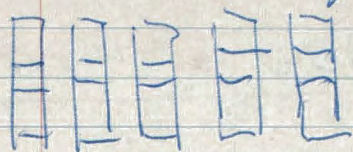


Dr 2734

142 Bldg

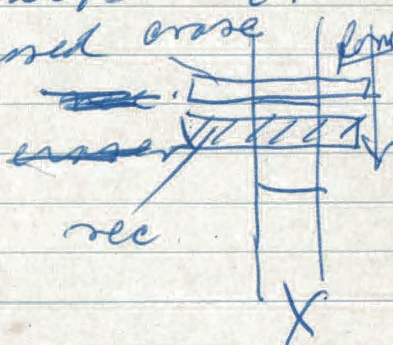
Mrs. Borne

1.) old labing spules



to b c a runs back when to runs forward
 moltese cross for transport of
 "reorder"; friction drive

2.) Transcription spule X Microphane
 lever starts at forward and



it also records
 voice of one
 speaks into
 microphane

Hand lever turns a forward or
 back, when lever turns a backward
 X also runs backward. —

when a runs forward X does
 not run unless microphane
 lever is depressed

[Try it out with two
 tape recorders]

When X turns backward it is
 also erased

10,000

8%

4,000	interest	4,000	Amortization
			<u>Income</u>
			Profits

50,000

14,500

3,000 interest

15,000 capital gain

H

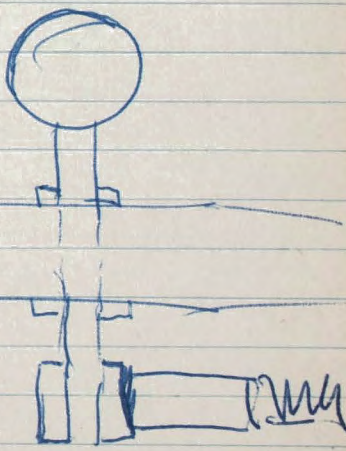
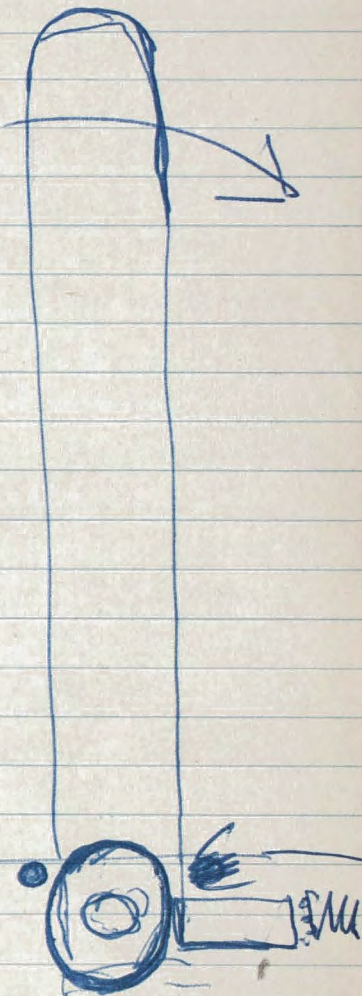
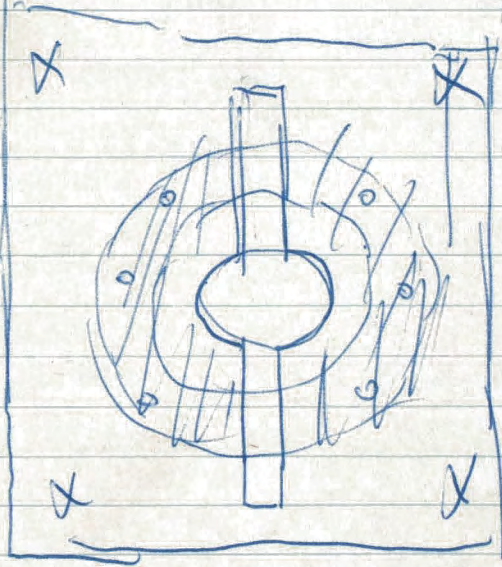
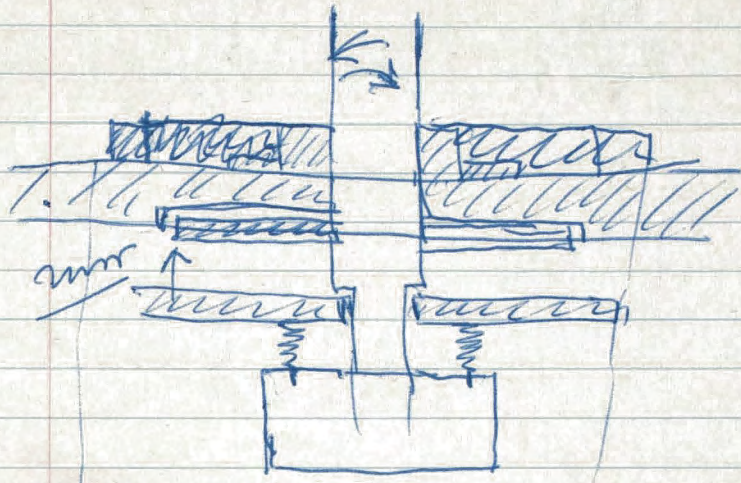
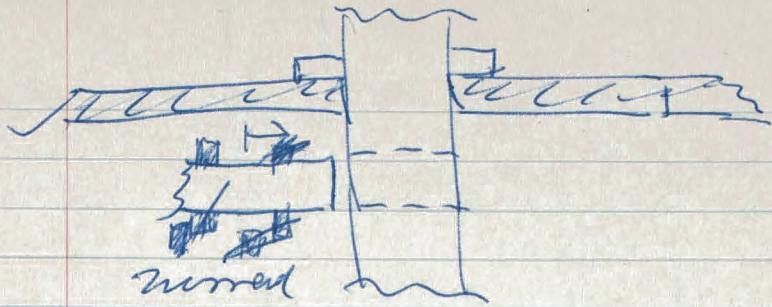


Fig 2

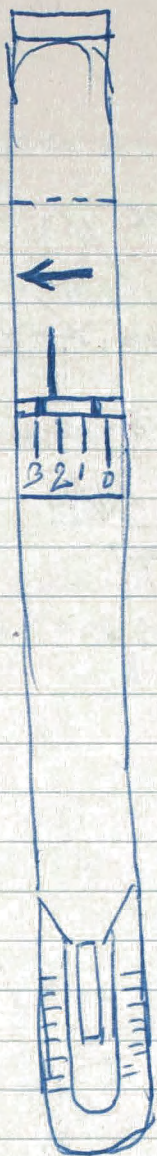
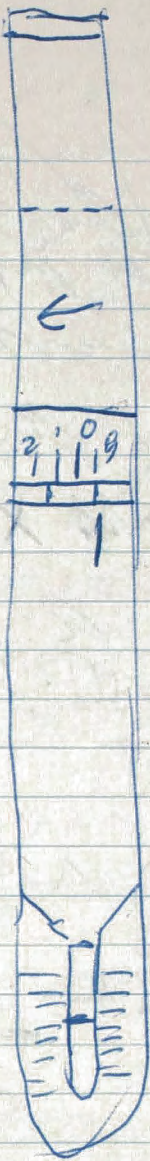


Fig 3



~~Suppose~~

Suppose ~~with the~~ ~~total~~
between two dividend ~~represent~~ the

If B shares are converted into A shares

the relative stake of the A shares

increases from x_i to $x_i \frac{[A_i] + \Delta[A]}{[A_i]}$

and the relative stake of all B shares falls

from y to $y \frac{[B_i] - \Delta[B_i]}{[B_i]}$

$$\text{Since } \Delta A = \frac{y_i [A_i]}{x_i [B_i]} \Delta B$$

we have

$$x \frac{A + \Delta A}{A} + y \frac{B - \Delta B}{B}$$

$$= x \frac{A + \frac{y}{x} \frac{A}{B} \Delta B}{A} + y \frac{B - \Delta B}{B}$$

$$= x \frac{[AB + \frac{y}{x} A \Delta B]}{AB} + y \frac{[AB - A \Delta B]}{AB} = 1$$

$$\text{because } x + y = 1$$

The change of the relative stakes
of all A and all B at time of
dividend payment

If only A+B shares are listed

$a \frac{y}{x} - b$ would have ~~been~~ bought


$$\frac{a \frac{y}{x} - b}{\text{"A+B"}} = \# \text{ of A+B shares}$$

and stake of B is increased

~~$y_{i+1} = y_i + H \frac{x_i}{[A_i]} + H \frac{y_i}{[B_i]}$~~

$$y_{i+1} = y_i + H \frac{x_i}{[A_i]} + H \frac{y_i}{[B_i]}$$

$$y_{i+1} = y_i + [y_i] \frac{x_i}{[A_i]}$$



Assume assume that

11

x and y are the relative shares before dividend is paid (or declared)

When ~~dividend~~ the total dividend payable on all owned A shares amounts to a . The ^(total) B shares would have been entitled to $a \frac{y}{x}$

If they get less i.e. an amount

b the difference $a \frac{y}{x} - b$

could have bought on the market

$[P_i] = \frac{a \frac{y}{x} - b}{\text{"A"}}$ of A shares where
"A" is the market price of A ~~the~~ after the one day ~~prior~~ to the declaration

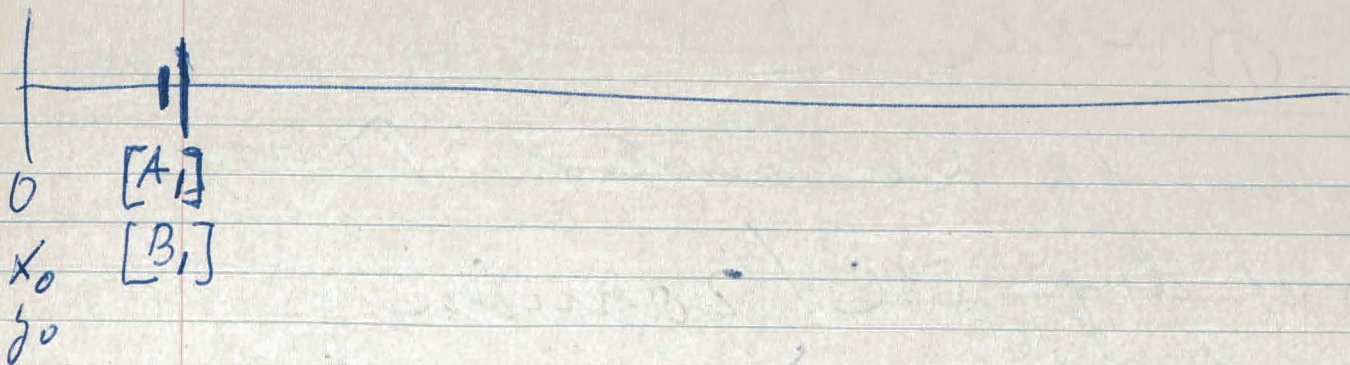
payment of the dividend

Therefore at the time dividend is declared the relative share of the A shares is changed

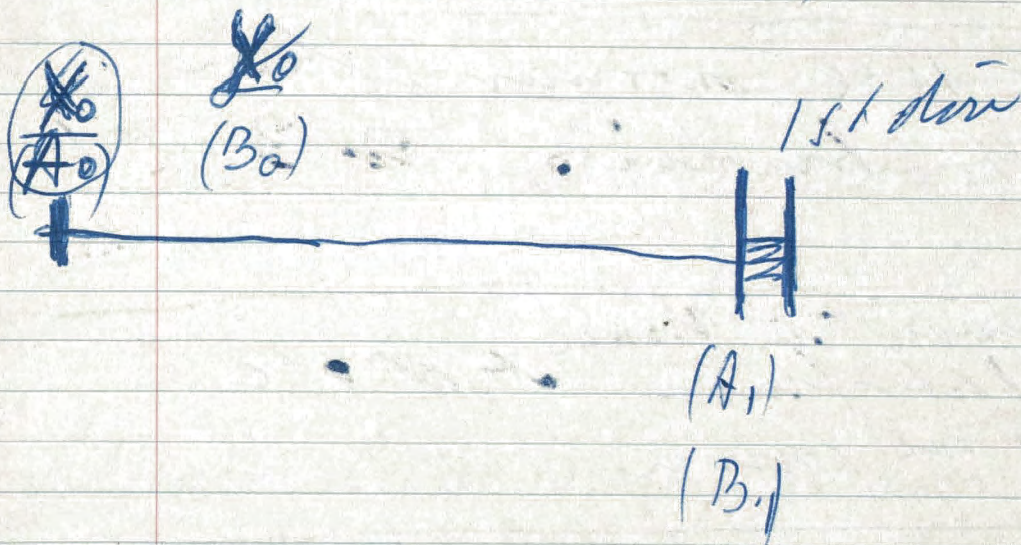
from x_i to $x_{i+1} = x_i \frac{[A_i] - [P_i]}{[A_i]}$

and y is changed to $y_{i+1} = \frac{[A_i]}{1 - x_{i+1}}$

1st div



$$\frac{a_n \frac{y_{n-1}}{x_{n-1}} - b_n}{(A_{n-1})}$$



rel. slope $\frac{x_0}{(A_0)} (A_1) = x_1$ (left)

$$\frac{y_0}{(B_0)} (B_1) = y_1$$
 (left)

$$x_1 \text{ (after)} =$$

Swan

Swimming in ice water Temp
Drop of dog $5^{\circ}\text{C} / 20 \text{ min}$
20 kg dog
consuming 200 cal/min
or 100 cal / 20 min
or 5 cal/min

Man breathes 2 liter/min

~~Assume~~

If dog heart 15°C warmer than
rest of body it consumes ~~2~~ 3 cal/min

Blood transport in water
if we put in 1 liter/min at 17°C
we lose 30 cal/min

~~Evaporation~~

Evaporation
1 kg 500 cal

18 gm 2 liter at 1 liter
40 min 60 min

22 liter

1 gm = 0.5 cal/min

22 liter
1 kg

18 gm of water
1 liter

for B store

$$\frac{y_n(\text{after})}{x_n(\text{after})} = \frac{[A_n]}{[B_n]}$$

$$x_{n+1}(\text{before}) = x_n(\text{after}) \frac{[A_n] + \Delta A_{(n \text{ to } n+1)}}{[A_n]}$$

$$y_{n+1}(\text{before}) = y_n(\text{after}) \frac{[B_n] - \Delta B_{(n \text{ to } n+1)}}{[B_n]} \frac{x_n}{[A_n]}$$

$$\frac{y_n}{B_n} = \text{number of } A \times \frac{x_n}{A_n}$$

Mean coronary circulation
300-350 cc/min

Mean aorta 400 cc/min

Mean 3 liter/min

circulation rate falls
at 20°C has fallen to 1/10 th

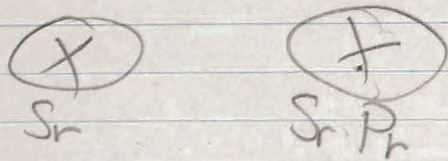
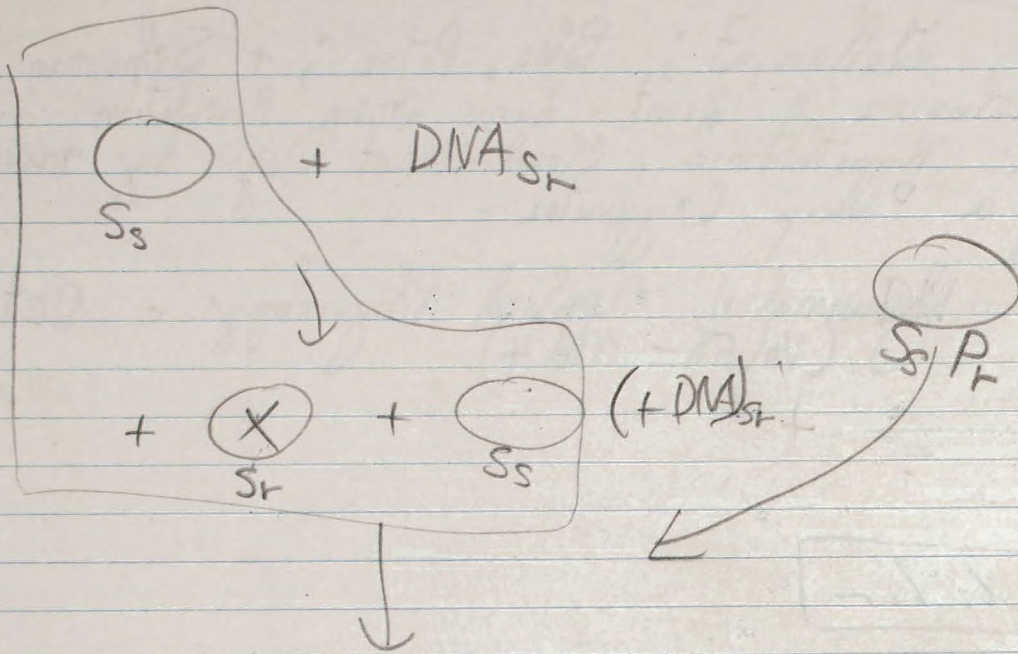
Ivan

Dellan, J; Blos, Peter; + Schuman H.:
"Exclusion of Heart + Lungs from Circulation in
the Hypothermic, Closed-Chest Dog by means
of a Pump Oxygenator -"

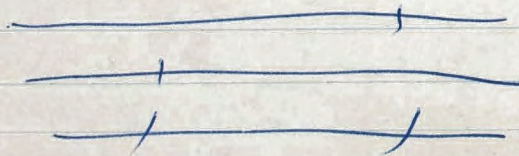
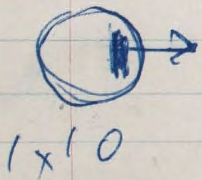
Journal of Applied Physiology - Oct 1952
(Vol 5) - No 4

100

Ivan L'her



Phage 1: 10×10^7 (total weight)



Brown Oak Ridge.

Shunt (Benses)

Wellmark

Zinder

45 min

(Barzon) (10 min)

U	:	C
AB	:	AC
GU	:	GC
AGU	:	AGC
AAGU	:	AAGC
GAAGU	:	GAAGC
GAAGA	:	GAAGC

$$\frac{N^x + y}{N^x + y}$$

2 + 1

~~AAG~~ → U + C

Roy Markham Brothers Inst. Labor.

Academic Press &
~~on Proteins~~ Chapter
Advances in Virus Res.

J. N. Benzold
J. R. Weyatt

Lab. of Insect Path.
1417 S. L. Moore
Ont. Canada

~~Permanence Adh.~~

	A	G	A/G
T2	32.5	18	1.8

T5	30.5	19.5	
----	------	------	--

Nacc	29	21	
------	----	----	--

R. prod.	35	15	2.1
----------	----	----	-----

R. burnetii

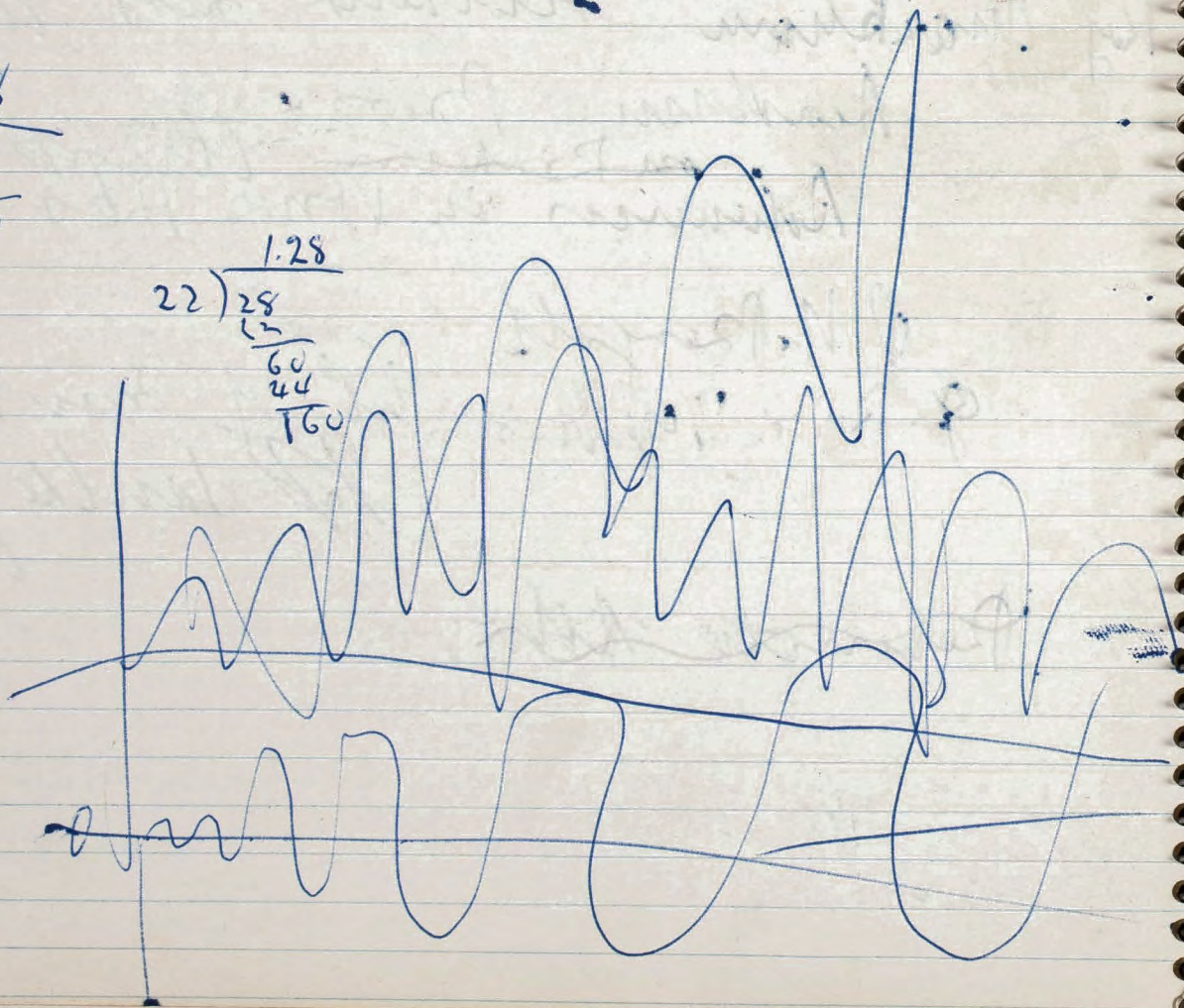
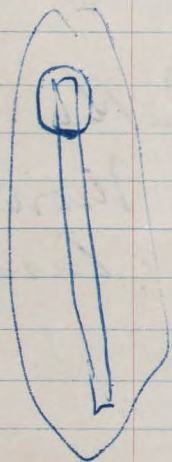
Immun.

0.7 — 1.87

Thymus	28	22	1.28
--------	----	----	------

$$\begin{array}{r} 1.8 \\ 18 \overline{) 32} \\ \underline{18} \\ 140 \end{array}$$

$$\begin{array}{r} 1.28 \\ 22 \overline{) 28} \\ \underline{22} \\ 60 \\ \underline{44} \\ 160 \end{array}$$



Wissnerman Army Med School H

Chromatin



Dounce Rochester Biochem.
Cytogenetics I

$50/10^8$

Prokaryotic nucleus

300×10^7 gm Mol. weight

A. g. cells. Myriad ≈ 1000

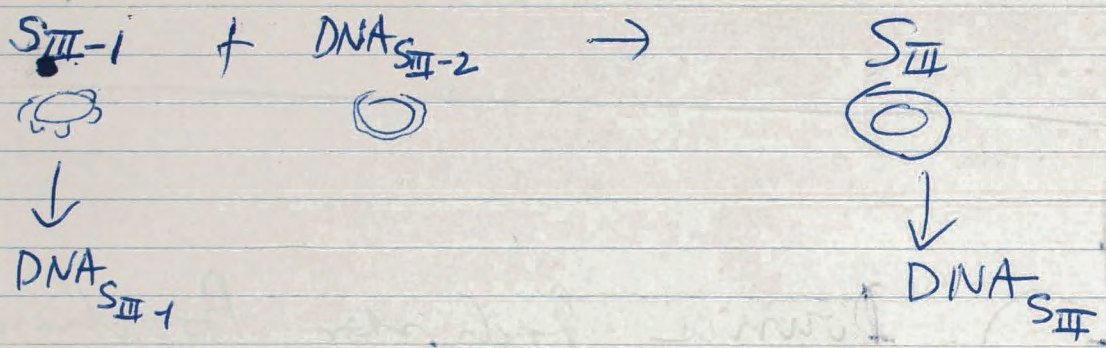
$$\frac{300 \times 10^7}{1000} = 300 \times 10^4 = 3 \times 10^6$$

10^8
 10^4

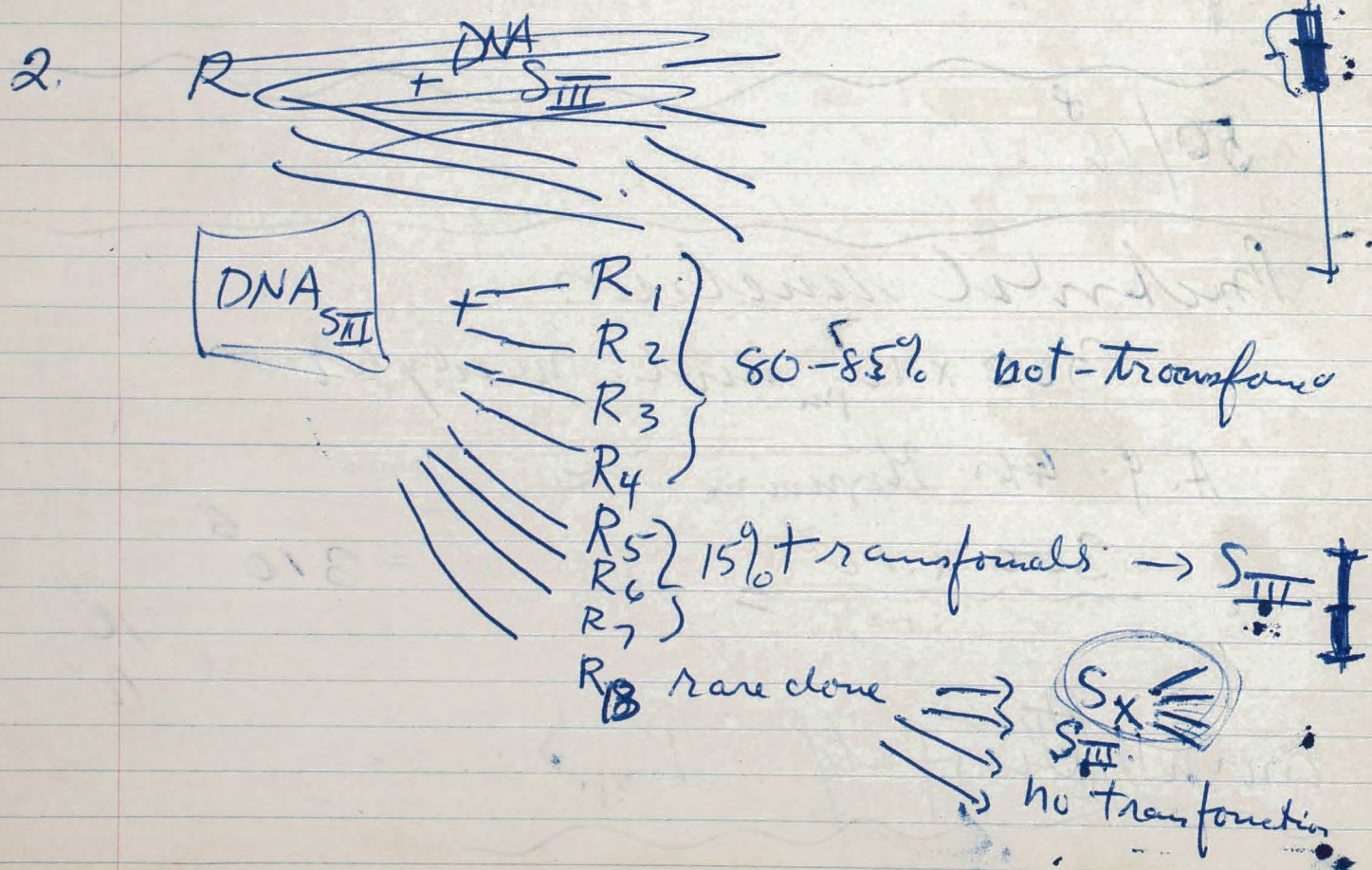
Erwin Chargaff P. J. S.

R Cell A + DNA_B → usual result B

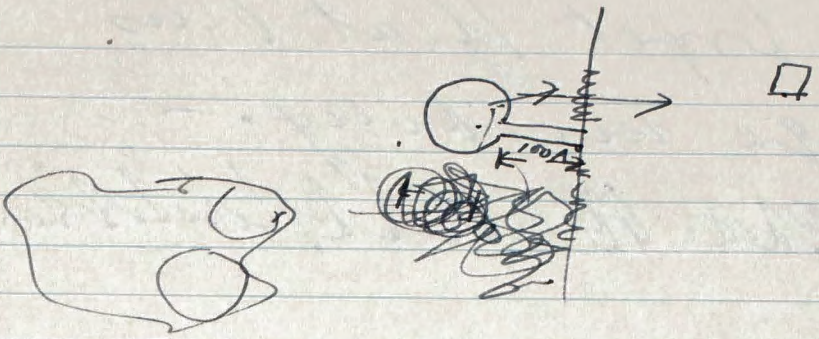
1. ~~R_A~~ " ~~B (= AB)~~



A + DNA_B → C



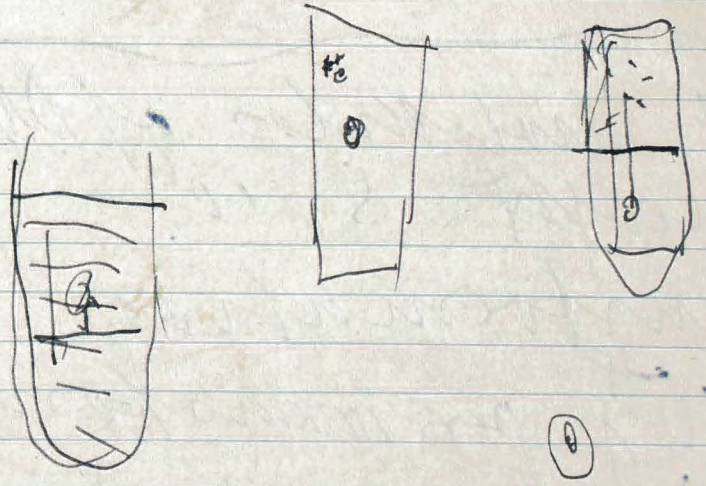
A.



1.7



(πd)



and not to forget that this

is a plunge meeting. -

~~For the meeting, what should be discussed~~
~~but should be~~

Now that the meeting is approaching its close ~~it is obvious~~
none of us can have any doubt
that each day we spent here
together in work and pleasure

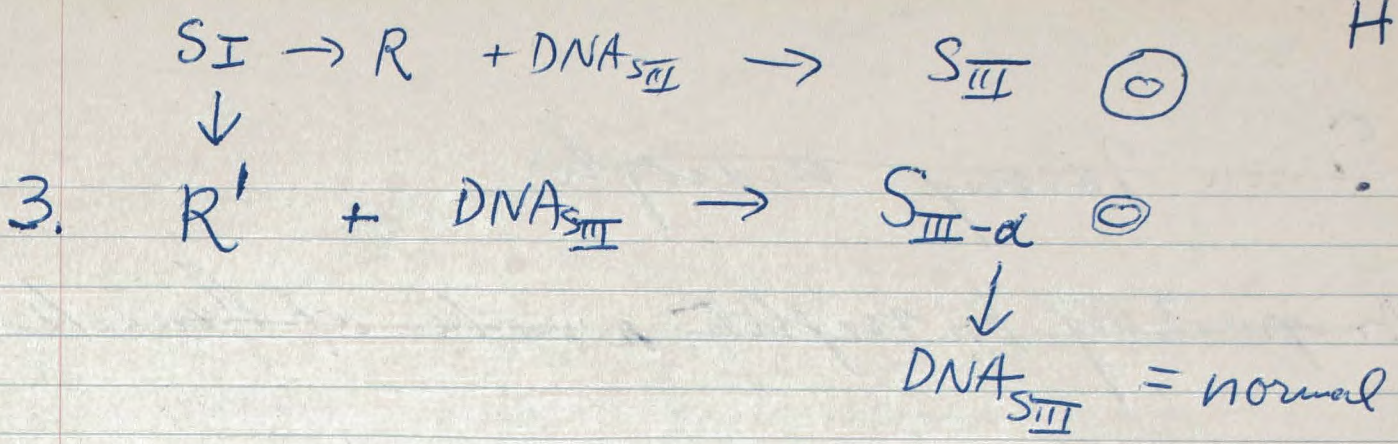
Since within a few years polio ~~is~~ will
be a thing of the past and not
~~seen again afterwards after virus~~

1000 molecules of DNA used
weight $5 \cdot 10^6$ per

transformation

10^{-8} g per transformed cell

1 Brieft contains
 $2 \mu\text{g}$ molecules of DNA
per Brieftum. -



since I lost my identity I should perhaps explain

When I was asked to ~~step~~ ^{take} the chair without hesitation as I ~~was~~ consider it indeed a great privilege to be able I also would like to say in order to stay once for all high remains

~~substantive~~ distinguished scientist independent now, and perhaps present) impracticable results

before calling on Dr. Bremer I ^{ask him to keep in mind} should like to ~~reassure~~ ^{reassure} those who will speak after him ~~to~~ ^{to} keep in mind what Dr. Keller told us on the first day ~~start~~

I am young enough

proposed by for right a vote of thanks

I was requested just an hour ago

~~I rise~~ Ladies and gentlemen;

I rise ^{in order} to propose a combined
vote of thanks for a number

of things for which ~~the~~ ^{most} of all of us have good

reason to be thankful, ^{as it would have been}

~~a vote of~~ ^{such a vote of} perhaps

thanks is ^{of course more} ~~our~~ ^{expressly} at the
more fitting to have ^{such a vote of}
and at ~~the~~ ^{the} meeting ^{to}

~~rather than~~ and we have

another day to go to but
the ~~the~~ of entertainment

was not more than many of us

will move ~~the~~ to night's

festivities and they wanted

and worse papers. ~~What a~~
~~What a~~ ~~What a~~ ~~What a~~ ~~What a~~
~~Jan may not~~ Perhaps it
is not clear to you that
in saying this I have just
paid the highest possible
praise to ~~the~~ ~~work~~ ~~and~~ ~~that~~ ~~was~~
~~ampliment~~, for it ~~is~~ ~~the~~
is true that he and
his ~~the~~ picked the very
best papers available
and I believe this to be
true than if necessary
follows that they could
not have picked more
papers without picking
worse papers. I believe
~~we want to tell~~ ~~them~~
I believe I speak in the
name of all of us of
I say to ~~them~~ ~~it was~~

Even ~~if~~ if it was not
a stage meeting; it was
a good meeting.

~~Thank you~~ I believe we are all
very ~~very~~ grateful to the officers
of the foundation for having
helped for their part in making
this meeting possible.

Just a few days ago Mr. Wilson
our secretary of defense ~~explained~~
~~that~~ ~~the~~ ~~fund~~ ~~for~~ ~~basic~~
~~research~~ will ~~be~~ severely
cut. ~~Also~~ all funds for
basic research ^{under his control} and he explained
that basic research is the
kind of research that does not
do any harm ^{any good}. — agencies
with the ~~fast~~ ^{important} ~~parts~~
of the ~~work~~ ^{work} ~~adapting~~ this
new ~~it is~~ ~~not~~

in Cold S.H.

meeting here before their home
but ~~at that time~~ I believe
~~they~~ each time for
Demere ~~successfully~~

insisted in making us
happy. Now he does it
is his secret. It is ^{probably} not

one secret but ~~just~~
three secrets ~~at the time~~

The first two secrets are ^{probably}
~~set~~ ~~secret~~ drugs which
~~Dr. Demere~~ ~~are~~ ^{probably}
~~secreted~~ in our gut

in our hand. These drugs
make us ^{greedy} and

they ~~keep~~ ~~us~~ keep up
our appetites ~~with~~

~~appetite~~ for people

they keep up our appetite for
people that is they make us

Even though the work of
the conference was not directly
concerned with polio it is
nevertheless true I believe
that every day we spent
in deliberation in this meeting
brought us one day closer
to the ~~day~~ ^{hour} when ~~polio~~ ~~struck~~
~~fundamental vaccination with~~
~~has~~ universal vaccination
will ~~able~~ put an end to
polio —

We are all grateful ~~I believe~~
to our host Mr. Demerec —
~~we are grateful for a number~~
~~of things which I shall try~~
~~to enumerate.~~ —

In various matters I shall
try to enumerate, and if
possible to amplify.
Many of us have been to

reminded him of the
egg dishes which ^{he} ~~they~~ was
enjoyed in England ^{during} thank
to American generosity.

and he was so overcome
with the happy memory
of this ~~that he~~ ^{of this date} ~~that he~~ ^{that he} ~~forgot~~ ^{forgot} ~~to eat any of it.~~

In addition to the two ^{groups}
secrets (mentioned before) ^{the}
he himself has a third

secret ~~and this~~ ^{is}
By this is the ~~secret~~ rare
secret possessed by only

very few hosts ^{in the world} of how
to create an informal
atmosphere. — each time

I return to each group
the hour I am thankful
to partake of this atmos-
phere

H

greivous
and they keep up an
appetite for food so
that we can hardly wait
the ringing of the dinner
bell. —

Those of you who are fond
of food would want me
to thank our host explicitly
for the delicious egg dish
which ~~was~~ we had this
morning for breakfast

~~At the table~~
What it was I cannot tell
you with certainty. I remember
scrambled eggs in everything
except taste and flavour.

~~and it had a delicious~~
~~consistence.~~ who sat next
Mr. Sanders from Oxford
England said that ~~it~~ this was
dish

It is because of their
superiority that meetings
at Cold Spring Harbor
are so pleasant and are
so fruitful

I wish therefore to:

~~write~~

I believe I speak in
your name when I
express ~~our~~ our gratitude
to Dr. & Mrs. Delbruck and
his program etc., to Dr. Duvigneau
and his helpers and to
the ^{offices of the} ~~Howard~~ Foundation
for infantile Paralysis.



H

① $R = 10^{-7} \text{ cm}$

$\boxed{3 \text{ in } 10^{-12} \text{ sec}}$

$\rho \text{ } 6\pi \cdot 10^{-5} \cdot 10^{-7} \text{ per sec.}$

~~4\pi~~

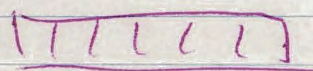
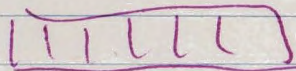
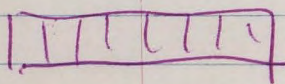
$3 \cdot 10^{-12} \cdot 4\pi \cdot 10^{-7} \approx \underline{\underline{30/\text{sec}}}$

The revival of Interest in the Dream. —

Robert. Bliss

Int. Univ. Press Inc

$$10^{-5} \frac{4 \times 10^8 R. f}{4 \times 10^7 \times 10^{12}} \quad \parallel \quad P = 10^{12} \left(\frac{4 \times 10^8}{4 \times 10^7} \right) \text{ molecules/l}$$



1000 genes

~~1000~~ 1000 enzymes (Trypt)

~~1000 genes~~

1000

$$\frac{22,000 \times 40,000}{6 \times 10^{23}} = 2 \times 4 \times 10^8 \times 10^9$$

$$\frac{1}{6} 10^{-14}$$

$$\frac{1}{9} 10^{-12} \text{ gm}$$

~~1000 genes~~

610 enzymes

$$\frac{6}{12} 10^{-16} 10^{23} = \frac{1}{2} 10^7 = 510^6 \text{ enzyme molecules}$$

how many sites?

~~200~~ engines in ~~site~~ are site
the

10000 sites

1 site makes 500 engines ^{total}
total

1000 sites

50000 engines
1000/2000

for L 1000 μmol

res is 10Ω

for C_e

100 Volts/cm

1 kW

~~1000~~

$\frac{1}{100}$ normal cell

~~10~~

$\frac{1}{10^3} \Omega$

15Ω for 1 normal

1500Ω for $\frac{1}{100}$ normal

$15,000 \Omega$ for $\frac{1}{1000}$ normal

for 100 Volt/cm

$$\text{Heat } 100 \times \frac{100}{10000} = 1 \text{ Watt}$$

Electrophoresis:

H

Scott E. Wood and John L. Engelke

0.5 cm/hour
for 5 Volt/cm

Hydramine
Nat. Lab.

1/1000 Molar Na salt

1/100 Molar ~~resistor~~ resistor Ω



Ω
~~resistor~~ resistor

~~for~~
~~1/1000~~ Molar ~~resistor~~

~~resistor~~
~~100~~ Volts/cm

Ω
~~10~~
1000 Amps

Henry G. Kumbel
The Rocky Inst Assoc.

Proppers

Na acetate ; 4.7
± 1 PH

Caendylite 72
Quinine + Quinine sulfate P.H. 7.3
TRIS P HCl

Urelic

P.H. 6.6

1/2 of PK unit
10 per cm. —

4

$$\text{trans} = 6.4 \log \frac{X_2}{X_1}$$

2 10450

Edward P. Harboch
Hugh J. Mc Donald
Robert M. Forbes
West of Princeton Lapala Under

Quintin F. Peristow
Food & Chemical Res. Lab. & Soc
Seattle Wash
J. A. C. 23 994 1951

W. F. White and J. W. Piffce Jr.
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The Proteins [Newirth and Basler]

Vol I Part ~~III~~ A ✓

Academic Press Inc. N.Y. 1953

References:

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Growth of the ~~the~~ dev. chick
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x207, p. 56, 1929/30

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Robert A. Cherry

Dept of Chem Madison Wood

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and Forin,

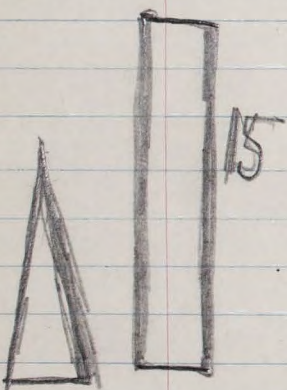
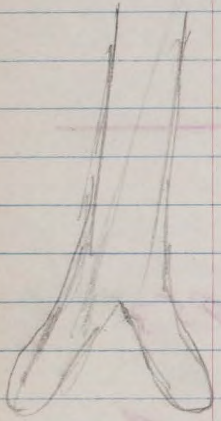
Electrolysis of
Proteins

Revised

1942

Review in Advances

and Protein Chemistry
by Swenson



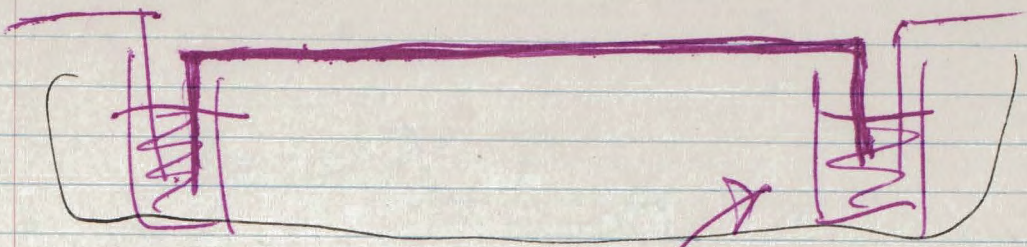
0.037 cm

2×10^{-8} Atm per Volt

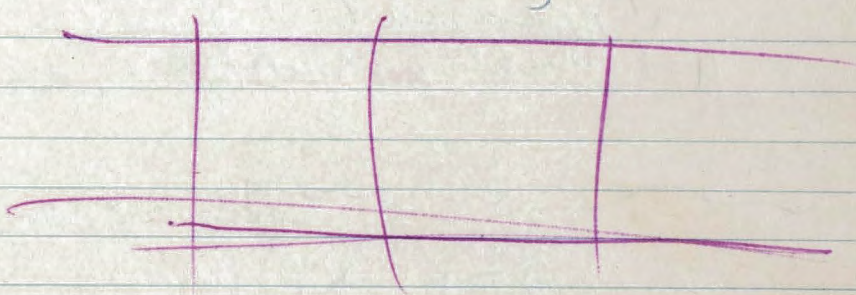
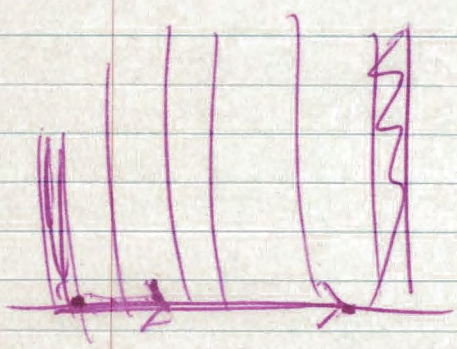
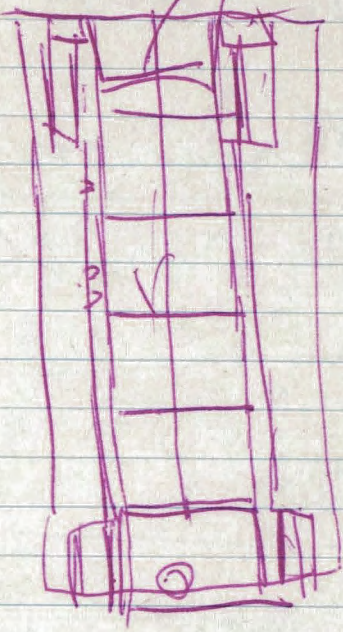
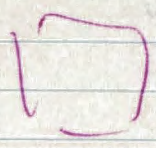
water rises due to capillary

$$\sigma = \frac{1}{2} h g \rho r$$

$$\frac{100 \times 2}{1000 \times 4} \text{ dyn/cm} = \text{cm} \times \text{cm}^2 \frac{\text{force}}{\text{mass}} \frac{\text{up}}{\text{cm}^3}$$



mm
mm



Electroautosuvids : Chem. Abstract

- 1.) William Terhune n.f. office
- 2.) Kubie Lawrence L. f.
- 3.) John P. Mallet n.f.

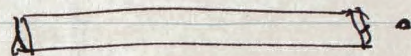
John Cenger Denver

Perceval Burt
U.S. Public Health Medical Center
Wash. D.C.

Robert M. Benjamin
45 E 86 St.

Parseval's

$$M = \frac{\pi r^4 P t}{\rho \text{Vol } l}$$



Electrostatics:

$$P = 2 \int \epsilon E l / \pi r^2$$

work for $P = 0$

$$V = \int \frac{r^2 \epsilon D}{4\pi \eta} \left(\frac{E}{l} \right)$$

Field

$$u = \int \frac{D}{4\pi \eta}$$



Form: Surfer Advances
in Protein Chem 1952

Madon et Al Nature 164
p. 498 / 1949

Madon discussion of the
Foxley Soc. 7 p 120 1949

Swenson

Advances in Protein Chemistry
4. p. 251 1948

Wieland / Fischer Ze Naturwiss. 35 29 1948

Turba / Euckenel Naturwiss. 37, 93
1950

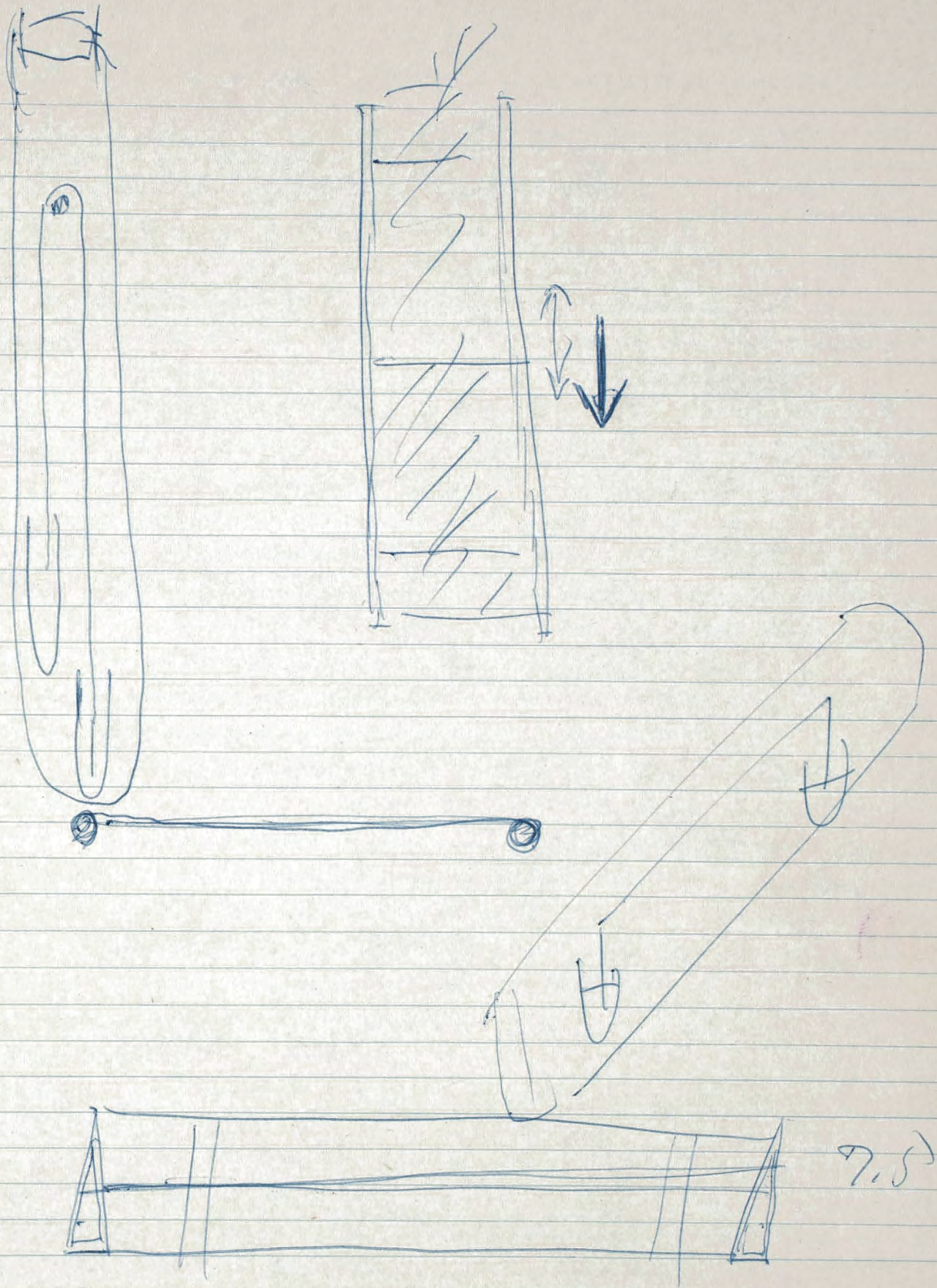
Bischoff / Brachem / Phosphorylation Keta
4 416 1950

Durham J. A. C. S. 72 2943, 1950

Greiner and Pischius Brachem

2 Natur.
320 273 1950

Strain J. A. C. S. 61 1292 (1939)



Depolarizable electrode
mercury channel

Andalusian: HOCHHAUS FELD STR. HAMBURG

Euler Adolph or Pergoldman

to Barcelona: Hotel Infles #1

Director ~~May~~ Phillips: Dr. Youngblood

Dr. Ulrich Mohr (Doge's Friend) (Kasselberg) ^{Frankfurt} Verleger in Kassel

via Valencia to Granada ^{above} (St Francisco Parador)

→ American Plan #3 and 4

to Zurich, July, Aug, Sept - in summer weather to Málaga (Miser) Hotel Miramar ^{medium class} cousin: Ilse Schade

Maman: Fabricant Cantensabren Fabrik ^{high class} member to

to stay José Molinos (Fischerhoff)

to Hotels → Santa Clara #5 ^{american} El Pico ^{Hotels}

to Sevilla Hotel Restaurant: El Baril

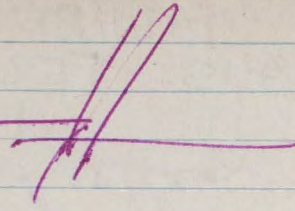
to Toledo schön (Inland)

to Madrid Restaurant @ Hogarr Gallego

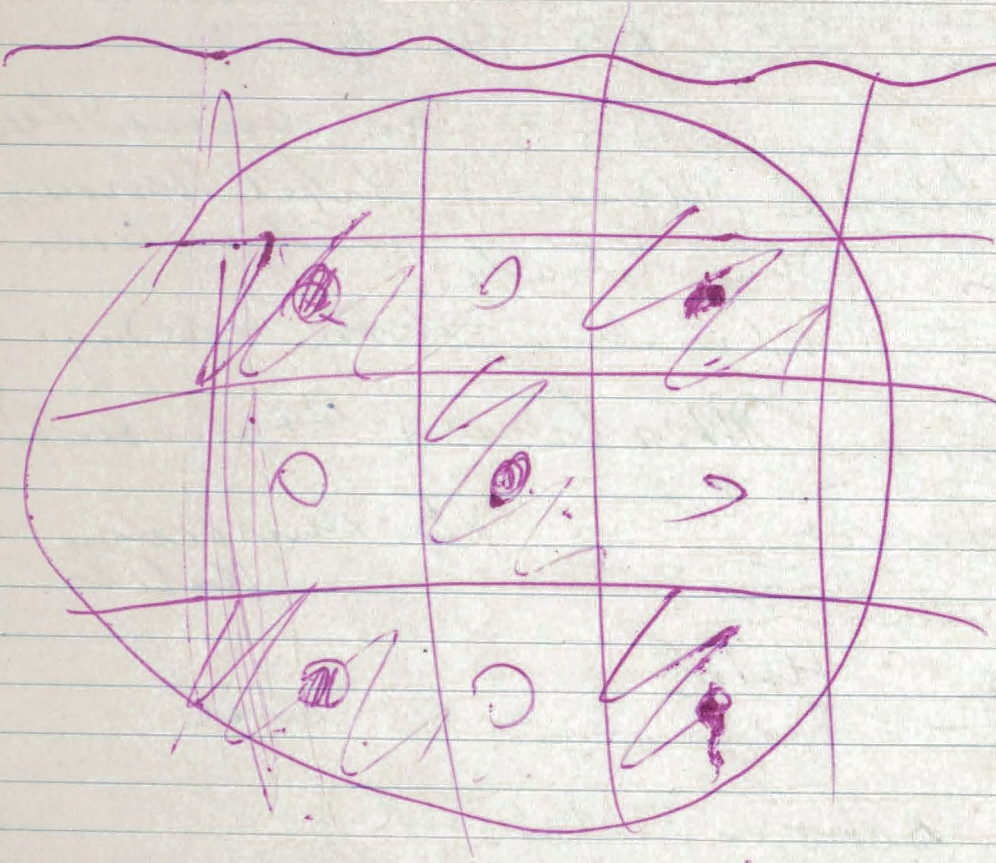
Ceiträn = Sangria ^{famille Presse} in Berlin ist jetzt ^{Produkt} CEA Domingues Rodriguez Tel: 212910

Turismo

Loftus



~~300~~
150,000



1.000.000

- 1.000.000
- 2.000.000