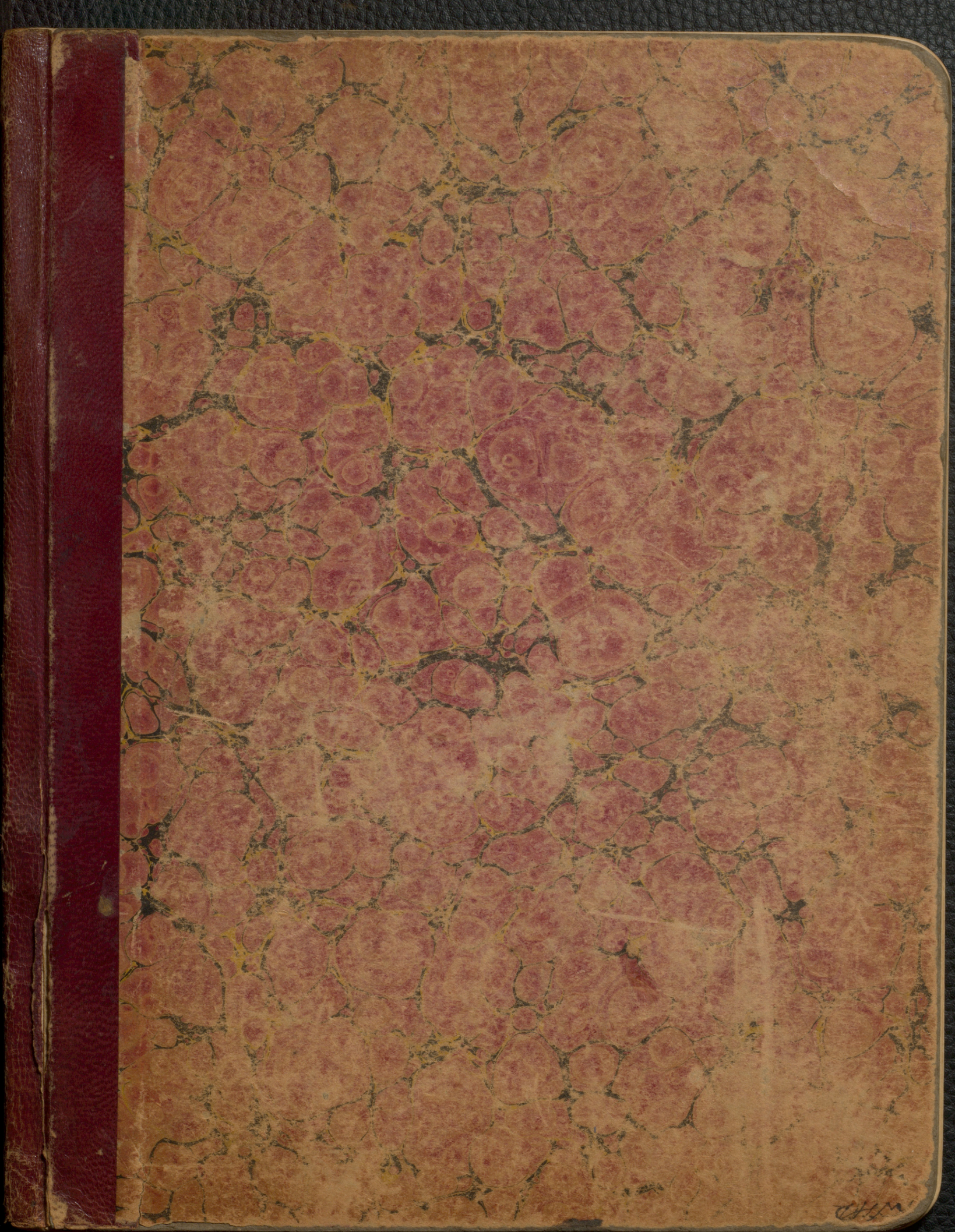




MS. Acc. 539

Oster Library

W. H. Murray.

McGill Med. '08

Montreal.

Sept. 29th 1906.

Laboratory work
in
Bacteriology.

Books recommended

- I Muir and Ritchie
- II McFarland.

W.H.D.

Name *W. H. Denny*
 Class Number

McGill University.

STUDENTS' LABORATORY RECORD.

Subject *Hyphomycetes*
 Date *Sept. 27th, 1906*

DATES AND TECHNIQUE.
 (Brief mention of methods employed.)

DESCRIPTION.
 (Full description of what is actually observed. Inferences and opinions placed within brackets. Drawings and diagrams enclosed in circles and when necessary letters.)

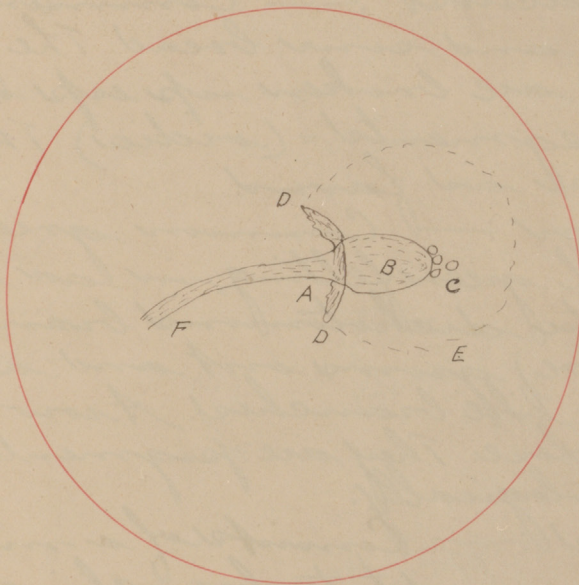
CONCLUSIONS.

A = substratum.
 B = aërial hypha.
 C = sporangium.
 D = columella.
 E = spores



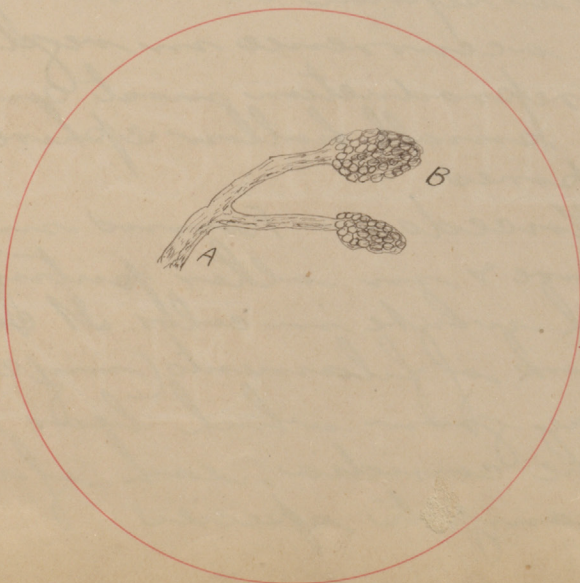
Aspergillus.

A = neck
 B = columella.
 C = spores.
 D = wings
 E = dotted line
 = ruptured
 spore case
 F = hypha



Mucor.

A = Hyphae.
 B = spores.



Penicillium.

Conditions likely to be confused with those described. Procedure necessary for establishing the diagnosis. References from standard author confirming statements. Explanation of any results not typical. Lecture notes, calculations, etc., can also be placed on this page.

Kyptomycetes:

These are low forms of plant life which tend to branch. These hyphae grow on the surface of fruit, bread etc. They branch and form a dense felted network = (mycelium). Mycelium is a dense felted network of filaments.

They differ much in fineness. Some cannot be seen by the naked eye. Certain branches (Aerial hyphae) are given off into the air. At the end of these are little masses (Sporangium) containing spores (conidia).

Two rods may come together (both are identical) They swell up and a zygosporangium is formed.

Oidium Lactis — Common organism in sour milk and sour bread. The filaments (which may be branched) are broken up esp. at the ends into short rod shaped segments = (oidia). This organism causes skin disease as favus.

Penicillium — Common green cheese mold. Light greyish green felting in an old orange. It has a characteristic dichotomous branching & filament (gonidiophore) grows out and at its end breaks up into finger like branches. A row of spores are at the end of these. They are pigmented green. No import. since pathologically.

Aspergillus — Consists of a mass of felted filaments which form a septate branching mycelium. It is of freq. occurrence in vegetable putrefactions. Non-sexual reproduction most common. The perithecia consist of a small hollow sphere within which lie the loose spores.

Mucor Mucedo — Forms in the putrefaction of those manure & in other putrefactions and is white or brownish white in color. It consists of a dense felted network of filaments (mycelium). From these aerial hyphae grow which bear sporangia and these contain the conidia, each of which have the power of reproducing its species.

Name W.H. Long
 Class Number 3

McGill University.
 STUDENTS' LABORATORY RECORD.

Subject Blastomyces
 Date Oct 1st 1906

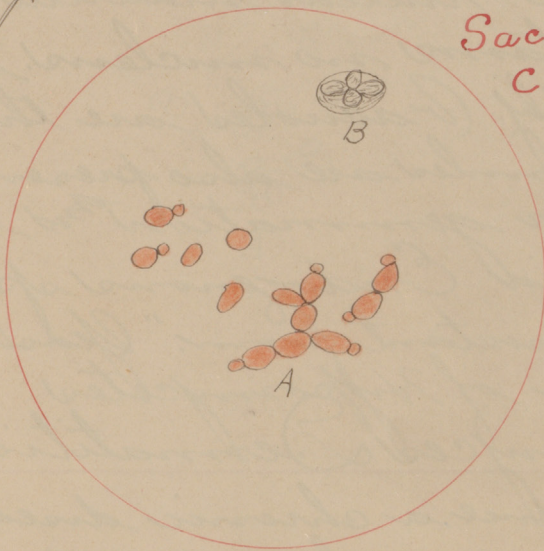
DATES AND TECHNIQUE.
 (Brief mention of methods employed.)

DESCRIPTION.

(Full description of what is actually observed. Inferences and opinions placed within brackets. Drawings and diagrams enclosed in circles and when necessary letters.)

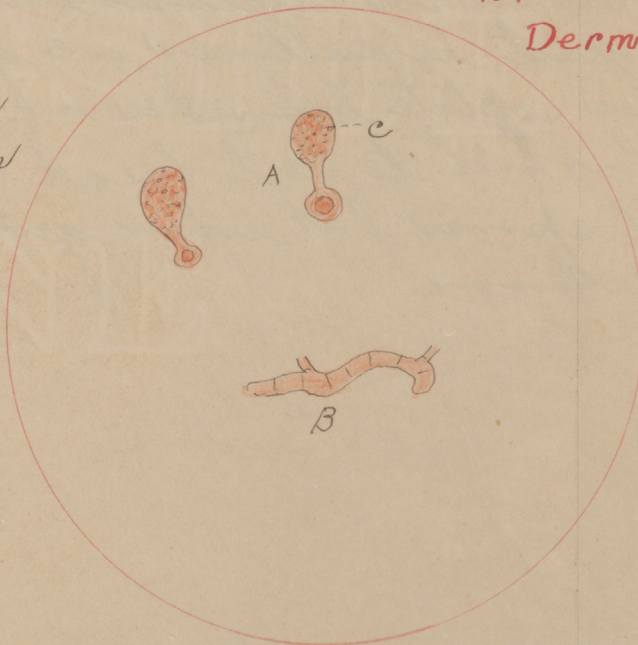
CONCLUSIONS.

A = cells are budding
 B = formation of endospores.



Saccharomyces Cerevisiae.

A = budding form.
 B = filament form.
 C = living granules



Blastomyces Dermatitidis.

Conditions likely to be confused with those described. Procedure necessary for establishing the diagnosis. References from standard author confirming statements. Explanation of any results not typical. Lecture notes, calculations, etc., can also be placed on this page.

Saccharomyces Cerevisiae :-

Consist of round or oval cells. Possess a cell membrane. Nuclear material within the cell but the cell contains no nucleus. Central part stains quite deeply. Vacuoles are the small clear spots. Many granules are also present. Multiplication is by budding or gemmation ^{and} not by fission as in bacteria. Endogenous spore formation also occurs. "resistant form." Yeasts seem to be a degenerated form of Hyphomycetes.

Blastomyces Dermatitidis :-

These produce a chronic disease which affects the skin. It forms abscesses deep down in the tissues. It forms cysts. In diseased tissues it is very much like the yeast. In cultures we get a mycelium. It possesses septate branches and aerial hyphae, the ends of which tend to break off into conidia. These are not spores but when grown form a network of mycelium.

Name *W. H. Army* McGill University.
 Class Number STUDENTS' LABORATORY RECORD.

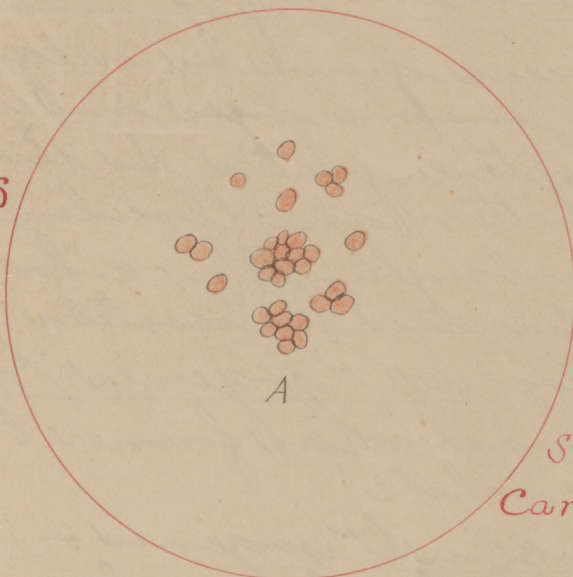
Subject *Cocci.*
 Date *Oct 4th 1906*

DATES AND TECHNIQUE.
 (Brief mention of methods employed.)

DESCRIPTION.
 (Full description of what is actually observed. Inferences and opinions placed within brackets. Drawings and diagrams enclosed in circles and when necessary letters.)

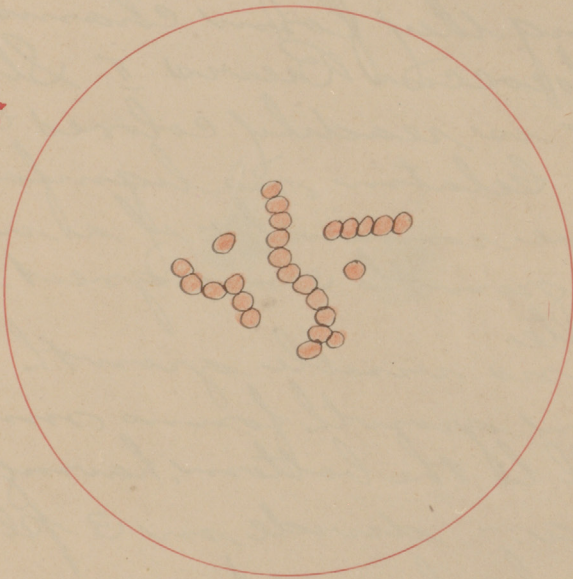
CONCLUSIONS.

Staphylococcus

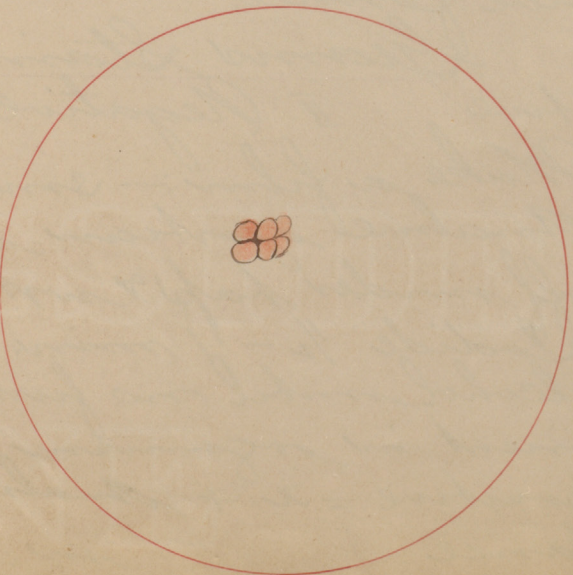


*Stain:—
 Carbol Fuchsin*

Streptococcus



Sarcinae



Conditions likely to be confused with those described. Procedure necessary for establishing the diagnosis. References from standard author confirming statements. Explanation of any results not typical. Lecture notes, calculations, etc., can also be placed on this page.

Staphylococcus Pyogenes Aureus:-

Spherical coccus grows in irregular clusters or masses. Stained in anafine dyes and is Grams positive. Liquefies peptone gelatin. As this proceeds the growth falls to the bottom as a flocculent deposit which soon assumes a bright yellow color. = color in most media. Renders media acid in reaction.

Staphylococcus Pyogenes Albus:-

Same characters as former but growth on all media is white.

Streptococcus Pyogenes:-

In growing they form chains of different lengths. I Streptococcus Brevis II Streptococcus longus

In staining is readily colored by Grams method.

In Peptone Gelatin no liquefaction of media.

Colonies are roundish & of a whitish color.

On agar growth shows great tendency to remain separate.

On potato no visible growth.

In Bouillon growth forms minute granules which fall to the bottom, having a sandy appearance.

Sarcina:- divide in 3 planes and we get a cube formed.

Grams Stains

I Positive

II Negative

Method:- Make a film:- smear, dry & fix - stain with Anafine gentian violet for 3 min. Wash off under tap & without drying add Grams Iodide $\frac{1}{2}$ - 1 min. Pour off. Apply alcohol until no further staining is removed. Let x = element in organism. Grams positive = x + Anafine + Grams gives a substance in alcohol.

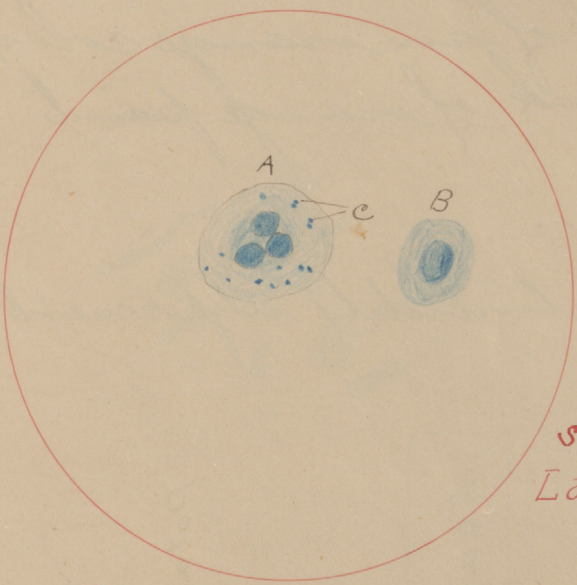
DATES AND TECHNIQUE. (Brief mention of methods employed.)	DESCRIPTION. (Full description of what is actually observed. Inferences and opinions placed within brackets. Drawings and diagrams enclosed in circles and when necessary letters.)	CONCLUSIONS.
--	--	--------------

Pus:-
No. I
 A = leucocyte
 B = diplococcus
 C = coccus
 D = Streptococcus



Stain -
Carbol Fuchsin

Pus:-
No II.
 A = Poly-morpho nuclear cell
 B = lymphocyte
 C = cocci



Stain:-
Loeffler's blue

Bile:-
 A = bacillus.
 B = cocci.



Stain:-
Carbol Fuchsin.

Conditions likely to be confused with those described. Procedure necessary for establishing the diagnosis. References from standard author confirming statements. Explanation of any results not typical. Lecture notes, calculations, etc., can also be placed on this page.

Staphylococcus Pyogenes Aureus

Notes on growth:

I Gelatin culture:  Light yellow funnel shaped growth. Apex pointing towards the bottom. The lower part is a brighter yellow than the upper showing that growth is falling. Slight liquefaction of the gelatin on 4th day after inoculation

II Agar-agar: "stroke culture."

Growth is of an orange color. Looking very much like a streak of orange paint

III Bouillon:

A slight turbidity is present 4th day.



*Staphylococcus
Pyogenes Aureus*

Name W. H. Kemp
 Class Number _____

McGill University.
 STUDENTS' LABORATORY RECORD.

Subject Pneumococcus
 Date Oct 16th. 1906

DATES AND TECHNIQUE.
 (Brief mention of methods employed.)

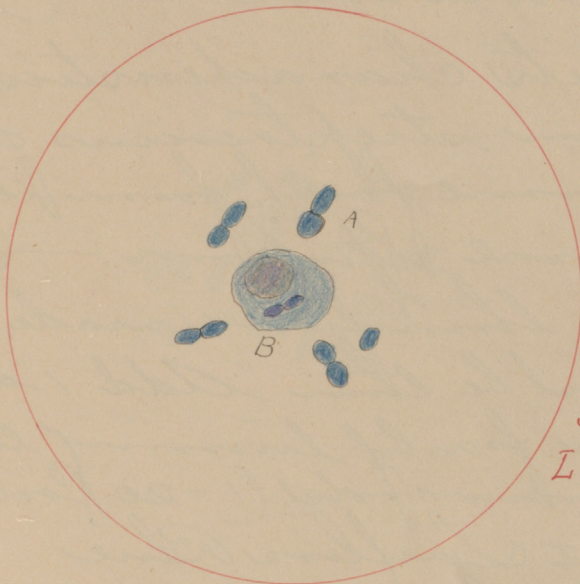
DESCRIPTION.
 (Full description of what is actually observed. Inferences and opinions placed within brackets. Drawings and diagrams enclosed in circles and when necessary letters.)

CONCLUSIONS.

Pneumococcus :—

A = *Pneumococcus*

B =



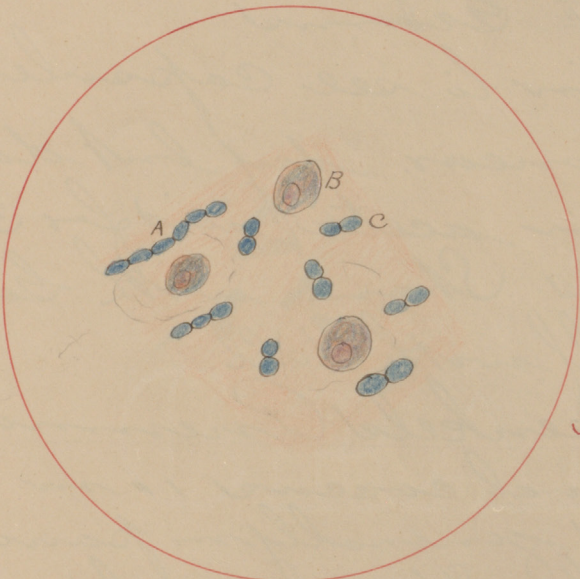
Stain—
 Loefflers Blue

A = *Streptococcus*

B =

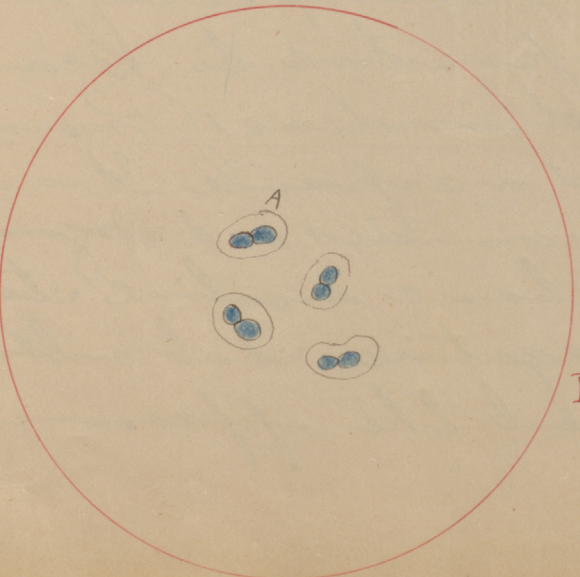
C = *Pneumococcus*

Positive to
 Grams



Stain—
 Grams

A = capsule of
Pneumococcus



Stain—
 Welch's Method

Conditions likely to be confused with those described. Procedure necessary for establishing the diagnosis. References from standard author confirming statements. Explanation of any results not typical. Lecture notes, calculations, etc., can also be placed on this page.

Pneumococcus — Oct 16th 1906
Loses its characteristics in media
It takes on streptococcus features
Examine fresh from the sputum
To Examine Sputum:—

Make a thin film. (made in ordinary way)
Film must be thin. Add 1 drop of water. Dry
slowly and fix by turning through flame with
film downwards. (1-20 forbids destroy them)
Stain I. Saefers Blue
II. Grams

To stain to see capsules:—

Make a smear. dry but do not fix in flame
but fix in acetic acid for 30 sec. Pour a blot
off excess. Stain with Gentian violet
Wash off with NaCl.

Frankel's *Pneumococcus*

Small oval coccus 1.2 in longest diameter
arranged generally in pairs (Diplococcus) Possesses
a capsule. Stains easily in basic aniline dyes
and is positive to Grams

Friedländer's *Pneumobacillus*

Possesses a capsule. It is a short rod with
a blunt rounded end. Organism stains
readily in basic aniline stains and is
Grams negative. Sub culture in gelatin
has a nail like appearance in 10 days.

Name W. H. R. ... McGill University.
 Class Number STUDENTS' LABORATORY RECORD.

Subject Pneumococcus
 Date Oct 16th 1906

DATES AND TECHNIQUE.
 (Brief mention of methods employed.)

DESCRIPTION.
 (Full description of what is actually observed. Inferences and opinions placed within brackets. Drawings and diagrams enclosed in circles and when necessary letters.)

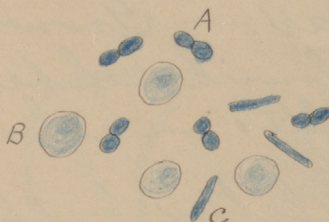
CONCLUSIONS.

Pneumococcus from Lung tissue

A = *Pneumococcus* (Fraenkel's)

B =

C = *Bacillus* (Friedländer's)



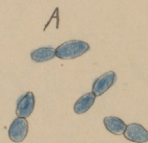
*Stain -
 Loeffler's Blue*

A = *Pneumococcus*

Positive to grams

Friedländer's, Pneumo - B

Negative to grams



*Stain -
 Gram's*

Conditions likely to be confused with those described. Procedure necessary for establishing the diagnosis. References from standard author confirming statements. Explanation of any results not typical. Lecture notes, calculations, etc., can also be placed on this page.

Oct 22nd, 1906 —

Anthrax Bacillus:

Growth on Agar:— Growth is abundant and of a pale yellowish white color. Margin of growth is much lighter in color than the rest.

Growth on Gelatin:— This is very characteristic being arborescent in appearance. The margin is woolly because of the numerous spikelike radiating from the main growth. A slight liquefaction of the gelatin at the surface.

Milk — no change.

Compare with Bacillus Subtilis^m & Mesentericus
Anthrax —

Non-motile. but could see Brownian movement.
Pathogenic. Has spores. Positive to Grams
Liquefies gelatin. growth is characteristic

Subtilis:

Motile. Non-purulent. Has spores
Positive to Grams

Mesentericus:

Motile. Non-purulent. Have spores
Positive to Grams.



Stab culture of Anthrax B. in gelatin
"Slightly liquefied" 5 days growth

DATES AND TECHNIQUE.
 (Brief mention of methods employed.)

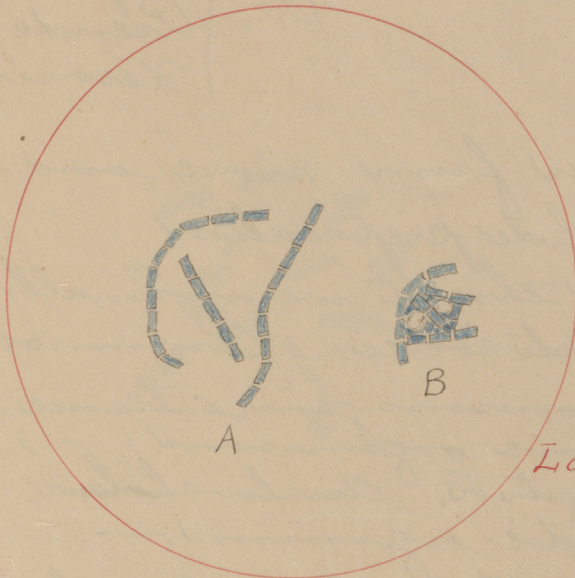
DESCRIPTION.
 (Full description of what is actually observed. Inferences and opinions placed within brackets. Drawings and diagrams enclosed in circles and when necessary letters.)

CONCLUSIONS.

B. Anthrax:—

A = *Bacillus Anthrax.*

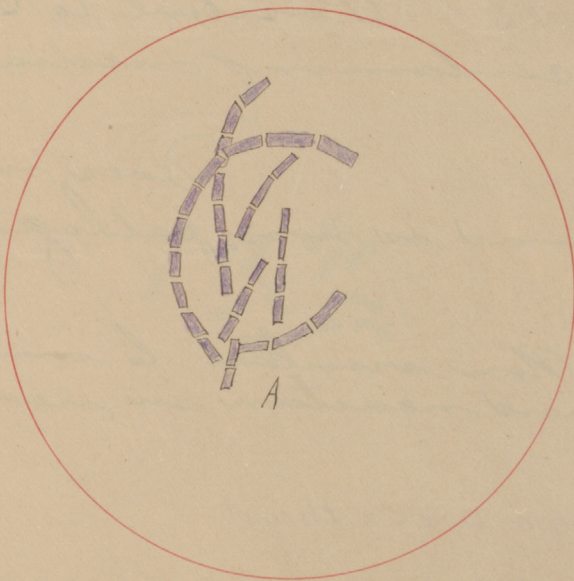
B = " " with
 two refractile spores



Stain—
 Loefflers blue

A = *B. Anthrax.*

Positive to
 Grams

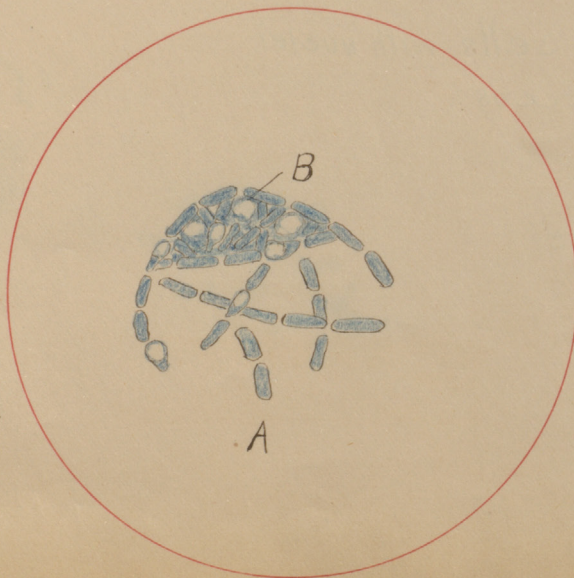


Stain—
 Grams.

B. Subtilis:—

A = *Bacillus Subtilis.*

B = refractile spore



Stain—
 Loefflers blue.

Conditions likely to be confused with those described. Procedure necessary for establishing the diagnosis. References from standard author confirming statements. Explanation of any results not typical. Lecture notes, calculations, etc., can also be placed on this page.

I Stain, mount and study } Diphtheria B
Pseudo-Diphtheria B
Xerosis

II Take cultures from nose and throat

III Make a slide preparation

In nose and throat we normally find

I Streptococci. II Pneumococci.

Following organisms gain entrance into system through mouth

I Pathogenic organisms:— Tuberculosis B. Cerebro. Spinal Meningitis B. Asiatic cholera, Typhoid, Diphtheria etc

II Saprophytic organisms:—

Diphtheria B:— Positive to Grams. Acid reaction in glucose containing media. virulent. I reflex blood serum.

Pseudo-Diphtheria B:— Does not form acid from glucose and is non-pathogenic to guinea pig.

Xerosis:— Non virulent to animals & does not produce an acid reaction in neutral bouillon

Scrapings from D.G.C's throat.

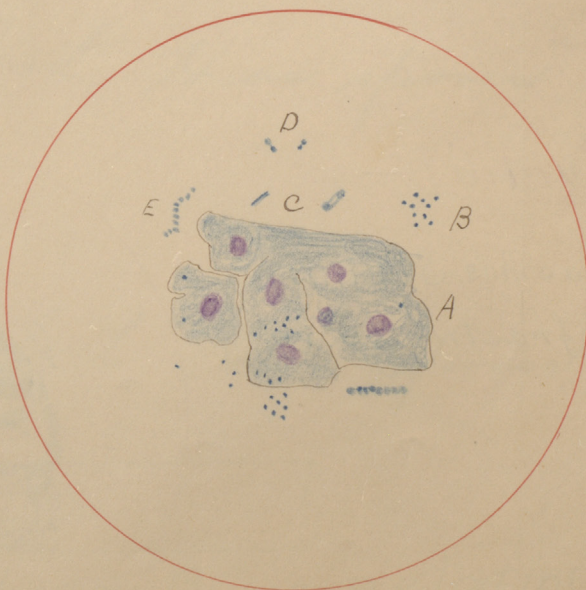
A = Epithelium cells with nuclei

B = Staphylococcus

C = Bacilli

D = Diplococci

E = Streptococci.



Name *W. B. Gandy*
 Class Number *15*

McGill University.
 STUDENTS' LABORATORY RECORD.

Subject *Diphtheria B*
 Date *Oct 25th 1906*

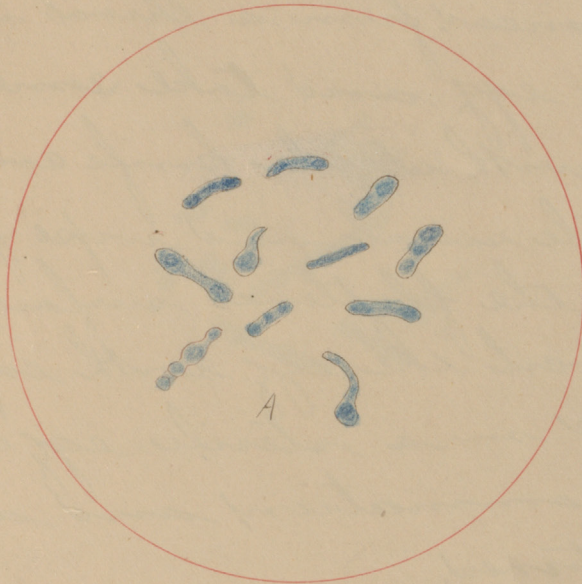
DATES AND TECHNIQUE.
 (Brief mention of methods employed.)

DESCRIPTION.
 (Full description of what is actually observed. Inferences and opinions placed within brackets. Drawings and diagrams enclosed in circles and when necessary letters.)

CONCLUSIONS.

Diphtheria. B.

A = Various forms

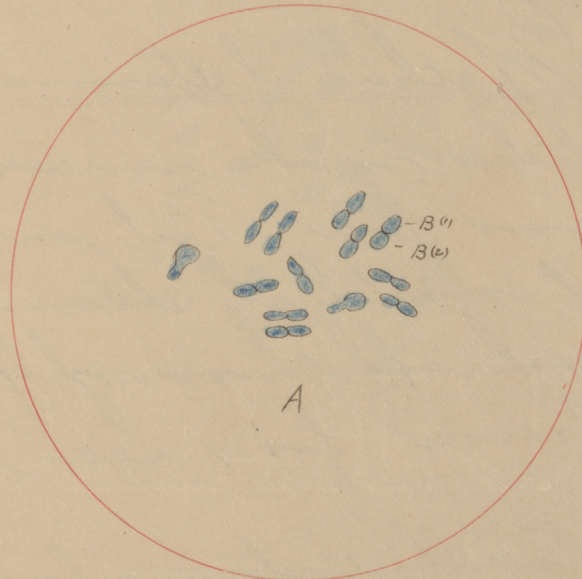


*Stain -
 Loefflers Blue*

Pseudo-diphtheria. B.

A = various forms

B(1) abuts B(2)



*Stain -
 Loefflers*

Xerosis.



*Stain -
 Loefflers.*

Conditions likely to be confused with those described. Procedure necessary for establishing the diagnosis. References from standard author confirming statements. Explanation of any results not typical. Lecture notes, calculations, etc., can also be placed on this page.

To take a smear from a throat when in the country
Boil an egg and take some of the shell from the end and with sterile knife cut a flat surface. Take a sterile swab and wipe patient's throat and stroke the flattened surface of the white of the egg. Invert the egg with exposed contents downwards in a sterile egg cup and take home for examination, and also from which to make cultures.

Neisser's Method of staining:

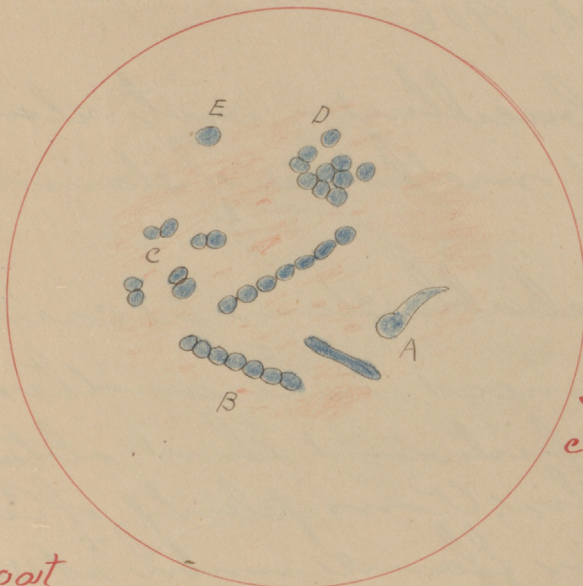
The clean slide. make smear in a drop of H₂O. dry and fix. Put on No I Blue solution. Heat until it steams up several times. Wash off thoroughly. Put on No II Bismarck brown for 1 sec only and then wash off.

Body of bacillus stains brown and the bipolar granules are stained blue.

DATES AND TECHNIQUE. (Brief mention of methods employed.)	DESCRIPTION. (Full description of what is actually observed. Inferences and opinions placed within brackets. Drawings and diagrams enclosed in circles and when necessary letters.)	CONCLUSIONS.
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Smear taken from growth
 from D. G. C's throat

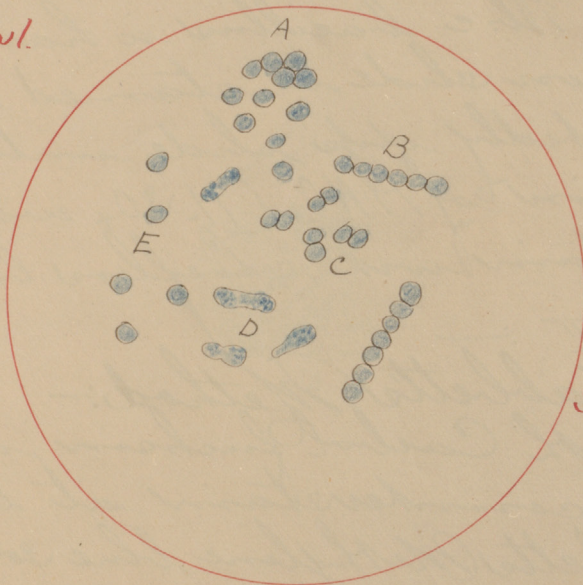
- A = Bacilli.
 B = Streptococci
 C = Diplococci
 D = Staphylococci
 E = coccus.



Stain. — Grams
 counterstain —
 Saffrin.

Taken from patients throat
 in Alexandria hospital.

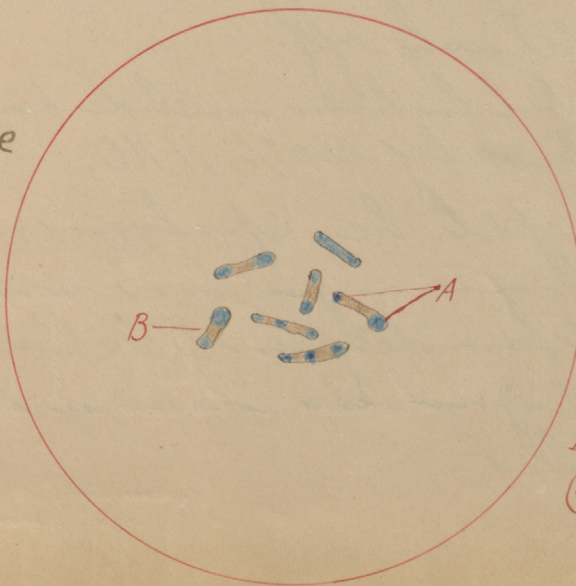
- A = Staphylococci.
 B = Streptococci.
 C = Diplococci.
 D = Bacilli.
 E = cocci.



Stain —
 Loefflers Blue

Diphtheria B. —
 Neissers method

- A = granules stained blue
 C sol. I
 B = protoplasm stained
 brown C sol. II.



Stain —
 Neissers method
 (See page 16)

Conditions likely to be confused with those described. Procedure necessary for establishing the diagnosis. References from standard author confirming statements. Explanation of any results not typical. Lecture notes, calculations, etc., can also be placed on this page.

Nov 1st. 1906. —

Tubercle bacillus — not stained by the ordin.
ary methods of staining.

Method I. —

Most reliable stain is carbol fuchsin
Make a smear. Take another clean slide and
press over first and thus obtain two thin smears
dry and fix. Pour plenty of Carbol fuchsin over
and heat in flame until it steams for a short while
(about $1\frac{1}{2}$). T. b. c. bacillus is hard to stain. Pour off
all debris on slide is stained. Wash off in water
and repeatedly dip slide until decolorised in
20% solution of HNO_3 (H_2SO_4 would replace the HNO_3)
Counterstain with Loeflers blue

Method II. —

Gabbett's Method. —

Stain with Carbol fuchsin as before. Decol-
orise and counterstain at the same time
with Gabbett's Methylene blue solution in the cold
for $1\frac{1}{2}$. Wash off.

Dried Carbol fuchsin on slide can be removed by Gabbett's
and also by 20% HNO_3

To keep t. b. c. sputum. —

Sputum from a person with t. b. c. can be
kept indefinitely in 5% Carbolic acid.
This safe guards one as the bacilli are
all killed.

Name W. H. L. Smith McGill University.
 Class Number 19 STUDENTS' LABORATORY RECORD.

Subject B. Tuberculosis
 Date Nov 1st 1906

DATES AND TECHNIQUE.
 (Brief mention of methods employed.)

DESCRIPTION.

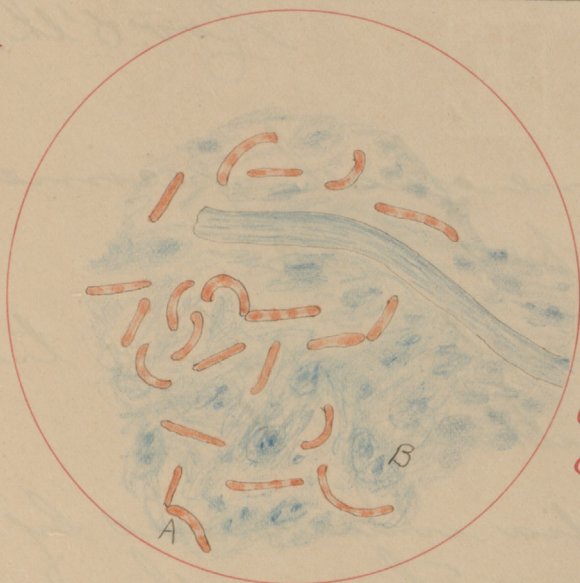
(Full description of what is actually observed. Inferences and opinions placed within brackets. Drawings and diagrams enclosed in circles and when necessary letters.)

CONCLUSIONS.

Bacillus Tuberculosis
in sputum.

A = *B. Tuberculosis*

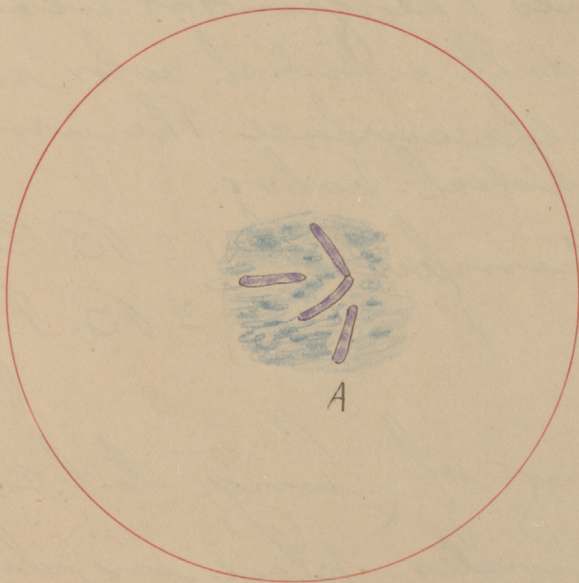
B = Salivary corpuscles



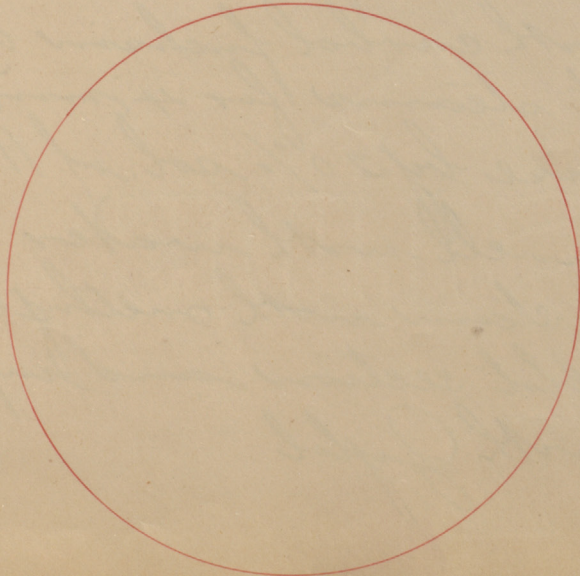
Stain—
 Gabet's and
 Carbol fuchsin

A = *B. Tuberculosis*

Grams positive



Stain—
 Grams



Conditions likely to be confused with those described. Procedure necessary for establishing the diagnosis. References from standard author confirming statements. Explanation of any results not typical. Lecture notes, calculations, etc., can also be placed on this page.

Nov. 8th. 1906.

I. J.B.C.

Stain one of each specimen } No's I
per t.b.c. } " II
" III

II Stain section of lung t.b.c.

III Note culture of t.b.c.

Media was covered by a wrinkled membrane. The growths were small and separate, dull whitish color, rather irregular and raise above the surface. The wrinkled membrane is of a whitish color.

IV Make transfers of { I B. Coli.
II B. Typh

Staining of Lung. t.b.c.

Receive in water. place on slide

I Stain with carbol fuchsin by warming so that it steams for 4 min

II Decolorise by 20% sol. of HNO_3

III Wash well with water

IV Counter stain with methylene blue

V Drain, blot section and rapidly use alcohol

VI Clear with Xylol

Name *W. W. Gandy*
Class Number

²¹
McGill University.
STUDENTS' LABORATORY RECORD.

Subject *B. Tuberculosis*
Date *Nov. 8th 1906*

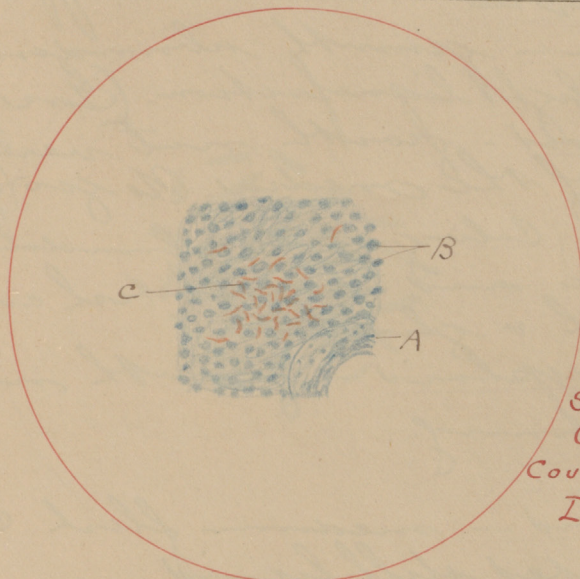
DATES AND TECHNIQUE.
(Brief mention of methods employed.)

DESCRIPTION.
(Full description of what is actually observed. Inferences and opinions placed within brackets. Drawings and diagrams enclosed in circles and when necessary letters.)

CONCLUSIONS.

Section of Lung (tbc.)

A = wall of an artery
B = Nuclei of cells
C = Cluster of
B. Tuberculosis



Stain:—
Carbol Fuchsin
Counterstain:—
Loeblers Blue

Conditions likely to be confused with those described. Procedure necessary for establishing the diagnosis. References from standard author confirming statements. Explanation of any results not typical. Lecture notes, calculations, etc., can also be placed on this page.

Gelatin - Colony and Typhoid. B.

Colony - growth abundant and white in color. Slight liquefaction. (Gas formed media broken 8 days)
Typhoid - growth not very abundant. no liquefaction of the media. No gas formation

Cobato - Coli-growth abundant. saved above the surface and of a whitish color. surface of growth smooth & glistening
Typhoid - growth not apparent. Surface is glistening.

Milk -

Typhoid - medium flesh colored. milk not coagulated still liquid

Colony - flesh color. coagulates so that tube can be inverted.

Fermentation tubes -

Colony - medium is turbid and about $\frac{3}{4}$ inch of gas collected in tube

Typhoid - medium unchanged & no gas is produced

Broth -

Colony - considerable turbidity

Typhoid - very slightly turbid

Dilution -

turbid in each case

Indol reaction in Simmonds Salts

Reaction may be proved in a good culture of B. Coli. It is Indol + .02% nitrite + H_2SO_4 gives a red reaction.

B. Malanga gives it without adding nitrite

B. Coli always present in human intestinal tract & also in animal. Water supply always contaminated by B. Coli from birds

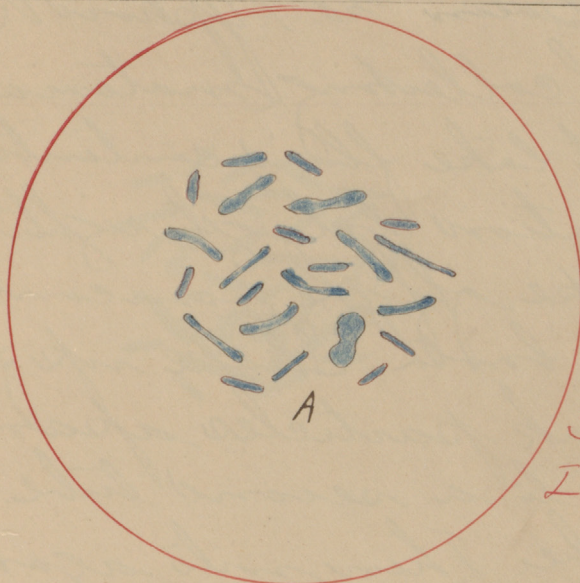
DATES AND TECHNIQUE.
 (Brief mention of methods employed.)

DESCRIPTION.
 (Full description of what is actually observed. Inferences and opinions placed within brackets. Drawings and diagrams enclosed in circles and when necessary letters.)

CONCLUSIONS.

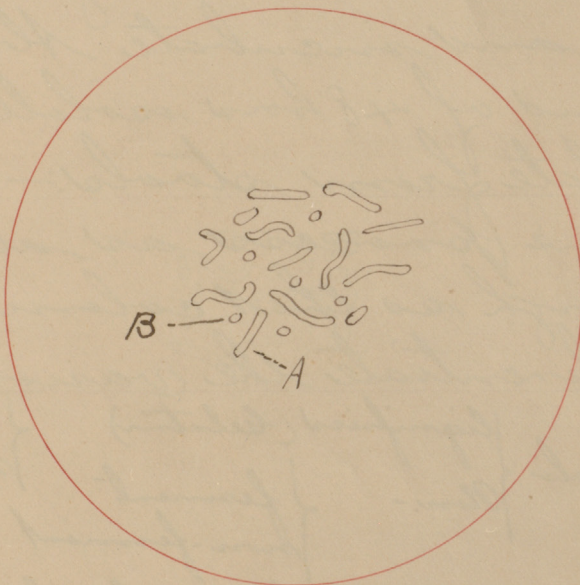
Typhoid. B.

A = Various forms



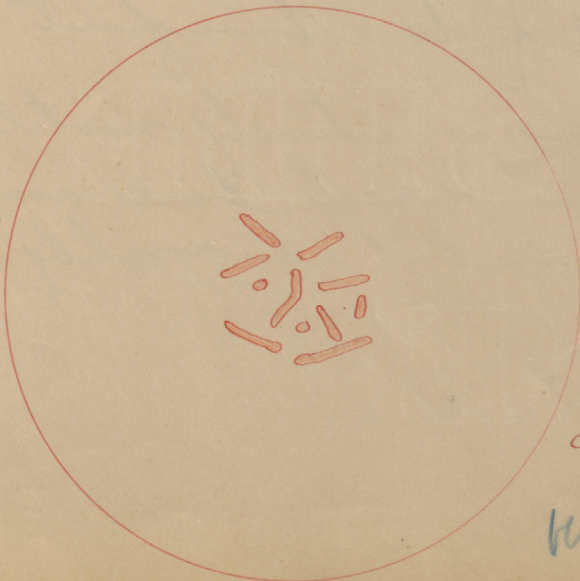
*Stain:—
 Loeflers Blue*

*A = B. actively motile
 B = endos B. which
 rotate rapidly across
 the field.*



Hanging drop.

*Negative
 to Grams*



*Stain:—
 Grams
 Counterstain:—
 Safranin*

W. H. Duff

Conditions likely to be confused with those described. Procedure necessary for establishing the diagnosis. References from standard author confirming statements. Explanation of any results not typical. Lecture notes, calculations, etc., can also be placed on this page.

Colony and Typhoid B. Nov 8th 1906

Mode of collecting material:-

Don't take fluid contents of intestine for examination but get right down to the mucosa and scrape off the mucosa with a knife. Put in sterile bottle. Shake up for 3-5-10 min. so as to break particles apart. From this tube take 3 loopfuls to a second tube. Then 3 loopfuls to a 3rd tube. Then into agar on plate. Allow to harden and incubate. At the end of 24 hrs and at end of 48 hrs isolate the different colonies.

To isolate from stools:-

Same process as above. Make dilution low enough so that colonies can be isolated.

To differentiate the various types:-

B. Typhoid or Coli.	Alkali	liquefies (gelatin)	}	ferment lactose glucose sacchar
		Non-		
Acid milk	}	ferment	}	non-ferment
		do throughout.		

B. Typhoid is actively motile and seems to move in a direct line across field

B. Coli is but sluggishly motile

Name *W. H. Dunn* ²⁵ McGill University.
 Class Number _____ STUDENTS' LABORATORY RECORD.

Subject *Colony Typhoid B*
 Date *Nov 8th 1906*

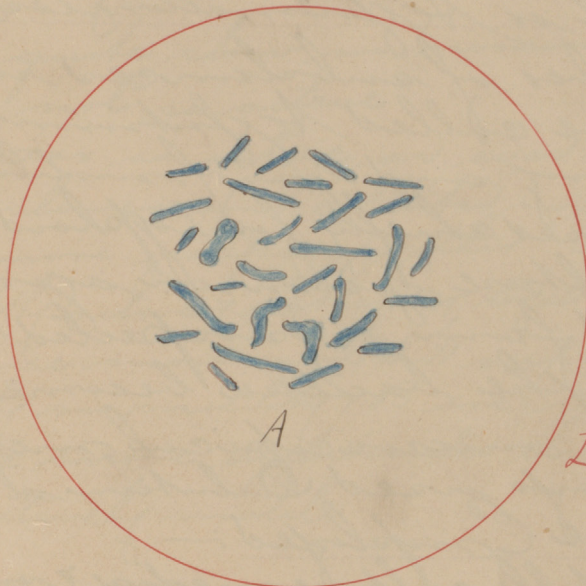
DATES AND TECHNIQUE.
 (Brief mention of methods employed.)

DESCRIPTION.
 (Full description of what is actually observed. Inferences and opinions placed within brackets. Drawings and diagrams enclosed in circles and when necessary letters.)

CONCLUSIONS.

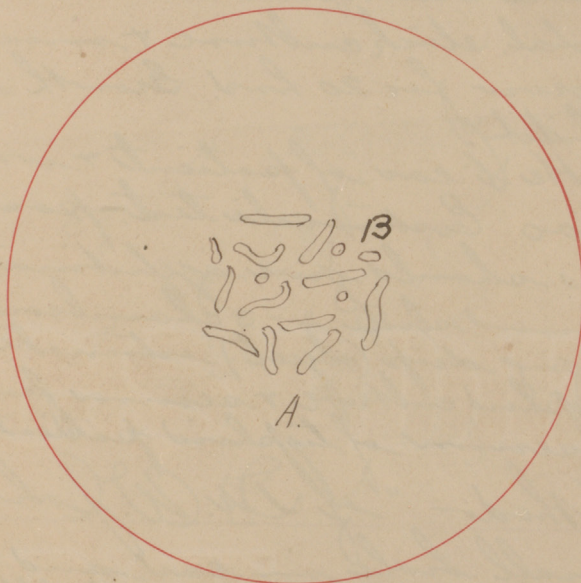
Coli. B.

A = Various Forms, -



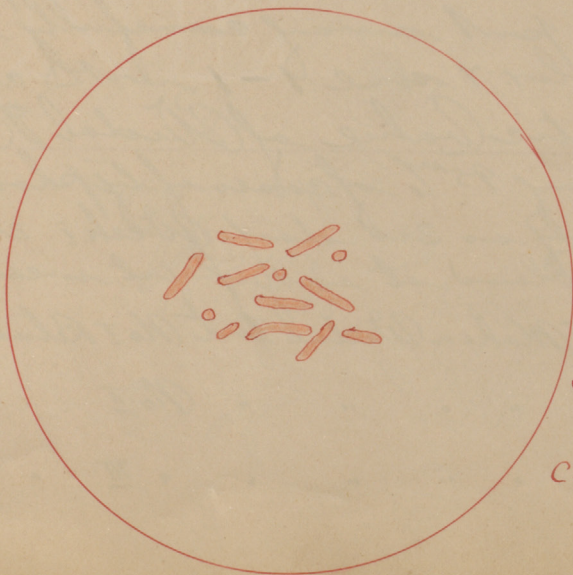
*Stain: -
 Loeffler's Blue*

*A = B. sluggishly motile
 B = end of B. which rotate quite slowly across the field.*



Hanging drop

Negative to Grams.



*Stain: -
 Grams I.
 Counterstain -
 Safranin*

Conditions likely to be confused with those described. Procedure necessary for establishing the diagnosis. References from standard author confirming statements. Explanation of any results not typical. Lecture notes, calculations, etc., can also be placed on this page.

Widal test is Agglutination test. Nov 12th. 1906.

A number of substances which cause agglutination were called "Agglutinins."

Clumping and loss of motility - Pfeiffer's Phenomenon. This test is used chiefly for Typhoid fever. It consists using a culture grown in agar or broth & adding serum to it from a suspected case & if the case is a true one the bacteria become agglutinated into clumps. The microscopical method is simplest & nearly always used. Dilution at least 1-25 or 1-50.

Technique Employed:-

I Get a suitable culture media & suitable growths free of clumps (e.g. Sal. stick culture & inoculate in Broth.) with 1.5 acidity & grow for 20 hrs. Growth is then abundant but only light turbidity.

II Apply pipette to ear of patient & withdraw blood. Dilute 1-100 or 1-200. Estimate test - positive or negative -

Dilution of 1/40 should give agglutinations in 20-40 mins.

Take hollow ground slide 2-3 chambers

Compare (a) Hanging drop (object) estimate its natural motility

" (b) Use typhoid culture & serum from normal individual

" (c) Use serum of typhoid patient & typhoid culture.

Handy Method:- "of Dr. W. Johnston"

Puncture small hole in ear and put drop on paper & let it dry & put away carefully till used. Then dilute till straw color & use 1-1 with culture.

Diagnostic Value of Widal Reaction:-

Recognized today 95% of cases of typhoid give the test

Present as early as 3rd day. Week 1 25% Week 2 vast majority

Best found in blood at end of 1st week.

Take lump of I Make a Widal test No I Blood serum in B typhoid
Serum 1/20 & a drop of Broth II " " " " No II " " B typhi
culture & clump III " " " " " III " " B
get 1/40 sol.

Blood Serum:-

No I. 5.15. B are quite active

" II 5.20 B " "

" III 5.20 B . very active

No I 5.25 B are quite slow in movement

" II 5.25 B are not so active

" III 5.25 B appear as active as ever

No I 5.30 Much slower and collected in groups

" II 5.35 Much more grouped together

No I 5.40 Still slightly active & gathering together more

" II 5.40 Still some movement but very slight

" I 5.50 Practically no mobility & B are grouped

" II 5.55. These are more agglutinated than No I

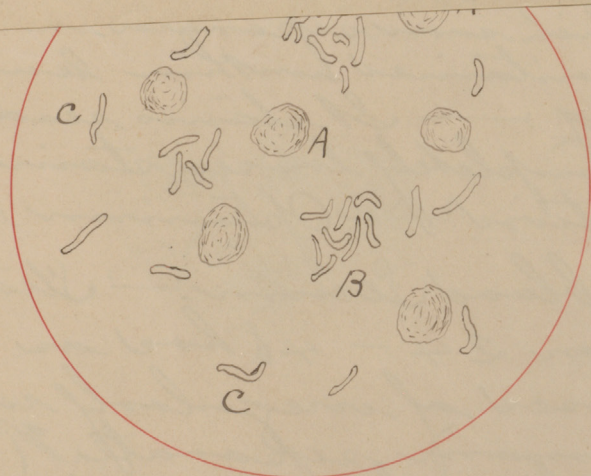
" III 6.00 Still actively motile

Reaction
1906

A = Blood corpuscles

B = Agglutinated Bacilli.

C = B. slightly motile.



Hanging drop

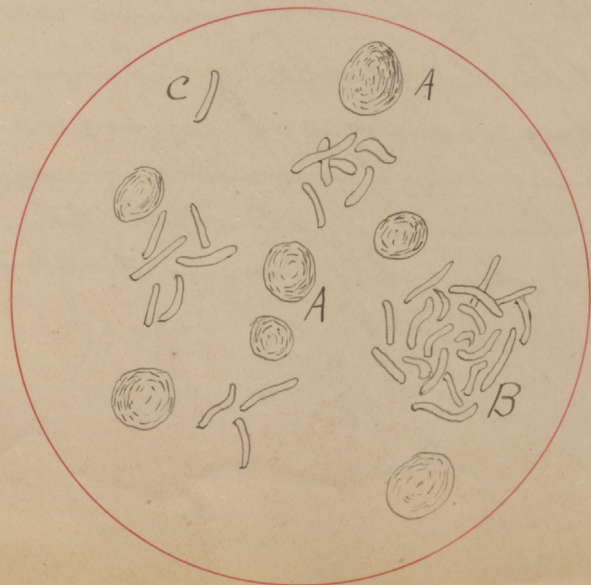
Dilution 1-40

No I. at 5.55

A = Blood corpuscle

B = Agglutinated Bacilli.

C = B. slightly motile.



H.

m

Thin

m

ser

a.

ch

m

only light turbidity

I Apply pipette to ear of patient & withdraw
1-100 or 1-200. Estimate test - positive or negative -
Dilution of $\frac{1}{40}$ should give agglutinations in 20-40 mins.

Take hollow ground slide 2-3 chambers
Compare (a). Hanging drop (object) estimate its natural motility
" (b). Use typhoid culture & serum from normal individual
" (c). Use serum of typhoid patient & typhoid culture.

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& let it dry & put away carefully till used. Then dilute
till straw color & use 1-1 with culture

Diagnostic Value of Widal Reaction:

Recognized today 95% of cases of typhoid give the test
Present as early as 3rd day. Week 1 25% Week 2 vast majority
Best found in blood at end of 1st week.

Take lumpful of I Make a Widal test No I Blood serum in B typhoid
Serum $\frac{1}{20}$ & a drop of broth II " " " " No II " " B typhi
culture & chas III " " " " " III " " B
set $\frac{1}{40}$ sol.

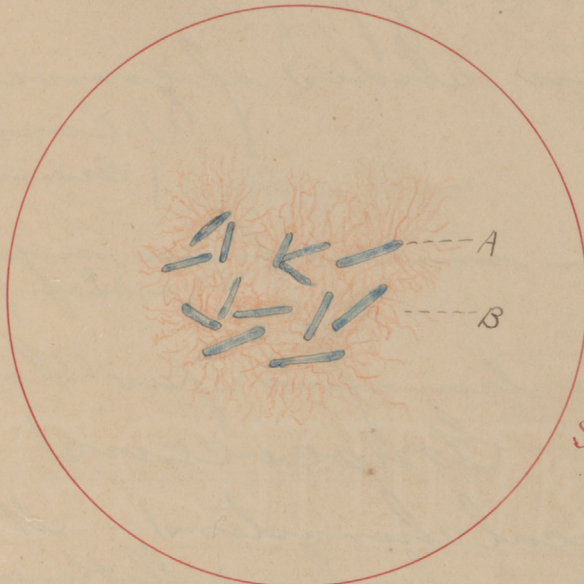
DATES AND TECHNIQUE.
 (Brief mention of methods employed.)

DESCRIPTION.
 (Full description of what is actually observed. Inferences and opinions placed within brackets. Drawings and diagrams enclosed in circles and when necessary letters.)

CONCLUSIONS.

*Typhoid B. with
 flagella stained:—*

A = Body of Bacillus
 B = Flagella stained red
 Peritrichous.



Stain:—
 Page 107 M.R.

Widal reaction:—

No. I. at V. 50

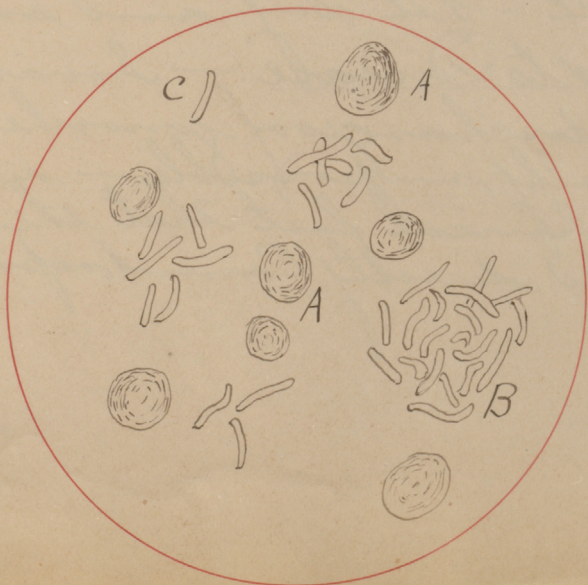
A = Blood corpuscles
 B = Agglutinated Bacilli.
 C = B. slightly motile.



Hanging drop
 Dilution 1-40

No. I. at V. 55

A = Blood corpuscle
 B = Agglutinated Bacilli.
 C = B. slightly motile.



Conditions likely to be confused with those described. Procedure necessary for establishing the diagnosis. References from standard author confirming statements. Explanation of any results not typical. Lecture notes, calculations, etc., can also be placed on this page.

Bacteriology of Female Genital Organs

I Stain slides of gonococcus
 { Even Methylene Blue
 Grams & contrast with Sapsin

II Stain smears from infected uterine secretions
 (a) Simple (B) Grams

III Make transfers Spur Cholera & Vibrio
Gonococcus

Microscopical characters — It is a diplococcus. Adjacent margins of each are flattened or slightly concave so that there is a small oval interval between them which does not stain. When division takes place a tetrad is formed which soon separates into two diplo-cocci. They are mostly contained within leucocytes.

Staining — It stains readily with basic aniline dyes and completely loses stain by Grams method.

Cultivation — Optimum temp = 37°C

Solidified blood Serum — Strike culture growth appears in 24 - 48 hrs as small semi-transparent discs of irregularly rounded shape. Colonies tend to remain separate. Reach maximum size in 4th - 5th day and are dead on 9th day.

Relations to Disease — Invariable present in all urethral discharges of gonorrhoea. Life outside of body is practically impossible. — a statement which corresponds to clinical fact that the disease is always transmitted directly. Cannot reproduce disease in animals.

DATES AND TECHNIQUE.
 (Brief mention of methods employed.)

DESCRIPTION.
 (Full description of what is actually observed. Inferences and opinions placed within brackets. Drawings and diagrams enclosed in circles and when necessary letters.)

CONCLUSIONS.

Gonococcus

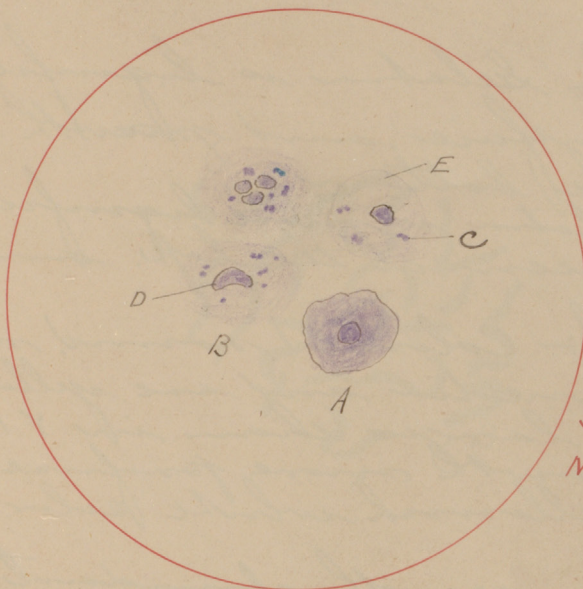
A = Epithelial cell

B =

C = Diplococcus

D = Nucleus

E = Protoplasm of cell faintly stained.



Stain: — Eosin (1)
 Methylene Blue (20)

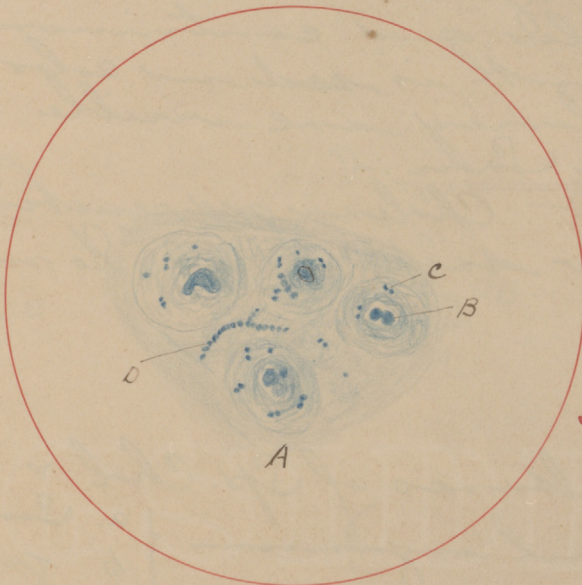
Pus of Gonococcus

A = Pus cell

B = Nucleus

C = Diplococcus

D = Streptococcus



Stain: —
 Loeffler's Blue.

Conditions likely to be confused with those described. Procedure necessary for establishing the diagnosis. References from standard author confirming statements. Explanation of any results not typical. Lecture notes, calculations, etc., can also be placed on this page.

calculations, etc., can also be placed on this page.

Sprellum Cholea and Cibro

Gelatin

Gelatin
Spir. Chol. Gelatin is liquified. Inverdis conical
hollow in surface and growth which is white has
fallen to the bottom. X 5 B. 10 t.

V.F.P. :- Gelatin is more liquified than the former
Air bubble seen at the top. and growth falls to bottom.

Agar:-

Spor Chol: Colonies round, raised above the surface of media and are yellowish white in color. Colonies are larger than in V.F.P. bacter

Colonies are larger than its V.F.P.
V.F.P.:- Growth more profuse than in former
 and of a yellowish white color.

Polats:

Spur Chal: - growth abundant, and from a brown to a red color and continuous.

to a red color and continuous.
V.F.P. - growth is red in color and separate in
dividual colonies are visible

Donham, John

Santham's Test:
Spir. Chol:— Cholera red reaction — obtained by adding few drops of H_2SO_4 . No antitox added.

- I Study cultures of Sps. Chal + V.F.P.
1a. Simple

- II Sham earl cogonum } a. Simple
b. grams

- III Exam. a hanging drop of each

Difference between two organisms

- I Finkler & Priore S. produces no indol
Cholera does (large amt)
- II Finkler & Priore S. in non-pathogenic except in
Cholera is pathogenic in small dose
- III The action of serum of patient is specific to cholera

Name

Class Number

31
 McGill University.
 STUDENTS' LABORATORY RECORD.

Subject

Date

Spir. Cholera
Mar 19th 189

DATES AND TECHNIQUE.
 (Brief mention of methods employed.)

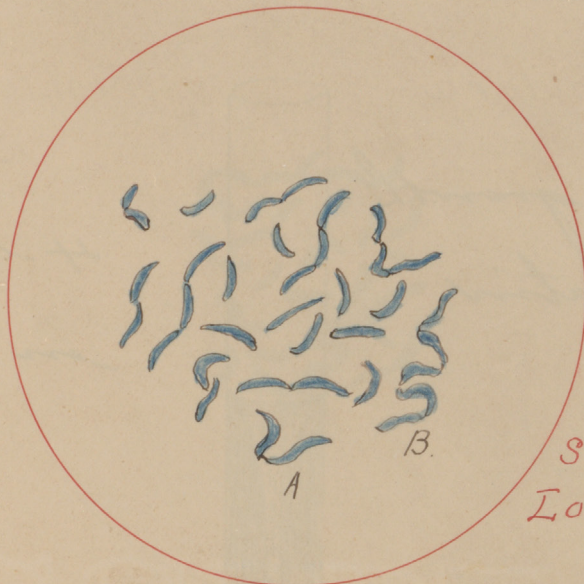
DESCRIPTION.
 (Full description of what is actually observed. Inferences and opinions placed within brackets. Drawings and diagrams enclosed in circles and when necessary letters.)

CONCLUSIONS.

Spir. Cholera:—

A = Two spirilla.

B = Spiral form.

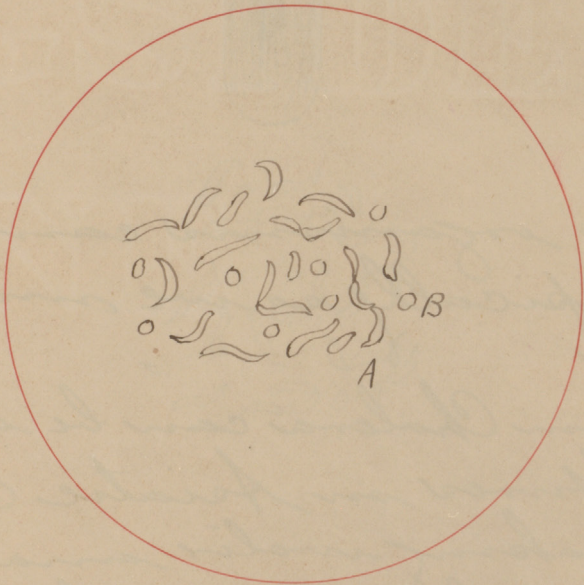


Stain:—
 Loeffler's Blue

Hanging drop:—

A = Spirall form. These moved slowly across field with spiral-like movement

B = end of spirillum. These rotate quite rapidly.



Spir. Cholera:—

Negative

to Grams



Stain:—
 Grams
 Counterstain:—
 Saffrin.

Conditions likely to be confused with those described. Procedure necessary for establishing the diagnosis. References from standard author confirming statements. Explanation of any results not typical. Lecture notes, calculations, etc., can also be placed on this page.

Spirillum Cholera:-

4 days growth
on gelatin



*Finkler & Priors
Spirillum:-*

4 days growth
on gelatin



The two organisms cannot be distinguished microscopically so we must rely upon their reactions

Spirillum Cholera can be obtained often in pure cultures in Asiatic Cholera

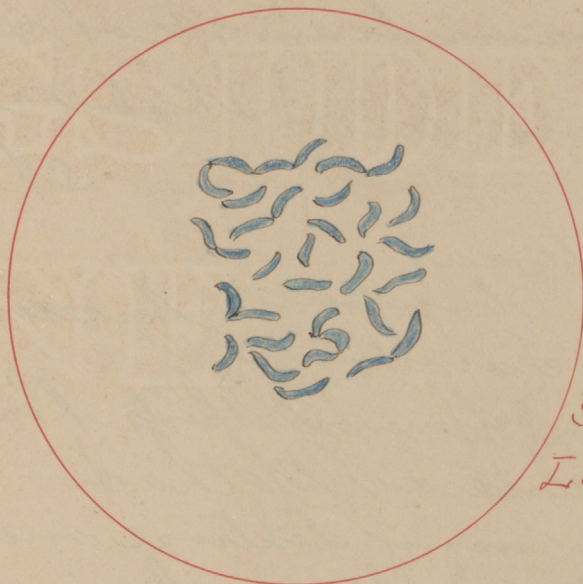
In making water analyses we must distinguish between the two organisms
Spir. Chol. and *S. F. P.*

DATES AND TECHNIQUE.
 (Brief mention of methods employed.)

DESCRIPTION.
 (Full description of what is actually observed. Inferences and opinions placed within brackets. Drawings and diagrams enclosed in circles and when necessary letters.)

CONCLUSIONS.

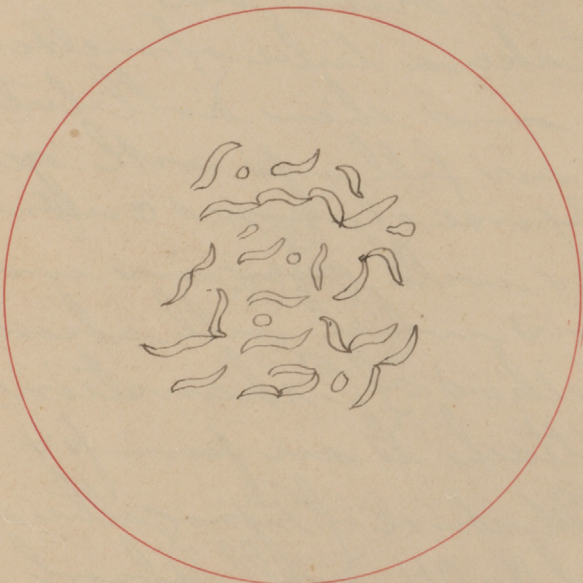
*Vibrio Finkler
 and Priors:-*



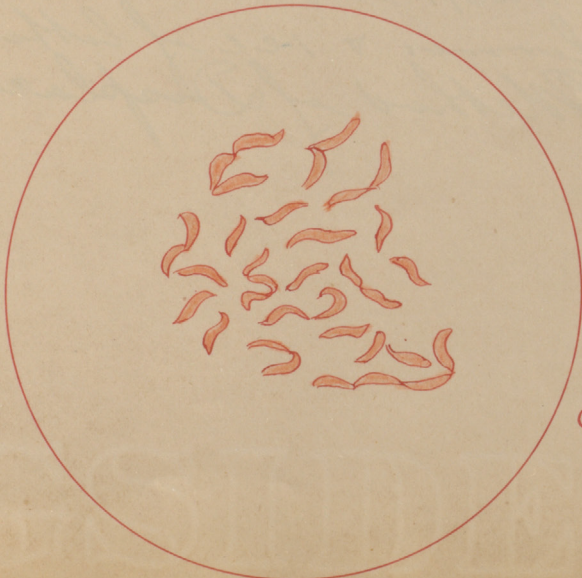
*Stain:-
 Loeflers Blue*

Hanging drop:-

*Movements the same but
 more sluggish than the
 Spirilla Cholera*



*V. F. P.
 Negative
 to Grams:-*



*Stain:-
 Grams
 Counterstain-
 Saffrin.*

Conditions likely to be confused with those described. Procedure necessary for establishing the diagnosis. References from standard author confirming statements. Explanation of any results not typical. Lecture notes, calculations, etc., can also be placed on this page.

I Demonstration of Anaerobic Cultures

II Actinomycetes

Stains & simple stains, Gram's
" Stain by Grams

Bacteria
Aerobes } I. Obligative
 } II. Facultative
Anaerobes } I. Obligative
 } II. Facultative

Different Methods of Raising Anaerobes

I Exclusion Method:-

- (A) By using dextrose media, inoculating & covering w/ olive oil
- (B) Take a tube of melted agar, cool to about 40°C , inoculate and then roll tube on ice. To exclude oxygen or air fill up with gelatin "Roll cultures"
- (C) By use of mixed cultures, e.g. the tetanus organisms will grow in wounds along w/ other organisms which will absorb the oxygen

II. Method of Exhaustion or Absorption:-

- (A) Attach to air pump & exhaust
- (B) Mixture of pyrogallic acid (10% sol) & (1% norm) solution of NaOH will absorb the O.
10 c.c. of former & 1 c.c. of latter
- (C) Method of Displacement:-

Name

*W. H. Duff*35
McGill University.
STUDENTS' LABORATORY RECORD.

Subject

Actinomyces

Date

Nov 22nd 1906

DATES AND TECHNIQUE.

(Brief mention of methods employed.)

DESCRIPTION.

(Full description of what is actually observed. Inferences and opinions placed within brackets. Drawings and diagrams enclosed in circles and when necessary letters.)

CONCLUSIONS.

*Actinomyces:—**A =**B =**Stain:—*
*Gentian Violet.**Organism positive*
to Grams*Stain:— Grams*
Counterstain:—
Safranin

Conditions likely to be confused with those described. Procedure necessary for establishing the diagnosis. References from standard author confirming statements. Explanation of any results not typical. Lecture notes, calculations, etc., can also be placed on this page.

Bacteriology of Eye: Nov 26th 1906:

- I Make smear preparation from the normal eye and stain by Gram
- II Examine Smears of B Mallei
- III Transfer Chromogenic B
 - (I). B Pyodisgousis!
 - (II). B Pyocyanens.
 - (III). B Fluorescens

Examine slides at end.

Compare - { Morax-oxenfeld
Diplo Bac
Koch-weeks Bac
Influenza Bac

Make smears from growths from conjunctival cases Specimens I. II. III

Morax-oxenfeld: Diplo-bacillus of Conjunctivitis
It is non-nutritive, does not form spores. Decolorized by Gram method. Does not grow on gelatin or agar.
Grows on blood serum causing liquefaction.

Name

37
McGill University.

Subject

Eye Bacteria

Class Number

STUDENTS' LABORATORY RECORD.

Date

Nov 26th 1906

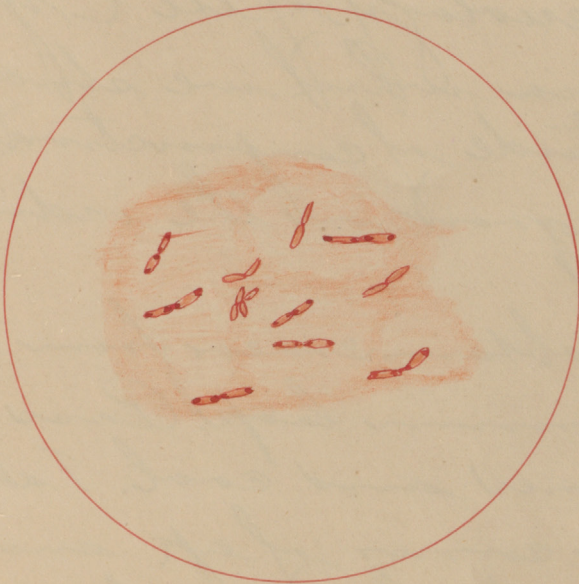
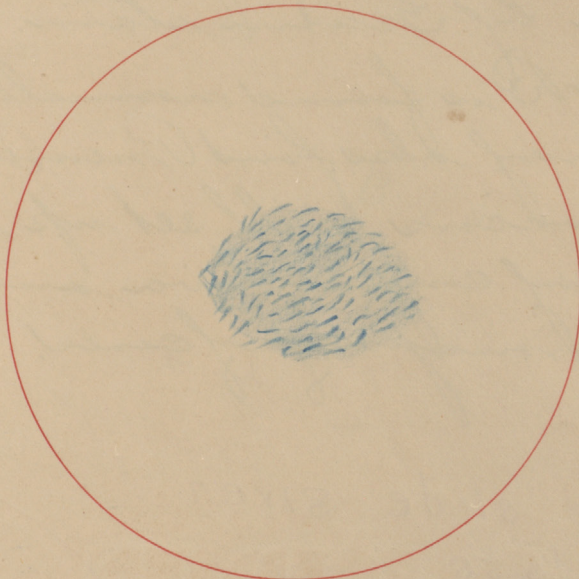
DATES AND TECHNIQUE.

(Brief mention of methods employed.)

DESCRIPTION.

(Full description of what is actually observed. Inferences and opinions placed within brackets. Drawings and diagrams enclosed in circles and when necessary letters.)

CONCLUSIONS.

*Morax Axenfeld**= Diplo-Bacillus**Scope No I.**These are diplo-bacilli with polar granules**Influenza B.**Scope No II.**These are exceedingly slender B.**Koch-Week. B.**Scope III.**These are short and quite thick. causes**Pink Eye:—*

Conditions likely to be confused with those described. Procedure necessary for establishing the diagnosis. References from standard author confirming statements. Explanation of any results not typical. Lecture notes, calculations, etc., can also be placed on this page.

Bacteriology of the Eye: — Nov 26th 1906
The bacteria which we study here are limited to the outside of conjunctival sac. The organisms will not grow on the ordinary media of the Laboratory.

To obtain smears from eye:—

Take platinum loop. Pass through the flame several times and cool. Take matter from the inner corner of eye and spread on slide and stain by Gram's stain. & counterstain

Xerosis B is found normally in conjunctival sac. We may also find Pneumococcus, Streptococcus. Gonococcus will set up severe inflammation and destroy conjunctiva and finally the eye. Sight lost in majority of cases.

Smear slide given
to class
from eye

A = Morax-Axenfeld B
= Diplo-bacillus
B = Streptococcus
C =



Stain—
Grams
Counterstain—
Safranin

Name

W. A. and 39

McGill University.

Subject

E. Bacteria

Class Number

STUDENTS' LABORATORY RECORD.

Date

Nov 26th 1906

DATES AND TECHNIQUE.

(Brief mention of methods employed.)

DESCRIPTION.

(Full description of what is actually observed. Inferences and opinions placed within brackets. Drawings and diagrams enclosed in circles and when necessary letters.)

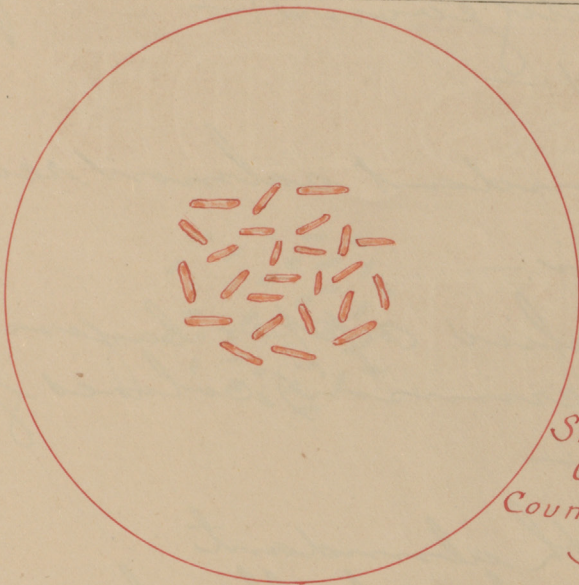
CONCLUSIONS.

Conjunctival cases:—

Specimen I.

Xerosis B.:—

Negative to Grams



Stain:—
Grams
Counterstain:—
Saffranin

Specimen II

A. Streptococci cum

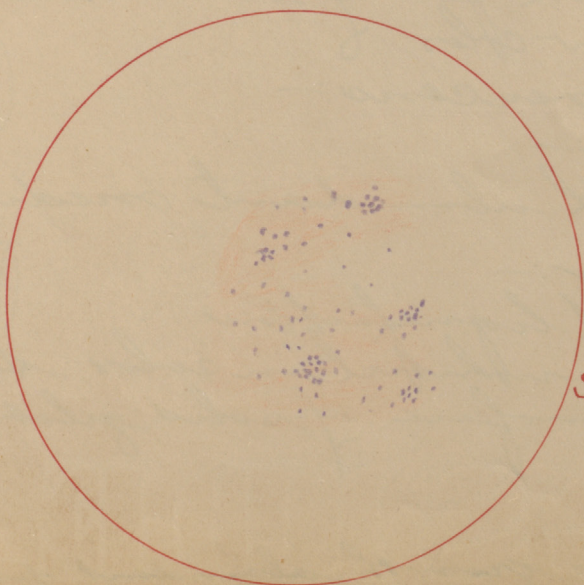
B. Morax Axenfeld B.



Stain:—
ditto:—

Specimen III

Staphylococci:—



Stain—
ditto—

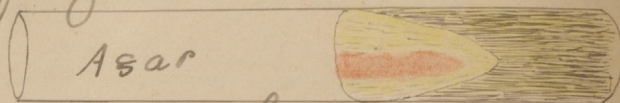
40
EXPLANATORY NOTES.

Conditions likely to be confused with those described. Procedure necessary for establishing the diagnosis. References from standard author confirming statements. Explanation of any results not typical. Lecture notes, calculations, etc., can also be placed on this page.

B. Prodigiosus:

3 days growth in each case

Agar:



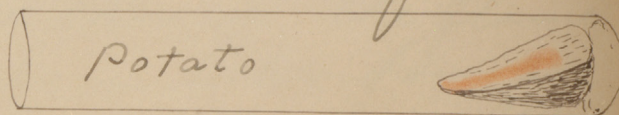
Abundant salmon red growth

Gelatin:



Liquefied upper layers turbid. Circular red (crimson) colored growth at surface

Potato:

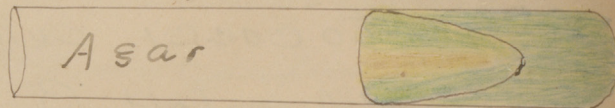


Growth abundant

and of a brilliant red (crimson) color

B. Pyoverdineus:

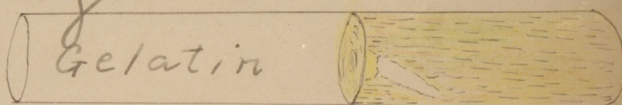
Agar:



Growth abundant & yellowish brown color

Media has a faint bluish green color.

Gelatin:



Growth quite abundant

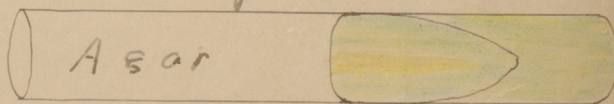
Media liquefied somewhat above & slight greenish shade.

Potato:

Growth fairly abundant and of a brownish yellow color

B. Fluorescens:

Agar:



Growth abundant media greenish yellow color

Gelatin:



Slight liquefaction

Growth whitish in color. When it has settled on surface of solid gelatin. No of slight greenish tinge.

Potato: growth abundant pinkish yellow color.

Name W. D. Dwyer McGill University.
 Class Number 41 STUDENTS' LABORATORY RECORD.

Subject Chromogent B
 Date Nov 29th 1906

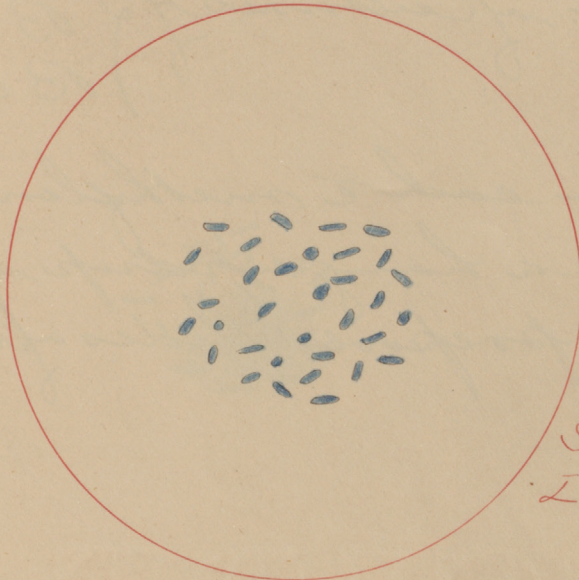
DATES AND TECHNIQUE.
 (Brief mention of methods employed.)

DESCRIPTION.
 (Full description of what is actually observed. Inferences and opinions placed within brackets. Drawings and diagrams enclosed in circles and when necessary letters.)

CONCLUSIONS.

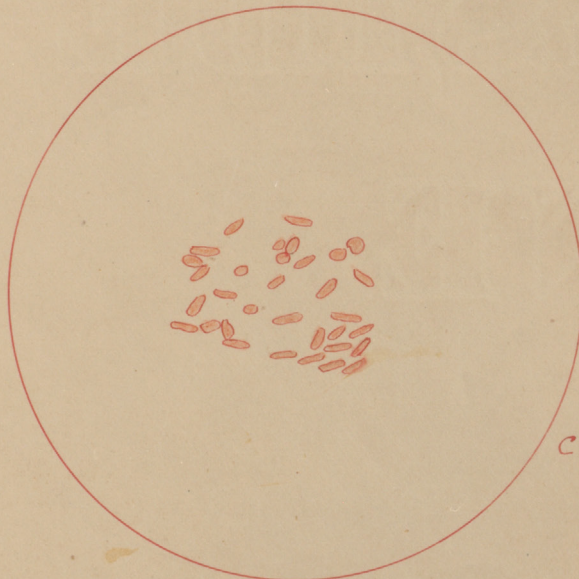
B. Prodigiosus:

These B. are very short and it is difficult to distinguish them from cocci.



Stain:—
 Loeffler's Blue

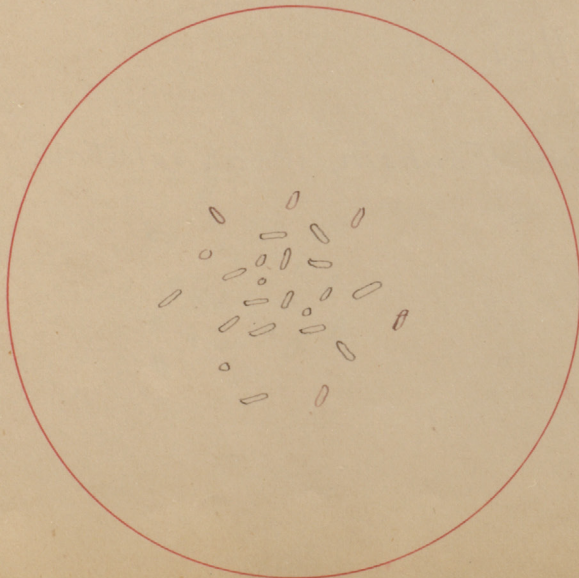
Negative to
 Grams



Stain—
 Grams
 Counterstain—
 Safranin

Hanging drop:

motile



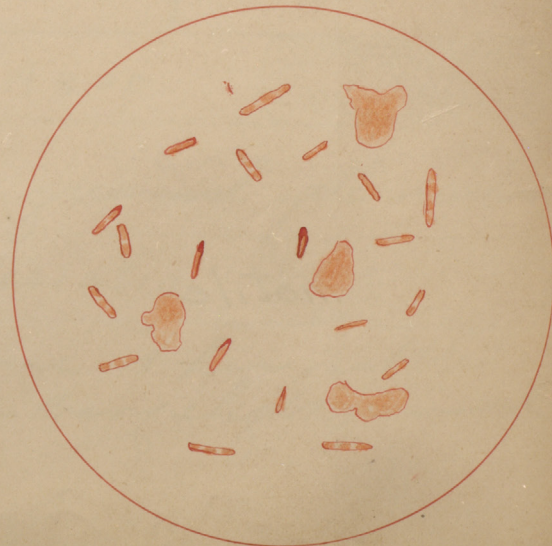
Conditions likely to be confused with those described. Procedure necessary for establishing the diagnosis. References from standard author confirming statements. Explanation of any results not typical. Lecture notes, calculations, etc., can also be placed on this page.

- [illegible]

B. Mallei =

Stair -

Carbol Fuchsin, weak solution.



Name W. B. Duff ⁴³ McGill University.
 Class Number _____ STUDENTS' LABORATORY RECORD.

Subject Chromogenic B
 Date Nov. 29th 1906

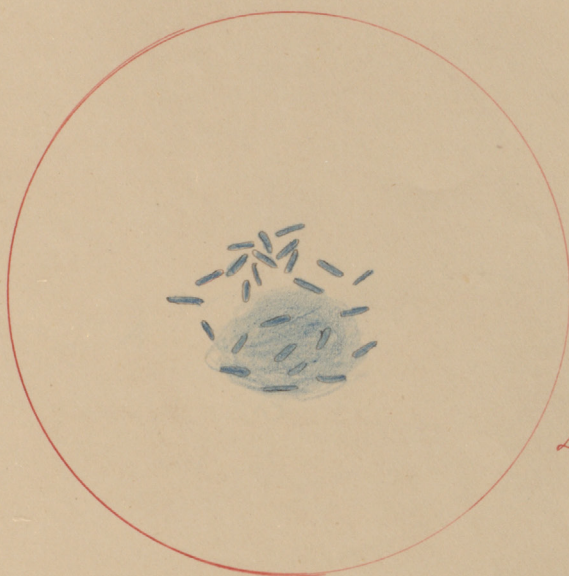
DATES AND TECHNIQUE.
 (Brief mention of methods employed.)

DESCRIPTION.
 (Full description of what is actually observed. Inferences and opinions placed within brackets. Drawings and diagrams enclosed in circles and when necessary letters.)

CONCLUSIONS.

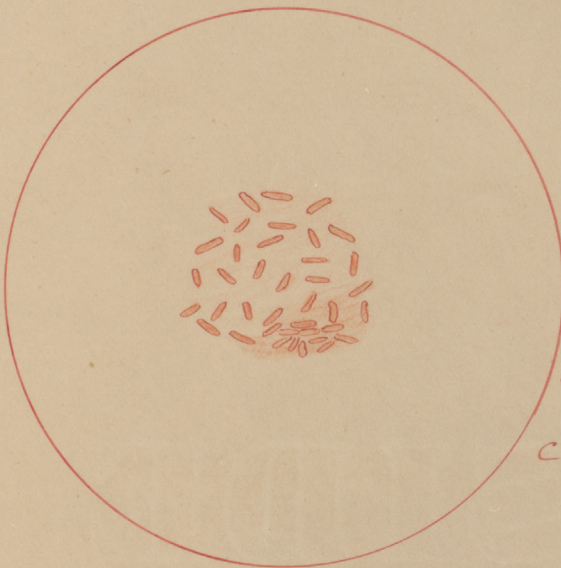
B. Fluorescens:

B. are short with round ends Arranged singly. Longer than B prodigiosus



*Stain —
 Loeffler's blue*

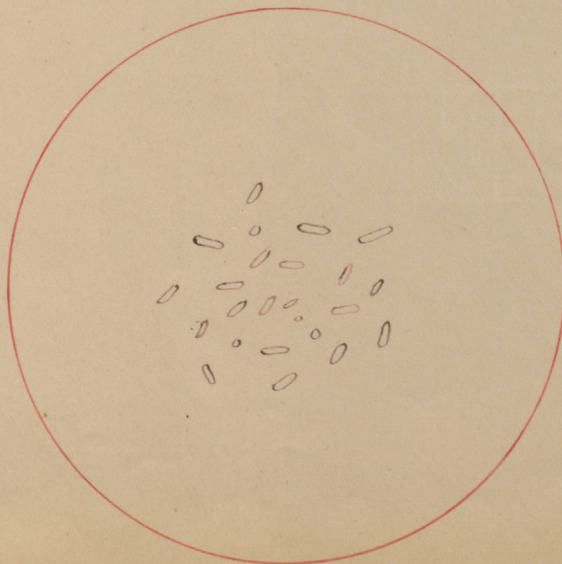
Negative to Grams



*Stain —
 Grams
 Counterstain —
 Saffranin.*

Hanging drop.

motile



L.L.
EXPLANATORY NOTES.

Conditions likely to be confused with those described. Procedure necessary for establishing the diagnosis. References from standard author confirming statements. Explanation of any results not typical. Lecture notes, calculations, etc., can also be placed on this page.

Name

W. A. Denny

McGill University.

Subject

B. Mallei

Class Number

STUDENTS' LABORATORY RECORD.

Date

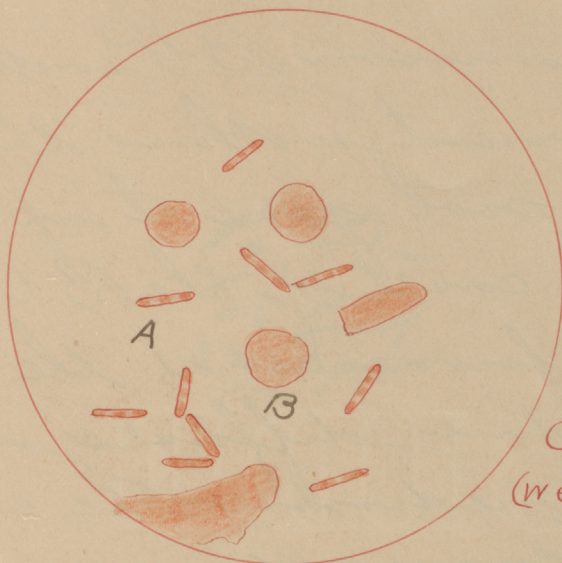
Nov 29th 1906

DATES AND TECHNIQUE.
(Brief mention of methods
employed.)

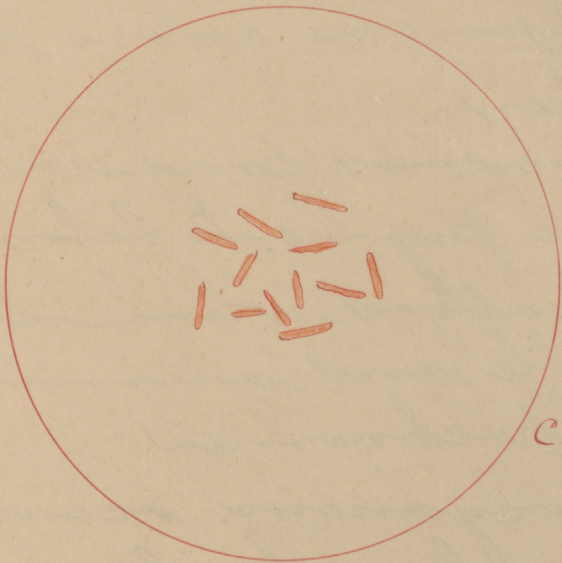
DESCRIPTION.

(Full description of what is actually observed. Inferences and opinions placed within brackets.
Drawings and diagrams enclosed in circles and when necessary letters.)

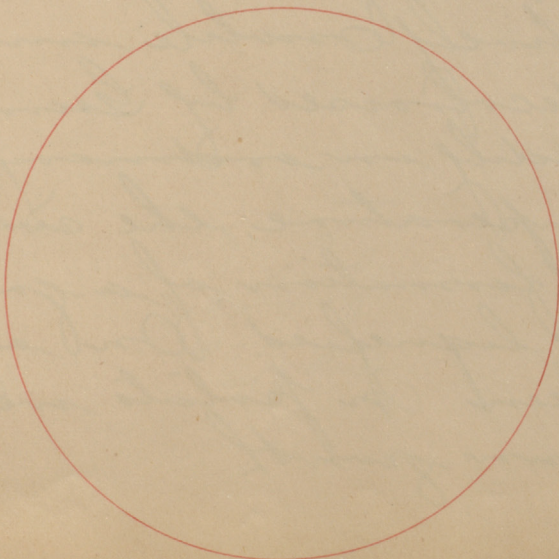
CONCLUSIONS.

B. Mallei or
*Glanders B**A = Glanders B. &*
*metachromatic bodies**B =*

Stain:—
Carbol Fuchsin
(well diluted)
Time = 1/2 min.

Negative to
Grams

Stain:—
Grams
Counterstain:—
Safranin



Conditions likely to be confused with those described. Procedure necessary for establishing the diagnosis. References from standard author confirming statements. Explanation of any results not typical. Lecture notes, calculations, etc., can also be placed on this page.

The organism *B. Prudigianus* retains its pigment within the protoplasm and does not give it up to the media but in the case of the *B. Pyocyaneus* and *B. Fluorescens*, the pigment which they produce diffuses out into the surrounding medium. The color will depend on the organism.

B. Pyocyaneus colors agar a bluish green.

B. Fluorescens, produces a greenish yellow color.

These pigments belong to a group of coloring matters which occurs widely in the vegetable and animal kingdoms viz the lipochromes.

B. Pyocyaneus occurs as minute rods 1.5 - 3 μ in length & less than .5 μ in thickness. They are actively motile and do not form spores. They are decolorized by Gerson's method.

Grows readily in ordinary media at the room temperature, the cultures being distinguished by formation of a greenish pigment.

Gelatin is liquefied. On agar growth has a metallic sheen. On potato we get an abundant reddish brown growth.

Name

McGill University.

Subject

Class Number

STUDENTS' LABORATORY RECORD.

Date

DATES AND TECHNIQUE.

(Brief mention of methods employed.)

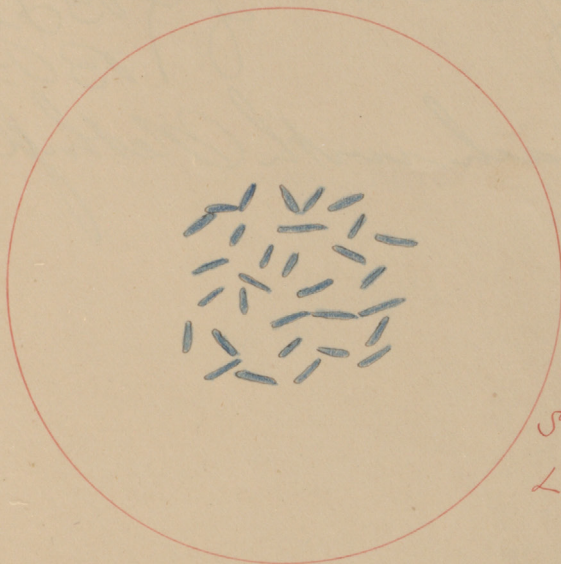
DESCRIPTION.

(Full description of what is actually observed. Inferences and opinions placed within brackets. Drawings and diagrams enclosed in circles and when necessary letters.)

CONCLUSIONS.

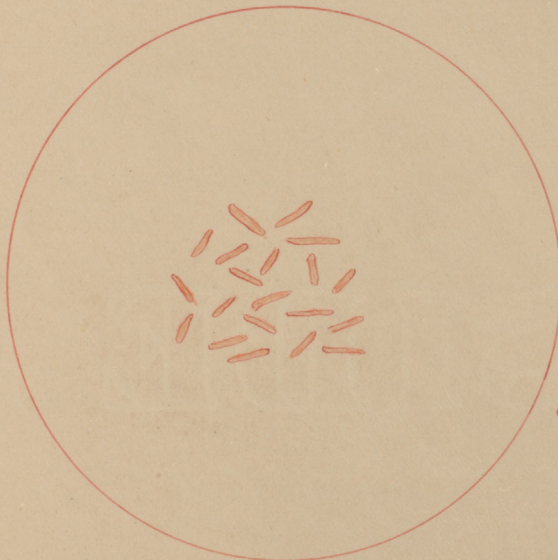
B. Pyocyaneus—

These B are of
varying length and
are very thin. 3-4
sometimes end to end.



Stain—
Loeflers Blue

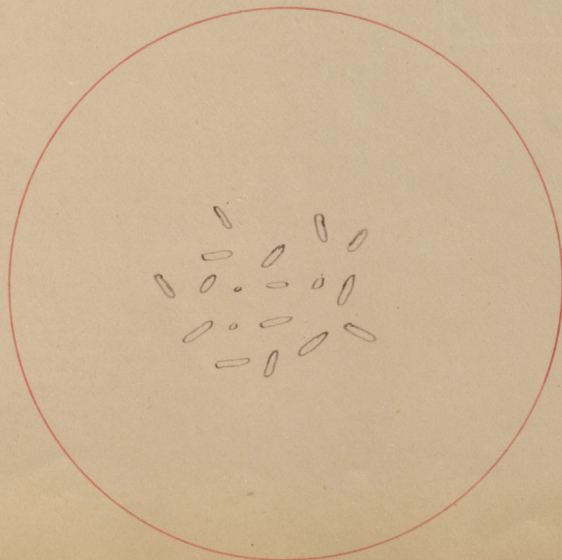
Negative to
Grams



Stain—
Grams
Counterstain—
Safranin.

Hanging drop

Actively motile



48
EXPLANATORY NOTES.

Conditions likely to be confused with those described. Procedure necessary for establishing the diagnosis. References from standard author confirming statements. Explanation of any results not typical. Lecture notes, calculations, etc., can also be placed on this page.

- I Exam of Cultures of *B. Pradigeosus*
B. Fluorescens
B. Pyocyaneus
- II Stain each with Methylene blue & gram
- III

Name.....

49
McGill University.

Subject.....

Class Number.....

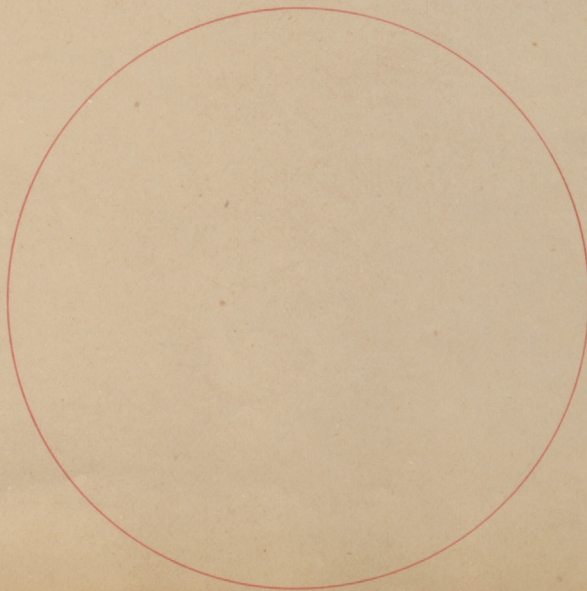
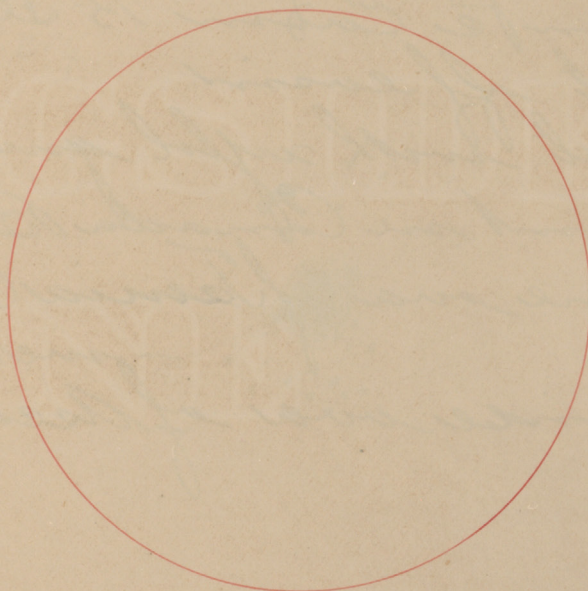
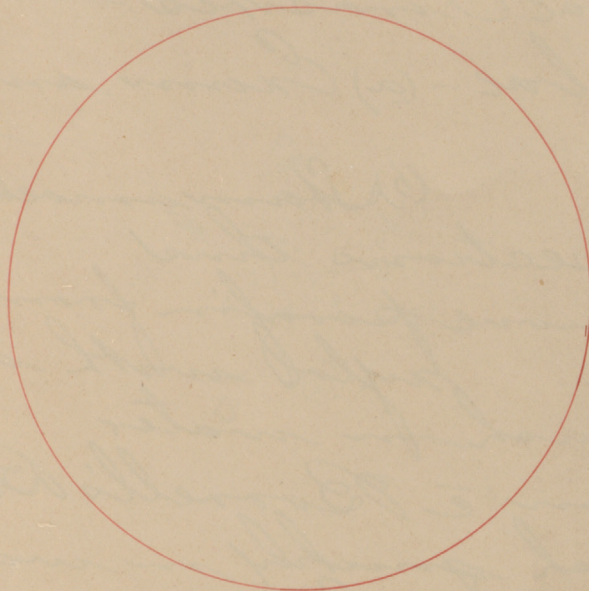
STUDENTS' LABORATORY RECORD.

Date

DATES AND TECHNIQUE.
(Brief mention of methods
employed.)

DESCRIPTION.
(Full description of what is actually observed. Inferences and opinions placed within brackets.
Drawings and diagrams enclosed in circles and when necessary letters.)

CONCLUSIONS.



Conditions likely to be confused with those described. Procedure necessary for establishing the diagnosis. References from standard author confirming statements. Explanation of any results not typical. Lecture notes, calculations, etc., can also be placed on this page.

Animal Parasites:—

I Amoebae - (a) Exam amoeba mtd
wet preparation
(b) Stain amoebae of *Disenteria* in
sections thus

Remove paraffin from section & xylol
" xylol with alcohol
wash in water

Stain & Borrell's Blue 3 min
Wash quickly in water

Stain Fe Eosin 15 secs

Blot off excess

Treat with xylol quickly

Mount in Canada Balsam

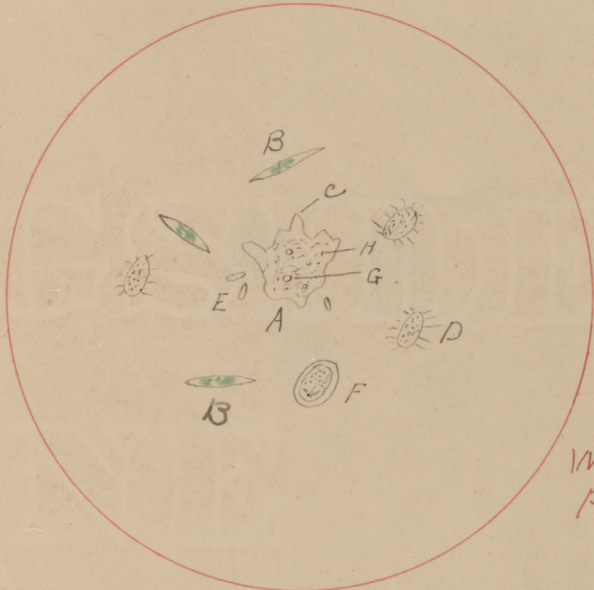
II Examine ova of *Tenia Mediocanellata*

III Examine ova of *Ascaris lumbricoides* - wet preparations

DATES AND TECHNIQUE. (Brief mention of methods employed.)	DESCRIPTION. (Full description of what is actually observed. Inferences and opinions placed within brackets. Drawings and diagrams enclosed in circles and when necessary letters.)	CONCLUSIONS.
--	--	--------------

Amoebae:—

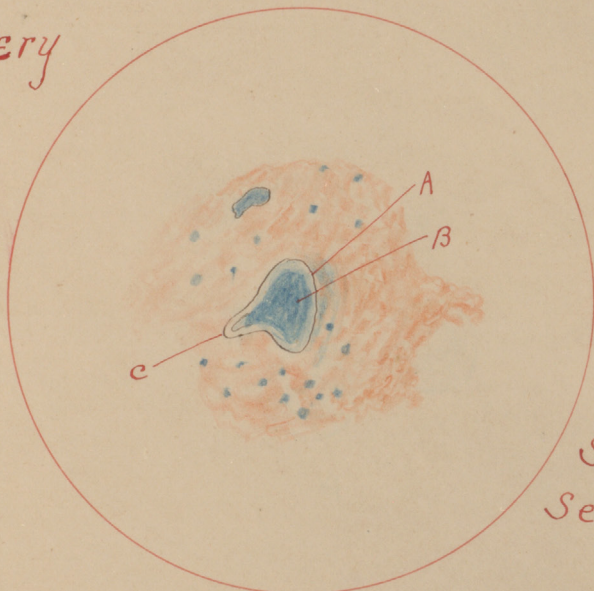
- A = amoeba
- C = pseudopodium
- G = vacuole
- H = granule.
- B = Diatoms
- E = p



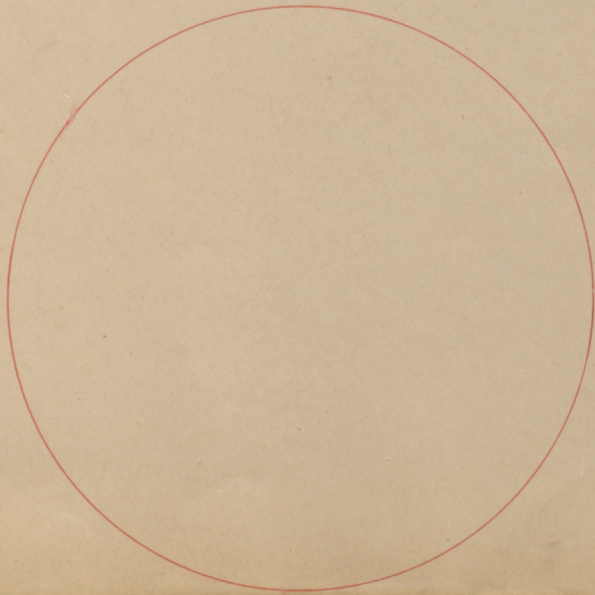
Wet Preparation

Amoeba of Dysentery

- A = Ectoplasm
- B = Endoplasm
- C = pseudopodium



*Stain:—
See, page 50.*



5-2
EXPLANATORY NOTES.

Conditions likely to be confused with those described. Procedure necessary for establishing the diagnosis. References from standard author confirming statements. Explanation of any results not typical. Lecture notes, calculations, etc., can also be placed on this page.

Name

W.D. Dwyer

McGill University.

Class Number

STUDENTS' LABORATORY RECORD.

Subject

Amoeba

Date

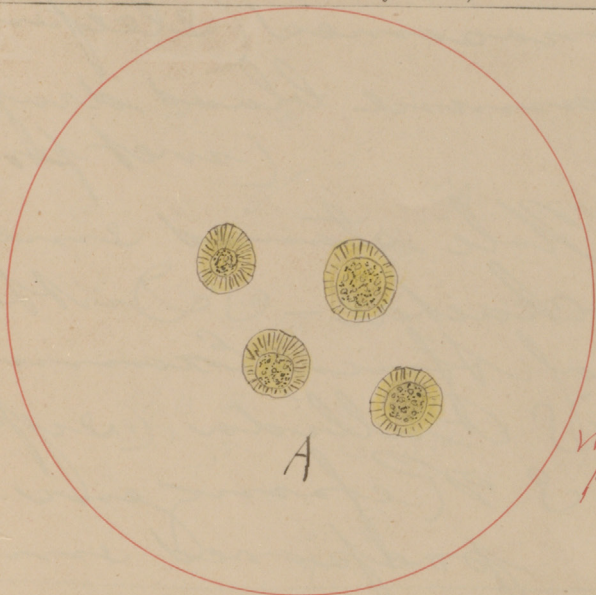
Dec. 3rd 1906

DATES AND TECHNIQUE.
(Brief mention of methods employed.)DESCRIPTION.
(Full description of what is actually observed. Inferences and opinions placed within brackets. Drawings and diagrams enclosed in circles and when necessary letters.)

CONCLUSIONS.

*Taenia**Mediocanellata:-*

A = Ova

Wet
Preparation—*Ascaris**Lumbricoides:-*

A = Ova.

Wet
Preparation—

Conditions likely to be confused with those described. Procedure necessary for establishing the diagnosis. References from standard author confirming statements. Explanation of any results not typical. Lecture notes, calculations, etc., can also be placed on this page.

I Trypanosomes (sleeping sickness)

Examine blood drop of infected Rat
(wet preparation)

Note stained smears under Microscope

II Spirochaetae - S. Dubois (Relapsing fever of Africa) Examine stained smear

- S. Pallida (Syphilis)

- S. Refringens - stain & examine prepared smears

Animal protozoa divided into groups
Infusoria:

Sarcodina - amoeba

Mastigophora - flagellates
ciliates

Sporozoa - malaria
coccidiosis

Not definitely known where spirochaetes belong They divide transversely

The trypanosomes are carried along in rats kept by inoculation They will grow in media of condensation of blood after and serum.

Name

McGill University.

Subject

Trypanosomes

Class Number

STUDENTS' LABORATORY RECORD.

Date

Dec 6th 1906

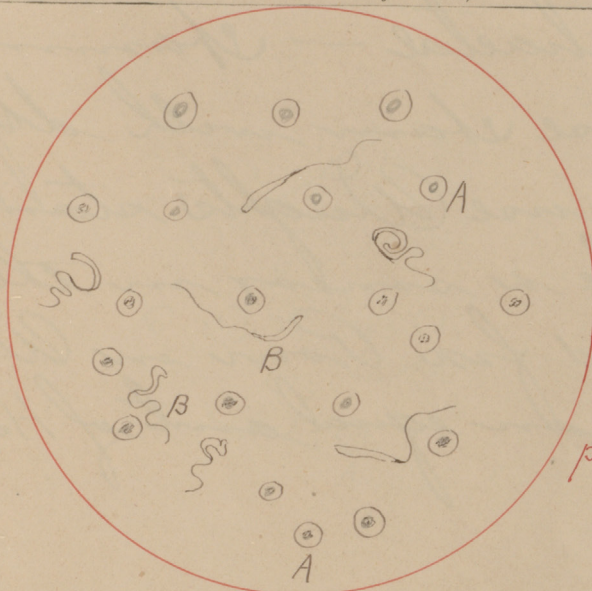
DATES AND TECHNIQUE.
(Brief mention of methods
employed.)DESCRIPTION.
(Full description of what is actually observed. Inferences and opinions placed within brackets.
Drawings and diagrams enclosed in circles and when necessary letters.)

CONCLUSIONS.

Trypanosomes -
from rat's blood

A = red corpuscles

B = Trypanosomes

wet
preparationTrypanosomes of
Sleeping sickness:-

A = Blood cells

B = Trypanosomes

C = Micronucleus

D = Undulating membrane

E = Flagellum

(C = Blastophore)

Stained section
under
Microscope

Conditions likely to be confused with those described. Procedure necessary for establishing the diagnosis. References from standard author confirming statements. Explanation of any results not typical. Lecture notes, calculations, etc., can also be placed on this page.

Spirochaeta — staining of —
These stain with difficulty
Well to use Wright's stain

Make a smear in the usual way
dry, and fix. Pour on Wright's stain
(1 part & an equal amt of 1% H₂O). Wash off.

Name

McGill University.

Subject

Class Number

STUDENTS' LABORATORY RECORD.

Date

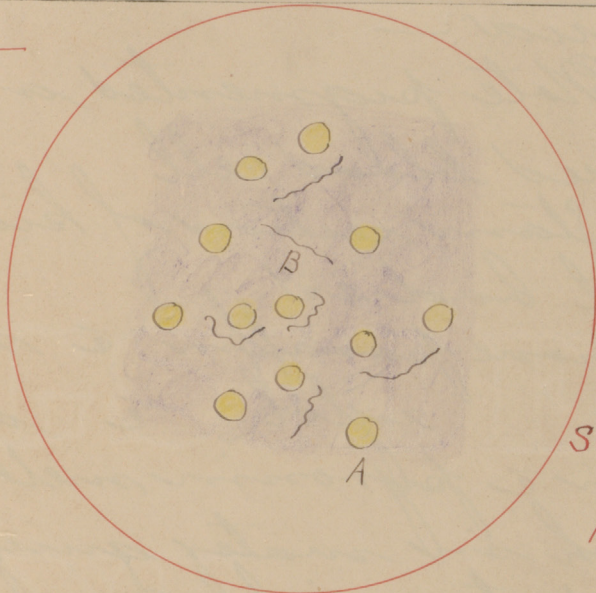
Spirochaeta
Dec 6th 1906DATES AND TECHNIQUE.
(Brief mention of methods
employed.)DESCRIPTION.
(Full description of what is actually observed. Inferences and opinions placed within brackets.
Drawings and diagrams enclosed in circles and when necessary letters.)

CONCLUSIONS.

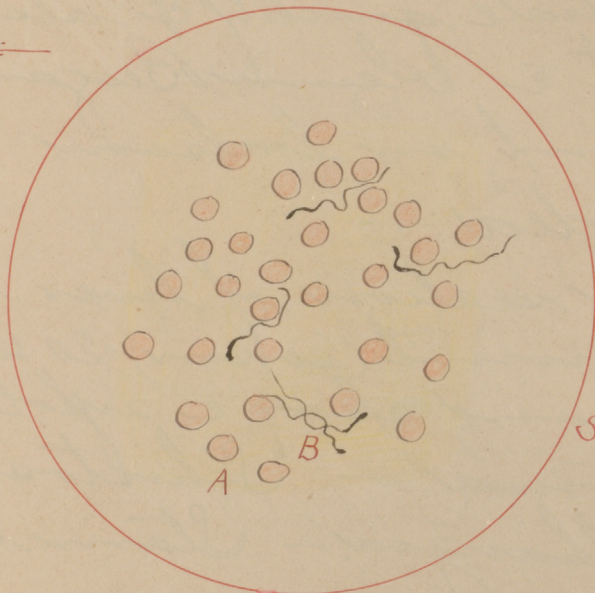
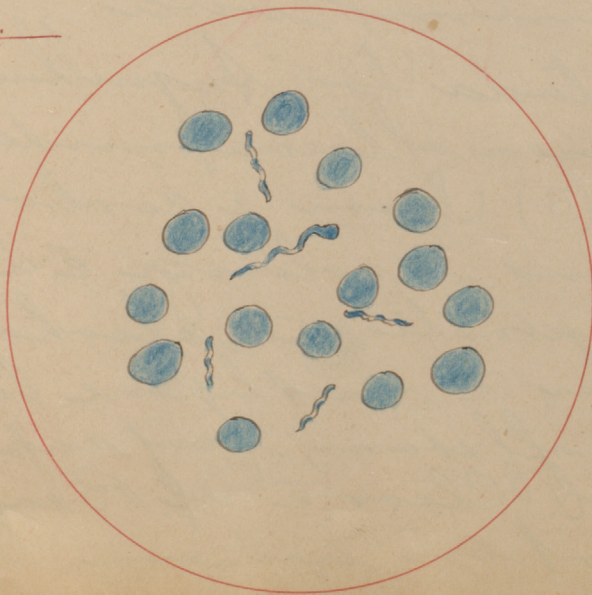
Spirochaeta Pallida:-

A = Blood cells

B = Spirochaeta

Stained Section
under
Microscope*Spirochaeta Duttoni*:-

A = Blood cells

B = Spirochaeta
DuttoniStained Section
lent by
Prof Adami.*Spirochaeta Refringsens*:-Stain—
Loeflers blue
(5 min)

Conditions likely to be confused with those described. Procedure necessary for establishing the diagnosis. References from standard author confirming statements. Explanation of any results not typical. Lecture notes, calculations, etc., can also be placed on this page.

I. Malaria:

- (A) Note pigmented amoeboid haematozoan red blood cell
(B) Stain section of kidney containing pigment bodies
Remove paraffin & xylol
" xylol & alcohol. Wash in H₂O
Stain & pyronin methyl green - 3 min
Wash in water quickly and blot.
Dehydrate quickly & alcohol and blot
Treat & blend Beagarnot. oleum nigam
Mount in balsam

II. Coccidia:

Stain section of liver rabbits counterstain and mount (cotton) 20 sec. Dehydrate & alcohol and clear & xylol.

III. Distoma: - "Schistosoma Japonica," - Bulbaria: - Stain section of intestine containing ova

IV. Hematoda - "Anguillula Intestinalis!" Note specimen of larva under microscope.

Section (B) Stain & alcohol fuchsin 2 min
Wash and decolorize & 2% HCl 1/2 min
dehydrate & alcohol 1/2 min.
Stain & methylene blue 1/2 min
Blot off stain, press rapidly dehydrate & alcohol. Clear & af. Beagarnot. of O. Organi
Mount in balsam.

DATES AND TECHNIQUE.
 (Brief mention of methods employed.)

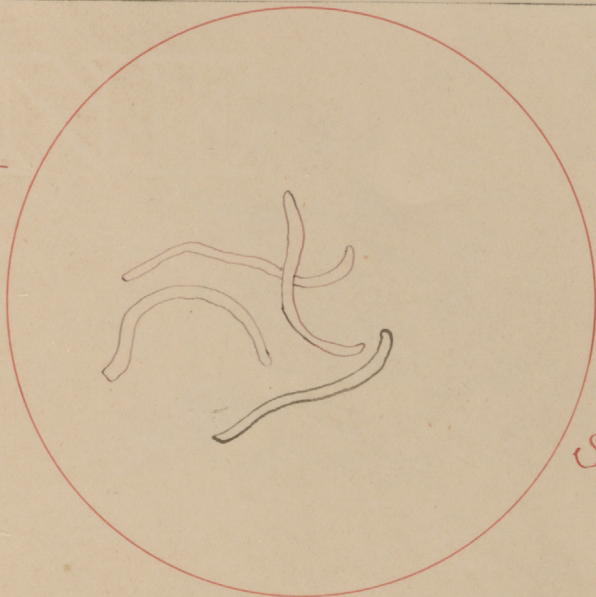
DESCRIPTION.
 (Full description of what is actually observed. Inferences and opinions placed within brackets. Drawings and diagrams enclosed in circles and when necessary letters.)

CONCLUSIONS.

Nematode:—

Anguillula Intestinales—

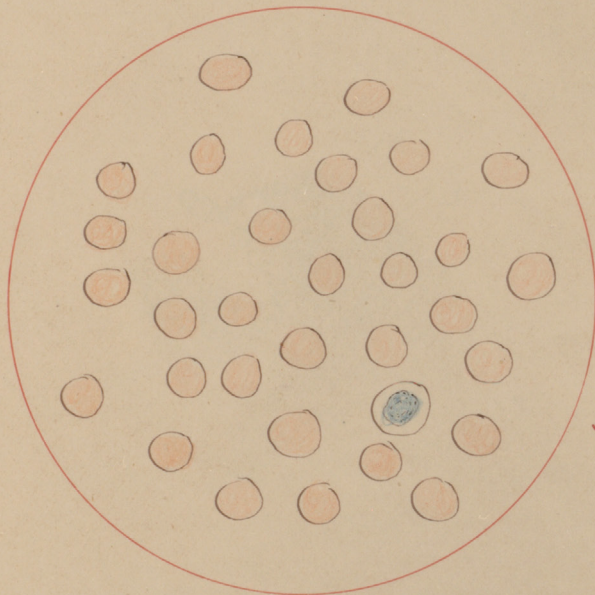
3 Embryos



Scope I

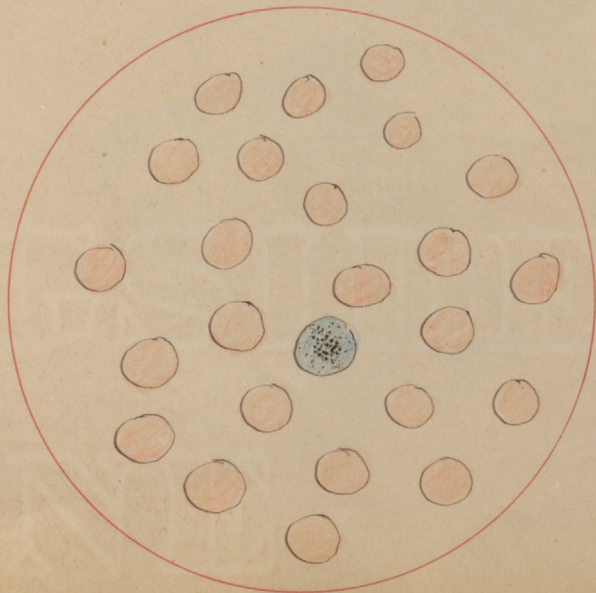
Malaria:—

Parasite within red blood cell.



Scope II

Malaria:— ^{1c}
pigment granules filling red blood cell.



Scope III

60
EXPLANATORY NOTES.

Conditions likely to be confused with those described. Procedure necessary for establishing the diagnosis. References from standard author confirming statements. Explanation of any results not typical. Lecture notes, calculations, etc., can also be placed on this page.

Name

McGill University.

Subject

Date

Class Number

STUDENTS' LABORATORY RECORD.

Sporozoa
Dec 1 Oct 1906

DATES AND TECHNIQUE.

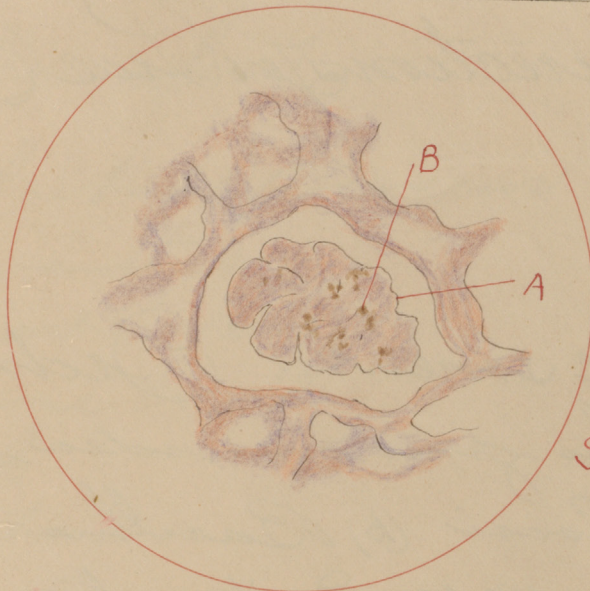
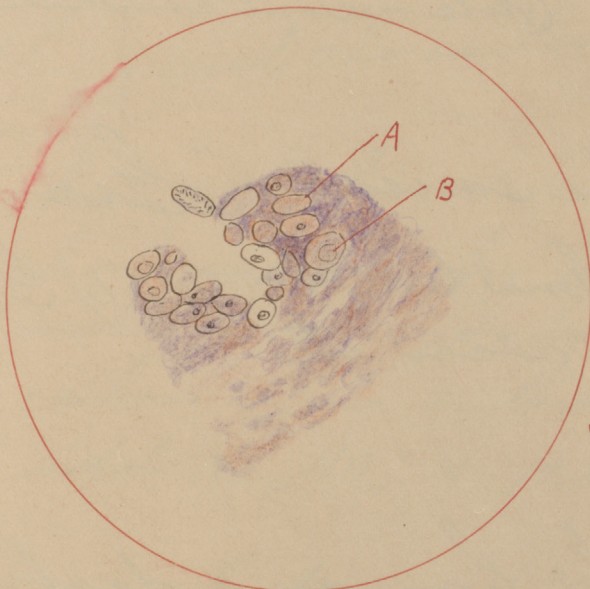
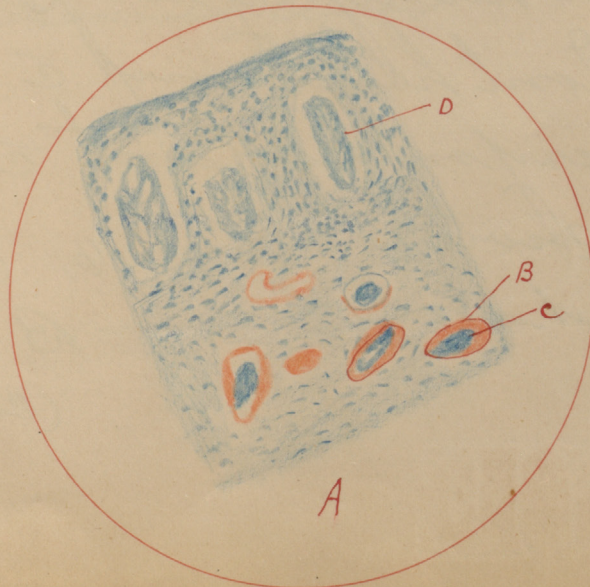
(Brief mention of methods employed.)

DESCRIPTION.

(Full description of what is actually observed. Inferences and opinions placed within brackets. Drawings and diagrams enclosed in circles and when necessary letters.)

CONCLUSIONS.

Malaria:—

A = Glomerulus of Kidney
of case of malaria (Balt)B = modified haemo-
globin of bloodStain —
(Page 58)coccidia —
Oviforme.Stain —
(Page 58)Bilharzia —
Haematobia.Stain —
(Page 58)

EXPLANATORY NOTES.

Conditions likely to be confused with those described. Procedure necessary for establishing the diagnosis. References from standard author confirming statements. Explanation of any results not typical. Lecture notes, calculations, etc., can also be placed on this page.

Directions for Prac. Exams.

- I
- II Make smear "Ordman's stain."
This gives an idea of nature of germ
(a) Cocci (b) Bacillus (c) Spirillum.
(Note - Don't contaminate tube. only one given)
- III Make smear "Gram's method."
(a) Gram positive cocci etc
(b) Gram negative
Typhoid
Colon
Cholera etc
- IV Make hanging drop
Won't help with c. cocci but is
very important c. bacilli
(a) Motile
most are so
(b) non motile
B. Aerogenes
(Colon forms)

Name

McGill University.

Subject

Class Number

STUDENTS' LABORATORY RECORD.

Date

DATES AND TECHNIQUE.
(Brief mention of methods
employed.)DESCRIPTION.
(Full description of what is actually observed. Inferences and opinions placed within brackets.
Drawings and diagrams enclosed in circles and when necessary letters.)

CONCLUSIONS.

V Making transfers

— In case of *Staphylococcus*

VI Color alone wanted.

— Typhoid or Colon

x Glucose broth

x Milk

Gelatin

Agar

Broth

Potato

} not characteristic

Diminutive Soln - Indol -

Present & cholera so also are nutritives

Must add H_2SO_4 only

Present & color (no nutritives)

Must add Na_2NO_2 & H_2SO_4

VII Animal Inoculations

EXPLANATORY NOTES.

Conditions likely to be confused with those described. Procedure necessary for establishing the diagnosis. References from standard author confirming statements. Explanation of any results not typical. Lecture notes, calculations, etc., can also be placed on this page.

Guide to recognition of organisms.

Grams Positive:-

- All Cocci
- Pneumococcus
- Anthrax B
- Diphtheria B
- Tuberculosis B
- Actinomyces
- Staphylococcus
- Streptococcus
- Micrococcus tetragenus

Grams Negative:-

- Gonococcus
- Typhoid B
- Colon. B
- Cholera S
- Finkler & Pirov S
- B Prodigiosus
- B Fluorescens
- B Pyocyaneus
- B Mallei
- Morax-Axenfeld B
- Pneumo-bacillus?

Motile:-

- Typhoid B
- Colon B
- Cholera S
- Finkler & Pirov S
- Prodigiosus B
- Fluorescens B
- Pyocyaneus B

Non-motile:-

- Cocci
- Anthrax B
- Diphtheria B
- Tubercle B
- Gonococcus
- Pneumococcus
- Mallei B (Grossian)
- Morax Axenfeld B =
- Diplo. B of Conjunctivitis

Name

McGill University.

Subject

Class Number

STUDENTS' LABORATORY RECORD.

Date

DATES AND TECHNIQUE.
(Brief mention of methods employed.)DESCRIPTION.
(Full description of what is actually observed. Inferences and opinions placed within brackets. Drawings and diagrams enclosed in circles and when necessary letters.)

CONCLUSIONS.

Action on media: — Milk (Litmus)AcidAlkalinecoagulatorsnon-coagulcoagulatorsnon-coagulators

- *Colo. B.*
- *anthrax.*
- *Staph. Py. Aureus*

- *Typhoid B.*
- *Pseudomonas B.*
- *Friedländer's Pneum. B.*

- *Cholera spirillum*

Fermentation (of sugar)FermentorNon-fermentor

- *Friedländer's Pneum. Bacillus*
- *Colo. Bacillus*

- *Typhoid bacillus*

Gelatin (action on)LiquefiersNon-liquefiers

- *Staphylococcus pyogenes aureus*
- *anthrax.*
- *Cholera spirillum*
- *Franklin's & Brown's spirillum*
- *B. Pseudomonas*
- *B. coli*

- *Streptococcus pyogenes*
- *Franklin's pneum. pyogenes*
- *Friedländer's pneum. bacillus*
- *Typhoid bacillus*
- *Diphtheria B.*
- *Micrococcus tetragenus*

EXPLANATORY NOTES.

Conditions likely to be confused with those described. Procedure necessary for establishing the diagnosis. References from standard author confirming statements. Explanation of any results not typical. Lecture notes, calculations, etc., can also be placed on this page.

Grams Positive:—A — Motile —

Fermenters

Non-Fermenters

Index

1908.

No	Flower.	Bot name.	Date	Habitat	Order	Page
39.	1 flowered Pyrola	Moneses uniflora	June. 27th	Deep woods	Ericaceae.	89
40	Purple flowering Raspberry	Rubus odoratus	June 25th	Thickets	Rosaceae	43
41	S. Dogbane	apocynum androsaemifolium	June. 26th	Banks & thickets	apocynaceae	114
42	Maple-leaved Arrow-wood	Viburnum acerifolium	June. 27th	River banks	caprifoliaceae	61
43	2 leaved Mitrewort	Mitella diphylla	May 30th	Rich woods	Saxifragaceae	47
44	Honey-suckle	Lonicera parviflora	May 20th	Rocky banks	caprifoliaceae	59
45	Mentha Spear-mint	Mentha viridis	July 15th	Wet places	Labiatae	102
46	Catnip	Repeta cataria	July 20th	Roadsides	Labiatae	104
47	Dandelion	Taraxacum densleonis	July 19th	Fields everywhere	Compositae	82
48.	Indian Tobacco	Lobelia inflata	July 25th	Dry fields	Lobeliaceae	84
49	Yarrow, Milfoil	Achillea millefolium	July 26th	fields	Compositae	80
50	Water Lily	Nymphaea odorata	Aug 4th	Ponds	Nymphaeaceae	9
51	Self Heal	Brumella vulgaris	July 27th	Woods & fields	Labiatae	104
52	Arrow-Head	Sagittaria variabilis	Aug 14th	shallow water	Alismaceae	148.
53	Pickered Weed	Pontederia cordata	Aug 14th	Shallow water	Pontederiaceae	164
54	Marsh Speedwell	Veronica scutellata	Aug 14th	Bogs	Scrophulariaceae	96
55	Cardinal Flower	Lobelia cardinalis	Aug 16th	Low ground	Lobeliaceae	83
56						

Name

McGill University.

Subject

Class Number

STUDENTS' LABORATORY RECORD.

Date

DATES AND TECHNIQUE.
(Brief mention of methods
employed.)DESCRIPTION.
(Full description of what is actually observed. Inferences and opinions placed within brackets.
Drawings and diagrams enclosed in circles and when necessary letters.)

CONCLUSIONS.

B. - Non-motile -

Fermenters

Non-fermenters.

Index.

1908.

No.	Flower	Bot name.	Date	Habitat	Order	Page
20	Twin flower	Linnaea borealis	June 16 th	Mossey woods	Caprifoliaceae	59
21	Speedwell American Brooklime	Peronica Americana	June 16 th	along brooks & ditches	Scrophulariaceae	96
22	Speedwell Thyme Leaved	Peronica serpyllifolia	June 16 th	Roadsides, fields	"	97.
23	Vetch or Tare	Picia sativa	June 15 th	waste ground	Leguminosae	37
24	Early Wild Rose	Rosa blanda	June 17 th	Dry woods	Rosaceae	44
25	Wood Sorrel (W)	Oxalis acetosella	June 17 th	Cold woods	Oxalidaceae	27
26	Wood Sorrel (Y)	Oxalis stricta	June 17 th	copses	"	27
27	White Trillium	Trillium grandiflorum	June 1 st	Rich woods	Liliaceae	159
28	Strawberry	Fragaria virginiana	June 3 rd	Meadows	Rosaceae	43
29	Buckwheat	Fagopyrum esculentum	June 16 th	Old fields	Polygonaceae	122
30	Hobble-bush	Viburnum lantanoides	June 1 st	Moist woods	Caprifoliaceae	61
31	7 Solomons Seal	Heptopis trifolia	June 18 th	Bogs	Liliaceae	161
32	Red Asier Dogwood	Cornus stolonifera	June 14 th	In wet ground	Cornaceae	58
33	Bracted Bindweed	Calystegia spithamea	June 19 th	Dry soil	Convolvulaceae	110
34	Vipers Bugloss Blue-wind	Echium vulgare	June 19 th	Roadsides	Borraginaceae	106
35	Pig Anemone	Anemone virginiana	June 19 th	Rocky woods	Ranunculaceae	3
36	Bush Honeysuckle	Diervilla trifida	June 20 th	Rocky woods	Caprifoliaceae	60
37	Beard Tongue	Pentstemon pubescens	June 23 rd	Dry soil	Scrophulariaceae	97
38	Tall-crow foot or Buttercup	Ranunculus acris	June 23 rd	Pastures	Ranunculaceae	5

EXPLANATORY NOTES.

Conditions likely to be confused with those described. Procedure necessary for establishing the diagnosis. References from standard author confirming statements. Explanation of any results not typical. Lecture notes, calculations, etc., can also be placed on this page.

Grams Negative:—

A — Motile: — Jan. 14th. 1907.

- I Kidney. Stain I
- 2 Lung Pneumonia Stain II
- 3 Lung. The Stain I
4. Liver the " III
- 5 Cancer, Breast Stain I

Stain I	Stain II	Stain III
1 Water	1 Water	1 Water
2 Haematoxylin 3 min	2 Haematoxylin 3 min	2 Carbolic Chlorine 30 secs
3 Wash taps	3 Acetic acid	3 Wash water
4. Eosin, 1 min.	4. Ammonia	4. Wash rapidly alcohol
5. Alcohol.	5. Water	5. Clear Rapidly
6 Clear	6 Eosin	6 Mount.
7 Mount	7 Alcohol	
	8. Clear	
	9 Mount	

III
Specimens already stained
fat Sudan III 1-2 hrs orange-
red. Stained by
(1) Haematoxylin 3 min
(2) Wash water
(3) Mount in farrant

Name

McGill University.

Subject I

Class Number

STUDENTS' LABORATORY RECORD.

Date

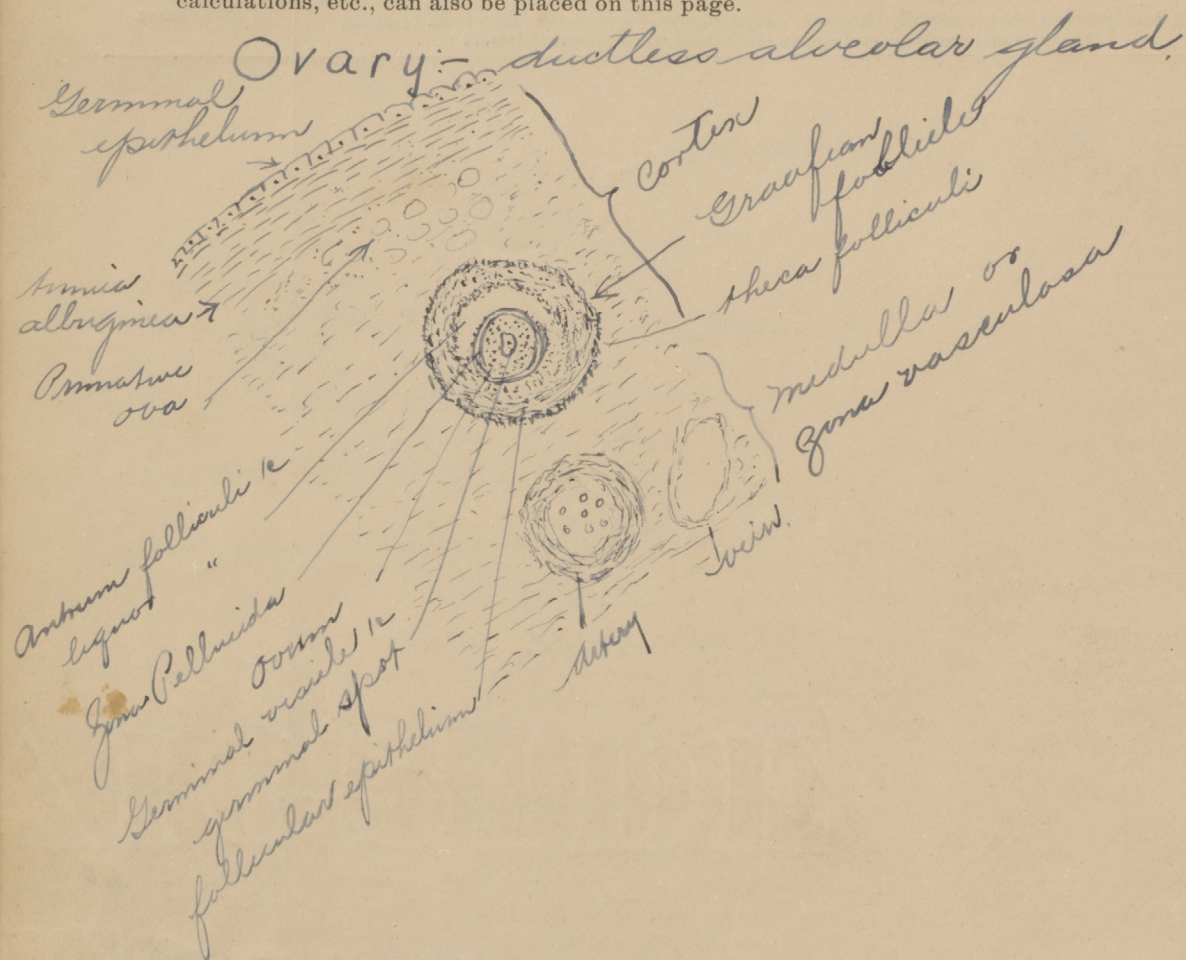
DATES AND TECHNIQUE.
(Brief mention of methods
employed.)DESCRIPTION.
(Full description of what is actually observed. Inferences and opinions placed within brackets.
Drawings and diagrams enclosed in circles and when necessary letters.)

CONCLUSIONS.

B. — Non-motile : —Index.1908

No	Flower	Bot. name	Date	Habitat	Order	Page
1	Leatherwood	Dirca	May 10th	moist woods	Thymel. aceae	
2	Moosewood	palustris	May 11th	Copse	Liliaceae	
3	Dog Tooth & Yellow Adonis tongue	Erythronium americanum	May 18th	bloody rich	"	
4	Purple Thillium round lobed	Thillium Erectum	May 15th	Dry rich woods	Ranunc. ulaceae	
5	Hepatica Liver leaf	Hepatica triloba	May 22nd	rich woods	Berber. idaceae	
6	Blue Cobweb	Caulophyllum Thalictroides	May 28th	Rich woods	Portulacaceae	
7	Spring Bedstraw	Claytonia Caroliniana	May 20	damp woods	caprifol. iaceae	60
8	Fly Honey Suckle	Lonicera ciliata	June 4th	Rich woods	Liliaceae	
9	Smaller Solomon's Seal		June 4th	Damp woods	Liliaceae	
10	Twisted stalk		June 4th	Rich woods	Violaceae	
11	Canada Violet	Viola Canadensis	June 10th	Marshes	Araceae	
12	Marsh Calla	Calla palustris	June 10th	Damp woods	Araceae	
13	Indian Turnip	Arisaema triphylum	June 11th	Rich woods	Ranunculaceae	
14	Red Baneberry	actaea spicata	June 7th	Low ground	Violaceae	
15	Common Blue violet	Viola cucullata	June 7th	Wet meadows	Violaceae	
16	Sweet white violet	Viola blanda	June 11th	Damp woods	Saxifragaceae	
17	Naked-stalked Mitre-wort	Mitella nuda	June 14th	Bogs	Rosaceae	
18	Purple Aven	Leum rivale	June 14th	Moist meadows	Iridaceae	
19	Blue eyed Grass	Bermudiana	June 14th	Wet places	Iridaceae	
20	Blue flag lily	Iris versicolor				

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Drawings and diagrams enclosed in circles and when necessary letters.)

CONCLUSIONS.

4

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