell, with their many nuclei.

Specimen 2. Plate 2. \( \times \frac{1}{2} \times 13 \) eyepiece stained with fuchsin or methyl blue.

The granulation tissue is seen in the upper layers of the corium and the part below the Reit & malfijii are affected.

The bacilli are scattered in large number in the larger cells.

The small round cell (SR) stained blue are the youngest cells, and the bacilli have not invaded them.

The bacilli are chiefly found in the large multinucleated cells, seen in so many parts of the section (G), and stained with the fuchsin.

A few bacilli are found in the connective tissue capsules, between the groups of cell.
There is great thickening of the vessel walls, and occlusion of vessels from endothelial proliferation.

Section 3. Fuchsin + Methyl-Blue.

**Figure 3.** High Power - 1/3 + B eyepiece. Shows the leprosy cell (q & q') with their nuclei, and the arrangement of the bacilli in them.

It also shows the sweat glandular tissue (s.g.) with no bacilli in them.

SR = Small round cell, with no bacilli.

**Figure 4.** High Power - 1/3 + B eyepiece. To show the overgrowth of the cells in the sweat glands (s.g.) so bacilli in the cells but one or two in the connective tissue framework round them in small numbers (x)

(q) = Leprosy cell.

**Figure 5.** Low power 2x B & C eyepiece. Is to show the infiltration along the line of a vessel wall - both endothelial & adventitial overgrowth.

The infiltration consists chiefly of
Leprosy.
Small round cells, there have no bacilli - but there are some larger cells with bacilli - but none of the very largest, showing that this proliferation is more or less of recent formation.

This specimen Figure shows also the occlusion of a vessel by the endothelial proliferation x. (There are no bacilli in these cells.)

On the left is a typical old infiltration round a vessel wall with giant cells, and bacilli.

Section 3. Fuchsin and methyl blue.

Figure 6. - x 1/2 + 4 eyepiece

Same vessel as in Figure 5, only more highly magnified, it shows the round cell proliferation round the vessel wall and the small Leprosy cells x x with their bacilli.

Lymphatic Gland in Leprosy.

Section 4. Methylene Violet -

Figure 7. x 1/2 + 13 eyepiece.

Shows the various cell. - Small round
Leprug. cells without bacilli S.P. Large leprug. cell, and giant cells with bacilli (g = g.) Pigment granules are scattered about.
Lymphoedermia Perniciosa.

   Fig. 1. Low Power x 2 ind A
   2. High x 5/3 + B
   3. Delta x 5/3 + B


Lymphoedermia Perniciosa is a disease described by Rapini († 1855: Hautkrankheiten) in which, in addition to general leukaeemia, there appeared leukemic nodules in the cutis; chiefly lying in the subcutaneous fatty layer. The microscope (Fig. 1. Specimen 1) shows these leukemic patches, so that they occur abundantly in the Corium between the fibrous tissue bundles (7), especially along and around the vessels (x).

The papillary layer of the Corium (P) is much infiltrated.

The Epidermis is slightly thickened at parts.
Lymphoedema praecox.

Figure 2 shows the exudation of leucocytes (L) along the line of a vessel (V).

Figure 3. The leucocytic exudation in the papillae of the Corium round the vessels.

The cells of the Epidermis are swollen. H = horny layer.
Sarcoma of the Skin.

Sarcoma usually attacks the subcutaneous tissue. A = Primary Sarcoma of Nose.

1-2 Sects. — Haematoxylin & Eosin carmine

Fig. 1. Low power. Shows infiltration of Corium — many newly formed vessels — a numerous haemorrhage.

B. Melanotic Sarcoma.

Fig. 1. High power. X 1/5 and a microscope. Shows the pigment between the bundles of Sarcomatous in fibrous, along the fibrous septa (near the blood vessels) — the pigment is mostly outside the cells.

Reti (R) is unaffected. I have seen the specimen shown in the figure.

Fig. 2. High power. X 1/5 and a microscope. Shows the pigments in the cells of Reti (?) which cells are undergoing degenerative processes, becoming vacuolated and breaking down.
Rodent Ulcer

Rodent ulcer is an epithelioma of the face, usually, of its upper part, probably arising from a sweat gland. It is a tumor which runs a chronic course, invading tissues locally but not affecting the lymphatic glands.

Section - Stains with Haematoxylin & Eosin

* Figure 1. 2 in + Approx. 1
2. ½ inch + Approx. 2

The microscope shows downward growth of epithelial cells, with a tendency to the aggregation of these cells. The cell are of varying sizes, but chiefly of cuboidal form. The most external one being more or less flattened. Their size is not so great as those in an ordinary epithelioma.

They are embedded in a fibrous tissue framework, which in some parts is fairly well developed, but at others shows signs of proliferation having many new round cells, or newly formed blood vessels.

The necrosed edge of the ulcer is
Rodent ulcer seen in Fig. 1. The more or less superficial nature of the growth, also the imperfect formation of cell nests.

Fig. 2. Shows the ordinary arrangement of cells.

Fig. 3. 1/3 B. eyepiece out. Taken from near the edge of the ulcer. Shows the epithelial cell undergoing division, degeneration, a few corpuscles between them.
Epithelioma of Skin
Caustic ulcer

1. Picro carmine

2. Haematoxylin

Epithelioma of Penis

1. Picro carmine

2. Haematoxylin

Epithelioma of Penis

1. Picro carmine

Fig. 3. x 2 + c.

The invasion in the case of Epithelioma is deeper usually than in Rodent ulcers.

Firstly, the Cone of the Rett malphigii have become deepened and appear to penetrate the true skin. They have become enlarged on account of the growth of the epithelial cell, many of which have become branched and contain more than one nucleus - often also they are degenerated and vacuolated.

The papillae have become proportionately enlarged, or elongated. There is a tendency to the forma-
Epithelium of skin -
tion of cells rests -
The epithelial growths may form one
connected mass, as may be seen by
studying series of sections, but often
portions get cut off.
The connective tissue between the
epithelial cells is sometimes fully
developed fibrous tissue (see the
fibrous ulcer - Fig 1) or may be
of quite new formation (see also
the same section, Fig 2), which is
taken from the edge of the ulcer, and
in which the growth of the
cancer is best observed.
**Eczema Marginatum (Kleba)**

A. *Picrocarmine*

Fig 1. $x 100$ - Haematoxylin

B. *Haematoxylin & Eosin*

Fig 2. $x 100$ - C. 200

Fig 3. $x 5$ - $+$

A. Shows a large amount of inflammatory roundcell + leucocyte proliferation in the Corium, extending from the papillae to its deepest parts, a being best marked around the glands, hair follicle, vessels.

The vessels are widely dilated and engorged with blood corpuscles.

The Epidermis itself also has undergone many changes. The Coen, at the Rete Malpighii are greatly increased in size, and the Rete cells are infiltrated by leucocytes.

They are also degenerated and increased. The horny cells are swollen & desquamated - and at parts the whole Epidermis has been completely shed.

Sectin B. (See also Figs 2 - 3) shows in addition the myeloid, in not
Very large numbers, invading the Corium especially in its deeper parts,  
are invading at that portion of the section where the degenerative change  
are most marked —  
The mycelium extends amongst the  
small round cells — and round  
the hair follicle — also between the  
fibrous tissue, and right down  
to the subcutaneous fatty layer.  
The mycelia are not present in  
The Epidermis nor in the most  
superficial portion of the Corium.
Scabies

Fig 1. x 1/5 + seeped piece. This specimen shows the area of minute acarous lying in the upper part of the horny layer of the epidermis. Some of the area have fallen out of their places. Below is seen an old burrow.

Acetomyces costi

1. of Subcutaneous tissue (last in box) Fig 1. x 2 + Fig 2. Pinocane.
2. Young Fig 2. x 1 + X. Maculata.
3. of Litter.

Fig 1. Shows the growth of the fungus in the subcutaneous tissue - large amount of vacuoles, small cell infiltration.

Fig 2. Same change in one of the mitotic tubular septa in the lungs.