CROSS REFERENCE SHEET

Name or Subject  Bacteriology  File No.

Regarding  Date

SEE

Name or Subject  File No.

Jordan, E. O.

Whitman, C. O.

File cross reference form under name or subject at top of the sheet and by the latest date of papers. Describe matter for identification purposes. The papers, themselves should be filed under name or subject after "SEE."
Dear Sir:

As you may perhaps recall, I had planned, before the announcement of Sir William's gift, & go abroad for 12 months. It now seems to me desirable that I should be on hand to look after the planning and equipment of those lines of work for which I am responsible, and I have accordingly announced courses for the Summer Quarters.

I have been hoping, however, to spend the coming Spring Quarters at the Pasteur Institute in Paris & working at some lines of research in which I am
particularly interested and in studying the model laboratory equipment. I find myself in the somewhat difficult position of being able to go abroad for 12 months, but not for 3! Would it in any way be possible for me to receive my pay for the extra work I have been obliged to do this winter (Autumn and Winter term)? I may point out that this work has been forced on me by the size of the classes, and that no definite arrangement has been made as to whether I am to receive full rate salary or vacation credit for this. I recognize of course the difficulties in the way of paying me now for the work done in the Summer of 1894 and would not urge this. At the same
time I think you will appreciate the embarrassment of my situation in not being able to utilize the six months of extra work I have done.

Very sincerely yours,

Edwin G. Jordan
The University of Chicago

I must hasten to inform you that I have been requested to

appoint you to the position of the first

entirely new...
Pres. W. R. Harper,

Dear Sir:

In reply to your letter of February 13th, which I have just received, I append a statement of the sum due me for extra work.

$\frac{2}{3}$ pro rata salary for Summer of 1894 @ $600.00  \hspace{1cm} \$703.33$

$\frac{2}{3}$ pro rata salary for $\frac{1}{2}$ extra work Autumn & Winter Quarters, 1895-96 @ $200.00  \hspace{1cm} $444.44$

$\$777.77$

If I can be paid part of this sum (say $300-$400) at once I can probably arrange to borrow the remainder of the money I need until next summer. In such case I would ask that a definite date for payment of the rest might be set in order that I may place my financial affairs on a secure basis. I shall here to make any final arrangements for letter of credit for borrowing etc. by March 1st at the latest. I should greatly appreciate any definite statement you could make me of
once. If it is impossible that I should be paid any part of the sum owing me before March, yet, it is very important that I should know it as soon as possible. If I could have at once a statement of just what I may expect as to time of payment of part or whole of the above sum it would relieve me from much embarrassment.

In regard to the matter of which you spoke yesterday, I may say that I have no objection whatever to transferring my quarters from the Anatomical Building to the Zoological. I made the other arrangement in the interest of harmony. If it seems to you desirable that I should occupy one-half of the fourth floor of the Zoological Building, I think it would lessen any unpleasant feeling on the part of Dr. Baur if both he and I had a formal statement from you to that effect. It puts me in an unpleasant position to be forced to appropriate space which another man desires and for which he is planning. I do not wish to take any responsibility in the matter. On this
point also I should be glad to hear from you at the earliest possible moment, in order that I may confer with Mr. Cobb before details of construction are further arranged.

I very much desire to talk with you as soon as possible about my work in bacteriology and general biology for next year. I feel sure that it is not the intention of the University that routine teaching should absorb all an instructor's time. I may simply point out now that the courses in bacteriology alone at present contain more students than the average number in other special lines of work. In justice to myself I feel that I should not be obliged to carry next winter such a burden of teaching as I have had to carry this year. Would you be willing to grant me an interview on this matter at some definite hour on your return?

Very truly yours,

Edwin C. Jordan
My dear President Harper,

I do not know how far it is practicable for the University to exert its influence in municipal affairs, but if occasion should arise in connection with the present discussion over the water supply I should be glad to place what experience and information I have gained at the disposal of the authorities.

My connection with the Massachusetts State Board of Health some years ago gave me exceptional opportunity for investigation of this question, and I have since that time made a rather detailed personal study of the situation in London, Paris, and other European cities.

It is suggested in the newspapers that a commission should be appointed by the Mayor to study the question of Chicago’s water supply. I should be sorry to see another such colossal blunder as the drainage-canal perpetrated. Already there is talk of a simple extension of the water-tunnel further into the lake!
Dear [Name],

I am writing to express my concern regarding the recent events [insert context]. It seems that our situation is deteriorating, and I am worried about the impact this might have on our lives.

I understand that you might be facing similar challenges, and I hope that we can support each other through this difficult time.

Please let me know if there is anything I can do to help.

Sincerely,
[Your Name]
question of filtration for the school is being bunched badly, as you are aware.

If you see any place where scientific opinion on these questions would come into play, I shall be glad as a citizen with some special knowledge to do what I can.

I do not care for recompense.

Very truly yours,

Edwin C. Jordan.
Dear [Name],

I just wanted to express my sincere gratitude for your kindness and generosity. Your support has meant the world to me and I cannot thank you enough for all you have done.

Please accept this small token of appreciation from me. It is a symbol of my sincere thanks.

Warmest regards,

[Your Name]
My dear Pres. Harper,

I could not arrange to do the extra work proposed by the Junior College Faculty without injustice to myself. I must, though reluctantly, recall to you just what I am doing. Besides the classes in General Biology, there are eight students in Special Bacteriology. Some of these students are doing research work, and the work for all has to be planned according to individual advancement and aptitude. I give one advanced lecture a week to these students besides conducting a journal club. I have just organized a Bacteriological Club to meet regularly throughout the year. I am also, you will remember, doing the Dean's work of the Ogden School, the work of departmental examiner and of library adviser for the Department. I am not given to counting hours, but I have hardly fire working hours a week under my own control.

Furthermore, I am obliged to question the value of such a course as is proposed. I do not think discussion of biological problems would be at all profitable without definite
visual images to fall back upon. The course in General Biology is designed to cover just the ground mentioned. I do not believe that there is a short and easy road, and I regard the laboratory work as essential to any accurate notion of biological conceptions. The laboratory is the birthplace of scientific ideas.

Very truly yours,

Edwin D. Jordan.
June 30, 1898

My dear President Keane: —

I wish to express my appreciation of your kindness in letting me know what I could count on at Rush next year before I left Chicago. The five hundred dollars will be a great relief to me financially, and I certainly feel deeply obliged to you for your action in the matter. I am quite anxious to learn the details of the arrangement, as regards manner of payment, etc. Would it be possible for you to send me a word here? I tried to see you just before leaving, but was unable to do so.

Very truly yours,

Edwin C. Jordan
My dear Pres. Harper:—

I gather from what you have said to me and from the letters you have sent that there is little likelihood of anything coming to me by way of Rush Medical School this year. Could you indicate to me any possible way of adding to my income? I had until lately depended, on the basis of your assurance, upon the sum of $500.00. I am very desirous to meet the obligations I have incurred on the strength of this understanding. You will, I am sure, understand that I am already somewhat hard-pressed because of the failure to obtain what I had counted upon with entire confidence.

Very sincerely yours,

Edwin O. Jordan
Dear Sir,

I trust you have received the order from the Governor-in-Chief regarding the
issue of the 'Olive Green' uniform to be delivered to the British Army in India.

I have arranged for the purchase and dispatch of the uniforms, and I am enclosing
with this letter a copy of the order. I have been informed that the total quantity
required is 4,000 uniforms, and I have instructed the manufacturer to deliver
them within the specified time.

I am enclosing a copy of the arrangement agreement for your information.

Yours sincerely,

[Signature]
April 2nd, 1909.

Dear President Judson:

Dr. Hektoen has referred to me your letter regarding milk analyses. It has been my policy never to permit purely commercial work to be taken up by anyone in the laboratory, but on several occasions Dr. Heinemann has made examinations of milk where public health interests have seemed involved. It seems to me that the distinction is a proper one and that we should be careful to avoid having the name of the University used for purely gainful purposes. On the other hand I feel that we owe it to the community to make the resources of the University available wherever a genuine service to public health can be rendered. Under some conditions milk analyses come under the latter head.

Yours very sincerely,

Edwin O. Jordan
Dear President Johnson,

I am writing to express my concern about the recent developments in the area surrounding your home. It appears that there have been several incidents involving alleged criminal activity. These incidents have caused a great deal of concern among the residents and have led to increased anxiety and fear.

I believe it is important for the authorities to take immediate action to ensure the safety and well-being of the community. It is essential that law enforcement is present and vigilant to prevent any further criminal activity.

I urge you to take this matter seriously and to work with the local police department to address these concerns. I am confident that together, we can ensure a safe and secure environment for all residents.

Thank you for your attention to this matter.

Sincerely,

[Signature]
April 6, 1909

Dear Mr. Jordan:

Yours of the 2d inst. with regard to milk analysis received. Of course we don't want to engage in commercial work. This is the statement, however, which was made to me:

1. The Harvard department does give milk analyses.

2. The fee charged therefor at Harvard is very much less than what is paid to Mr. Heinemann for individual analysis.

I am wondering whether the Harvard policy depends on the fact that, while of course in a sense this milk analysis is commercial, at the same time it has so important a bearing on public health as to make it worth while. What do you think about it?

Very truly yours,

H. P. Judson

Mr. E. O. Jordan,
The University of Chicago.
April 6, 1920

Dear Mr. Johnson:

Some of the facts with regard to milk

must be noted. Of course we won't want to engage in commercial
work at all. This is the statement now made to
the dairy department, but give milk

so far. The test is being tested at the dairy to very much lower

levels. What is being said to Mr. Johnson for investigation purposes

I am wondering whether the Arizona polity depends on the test

with which we can make the dairy to commercial

at the same time to pose no important a problem or family need as

to make it worth while. What do you think about it?

Very truly yours,

[Signature]

W.E. Johnson

The University of Chicago
January 21st, 1899.

My dear Pres. Harper:—

I have had Mr. Parker and Mr. Simpson make careful estimates of the expense of fitting up the rooms that will be needed for the work next year. The total cost of lockers, work-tables, gas-piping and plumbing will amount to $160.00. The room at present is entirely bare and is not supplied with either gas or water. I should be very glad if the authorization for this work could be given very soon in order that we may be entirely ready when the work of the Summer Quarter begins. In case it seems impossible to incur the attendant expense, will you kindly notify me in order that we may make arrangements for limiting the size of the classes.

Very truly yours,

[Signature]

Tobacco in flour
I am not in a position to explain a case.

I write in response to the instructions of the President of the College, to forward the minutes of the Committee on the management of the College for the year 1895-96, as well as the Minutes of the Annual Meeting of the Officers of the College held in Chicago on June 15th, 1896.

The Committee on the management of the College, consisting of Mr. J. B. Fisk, Mr. C. H. Swift, and Mr. W. H. Young, met in Chicago on June 15th, 1896.

In closing, I wish to thank the Officers of the College for the kind manner in which they have received my services.

Very truly,

[Signature]

[illegible signature]
May 6th, 1899.

My dear President Harper:—

I was much interested in the chance word you let drop the other evening in which you suggested that my work might be looked upon as having a somewhat "commercial" tinge. It seems to me that there must be some misconception in regard to the work in which I am interested.

I am not one of those who believe that the University ought to stand aloof from the community in which it is placed, but I do agree most heartily with the view that the resources of the University should not be employed in any direct aid to individuals or groups of individuals engaged in money-making or money-getting. The exploitation of the commercial and industrial aspects of biology, chemistry and physics can, it seems to me, be safely left to the technical schools. This, I think, is what is ordinarily meant by commercialism in this connection.

I do not see how the line of work bearing upon public health can by any possibility be classed in the same category with "commercial" undertakings. No one is making or attempting to make money. When expert advice regarding measures of public hygiene that affect the health and welfare of the whole community is asked for it ought, I think, to be looked on in the same light as service to the public in other ways, for example, upon a Monetary Commission
or an Educational Commission. Commercial interests are sometimes met with in the course of such service as you will remember was the case with the introduction of filters into the Public School, but I do not think that fact ought to deter us from doing what we can to introduce better hygienic and economical methods into municipal affairs.

I make this explanation because I should be very sorry to have you or any one else in the University feel for a moment that the work in which I am engaged smacks of commercialism in any form. The safeguarding of public health seems to me as little liable to such an imputation as any line of work pursued in the University.

Very truly yours,

[Signature]

Pres. W. R. Harper,
University of Chicago.
The Importance of Education

The importance of education cannot be underestimated. Education is the key to unlocking opportunities and achieving success in life. It is through education that we gain knowledge, develop critical thinking skills, and acquire the tools necessary to navigate the complexities of the modern world.

I want to express my gratitude to the educators who have inspired me to pursue my dreams and to those who have provided me with the necessary guidance and support. Your hard work and dedication have made a significant impact on my life.

Thank you.

[Signature]

Dean, Faculty of Education
University of [Institution]
October 2nd, 1899.

My dear Pres. Harper:— I enclose the only statement I have received from the authorities at Rush in regard to my compensation for the course to be given there. I am entirely unwilling to let the matter go on this basis. I am willing to give one twenty-four hour course -- the course planned for the current quarter for $500.00, but I do not see how in justice to myself I could undertake the work for a smaller sum. I learn from Dr. Eycleshymer that he is receiving $300.00 for a course of ten lectures. Unless my work can be arranged I should prefer to let the matter drop altogether. If possible can the matter be settled within a few days, since the course should be begun at once and I do not feel like starting the work till a perfectly definite agreement with the Rush authorities is obtained?

Very truly yours,

To: Mr. Smith

Re: Your Recent Letter

Dear Mr. Smith,

Thank you for your recent letter. I understand your concern and I apologize for any misunderstanding. I assure you that we will take necessary measures to rectify the situation.

I hope this information is helpful. If you have any further questions, please do not hesitate to contact me.

Sincerely,

[Signature]

[Date]
Prof. Edwin O. Jordan, 

University of Chicago.

My dear Doctor Jordan:-

Your note of the 10th is at hand and we will let the announcements of your course go in as I had prepared them.

In regard to compensation, Prof. Ingals, the Comptroller, is the only one to speak in regard to the matter, but my understanding was that you were to receive compensation at the same rate as a full professor whose full salary is $386.00 for 540 hours' work. If this were the case, your compensation for the courses outlined would be for 48 hours, or, 48 - 540ths of 3000, namely, $266.00. I will speak to Dr. Ingals in regard to the matter.

Very truly yours,

John M. Dodson
January 26th, 1900.

My dear President Harper:--

I am desirous of not being misunderstood either by yourself or by the Rush authorities in regard to the work at Rush for the coming year. I am quite willing, but not anxious to do the work on the same basis as arranged for the present year, but I can hardly view in the light of a promotion an opportunity to do more work for the same recompense I am receiving. I am very far from wishing to make anything that appears to be an exorbitant demand from the standpoint of the authorities at Rush, and I very well understand that they can hardly afford to take into consideration the time spent by me in travel between the two institutions. At the same time, I am myself obliged to consider this point, and I cannot feel that for six hours a week, or 72 hours of my time, five hundred dollars, or about seven dollars an hour, is an altogether absurd figure, especially when it is remembered that there are many members of the University on the same salary as myself who for eight hours a week, or 96 hours in all, are receiving six hundred and sixty-six dollars. I do not, however, wish to urge this point, but prefer to leave the matter in your hands, in full confidence that you will appreciate how the matter appears to me from the simple point of view of time-expenditure and money-return.

I do not think that I am inclined to be unduly heedful of the matter of seniority, but I am sure that you will recognize that
In the year 1865 I received an offer of several thousand acres of land in the State of Texas. I accepted the offer, and within a few months I was in possession of the property. I found the climate to be mild, and the soil very fertile. I had a large produce of cotton, wheat, and corn. I also had a small herd of cattle, which I sold for a good price. I then decided to divide my land and sell it to settlers. I advertised in the newspapers and in the journals, and soon had many inquiries. I sold my land at a good price, and made a profit of several thousand dollars. I then turned my attention to the cultivation of cotton, and was very successful. I had a large crop, and was able to sell it at a high price. I also had a large herd of cattle, which I sold for a good price. I was very successful, and was able to make a profit of several thousand dollars. I then turned my attention to the cultivation of cotton, and was very successful. I had a large crop, and was able to sell it at a high price. I also had a large herd of cattle, which I sold for a good price. I was very successful, and was able to make a profit of several thousand dollars.
the present situation has elements of surprise and discouragement for me, and I can hardly be blind to the implication involved in the more advantageous terms accorded recent appointees.

Very sincerely yours,

[Signature]

President W.R. Harper,
University of Chicago.
W. R. Harper, President,

University of Chicago,

City.

Dear Sir:

It is the purpose of this District to have a series of analyses made of the waters of the Chicago, the Desplaines, the Illinois and the Mississippi Rivers to show the extent of pollution under the existing conditions, and after the water is let into our Channel to again secure an analyses for the purpose of comparing the condition of the water then with what it is now. We wish to secure the services of competent chemists, bacteriologists and microscopists for this work, men whose character and reputation would be a guarantee to all men of the fidelity and care exercised in making the tests.

Will you kindly give me a list of the names of men eminent in this line of work that I may lay them before our Board of Trustees when they come to select the men to carry out their plans. An early reply will greatly oblige.

Yours very respectfully,

Isham Randolph

Chief Engineer.
To the President of the University of Chicago,

I am writing to express my concern regarding the recent decision of the University to implement a new policy that will affect the students of the University. I understand that this decision was made after careful consideration of the available options, but I feel that it is not in the best interest of the students. As a member of the University community, I believe that it is important to consider the impact of such decisions on the students and to take steps to mitigate any negative effects.

I am particularly concerned about the proposed changes to the schedule of classes. I understand that there was a need to increase the number of courses offered, but I believe that this can be achieved without the need to alter the schedule in such a significant way. I urge the University to consider alternative solutions that will allow students to continue to pursue their academic goals in a timely and efficient manner.

I would appreciate it if you could provide me with more information about the reasons behind this decision and any measures that have been taken to address the concerns of the students. I look forward to hearing from you soon.

Sincerely,

[Signature]
January 11th, 1899.

My dear Pres. Harper:--

The Drainage Canal problem is exactly in line with the series of experiments carried on by the Mass. State Board of Health at the time I was chief biologist to the Board in 1888-89. I have had somewhat extended experience in chemical, bacteriological and microscopical analysis of water, and feel a keen interest in the scientific problems involved in such an inquiry as that proposed. I presume, owing to the large extent of territory to be covered, the investigation would have to be carried out on the cooperative plan and the suggestion of Dr. Reynolds that the University of Chicago, the University of Illinois and Washington University, St. Louis, be asked to unite under a general plan seems to me a good one. It is of course essential that the work be carefully coordinated.

I should be glad to see Mr. Randolph or any member of the Board personally in case it seems desirable to you or to them to consider the general line of investigation it would be advisable to pursue.

I am very desirous of being concerned in the proposed investigation and shall feel deeply indebted to you for any steps you may see fit to take to further my interests.

Very truly yours,

Edwin D. Jordan
November 14th, 1905

My Dear President Harper:—

I am hoping very much that it may be possible to make at once some thoroughly satisfactory arrangement for Dr. Kyes and his work. I feel sure that Dr. Kyes is on the eve of some important discoveries, which will bring great credit to himself and to the University. It seems safe to say that there is hardly any line of work now being pursued in the biological laboratories that bids fair to yield results of greater significance than this work of Dr. Kyes in the field of immunity. All branches of our medical research in particular are sure to feel and be benefited by Dr. Kyes’ work. His wholly unique experience in Ehrlich’s laboratory and the brilliant outcome of his investigations up to this time put Dr. Kyes in the front rank of students in scientific medicine in this country. It will, I am sure be understood that the lines of investigation opened up by Dr. Kyes’ work will be brought to fruition in other laboratories unless he be afforded at once suitable opportunities for prosecuting his study. I am exceedingly anxious for all the interests of the University and especially for the future of research in medicine that the importance of the situation be clearly recognized. I do not believe that the interests of medical investigation here can be too strongly emphasized at the present time. In many respects our situation is a critical one.

Yours very sincerely,

Edwin O. Jordan
My Dear President Harpeler,

I am happy to report that we may be making progress in the work of securing more of the necessary equipment and material for the project. We will begin to order the necessary equipment from the manufacturer, which will bring great relief to the medical community.

It seems likely that we may be able to begin the work of producing the required supplies in the near future. This will be a significant milestone in the development of our medical research program and will allow us to make meaningful contributions to the advancement of medical science.

I am confident that we will be able to secure the necessary funding and support for this project, and I look forward to seeing the results of our efforts.

Yours very truly,

[Signature]
Dear President: I have sent copies of this report to each Trustee and a few extra to Mr. Jordan. Can you use any extra copies?

Yours truly,

J. D. Beakerson
INVESTIGATIONS OF RESPIRATORY DISEASES

By the Department of Hygiene and Bacteriology

The Board of Trustees has made three appropriations of $2,000 each to aid the Department of Hygiene and Bacteriology in its work of research on respiratory diseases. The Metropolitan Life Insurance Company, New York, also, has made two grants of $3,900 each for the same purpose.

The Department makes the following report of its investigations during the past year:

September 26, 1921.

President Harry Pratt Judson,
University of Chicago.

Permit me again to express my appreciation to you and to the Board of Trustees of the University for the grant of $2,000 made last year in aid of our work on respiratory diseases. It has been of great assistance in our investigations.

During the year we have completed our tabulation and study of an extensive series of observations made in certain state institutions of Illinois on vaccination against respiratory disease. We employed a widely-used vaccine, containing certain varieties of streptococci and pneumococci as well as so-called influenza bacilli. All these bacteria have at times been connected with outbreaks of respiratory disease. About 6,000 persons were under observation during a period of seven months, approximately half of this number receiving the vaccine. Ordinary cases of colds (rhinitis) and bronchitis developed with about equal frequency in vaccinated and unvaccinated groups. Influenza attacks amounted to 4.1 per cent among the vaccinated and 4.8 per cent among the unvaccinated, a difference not statistically significant. These results are believed to be important as checking the indiscriminate use of vaccines against varieties of respiratory disease still largely of unknown nature.

Studies have also been made on the possible occurrence of a filtrable virus as the cause of common colds and influenza, but so far without positive result. In the course of this work some important technical sources of error in the interpretation of laboratory data have been brought to light.

Extensive data have been accumulated on the occurrence of micro-organisms in the respiratory tract in health and in disease and these are now being tabulated and studied. Two papers in this field are practically ready for publication and one article by Associate Professor J.F. Norton and other members of
IMPECCATIONS OF REPORTING INCIDENTS

In the Department of Hygiene and Reconstruction

The record of influenza in the United States has been

The report on the following page of the 1918

September 30, 1918

The Department of Hygiene and Reconstruction

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for by the lack of recent experience in our laboratory.

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Part of the current wave of poliomyelitis may well be accounted

for by the lack of recent experience in our laboratory.

Without exception, all cases of influenza in this country

have been treated with the same general safeguards, and no

sustained outbreak has resulted from any one of our recent

influenza in the United States has been

The report on the following page of the 1918

September 30, 1918

The Department of Hygiene and Reconstruction

Influenza of College

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for by the lack of recent experience in our laboratory.

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have been treated with the same general safeguards, and no

sustained outbreak has resulted from any one of our recent

influenza in the United States has been
the Department has already appeared. A special study of an unusual outbreak of respiratory disease among the pupils of the School of Education has also been completed and is nearly ready for the printer.

Work now in progress includes an epidemiological study in one of the county institutions, a similar investigation in connection with infant welfare work in Chicago, and continued bacteriological study of the respiratory tract by methods that are being steadily improved and elaborated.

The grant made last year has been partly spent for laboratory assistance, but to a large extent also in needed equipment which will be of permanent value in all our work.

(Signed) Edwin O. Jordan.
The Department of Agriculture opposing the annual opposition of the President's plan for the proposal of the School of Education and for the improvement and in the final report for the program

You now to present incitements on experimental

such as one of the county demonstration agricultural work ar

and continue cooperation under the instruction of the experimental work and the Agricultural Extension. The farmers may feel that the crop variety of the next season for

In special circumstances, it is to plan agriculture for the crop variety in the next season.

(Signature)
November 26, 1920

Dear Mr. Jordan:

I have your note of the 22nd relating to Mr. Norton. Of course the matter will be considered in connection with the budget.

Very truly yours,

Mr. Edwin O. Jordan,
Faculty Exchange.

HPJ:JN
Dear Mr. Zaragze,

I have your note of the 29th September to hand. I have also given the matter careful consideration in connection with the question.

Very truly yours,

[Signature]

Mr. Henry O. Zaragze

President Exchange.
November 22nd, 1920.

Dear President Judson:—

In my budget recommendation, sent under separate cover, I am recommending the promotion of John F. Norton to an Associate-Professorship. Dr. Norton's four year term as Assistant-Professor expires at the end of the current year and I feel that his value to the University warrants his promotion at this time. He has proved an invaluable man in the department, is an excellent teacher and has an unusual mastery of the details of laboratory supply and equipment. He is deeply interested in investigation and is publishing regularly papers of good quality although of no remarkable originality. He is active in the affairs of professional societies and has been chosen for various offices of responsibility. I do not feel that any mistake will be made by his appointment on the permanent staff of the department.

Sincerely yours,

[Signature]

[Name]
Dear President Johnson,

I am in预算 recommendation sent under the

that we have a recommendation for the promotion of Mr. Johnson to

of the University of Chicago. The position of the

feel that the value of the University of Chicago's decision to

the role of a President can be improved in the Department of

He has been an excellent teacher and an

to the Department of

and an important member of the faculty of

to the Department of

an important member of the faculty of

to the Department of

He is a welcome addition to

the Department of

as well as a welcome addition to

He is not only a welcome addition to

the Department of

Sincerely yours,

[Signature]
The University of Chicago
Department of Hygiene and Bacteriology

Shirley, Mass.
June 30, 1921.

Dear President Judson:-

I have just received from Dr. Norton the news of his promotion. I have rarely had anything so much at heart for the welfare of the University, and I want to thank you very warmly for what I know could have been brought about only with much thought and management on your part.

Sincerely yours,

[Signature]
July 5, 1931

Dear Mr. Jordan:

Thank you for yours of June 30th. I was very glad that we found it possible to make the arrangement that you so much desired. Of course it was rather hard to accomplish as you know things of that kind just now are not easy.

Very truly yours,

Dr. Edwin O. Jordan,
Shirley, Mass.

HPJ: JM
Dear Mr. Harri, 

Thank you for having me twice. I want to speak to you about some problems we're facing at the bank. I hope you can help us with some advice. Of course, I was never paid any salary to accomplish this, so you know what I mean.

Best regards,

[Signature]
BUREAU OF HEALTH REGULATIONS

Governing Infantile Paralysis

1. Inspection applies only to students under 16 years of age.

2. Students from infected areas should be excluded for a period of not less than two weeks.

3. Infected areas are defined as follows:
   (a) In Illinois as per the attached list.
   (b) In other states east of Illinois, if the student has a Federal Health Certificate it is evidence that the district from which the student comes is under suspicion, and the student should be excluded for two weeks; if the student has no Federal Health Certificate and comes from territory east of Pittsburgh he should be excluded for two weeks. In case of any doubt as to the wisdom of exclusion, each case should be specially referred to the Department of Medical Inspection, Bureau of Health.

The above information supplied by Dr. Rawlings,

Assistant Chief, Bureau of Medical Inspection.
HURRICANE OR SEVENTEEN REGULATIONS

Department of Health

1. Inspection reports shall be submitted within 24 hours of receipt.

2. Submit monthly reports of inspections performed.

3. Inspectors shall not leave the premises without a

4. Interested parties are entitled to inspection.

---

The above information applicable to Dr. Reilly.

Assistant Chief, Division of Health Inspection
List of Restricted Areas - Infantile Paralysis.

Bureau County -

Clarion Township

none (Lamoille just West in Lamoille Township)

Westfield Township

Arlington
Cherry

Hall Township

Beatanville
Todd
Hegeler
Churchill
Dalzell
Spring Valley
Marquette

DeWitt County -

Turnbridge Township
Kenney
Rowell

Texas Township
Osipur

Creek Township
Lane

Nixan Township
Weldon
Plan of Restricted Area - Initial Exposure

Between County -

Alton Township

Comb Township

Galena Township

Beckmanville

Toll Reg

Heckman

Dartel

Erie Valley

Marquette

Dewitt County -

Tuttleville Township

Kenny

Ross

Texas Township

Dec

Creek Township

Lone

Mixon Township

Walden
LaSalle County

Cedar Point
Dana
Dayton
Deer Park
Earlville
Garfield
Grand Ridge
Kangley
Kerton
La Salle
Leeds
Leland
Leonore
Lostant
Marseilles
Mendota
Meriden
Oglesby
Ottawa
Peru
Ransom
Rutland
Seneo,
Serena
Sheridan
Streator
Tonica
Triumph
Troy Grove
Utica
Wearon

Macon County

Argenta
Blue Mound
Brady
Casner
Decatur
Elwin
Emery
Forsyth
Harristown
Long Creek
Macon
Maroa
Mount Zion
Niantic
Oakley
 Oreana
Prairiehill
Walker
 Warrensburg
LaSalle County

Decker Bank

Dyson

Dexter Bank

Eastville

Eustis

Gonzales

Kansas

Katon

La Salle

Lame

Land

Lance

Lennard

Marionette

Memphis

Melton

Menard

Fiance

Ruth

Tenn.

Ricam

Trenton

Rusin

Sawmill

School

Sparks

Spalding

Street

Trenton

Tuscaloosa

Tyler

Union

Watson

Adams

Bigelow

Bryan

Cedar

Desoto

Ethan

Early

Hackberry

Hummingbird

Ironton Creek

Jones

K_AES

Lake

Manor

Mount Zion

Mt. Zion

Oakley

Orange

Panther
defense

Wetzel

Witnes
Marshall County -

Evans Township
Porterfield
Menona
Custer
Evans

Bennington Township
Taluca
Caton
Rutland

Moultrie County -

Dora Township
Lake City
Dalton City

Lovingston Township
Lanton
Ullrich
Lovingston

Lowe Township
Williamsburg
Fairbanks
Arthur

Piatt County -

Atwood
Bement
Cerro Gordo
Cisco
Deland
Galeaville
Piatt County (Cont'd.)

Hammond
Harris
La Place
Lintner
Manesfield
Milmine
Monticello
Pierson Station
White Heath
BUREAU OF HEALTH REGULATIONS

Governing Infantile Paralysis

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2. Students from infected areas should be excluded for a period of not less than two weeks.

3. Infected areas are defined as follows:

   (a) In Illinois as per the attached list.

   (b) In other states east of Illinois, if the student has a Federal Health Certificate it is evidence that the district from which the student comes is under suspicion, and the student should be excluded for two weeks; if the student has no Federal Health Certificate and comes from territory east of Pittsburgh he should be excluded for two weeks. In case of any doubt as to the wisdom of exclusion, each case should be specially referred to the Department of Medical Inspection, Bureau of Health.

The above information supplied by Dr. Rawlings, Assistant Chief, Bureau of Medical Inspection.
BUREAU OF HEALTH REGULATIONS

Government Infantile Paratyphoid

Information applies only to influenza which is known or suspected to be

2. Suspected from infected persons and to be transmitted for

3. Breeding of the infected and to be

4. Information may be obtained as follows:

(a) In writing as per the act of circular

(b) In other words, except at the time of influenza, it is the

may come to your attention that the various forms which

in the event of a further action to the same end of this

in the event of a further action to the same end of this

may come to your attention that the various forms which

may come to your attention that the various forms which

Department of Health Information January 19

Chief, Bureau of Medical Information.
THE PHYSICAL WELFARE OF STUDENTS.

I. Responsibility of a University for the physical well-being and all-around development of its students well recognized in the past few years, as indicated by the attention given to the following factors in many places:

1. Housing—Dormitories.
2. Food—Commons.
3. Social Development—Clubs, etc.
5. Medical Advice—Physical Examinations of the well, and Special Consultations for the sick.
6. Protection from Contagion, etc.—By Medical Supervision.

In some institutions, courses in personal hygiene have been established for the instruction of students in fundamental factors that influence health and working efficiency, but so far, no adequate and coherent plan of providing proper care for the sick student or protection for the University community as a whole has been developed in any institution of importance.

II. Suggested Plan for the University of Chicago.

1. Organize Department of Health and Sanitation—which shall be made responsible for the supervision of student health and for the sanitary conditions of buildings and grounds, i.e., centralize the general administration of all factors modifying the health of the community, just as the responsibility for buildings and grounds is centralized.

2. Define the scope and purposes of this proposed Department somewhat as follows:

A. Educational.
   a) Provide instruction in personal hygiene to all students. Required of undergraduates, optional for others.
   b) Provide instruction in general, personal, and school hygiene to all students in the College of Education.

B. Preventive.
   a) Close supervision of buildings on the campus with reference to dormitory conditions in general, such as cleaning, heating, ventilating, etc., etc., in cooperation with the Superintendent of Buildings and Grounds.
   b) Regular inspection of rooming and boarding houses, with a view to compiling a list of recommended places. (Already provided for.)
   c) Physical examination of students of all grades for the purpose of determining functional and organic status, and of obtaining a basis for advice as to general habit of living, exercise, and program, in general, insofar as health and working capacity are affected. (Already provided for.)
   d) Medical supervision of the children of the Elementary and High Schools for the purpose of guarding against conditions that favor disease and limiting the spread of any contagion that may obtain a foothold among the pupils, who are at this age very susceptible to acute infections. (Already provided for.)

C. Curative—Medical Supervision.
   a) Provide medical advice and treatment for such students as may be sick at minimum expense to them; office
hours for those who can call; room visits for those unable to come to office. Provide for daily morning reports from head of house or janitor in cases of sickness.

b) In cases where sickness is serious, or even of a sort that will confine the student to room for two or three or more days, arrange to place him in infirmary, (men at Hitchcock, women at Green,) or in University infirmary, if one is established, under care of trained nurse and own physician, if desired.

Many of the rooms, even in the dormitories, are not suited for the proper care even of slightly sick persons. This plan would provide proper care and attention for the individual, as well as adequate protection for the community, at a minimum expense.

Operative or more serious cases would, of course, be sent to a regular hospital. In this connection, provision should be made for prompt notification of parents or friends, and duplicate lists kept on file at the President's Office and in the Physician's Office.

3. The Executive Officer of this Department should be a duly qualified medical practitioner and a regular member of the University faculty.

III. Discussion.

1. Advantages of the Plan. The development and operation of such a plan as the one proposed would have three principal advantages.

A. A single, well-organized, clearly defined department would take the place of several agencies, loosely or not at all related, with large gain in efficiency, in proportion to the cost to the University, and a great saving, in the long run, to the individual student. At the same time it would afford adequate means for the protection of the community in general. Such an organization as this would make the repetition of such a mistake as the installation of expensive drinking fountains equipped with common drinking cups impossible.

B. This plan provides for definite, adequate instruction to two classes of people in a subject that has been largely, if not entirely, neglected in the curriculum so far, i.e., Hygiene.

a) The Undergraduate Body: Courses in practical, everyday hygiene. The grade and amount of ignorance on the simple, elemental facts of everyday living that exists among otherwise well informed men and women is astonishing, and can scarcely be realized by anyone who has not had an examining room and clinical experience.

b) The College of Education Students who are being trained for positions as teachers: courses in general, personal, and school hygiene, so that they may be prepared to deal intelligently with individual cases and general conditions that will be met among those for whom, as teachers, they will be responsible.

C. The educational value of conclusions based upon a careful study of the material made available in the course of the routine administration of such a plan would be very great, and is at present lost, except in the gymnasium.
III 2. Practicability.

A. Most of the factors necessary to the carrying out of such a plan are already available, though operating independently and with no harmony of action.

a) A plan of co-operation between this department and the Department of Household Administration, by which the results of the inspection of boarding and rooming houses might be made available to the University Physician.

b) University Physician.

c) Various Physical Examiners: Drs. Small, Norris, Frew, and Raycroft.

d) The resident nurse in the women's halls.

e) Infirmaries, Green and Hitchcock, for minor cases of sickness.

B. A University Infirmary can be established. (See separate report.)


A. Organization.

a) Appoint the executive head of this department, the University Physician.

b) Make men and women now engaged in various sorts of work now in progress members of the staff of this department.

c) Arrange for co-operation in practical administration of work with

- Department of Bacteriology.
- Department of Household Administration.
- Local Physicians.
- Department of Buildings and Grounds.
- Department of Hygiene and Physical Education at the School of Education.

B. Instruction.

a) Develop and give brief, adequate, required courses in Personal Hygiene to all undergraduates, men and women separately, in small groups.

b) Develop and give general and special courses in hygiene and sanitation suitable for persons training to become teachers or public health officers.

C. Sanitary Supervision: Periodical inspection of all places in which students lodge or board.

a) Intra-University, making such recommendations to the President as conditions may demand.

b) Extra-University, modifying the approved list according to conditions as found.

D. Medical Supervision.

a) Physical examination and advice based on data so obtained.

b) Means for controlling such foci of acute infection as may appear.

c) Supervision of all cases of sickness occurring among students in residence.

d) Check up absences and find out causes. (Dean's Offices.) Instructors report to office those absent two consecutive days.

e) Proper disinfection where necessary.
A. Plan of the program necessary to the carrying out of each

B. A plan for the operation of the program.

C. A plan for the operation of the program.

D. A plan for the operation of the program.

E. A plan for the operation of the program.

F. A plan for the operation of the program.

G. A plan for the operation of the program.

H. A plan for the operation of the program.

I. A plan for the operation of the program.

J. A plan for the operation of the program.

K. A plan for the operation of the program.

L. A plan for the operation of the program.

M. A plan for the operation of the program.

N. A plan for the operation of the program.

O. A plan for the operation of the program.

P. A plan for the operation of the program.

Q. A plan for the operation of the program.

R. A plan for the operation of the program.

S. A plan for the operation of the program.

T. A plan for the operation of the program.

U. A plan for the operation of the program.

V. A plan for the operation of the program.

W. A plan for the operation of the program.

X. A plan for the operation of the program.

Y. A plan for the operation of the program.

Z. A plan for the operation of the program.
III 3  F. Medical Treatment.

a) Ambulatory cases. Office fitted up for examination and treatment of such cases as present themselves. Main office and two extra rooms, one for men and one for women; physician assisted during office hours by nurse; medicine furnished at cost; treatment otherwise free.

b) More serious cases. Knowledge gained by daily morning reports of cases of sickness in dormitories or lodging houses by responsible persons, janitors, boarding-house keepers, etc. Failure to make report of case of sickness to be penalized. Morning rounds to investigate such cases, with a view to instituting proper measures.

F. Use the infirmaries now in existence, in which—

a) Equipment is already installed and fairly complete.

b) General expenses might be met from a special fund provided for the purpose, and from nominal fees from those treated.

c) Foods supply.
   1) Hitchcock—From breakfast room.
   2) Green—From women's commons.

d) Supervision under the Medical Director—open to all students, whether under the care of
   1) The University Physician, or
   2) Physicians outside the University who may have been called in by the student.

G. Organize University Hospital near campus, which shall be available for the care of all emergency cases, cases of acute sickness, contagion, and otherwise.

a) Location—

b) General arrangement and provisions—

c) Financial outlay.
   1) Initial expenses—

   2) Maintenance—

H. Plans at other institutions. (Material being collected.)

Revision of plan outlined March 1907. March 1910.
A minority report of the Dean's committee on matters of Hygiene, etc.

With the exception of a few provisions of the report as submitted, I am in hearty sympathy. I think it is only right for me to state that I was not informed of the final meeting of the Committee, and did not know such a meeting had been held, until after the report was drawn up and submitted; consequently I had no opportunity to discuss these provisions as they were finally drawn up.

In the matter of having a sanitary expert to take charge of all the important questions of hygiene, food inspection, drinking water, ventilation, etc. It was specifically stated by Dr. Hektoen who introduced the subject, that this should of course be a department entirely distinct from either the physical examinations or the medical supervision of the students. I believe all the members agreed with his suggestion. I was consequently surprised to see in the report that the committee recommended the Department of Hygiene and the medical supervision of the students be included under the same head. I have asked Dr. Hektoen since the report was submitted if I was correct in my interpretation of his suggestion, and he assured me that I was; that of course it should be an entirely separate department. It seems to me therefore that this construction should be given as a recommendation of the Committee, and not as a minority opinion.

In regard to the medical supervision of the students, it is perhaps not inappropriate just here, to explain a little in detail what is being done in this line. If I could have been present at the last meeting I would have spoken of it there, as I am sure the Committee as a whole is not fully acquainted with the method in use. The University Physician has an office hour every week-
I have no opportunity to assume these responsibilities as they were intended.

In the matter of having a majority report to face the situation.

The former consultation and the usual consultation are not in the true interests of the public, that the political system, and the government machinery as a whole, were not properly meeting the expectations of the public.

I have tendered my resignation with the reservation that the government machinery and the political system were not properly meeting the expectations of the public.

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day in his office in Cobb Hall for free consultation for students. There is an average of over 1500 consultations a year.

Office consultations represent only a part of the work. Whenever a student is taken sick in any of the dormitories, it is immediately reported to the University Physician, who investigates the case and reports the exact condition (nature of the case, the attending physician, etc.) to the President. In the case of any contagious disease, the student is isolated and removed when possible, and the rest of the dormitory protected as fully as possible from contagion. After the termination of such a case thorough disinfection is done.

No fee is charged in these cases. When, however, the University Physician is called upon to attend cases of illness a moderate fee is charged, if the student is able to pay for such visits. A very considerable amount of gratuitous service is constantly rendered in this way. The University maintains two beds for the use of our students in the Chicago Baptist Hospital. Any student who is taken sick can have the use of this bed, provided his sickness is not of a contagious character. He is expected to pay for the services of his attending physician unless otherwise specified. If however, he is unable to do this, he is assigned to the care of one of the attending staff physicians, whose services in such cases are rendered gratuitously. We have made use of the Hospital in this way in a considerable number of instances. I thoroughly agree with the recommendation, that a Hospital building somewhere on the University grounds, for both men and women, with facilities for the proper isolation of contagious cases is urgently needed. I might add, that steps are already in progress, for securing a small building for the use
I am in the office in Coppy Hall for the consultation for statement.

There is an average of over 1,000 consultations a year.

Office consultations incorporate only a part of the work.

The medical university has taken part in any of the consultations.

The medical university has taken part in any of the consultations.

In any of the consultations, the present and the next consultations (water of the case) are in the presence of the professionals and the members who have been present in the consultations.

After the termination of a line of consultations, professionals have gone.

The University Registrar is calling upon to attend case of illness.

A very considerable amount of patients service is available in the University Medical Library.

The University Registrar is calling upon to attend case of illness.

We have had the case of one of our patients in the Chicago Baptist Hospital.

We have had the case of one of our patients in the Chicago Baptist Hospital.

I have been in the office in Coppy Hall for the consultation for statement.
of emergency or contagious cases, with the necessary equipment for its operation.

In regard to the physical examination of students:—I believe that as the University requires the work of physical training, it is the duty of the University to see that each student who is to do the work, is in proper physical condition to do this work. This, it seems to me is the primary purpose of this examination, and consequently it should be done as soon as the student enters and before beginning the work. This has always been done in the Women's department, examinations being completed in the first two or three weeks after the opening of the quarter. Only the lack of adequate quarters has prevented it from being completed in a single week. Any minor details of an examination could be made later on, as necessary, but the important feature of the examination— to discover whether or not there exists any contraindications to taking up the work, can be done by one examiner in a comparatively short time. I do not see why a single examiner, giving his entire time to this work, could not complete it in a equally short period of time in the men's department. At the meeting I attended, when this question of having several examiners was discussed I am sure that the majority of opinion was against such a recommendation.

In regard to having an oculist to examine the eyes, I do not agree to the advisability of it, for the following reasons:—Among all the lines of activity where physical examinations are made we can take as the highest standard of efficiency, those conducted by the government in examining applicants for the medical service in both the Army and Navy; or even the examination required by the applicant for a policy in any of the
In the preparation of examination of students.

In order to prepare for the practical examination, the work of practical training, if I am truly the Union, is to see that each student is prepared to do his work properly. This, it seems to me, is the primary purpose of the examination, and therefore it is important to ensure that all students prepare for the examination as the subject matter and both the examination and the examination papers have been prepared and completed.

The examination, only the last of the students in the Department of the Chemistry, is to be held in the Chemistry Department, and the examination papers are to be ready on the day of the examination. The examination papers are to be completed in the Department of Chemistry. Only the last of the students in the Department of the Chemistry, is to be held in the Chemistry Department, and the examination papers are to be ready on the day of the examination.

If you have any objections, please let me know immediately. I would like to have this examination in the Chemistry Department.

I hope to receive your comments soon. I am eager to examine the case.

I am very eager to do the examination of the following reasons:

1. The examination papers are to be completed in the Department of Chemistry. Only the last of the students in the Department of the Chemistry, is to be held in the Chemistry Department, and the examination papers are to be ready on the day of the examination.

2. The examination papers are to be completed in the Department of Chemistry. Only the last of the students in the Department of the Chemistry, is to be held in the Chemistry Department, and the examination papers are to be ready on the day of the examination.

3. The examination papers are to be completed in the Department of Chemistry. Only the last of the students in the Department of the Chemistry, is to be held in the Chemistry Department, and the examination papers are to be ready on the day of the examination.
best established life insurance companies. All that is required here, is the test for the acuteness of vision, and the test for color-blindness. Most of the insurance companies do not even require as much as this. Any physician who is qualified to make a physical examination is certainly qualified to make these tests. If any evidence of a diseased condition of the eyes is found, the examiner should record such a condition, and advise the students to consult an oculist; but it is not his province as the examiner, to go further than this. The ears, nose, throat, or any other organ of the body, might show evidence of a diseased condition, as in fact we not infrequently find to be the case. Why would it not be just as reasonable to recommend the employment of specialists in these other lines? In the case of women, the necessity arises much more frequently, of making special inquiry into the condition of the nervous and sexual systems, than for symptoms referable to the eyes, consequently a neurologist and a gynecologist could be recommended with equal propriety on the examining force.

In regard to the employment of a woman physician for the women students, I understand that there has been some objection to the method as it has thus far been conducted. I do not wish to enter any objections to this recommendation if there is any serious opposition to our present method, which is this:—The University Physician examines the heart, lungs, eyes, and ears; and the remainder of the examination is made by the director of the department and her assistants. I would only say that the women very frequently during the examinations express their interest in what the examination reveals as to the condition of their hearts and lungs. Not infrequently, too, mothers of the girls
have spoken to me of their appreciation of this work, and have thanked me for doing it.

On the other hand, it is undoubtedly true that some of the women object to having a man make this examination; some even object just as strongly to either a man or a woman, protesting against any examination. I think it would possibly be advisable to have some woman physician upon whom we could call, to report to her such cases, or to make any special examinations where such appeared necessary. It is my opinion that more than one regular examiner in each department would cause needless confusion, would not materially hasten the necessary work, if done as I believe it can be arranged, and is therefore unnecessary.

Respectfully submitted,

[Signature]

E. A. T. Swall
have shown to me of recent extraction of the works of some

I'm afraid we're going to have to go on this.

Of the other hand, it is my understanding that some of the women objects to having a man make this examination. Some even object just as strongly to either a man or a woman. I really think it would be best if we could

The report on examination. I think it would be best if we could

necessary to have some woman in order who knows what to do. To have any special examination

report to her more closely, or to make any special examination

where more expensive necessary. It is my opinion that more

There are regular exams in every department, and these can be very useful.

Once completed, they can be submitted, and if they are necessary, they

Sincerely,

[Signature]

Head Secretary
Dean George E. Vincent.

My dear Mr. Vincent:

In regard to the report of the committee on "Hygiene" etc. which has been submitted to you, I wish to say that my signature as a member of the committee endorsing all the items of the report as submitted, is unauthorized and I protest against it as I do not agree with a few of the items as expressed in the report.

At the last meeting of the committee which I attended, several of the members expressed opinions contrary to the ones given in the report as the opinions of the committee. On one item five members present (a majority of the committee) expressed an opinion contrary to the one submitted in the report.

My principal reason for protest however, is that at the final meeting of the committee, when the report was to be put into shape for its submission, I was not notified that such a meeting was to be held, and knew nothing about it until this report was already in your hands.

It seems to me that in matters so closely involving my own work, it is hardly just to me that I was not allowed to have a voice in the deliberations of the committee on which I had been appointed.

If this report in its entirety expresses the opinion of a majority of the committee, before it is taken up for
Dear [Name],

I regret to inform you of the recent decision of the Board of Directors to revise the corporate structure of our organization. The purpose of this letter is to explain the rationale behind this decision and to request your support in this matter.

The rationale for this decision is rooted in our commitment to improving the efficiency and effectiveness of our operations. After careful consideration, we have determined that our current structure is no longer aligned with our strategic goals.

We believe that a new corporate structure will enable us to better achieve our objectives. This will involve a restructuring of the current structure, including changes to our organizational chart and roles.

I understand that this may come as a surprise, and I want to assure you that we have taken this decision after extensive deliberation and consultation with various stakeholders.

Your support in this matter is crucial to our success. I encourage you to take the time to understand the changes that will be implemented and to provide your feedback where appropriate.

Please let me know if you have any questions or concerns regarding this matter.

Sincerely,

[Your Name]
action by the President, or whatever administrative body it may come under, I would ask the privilege of expressing, as a minority report if necessary, my own views on the two or three items of the report to which I take exceptions.

Very truly yours,

[Signature]

Dr. Charles P. Small
Dear Mr. Smillie,

I am pleased to have the opportunity to present my resignation.

As you are aware, I have been working on the development of a new product. In the past week, I have had to take on additional responsibilities and my work load has increased significantly. This has caused me to consider my future and I have decided that it is time for me to move on.

I believe that my resignation will allow me to take on new challenges and pursue my career goals. I am confident that my experience and skills will be valuable in any new role.

I appreciate the opportunities that I have been given during my time here. I have enjoyed working with you and the team.

Best regards,

[Signature]

[Name]
Report of the Committee Appointed by the Deans to Consider and Make Recommendations on the following Questions:

I. Methods of Supervising Sanitary Conditions in the University.
II. Provisions for Protecting the Well from Infection and Caring for the Sick.
III. Physical and Medical Examinations of New Students.
IV. Provisions for Regular Courses of Lectures on Personal Hygiene.

A. General Statement.

The responsibility of educational institutions for the physical well being and all-round development of its students is coming to be more definitely recognized, as indicated by the attention that has been given to the various factors that tend to improve living and working conditions, viz.: Dormitories for better housing; Commons for proper food; Students' Clubs and Unions for healthful social intercourse and development; Gymnasium, Swimming Pools, Athletic Fields, and required Physical Training for proper physical growth and development; Physical Examinations and Medical Advice to enable the individual to maintain a high grade of working efficiency; and Medical Supervision for the care of the individual and the protection of the community.

Students in the University are required to maintain a standard of work that involves strenuous mental and physical effort and the ability to meet the requirements depends upon a reasonable degree of health and vigor.

The University is a community in which students are brought into intimate contact in class-room, laboratory, and dormitory, each one exposed thereby to more than the ordinary possibility of infection from one to another if any one of them is suffering from tuberculosis, diphtheria, typhoid fever, certain skin and venereal diseases.

The University is in duty bound to see that such conditions are maintained and that such supervision is exercised as shall insure to each student freedom from additional or avoidable risk to his health, due to his residence and work in the University. It can not insure to the student freedom from the usual diseases common to all, but it should make provisions that will (a) enable the individual to obtain proper care at a minimum expense of money and time, and will (b) protect the community from
the spread of such sickness.

In general, then, it is the duty of the University to protect its students by all reasonable means from infection through such sources as:

a. The drinking water supplied or its method of distribution.
b. The food supplied at the Commons and elsewhere.
c. The rooms and houses that are on the University approved list.
d. The admission of students suffering from or carriers of infectious diseases.
e. Failure to detect and isolate promptly cases of infectious diseases which may arise.

It is also the duty of the University to inform each student as to his physical condition, so that he will not undertake physical or mental work in excess of his abilities, and, if necessary, to forbid the student from undertaking such work.

The University should also make provision for the instruction of all of its students in the fundamentals of personal hygiene and of those phases of community hygiene that are especially related to the University community, and will increase his efficiency as a member of society.

B. Recommendations.

I. The Committee recommends that a University Board of Hygiene should be created to take charge of general questions of Hygiene in the University, and that there should be appointed an executive officer who should have supervision and charge of all matters which fall under the heads of Hygiene, Sanitation, and Medical Supervision in the University.

II. The Committee further recommends that arrangements should be made by which such a Board and its executive officers might be able to avail themselves of the laboratory facilities of the University.
III. The Committee recommends that the University should establish an infirmary, where resident men and women students who are sick might be properly cared for. Provision should be made in this infirmary for the adequate isolation and care of cases of infectious diseases, such as chicken-pox, measles, scarlet fever, diphtheria, and so on. This infirmary might be established in a suitable building on the University property, e.g., 5845 Drexel Avenue. A sufficient appropriation should be provided by the University to maintain this infirmary, and its staff, with the understanding that students who are sick and use the infirmary are to be charged a fee proportionate to the services required, and that the money received from this source is to be used in defraying the expenses of the infirmary.

The need for this provision is most pressing.

The Commissioner of Health, Dr. W. A. Evans, promises his full co-operation in the matter of the establishment of such an infirmary.

IV. The Committee recommends that a course of lectures on personal hygiene be given to all new students as soon as possible after their entrance into the University. (It is suggested that the sections of English 1 include practically all the Freshmen during the first quarter of residence, and that these groups are not too large to bear such lectures to advantage.) There should be organized a major course in Hygiene which should be open to all students.

V. It is considered extremely desirable that the physical examinations of new students in the University should be completed within the first two weeks after their entrance into the University. Attention is called to the fact that these examinations would be greatly increased in value if they could be made during the days of registration before the beginning of the quarter. These examinations should include an adequate examination of the eyes by a trained oculist. The medical examination of women should be made by women physicians. The staff necessary to make these examinations within the time indicated would be:---

For University Women---A woman physician who should give the greater part of her time during the first week or two of the quarter to this work.
THE COMMITTEE RECOMMENDS THAT THE UNIVERSITY FUNDAMENTAL RESEARCH COMMITTEE CONSIDER THE FOLLOWING THREE PROPOSALS TO MEET THE NEED FOR THE EXPENSIVE INSTRUMENTATION AND CLOTHES PROPOSED BY THE COMMITTEE FOR THE FOLLOWING REASONS:

1. The proposals are in line with the University's overall research objectives and priorities.
2. They provide a solid foundation for future research and development.
3. They are cost-effective and efficient in terms of resource allocation.

The committee further recommends that the proposals be reviewed by the appropriate University committees for final approval.

The proposals include:

- Proposal A: [Description of Proposal A]
- Proposal B: [Description of Proposal B]
- Proposal C: [Description of Proposal C]

The committee encourages the University administration to consider these proposals as a means to enhance the University's research capabilities.
For University Men—Two additional physicians, who should be used, one in the morning, and one in the afternoon, until the examinations are completed.

For School of Education Girls—A woman physician for at least a week to assist in making the medical examinations of girls who are entering the School for the first time.

For School of Education Boys—An additional physician to assist the present staff in the physical examinations, so as to have them completed as soon as possible.

The Committee recommends that a statement formulated on the basis of careful consideration by the home physician of certain important points about the physical condition of the student, be required of each entering student. Students who find it impossible to present such a statement should have the medical examination during the registration days, if possible.

VI. The Committee recommends that increased provision be made for the medical supervision and care of the students in general, as follows:

For Women—An arrangement should be made by which a woman physician may be connected with the University on such a basis as to allow her to make the medical examinations of women, as indicated above, and to give lectures on Hygiene, already referred to, and to hold convenient office hours during the year for consultation by women who are sick.

For Men—The work of the Medical Officer should be so arranged as to allow him to keep office hours for consultation by men students who are sick, and to give lectures on personal hygiene to incoming students, and to give adequate consideration to questions of Hygiene and Sanitation in the University in general.

VII. The Committee recommends that the present vaccination certificate requirement be strictly enforced, and that each student who returns to the University after a long vacation be required to report regarding his own health during the vacation and whether he was exposed to infectious disease. This will enable the University authorities to investigate suspicious cases.
For University of Chicago, the examination disturbances were
apparent at noon and in the morning, and one in the afternoon.

With the examinations complete.

For School of Education of the University of Chicago,
for at least a week to permit the median examination
throughout.

For School of Education at the University of Chicago,
from 2:00 to 4:00 P.M. the examination as one.

The Committee recommends the statement for the
examination for the University of Chicago.

The examination for the University of Chicago.

ATTENDANCE AT SCHOOLS OF ARMS
or any other examination.

The Committee recommends the attendance at the
examinations at the University of Chicago.

The Committee recommends the attendance at the
examinations at the University of Chicago.

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examinations at the University of Chicago.

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examinations at the University of Chicago.
VIII. The Committee recommends that no undergraduate student be allowed to take more than three majors' work in the University without examination by, and the permission of, one of the permanent University examining physicians.

The Committee presents in this report an outline of general considerations which it believes to be of great importance, and specific recommendations for their administration. It stands ready to make a detailed presentation of the expense that would be required to put one or all of these recommendations into effect.

Respectfully submitted,

James R. Angell
John M. Dodson
Gertrude Dudley
Ludwig Hektoen
Edwin O. Jordan
Robert M. Lovett
Charles P. Small
Marion Talbot
Joseph E. Raycroft, Chairman.

December 21, 1910.
The committee recommends that no University student be allowed to take more than three semester's worth of the University of Chicago material without examination by the department of one of the permanent University examining professors.

The committee presents its full report as an outline of draft for consideration during the next term's examinations. It recommends that final examinations of the above four courses be held in the second week of the second term to make a test of the preparation of the above four courses for the student to be ready for any of the University's courses recommended above.

Respectfully submitted,

[Signatures]

December 31, 1940
Experiments in Grafting Hydra.

By

Mary Hefferan.

With 3 plates and 2 figures in text.

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Experiments in Grafting Hydra.

By

Mary Hefferan.

With Plates XXIII—XXV and 2 figures in text.

Eingegangen am 22. December 1901.

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A. Introduction.

After Trembley's famous experiments on Hydra in 1740—44, several investigators in the next few years repeated parts of his work with more or less success. Among them were Baker (1773), Rögel von Rosenhop (1755), and Lichtenberg (1773), who obtained union of grafts by binding them together with a hair. Then for a
century little work was done upon the morphology of Hydra until
ENGELMANN (1878), and MARSHALL (1882), described the formation
of polyps from pieces of tentacles, results which have been disproved
by NUSBAUM (1887—90) and Miss PEEBLES (1897). NUSBAUM and
ISCHIKAWA (1899) experimented upon the eversion of polyps, and
differed as to the manner in which the ectoderm regained its normal
position. ISCHIKAWA also united polyps by pushing them together
on a bristle.

It was not until the time of WETZEL, (1895) that extended
experiments in grafting were made. WETZEL united hydra in various
ways, using individuals of the same species or of different species,
and making grafts "autoplastic" (GIRARD), or "heteroplastic", according
as the pieces were from the same or from different individuals. He
grafted like ends together and found that they united readily, show-
ing that polarity did not exist in Hydra in the sense in which the
term is used with plants. Later polyps united by like ends separated
or fused in such a manner as to form a normal Hydra.

WETZEL continued his experiments in 1898. He examined some
grafts histologically and concluded that, as in the experiments of
BORN and JOEST on tadpoles and earthworms, only body layers of
the same kind fused together. He reached the same conclusions as
before in regard to the non-existence of polarity, and from one ex-
periment of his own and one of ZOJA (1899), suggested the possibility
of heteromorphism in Hydra. He did not obtain union between
Hydra fusca or Hydra grisea, and Hydra viridis.

The work of WETZEL in regard to regulation of graft ab-
normalities was confirmed and extended by RAND (1899), who worked
with Hydra viridis, and by Miss PEEBLES (1900), who used Hydra
fusca and Hydra grisea. I shall refer later to some differences in
their results from these two forms. The most recent work on
the morphology of Hydra is that of PARKE (1900), who studied variation
in the number of tentacles of different species and noted some regu-
lation of abnormal forms found in nature.

The experiments upon the regulation of graft abnormalities here
described were carried out at the University of Chicago during parts
of the year 1899—1900, on the lines already followed by RAND and

5 Observations and Experiments on Regeneration in Hydra viridis, by
Helen Jean King, 1901, Archiv f. Entwicklungsmech. XIII. page 135, appeared
as this article was going to press.
jars covered, as the appearance of a surface scum of dust and bacteria in a jar is quickly followed by the disappearance of the Hydras. The conditions for maintaining the proper equilibrium of oxygen tension in the water by means of the right quantity of algae can only be determined by experience.

The large, brown Hydras will eat almost anything that is small enough for them to engulf. I have seen them take in pieces of boiled egg yolk or small pieces of worms or snails. Hydra monoecea will devour Hydra grisea, tentacles and all. One feeding experiment especially gave most interesting results. A small red crustacean is found in great numbers at South Chicago, Indiana, in April. Later in the season this form loses its bright red color and turns dark blue. Then it disappears as does Branchiopoda. A few Hydra fuscus, which by chance I placed in the dish with some of these red crustaceans, seized upon them readily, with the result that after digestion the whole polyp with its buds turned bright red. The pigment extended even up into the ectoderm of the tentacles and only under a lens could it be seen that the thin layer of ectoderm was not colored. The color persisted for several days. The buds remained pink for some time after they separated, notwithstanding the fact that they had received the pigment through the parent only. Later the color gradually faded out. Some interesting experiments in feeding might be made with this form.

Various methods have been used in grafting Hydra. Lichtenberg (73) bound them together with a hair; Ichikawa (79) got them to unite by pushing them together on a bristle; Wetzel (95), (98) also used a bristle. Rand (1900) invented a method of placing the Hydra together in small paraffin grooves under water. I found that in most cases the Hydra could be made to unite if they were simply held together gently for a few minutes with dissecting needles. The polyps to be grafted were placed upon a glass slide under the dissecting lens, with sufficient water to cover them but not enough to cause much disturbance from surface tension when needles and scalpel were introduced. The cuts were made with a small scalpel or a lancet needle. The pieces were pushed together and held in position a few minutes until, by the accumulation of protoplasmic material at the point of union, the wound was firmly closed. Very often the whole of the cut surfaces did not unite at first, but usually, if the adhesion of only a few cells at one edge could be accomplished, it was enough to insure the complete welding of the whole in a few hours. It was necessary to keep the needles at hand and to watch the polyps closely for some minutes, as the first strong, sudden contraction was apt to separate them, after which they would unite if pushed together again at once. I found also that the pieces fused much more readily if the cut was not a clean, sharp one, but somewhat irregular. If the Hydra did not unite readily at first the process was facilitated by breaking the cut edge slightly with the needle. This seemed to overcome the tension by means of which the cut edges turn in and bring the ectoderm over the naked endoderm so that the wound closes quickly of itself. This breaking of the edges allowed the two pieces to dovetail into each other, in which case they united easily.

I thought that I observed a seasonal difference in the readiness of the protoplasm to graft. Late in the fall when the Hydras were not budding and were only in fair condition, they fused readily with one another. During the winter my Hydra viridis in the aquarium grew very small although otherwise in good condition. The polyps still united readily, although the operation was somewhat difficult on account of their minuteness. In the spring, upon obtaining fresh Hydra fuscus from Jackson Park, in fine condition and budding rapidly, I was surprised to find them exceedingly difficult to unite. Hydra grisea was also difficult. However, I found that the large, brown Hydra monoecea, and Hydra viridis, obtained from South Chicago and Salt Creek were very easy to work with. The latter two species are in general easier to manipulate than Hydra fuscus and Hydra grisea, Hydra viridis because of the rapidity with which it regenerates and regulates itself, and Hydra monoecea because of its size and general plasticity.

After the grafts were made the compound was left upon the slide and water added gradually for some minutes. It was then removed to a stouter dish containing water and some Hydra-free algae. I found it unnecessary to change the water, only adding a little from time to time.

In the description of the experiments I shall use the terms graft, stock, and compound in the sense in which they were employed by Rand (1900) and Miss Perkles (1900). By lateral graft I shall mean a case in which the graft is inserted like a bud into the side of the stock; by tangential or side grafts, cases in which the polyps have had shavings or slices cut from the trunks and are put together side by side without removing either end. By end to end grafts, cases in which
a head or foot has been removed and a head or foot of another polyp joined to the cut end in place of the lost part. In speaking of the ends I have used the terms head, oral end or + pole as synonymous, also the foot, aboral end or — pole.

C. Experiments and Results.

1. Lateral Grafts.

Rand (99) from his experiments on Hydra viridis drew the following conclusions:

1) Lateral grafts in Hydra viridis do not persist as permanent abnormalities.

a) If a piece bearing tentacles be grafted into the trunk of a Hydra, there results in most cases a slow migration of the graft down the trunk of the stock until graft and stock arise directly from a common foot. A constriction then slowly forms between graft and stock, which finally separate. Sometimes the graft constricts and separates from the stock before migration to the foot is completed.

b) Pieces (from which tentacles have been removed) may fail to regenerate tentacles, in which case they are completely resorbed by the trunk of the stock. There is sometimes a downward migration of a graft that undergoes resorption.

Miss Peckels (1900) working with Hydra fusca and Hydra grisea, says: "I have not observed the 'wandering' of the smaller component of the graft which Rand (99) describes. The two foot ends seem to be brought together by the forward growth of the new body, not by any migration of the smaller pieces."

The following experiments which I have made with both Hydra viridis and Hydra fusca gave some results interesting in this connection.

1. Hydra fusca.

Experiment 1. Oct. 29, 1899. I cut a well grown bud just above its base from one individual of Hydra fusca and grafted it upon the side of another polyp. On Oct. 30 they were well united, with the body layers and body cavities continuous (Fig. 1 a). On Nov. 4 the graft had swung around to lie in the same direction as the stock (Fig. 1 b). Nov. 13 showed them as in Fig. 1 c, a symmetrical double headed Hydra. A comparison of this figure and the one before it shows the space between the two heads much shortened. When the polyp contracted the heads were brought close together as in Fig. 1 d. The stock had produced one and the graft two more tentacles. The next drawing was made on Nov. 15 and shows gradual narrowing of the distance between the heads. On Nov. 27 (Fig. 1 f) there were still two distinct hypostomes although the tentacles were close together, some lying directly in the space between the mouth openings. Upon examination Dec. 2 the mouths were fused into one opening and the tentacles altogether numbered only eight, a reduction of four. One of these was branched at the tip, showing that the reduction had at least in this case taken place by a process of fusion.

Experiment 2. Nov. 4. Grafted a large seven tentacled Hydra monocoeia upon the side of another large polyp of the same species. After removal to the seawater dish they presented the appearance shown in Fig. 2 a. On Nov. 6 the compound appeared to be in thriving condition, the stock had straightened out and the body walls and cavities were continuous. Nov. 12 showed it as in Fig. 2 b. Two days later the gradual lengthening of the common foot end and fusion of the nearly equal oral parts of the body had begun (Fig. 2 c). An ovary was forming on the stock. A few days later this specimen was accidently destroyed but not until the tendancy towards fusion had been plainly evident.

Experiment 3. Nov. 6. Grafted a young Hydra fusca on the side of a large one of the same species. On Nov. 7 the position of the graft is shown by Fig. 3 a. The regulation was very slow, the graft remaining in about the same position and directed backwards for over a week. On Nov. 17 it was at the middle of the body of the stock (Fig. 3 b). Three days later it had swung around and the length of the portion of the stock from the graft to the foot had increased noticeably (Fig. 3 c). The drawing of Nov. 28 (Fig. 3 d) shows the two heads to be fusing gradually, the two arms of the Y shaped figure being much shortened and equal in length. The regulation proceeded very slowly, for on Dec. 18, forty two days after the graft was made, the heads were still some distance apart. Food was taken during all this process by either mouth and the graft had produced one tentacle. I did not preserve the polyp longer than forty five days, the ultimate fate of the abnormality being obviously as in Experiment 1.

Several other experiments of side grafts were made with Hydra fusca, the graft being inserted from one half to one fourth of the length of the Hydra from the foot. The result in each case was
the migration of the graft toward the oral end of the stock and final fusion of the two heads into one. In only one experiment of side grafting with Hydra fusca did I get a different result from that described above.

Experiment 4. Nov. 14. Grafted the oral half of one Hydra so near the foot of another that part of the foot was cut off in the process. On Nov. 16 the stock had produced a bud and the graft was firmly united close to the foot of the stock with body cavity opening into that of the stock (Fig. 4 b). The bud developed and separated Nov. 23. On Nov. 27 I cut a ring of tentacles from both graft and stock. By Dec. 15 the stock had regenerated five tentacles and the graft three. The graft had migrated nearer to the foot and swung around so that its long axis was in the same direction as that of the stock (Fig. 4 c). A few days later the two separated, having persisted in abnormal form for over a month, a rather remarkable fact when we consider how short a distance the graft had to travel to reach the foot, if this process were necessary for separation, and that meanwhile a bud had developed and separated in eight days.

2. Hydra viridis.

Experiment 5. Nov. 6. I cut the aboral half from a Hydra viridis and grafted the oral half on the side near the middle of a second polyp of the same species (Fig. 5 a). The two united well and remained in good condition. On Nov. 10 the graft was perceptibly moving downward and a drawing made Nov. 16 shows the two heads arising from a common foot which is considerably less than half the stock (Fig. 5 b). The arms of the Y above the angle are still of equal length, which indicates that splitting has taken place instead of migration of the graft. There might possibly be another explanation, i.e. that the graft increased in length as it moved down, but I see no reason why it should grow while the stock did not grow. On Nov. 20 the division had nearly reached the foot, and separation took place a few days later.

Experiment 6. Same as above except that the graft was inserted above the middle of the stock, and was somewhat longer than the oral part of the stock above the graft (Fig. 6 a). In this case migration seemed to take place instead of splitting, for the graft moved down until equal in length to the oral part of the stock. Then it continued its migration until it was less in length and finally constricted off before reaching the foot. The final separation produced two very unequal Hydras, for the graft evidently did not increase in length (Fig. 6 b and c).

Experiment 7—10. Nov. 10. Made side grafts in Hydra viridis as above, inserting the grafts at different levels. In every case migration toward the foot and final constriction and separation occurred, either before or after reaching the foot, thus agreeing exactly with the results of Rand’s similar experiments on Hydra viridis 1).

3. Conclusions.

It seems to me clear that both the migration observed by Rand and the fusion described by Miss Peebles take place in the process of regulation of Hydra fusca and Hydra monoeica. During the first part of the process the length of the foot end of the stock increases without any perceptible diminution in the length of the graft, but with a decrease in the length of the oral part of the stock above the graft. That is, the graft creeps up the stock. When the head end of the stock and the graft become equal in length the movement of the latter ceases and both diminish in length simultaneously until the two tentacle rings are brought together and fusion results. This is apparently a problem in tension. The inner angle of the two arms of the stock and graft is the seat of a tension which acts unequally on the two arms as long as the arms are unequal in length, the pull being on the side of the longer arm, tending to drag the shorter arm up. As the arms become equal in length the tension becomes equalized and the process passes gradually over into that of upward growth in the line of the bisector of the angle of the Y shaped figure and a fusion of the two inner walls of the arms. The stretch or tension at the vertex of this angle as seen in the drawing, is indicated by the disappearance of the sharp angle between stock and graft and its replacement by the curved line which represents the part of the upper body wall between the gradually approaching heads.

The stronger tendency in side grafts of Hydra fusca is not to separate but to remain united to the stock and finally to fuse with it. There is evidently a point near the foot of the Hydra stock, however, where the tendency to fuse toward the oral end of the

1 Miss Kiss 1901) also found that regulation of double headed Hydra viridis was always brought about by the separation of the parts of the polyp into two individuals.
stock and graft gives way to the more feasible method of regulation by a short migration and constriction at the foot of the stock. There must then be a point of equilibrium where the graft would move because of the difficulty of cutting the thin shaving from the side of the Hydra. It lies probably somewhere in the aboral 1/4 of the body, with that of Hydra fusca we find a marked difference. In both cases, after a few days, the lateral graft swings around, causing a symmetrical Y shaped figure. The base of the graft curves into the trunk of the stock as described by Rand in his comparison of grafts in Hydra fusca to fuse toward the head and form one polyp; in Hydra viridis, to split towards the foot and separate into two individuals.

I can think of no reason for this remarkable difference in the behavior of lateral grafts of Hydra fusca and Hydra viridis except the possible one of capillarity. The most noticeable difference, aside from that of color, which can have nothing to do with this phenomenon, is that of size. Hydra fusca is a much larger (i.e. three or four times as large) cylinder than Hydra viridis. It is well known that large drops of any liquid run together or fuse more easily than small drops, because the surface tension bears an inverse ratio to the radius of the drop. The same thing may be true for two semi-fluid cylinders in contact. The greater the diameter of the cylinders at the angle of the cylindrical capillarity and the stronger the longitudinal tension which draws them up and pulls the two arms together. The less the diameter of each cylinder at the, the stronger the circular tension and the tendency to separate by regaining the cylindrical form.

II. Tangent Grafts.
1. Experiments and Results.

The struggle between the tendency of grafted Hydras to fuse, in order to regain the normal form, and the tendency to separate, is often seen in abnormal compounds of the same species. This was rather well brought out by the following experiments.
body cavity was through the oral ends, the small aboral ends lying opposite each other. There was no way of distinguishing the original head and foot of one polyp. Fig. 9 c shows the aboral ends somewhat separated or shifted but still no signs of constriction or absorption. The end is foreshadowed however by Fig. 9 d, where the connecting band between the two Hydras, which formerly had the diameter of the widest part of the Hydras themselves, is narrower and distinguishable, and the two polyps are again distinct without having accomplished the reversal which would put them in opposite directions. Separation followed as shown by Fig. 9 c and f. The constriction occurred near the foot.

Experiment 15. Nov. 16. Repeated experiment 12, cutting slightly larger areas (Fig. 10 a). The polyps united readily. On Nov. 18 they appeared as in Fig. 10 b, the two Hydras having actually one body cavity in the region of the union instead of a mere band of connection. The result was easily prophesied. Fusion of the two components into a normal polyp progressed slowly and uniformly as seen in Fig. 10 c—d. The last drawing was made Dec. 15.

Experiment 16. Repeated experiment 15 with the same result. Nov. 17—Jan. 3.

2. Conclusions.

The results of these few experiments show that the probability of separation or fusion as a means of regulation in tangential grafts, when the poles are made to lie in the same direction, depends largely upon the area of the uniting surface between the two polyps. The larger the area of surface, the more probable that fusion will take place, partly no doubt from mere capillary attraction. There is a point, however, below which the adherent forces of the protoplasm are overcome by the tendency of the polyp to free itself from the abnormal contact and the consequent pull brought to bear on the connecting band. [In these experiments the polyps both had the glandular foot left on them, and when both animals contracted sharply with the foot fastened to a support and somewhat widely apart, the pull on the connection between them was considerable. The area of adhesion must be large enough then to resist this separating force.]

In the two experiments in which the poles were reversed, we saw that one compound persisted and became normal, the other finally separated into its components. In the latter case the uniting surface was made larger than in the former. This apparent anomaly is explained, I think, when we consider that in the case of fusion the reversal of poles was corrected by the polyps twisting around before fusion took place. With a union of a larger area this swinging around of one polyp may have been impossible and therefore fusion did not result. In order to determine if fusion would take place with poles in opposite directions I performed the following experiment.

Experiment 17. Nov. 23. Having removed the foot of a Hydra fascia, I grafted the cut aboral end into the side of a second polyp near the oral end. The next day I cut off the head of the graft and with some difficulty, because of the strong contraction of the polyps, managed to get a good union between this end of the graft and the stock near the aboral end of the latter. The whole area of union was sufficiently extended and firm, as seen in the drawing made Nov. 25 (Fig. 11 a). There seemed to be no reason why fusion should not take place. However on Nov. 26 I found that the graft had separated at the upper point, i.e. the aboral end of the graft. On the next day it had begun to swing around so that the aboral end would lie in the same direction as that of the stock (Fig. 11 b and c). Then fusion downward of the aboral ends began to take place and was almost completed when the last drawing (Fig. 11 d) was made on Dec. 11. Glandular foot cells formed in the end of the graft before fusion was completed.

The question of the relation of "polarity" in Hydra and the probable fate of a graft as seen in Experiment 17, raised many interesting problems as to the regulation of abnormal grafts. It is known from the results obtained by Wettzel (1900) that if the tentacles of two polyps are removed and the cut oral surfaces grafted together, in other words, if positive poles are united, a certain result will follow; i.e. a new head will appear near the line of union, the bodies will bend from this point as an angle and fuse together towards the aboral ends. If however two Hydras are put together by uniting unlike poles, that is, if a head end be grafted on a foot end, the compound will often remain permanent. If the remaining head and foot are cut from this compound, a new head will invariably form at the head end, a new foot at the opposite pole, and a normal animal result. Suppose that instead of leaving free ends in this latter case, the free ends were brought together also, unlike poles being united to form a complete circle. There would then be no place for a head to form, if the
initiative force for the formation of a head comes from either a free oral or from two oral ends in union. Very likely the break for a head would take place somewhere at a point of least resistance, i.e. where the union was not perfectly strong. This problem I have as yet been unable to solve, for although I still think that the graft might be made my endeavors to secure a perfect Hydra ring have thus far failed. On account of the contractility under manipulation two Hydras grafted end to end make too short a structure to bend around in order to unite the free ends. Therefore I grafted three or four together, making a long chain, but since it was necessary to wait several hours between each graft in order that the previous one might become firm I found that usually before the last union could be made the first had become irregular. I also united the polyps in pairs and then put the pairs together, but this also was unsuccessful. The difficulty of producing a fairly permanent polyp of abnormal length raised a second question already suggested above. Under what conditions does an end to end graft with middle poles together remain permanent and become a normal Hydra? Can Hydra of abnormal length be produced in this way?

III. Polyps of Abnormal Length.

1. Experiments and Results.

Experiment 18. Oct. 29, 4 P.M. Grafted two specimens of Hydra viridis end to end. The poles were placed in the same direction and only the two extremities to be united were cut off. On Oct. 30, 9 A.M. the two Hydras seemed to be perfectly joined and the body cavities continuous. The point of union was almost unnoticeable except for a slight constriction around the body when the polyp contracted [Fig. 12 a]. I cut off the ring of tentacles and grafted a third Hydra on to this end, poles again in the same direction. On Oct. 31 at 9 A.M. the condition was as seen in the drawing, Fig. 12 b. The first union between a and b was at x, the second between b and e at y where there is a slight projection of the body wall. Nov. 1, 9 A.M. the condition appeared as in Fig. 12 c. The compound did not appear reduced in size, but the projection at y had become a foot by which the polyp could attach itself to a needle. The body cavities still seemed to be perfectly continuous. On Nov. 2, 9 A.M. constriction had taken place and c separated leaving a and b without a head. The next day b had produced a bud [Fig. 12 d]. No sign as yet of tentacles or hypostome. On Nov. 5 four tentacles had developed on b and five on the bud. A mass of debris collected by glandular cells which seemed to have formed at x was easily removed by the needle. The union between a and b still seemed to be perfect, with only a slight enlargement of diameter at that point. When the Hydras were extended the trace of the grafting could be seen. However, careful observation showed that the compound could attach itself at the middle, and on Nov. 6—7 there was no noticeable change. Nov. 8 showed a slight constriction of the body walls at x [Fig. 12 e]. Nov. 9, the bud was detached and constriction of the body wall was deeper. On the next day the body cavities were no longer continuous, although contraction still took place throughout the animal upon stimulation of either end. On Nov. 19 a and b separated while I was removing the collection of loose material from x. Two days later I noticed that a had formed no tentacles but seemed to have a foot at either end. Under a microscope I saw that a bit of the glandular structure of x had remained slightly attached to the oral end of a, which persisted unchanged, with no tentacles for six days. On Nov. 27 these few cells were missing, and the next day the beginnings of three short tentacles and a hypostome were seen and the last of the three Hydras had returned to the normal condition. This peculiar effect of a few glandular foot cells in preventing the regeneration of oral structures was striking, since Hydra viridis usually shows new tentacles in less than 24 hours.

The particular feature of this experiment was that, although the union at x seemed to be perfect, and that at y less so, but no less than in many other cases where the graft had remained permanent, separation eventually took place. It seemed probable that the length of the compound structure was at fault.

Experiment 19. Nov. 1. Cut off head end of one and foot end of another large Hydra monoecia and united the main pieces. They were enormous Hydras which, when extended, were at least an inch in combined length. On Nov. 2 they were in good condition, union of body cavities perfect etc. There was no visible projection nor were there irregularities in the walls except a slight constriction at the point of the graft. On Nov. 5 the lower Hydra had begun to reproduce a head and tentacles at this point [Fig. 18 a]. Next day each head took in large pieces of boiled egg yolk, which showed the body cavities plainly in communication. On Nov. 7 more tentacles appeared and a beginning of constriction at the point of union.
showed itself. The compound was afterwards lost, but the components would have separated eventually.

Experiment 20. Nov. 5. Grafted a pair of Hydra viridis end to end, cutting off only the ring of tentacles and foot. A head was produced at point of union and the parts separated Nov. 9.

Experiment 21. Cut two individuals of Hydra viridis near the middle of each and transferred the oral end of one to the aboral end of the other. Both became perfectly normal Hydras. For the first few days one showed at the place of union a green zone darker than the color of the rest of the bodies, probably caused by an accumulation of protoplasm, which seems always to flow to the point of union when adhesion takes place. A slight constriction is usually seen between the polyps upon contraction for a few days after union. On Nov. 20 I could find no indication of graft.

Experiment 22. Nov. 15. Cut off slightly more than the aboral \( \frac{1}{6} \) of a Hydra viridis and grafted on an oral \( \frac{1}{6} \) of another. This made the compound a little more than the normal length of a Hydra. Nov. 19 the Hydra was fastened to the side of the dish and looked perfectly normal.

Experiment 23. Nov. 15. Cut about \( \frac{3}{4} \) of a Hydra viridis and added this to \( \frac{1}{4} \) of another. On Nov. 16 the Hydra appeared as in Fig. 14 a. When extended it seemed nearly twice as long as the average Hydra viridis in the aquarium. On Nov. 17 a dark zone was seen at the point of union, and a slight constriction. On Nov. 26 the compound was in bad condition, had lost some tentacles and had become reduced in size. When revived it was not much larger than an average Hydra, and there was no evidence of the grafting. However when the tentacles were regenerated one appeared in the middle of the body, evidently at the point of the graft (Fig. 14 b). This persisted for three days, then gradually became absorbed, and the Hydra remained in normal condition. It seemed that although the polyp had become smaller through bad nourishment and self absorption, had lost its abnormal length and had suffered considerable protoplasmic readjustment, it still possessed at the point of grafting some potential head protoplasm which upon renewal of favorable conditions reproduced a tentacle. If the compound had still been abnormally long; a complete head would have formed and separation would have followed. The degree of divergence from the normal size was however so small that after further readjustment towards a permanent normal union, the protoplasm at the point of union lost its local character, and the tentacle was absorbed and disappeared.

Experiments 24 and 25. Nov. 11. Cut two Hydra viridis near the middle and exchanged the body halves. Both remained permanent grafts. One was interesting because of the development of a bud which appeared a little above the slight constriction between the two components. As the bud developed it moved down so that before it separated (Nov. 17) it was exactly at the point of union, the constriction being still visible. Rand suggests in his comparison of buds and grafts that even if a bud should tend to migrate down the trunk, as does a graft in Hydra viridis, the amount of migration would not be noticeable in the short time during which it remains attached. In this case the slight migration was easy to determine on account of the mark of constriction in the trunk.

Experiment 26. Nov. 6. Grafted together the halves of two Hydra viridis, cutting near the middle so that the resulting compounds were about the normal length. The grafts persisted and the compounds became perfect polyps.

Experiment 27. Nov. 22. Made a compound about \( 1 \frac{1}{2} \) the normal length. On Nov. 24 the graft appeared to be well joined. A deep constriction was noticeable between the two components when contracted, but the body cavities were perfectly continuous. When extended a slight projection was seen close to the point of union, which looked like a bud. On Nov. 26 it was found to be a glandular foot by which the compound could attach itself to a needle. Two days later only a very slight constriction was visible and the projection at the point of union was smaller but still glandular. On Dec. 4 the abnormal foot had been entirely absorbed; the constriction was only visible when the Hydra contracted sharply. Otherwise the polyp was normal although still slightly longer than ordinary Hydras. It gradually became reduced in size until normal.

2. Conclusions.

Several more grafts were made like those in the preceding experiments, in which a permanent union was never obtained when the compound closely approximated twice the length of a normal Hydra or was more than twice the length. The difficulty of obtaining a permanent union was slight when a Hydra of only ordinary length was made by grafting a head half and a foot half together, but the probability of a union persisting for more than a few days was less
as the lengths of the components were increased. In experiments 23 and 37, in which the compounds were more than $1\frac{1}{2}$ and less than 2 times the normal length, regulation was begun in the one case by the formation of a tentacle and in the other by the appearance of a foot. In the first case poor condition and consequent reduction of size seemed to be the cause of the abandonment of the process of separation and of the resorption of the tentacles. In the second case the compound, although not under unfavorable conditions, became slightly reduced in size, resorbed the tentative foot and retained the graft union. These two cases seem to have been very near the decisive point, where the balance may go either way, towards regulation by separation of the components or towards permanent fusion. The last result was accomplished in both cases, and accomplished by a reduction of the abnormal length, i.e. the compound simply decreased in size very slowly until it could not be distinguished from an ordinary Hydra. In order to determine how this reduction took place I attempted to make camera lucida drawings of compounds from day to day, but owing to the difficulty of getting the same degree of magnification each time (the amount of water in which the Hydra was placed on the slide being a troublesome factor), and of computing the volume of the specimen from the irregular outlines, the results have so far been unsatisfactory. There is no doubt, however, of the difficulty of building up an abnormally long Hydra. Regulation will follow in one of two ways; if the increase in length be inconsiderable the compound will regain the normal size by reduction through self-absorption; if the length be too great for reduction to be accomplished quickly, constriction and separation of components will take place. The latter phenomenon may be comparable to that which occurs in the formation of liquid cylinders in experimental physics, according to the law enunciated by Plateau (73): “If the length of a cylinder (of oil), formed between two bases perpendicular to the axis, much surpass triple the diameter, equilibrium becomes unstable, at some point constriction takes place, and the figure separates spontaneously into two unequal portions. The exact value of the limit of stability is between 3 and 3.6 times the diameter. The mode of deformation of the cylinders is the result of a property which is inherent in them.”

No constant direct ratio can be determined between the diameter and length of the cylindrical Hydra, since, through contraction and extension, the relation is constantly changing. It is probably true however that a certain relation exists between length and diameter, such that any Hydra of given length must approximate a given diameter; in other words the volume must be fairly constant. A definite volume as well as a definite form is evidently a morphological necessity in Hydra.

IV. Abnormal Budding.

Miss Tryon (1900) suggested that it would be interesting to keep double polyps if possible, in order to see how and where buds would appear. I have already mentioned one or two cases of budding compounds. Two others were of interest.

Experiment 28. Oct. 19. I grafted four Hydra viridis in pairs, end to end, cutting off as little as possible. On Oct. 20, I united the pairs with poles in the same direction, making a chain of four individuals. The compound persisted for a few days. On Oct. 21 a slight swelling appeared near the head end of 3 and one near the foot end of 2, which I took to be indications that separation was to follow. On the next day these prominences were plainly buds which, although entirely out of the budding zones of the individual components upon which they were developing, were within what would be the budding region of the whole compound, i.e. the middle $\frac{1}{3}$. The buds developed and separated while a very complicated process of regulation, reduction, and separation of components went on in the abnormally long compound.

The Hydra used in Experiment 26 also budded. Two days after grafting a bud appeared exactly opposite the slight indentation which marked the point of union. In this case I observed no migration of the bud which developed and separated at the dark zone that marks the place of the grafting after constriction disappears. The question as to the origin of the bud, whether from one Hydra or from both, is an interesting one. I endeavored to throw some light upon the problem by grafting Hydra fusca and Hydra grisea.

---

Fig 2
together in the budding region, hoping to get a bud again at the point of union where the marked difference in the color of the two grafted polyps would help to determine to which the bud belonged. I was unable to get a bud at the right point.

From Experiment 28, in which the bud appeared in normal position as to the whole compound, but abnormally in relation to the individual components, 24 hours after grafting, it seems probable that the operation of grafting had a marked influence upon the budding process, at least in regard to the position of the bud. The perfectly normal development and separation of the bud in Experiment 20, which arose in this case at the line of union between the Hydra, showed that the operation of 48 hours before had no effect upon the mechanism of separation of bud and stock, such as that shown by Rand for an operation made at the foot of the bud when half developed. In both these experiments a striking fact to be noted is the evidence that buds arise very suddenly and spontaneously, not being in any sense long determined in position and lying latent.

D. Summary.

1) Regulation of lateral grafts in Hydra fusca is usually a double process of migration of the graft, and of fusion as the result of tension, i.e. the graft tends to migrate towards the head end of the stock until the head ends of graft and stock are equal in length, when fusion gradually brings them together. There is however a level of insertion somewhere in the aboral 1/3 of the stock, below which a graft will move downward and constrict off.

2) Regulation of lateral grafts in Hydra viridis is usually a process of downward migration, constriction and separation at the foot of stock. Occasionally a graft inserted very near the oral end of the stock will persist for some time and finally fuse as in Hydra fusca.

3) The difference in the behaviour of lateral grafts in Hydra fusca and Hydra viridis is probably due to a difference in the diameters of the cylinders which form them, and to the action of capillarity.

4) When two Hydras are united side by side in tangent grafts, the probability of separation or fusion as a means of regulation depends upon the area of unifying surface, i.e. upon capillary attraction.

Fusion will not take place between such Hydras united with poles in the opposite direction, but if the area of union is not too large, they may swing around until the poles lie in the same direction, and then fuse into one.

5) Hydras united in end to end grafts with poles in opposite directions will not form permanent union. Hydras so united with poles in the same direction will form permanent unions if the length of the compound is less than twice that of a normal Hydra.

6) Ends may arise in a compound polyp of abnormal length within the budding zone of the compound, regardless of that of the individual components. They may also arise at the line of union. The suddenness with which they appear in these unusual places shows that their position is not long predetermined.

Hull Zoological Laboratory, University of Chicago,
December 1, 1901.

Zusammenfassung.

1) Die Rückkehr zur Norm (Regulation) bei lateralen Aufpropfungen bei Hydra fusca besteht gewöhnlich aus den beiden Prozessen der Wanderung des Pfpfiststeges und der Verschmelzung als Ergebnis einer Streckung desselben, d.h. das Pfpfiststück hat die Tendenz, nach dem oberen Ende des Stocks hin zu rücken, bis die Kopfenden von Pfpfiststück und Grundstock von gleicher Länge sind; abet dann bringt sie ein eintretender Verschmelzungsprozess allmählich zur Verschmelzung in ein Stück. Innerhalb zieht es in der Gegend des aboralen Fünftels des Stocks eine Grenze, unterhalb deren ein Pfpfiststück sich aboralwärts bewegt und sich abschnürt.


2) Der Unterschied in dem Schicksal seitlich angelegter Pfpfistücke bei Hydra fusca und Hydra viridis entsteht möglicherweise durch eine Durchmesserverschiedenheit der beidseitigen Cylinderform und durch den Einfluss von Kapillarheitsverschiebungen.

4) Bei der Vereinigung zweier Hydras Seite an Seite mittels tangentialen Aneinanderlegens hängt die größere oder geringere Wahrscheinlichkeit der Trennung oder der Verschmelzung von der Größe der Vereinigungstürme ab. d.h. von der wirksamen Kapillarwirkung. Verschmelzung tritt nicht ein, wenn die Hydra in umgekehrter Lage vereinigt wurden, ist dabei jedoch das Vereinigungsfeld nicht allzu groß, so können sie sich herumdreht bis die gleichnamigen Enden nach derselben Richtung liegen abd ab und verschmelzen.

5) Vereinigungen aus Hydrastücken, mit den gleichnamigen Enden nach entgegengesetzten Richtungen, gehen keine dauerhafte Verbindung ein. Denartige...
aber mit gleichmäßigen Enden gleich gerichtete Vereinigungen können sich danach verbinden, wenn die Länge des zusammengefassten Individuums weniger als die Doppellee von der einer normalen Hydra beträgt.


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**Explanation of Plates XXII—XXV.**

Fig. 1. Regulation of a lateral graft of Hydra fusca. Experiment 1. a 1st day, b 6th day, c 10th day, d 15th day, e 17th day, f 20th day.

---, 2nd day, g 9th day, h 11th day.

Fig. 3. Regulation of a lateral graft of Hydra fusca. Experiment 3. a 2nd day, b 11th day, c 14th day, d 22nd day.

---, 4th day, e 5th day.

Fig. 4. Regulation of a lateral graft of Hydra fusca. Experiment 4. a 1st day, b 4th day, c 5th day.

---, 5th day, d 10th day.

---, 6th day, e 11th day, f 15th day.

---, 7th day, g 18th day.

---, 8th day, h 20th day.

---, 9th day, i 22nd day.

---, 10th day, j 25th day.

---, 11th day, k 27th day.

---, 12th day, l 29th day.

---, 13th day, m 30th day.

---, 14th day, n 31st day.

---, 15th day, o 32nd day.

---, 16th day, p 33rd day.

---, 17th day, q 34th day.

---, 18th day, r 35th day.

---, 19th day, s 36th day.

---, 20th day, t 37th day.

---, 21st day, u 38th day.

---, 22nd day, v 39th day.

---, 23rd day, w 40th day.

---, 24th day, x 41st day.

---, 25th day, y 42nd day.

---, 26th day, z 43rd day.

---, 27th day.
Department of Bacteriology  
Zoology Building  
June 15, 1902

President R. P. Harper,  
Dear Sir:—

I forward you with this a reprint of the article by me in the ‘Bacteriological Zeitschrift’, just published; I hope to send you shortly another from the ‘Centralblatt für Bacteriologie’.  
I should also like to say to you that I am entering upon my work next year as Curator of the Bacteriological Museum, with interest and pleasure, but that I am especially glad to be of some service to the department as to the University.  
Very respectfully,  
Mary Heffernan.
November 18, 1924.

Professor L. C. Marshall,
Faculty Exchange.

My dear Professor Marshall:

I am enclosing a list of projects for this department in accordance with your recent request. I was, unfortunately, in the east when the request reached my office and have only recently returned, hence the delay.

Sincerely yours,

Edwin O. Jordan.

BOJ:JC
November 12, 1953

Professor E. C. Eckhardt

Dear Professor Eckhardt,

I am writing to express my sincere congratulations on your recent appointment to the Department of Radiochemistry and its excellent research program. I have thoroughly enjoyed the paper you and your colleagues are to present on the role of radioactive tracers in chemical analysis.

Sincerely yours,

[Signature]

Dean of Science

[Signature]
Desirable Projects, Department of Hygiene and Bacteriology

1. For the study of the nature of the toxins (specific poisons) produced by certain disease germs (which cause diphtheria, tetanus, botulism, etc.) and of the antitoxins which can be produced in animals to neutralize those poisons in the infected individual:

   For each year - technical assistant $1500
   equipment 300
   animals and feed 500

   Total $2300

2. For a study to develop new and improved methods for the production of antitoxins and other types of anti-sera by the application of certain chemical discoveries of the last ten years:

   For each year - technical assistant $1500
   equipment 300
   animals and feed 500

   Total $2300

3. For the study by certain new chemical methods of the nature of the virus - at present of unknown nature - which causes the disease smallpox:

   For each year - technical assistant $1500
   equipment 300
   supplies, animals and feed 500

   Total $2300
It would be desirable to plan this study to extend over a period of two or three years.

4. At the present time certain researches are being conducted on the production of anti-bacterial sera for use in pneumonia infections. This would be greatly facilitated and certain existing handicaps would be eliminated by the provision of a capable technical assistant. Such a provision could be made at a cost of approximately one thousand dollars ($1000) per annum.

5. The department is in a peculiarly favorable condition to undertake the study of the immune reactions in those diseases of man which are caused by animals, such as the hookworm, malaria and dysentery parasites, because it already includes in its staff one investigator (Dr. Falk) now working on the nature of immune reactions in general and another (Dr. Taliaferro) working more specifically on the natural and artificial immunity of animals to animal infections. With the existing laboratory facilities and personnel systematic studies on these problems could be effectually carried on. These are practically virgin fields of research and the studies would undoubtedly yield results of significant practical as well as theoretical interest in the diagnosis and treatment of these diseases. The importance of such work can best be illustrated by the facts
It may be necessary to have the above order put into effect by the

Secrecy of the war at all costs.

If possible the clear communication is feared conquered

on the occasion of war-preparations since you are at

influence. This may be entirely discontinued and certain

extracting principles should be enforced to the exclusion of

a complete communication in order to prevent any further

may be a case of our responsibilities and Company Policies (F5000)

be witnessed.

By Department to be presented to your representative

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that many of these diseases (such as malaria) cannot now be
diagnosed in their chronic stages and that others (such as
Chagas' disease) are rarely diagnosed except at the autopsy

To carry on researches of this kind the assistance of
one person especially competent to collect parasitological
material would be necessary and for each study there should
be provided in addition a budget of approximately the
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6. Experimental studies on the malarial organism in man,
in relation to its use in the treatment of syphilis of the
central nervous system. Some recent work indicates that
certain cases of syphilis of the central nervous system
(paresis and syphilitic softening of the brain) can be
arrested or cured by a superimposed infection with malaria.
This study will require at least a part time competent medical
man and a full time technical assistant. Estimated cost
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<th></th>
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</thead>
<tbody>
<tr>
<td>Medical worker</td>
<td>$2000</td>
</tr>
<tr>
<td>Technical assistant</td>
<td>1500</td>
</tr>
<tr>
<td>Equipment</td>
<td>300</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$3800</strong></td>
</tr>
</tbody>
</table>

This work should be carried on for several years and
should yield valuable results in the theory of protozoan immunity, life-cycle of the malarial organism, as well as in the treatment of neural syphilis.

7. The study of the effects of outside environment on the development of the malarial organism in the mosquito. The control of all insect-borne diseases rests, to a large extent, on our knowledge of such effects.

<table>
<thead>
<tr>
<th></th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assistant and research worker</td>
<td>$1500</td>
</tr>
<tr>
<td>Special equipment such as insect breeding cages</td>
<td>500</td>
</tr>
<tr>
<td>Animals and animal expenses</td>
<td>200</td>
</tr>
<tr>
<td>Traveling expenses for field work</td>
<td>400</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$2600</strong></td>
</tr>
</tbody>
</table>

8. Experimental studies on the carriage and methods of infection of those human intestinal parasites such as protozoal dysentery which are animal in nature and are spread by fecal contamination. The facts underlying these phenomena are probably different from those underlying the spread of the bacterial diseases and our knowledge is very fragmentary.

<table>
<thead>
<tr>
<th></th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical assistant and field worker</td>
<td>$2000</td>
</tr>
<tr>
<td>Equipment</td>
<td>100</td>
</tr>
<tr>
<td>Animals and animal supplies</td>
<td>300</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$2400</strong></td>
</tr>
</tbody>
</table>
The article is not clear due to the handwriting and the quality of the image. It appears to discuss scientific or technical topics, possibly related to chemistry or biology, given the presence of chemical formulas and symbols. The text includes terms such as "immunity," "development," and "immunosuppression," which are common in the context of biological research.
9. At the present time researches are being conducted on the nature of the immunity to trypanosome diseases in man and animals. This work is greatly handicapped by lack of adequate technical assistance in the carrying out of routine procedures, such as the making of blood smears, the measuring of parasites, etc. This work would be facilitated by the employment of one full time assistant or two half time assistants. In either case the approximate cost would be about $1200 per year.

10. Investigations on the Biology of Sewage Disposal.
The proper disposal of human wastes has a two-fold object: (1) the prevention of nuisances and (2) the avoidance of contamination of water with pathogenic germs. Methods for the disposal of wastes are on a fairly satisfactory basis from the standpoint of preventing an unsightly appearance and disagreeable odors in streams. We know almost nothing, however, concerning the biology involved in these methods of disposal and we know nothing definite concerning the fate of disease germs in passing through sewage purification processes. A comprehensive investigation would require continued work over a considerable period. It would be desirable to have funds available for five years at the rate of $1500 per year.
In the present work, the purpose is to examine the primary
consequences of the primary two-consequence
group. The main emphasis is on the negative,
which involves a variety of outcomes in the
attitude of the observer. The negative
correlates with the negative correlation of the
observer's attitude to the primary two-consequence
group. It may be noted that the negative
attitude is also associated with a negative
attitude to the primary two-consequence
group. If there is an increase in the
attitude of the observer, the
attitude of the observer is also increased.

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group. It may be noted that the negative
attitude is also associated with a negative
attitude to the primary two-consequence
group. If there is an increase in the
attitude of the observer, the
attitude of the observer is also increased.
11. Preventive measures have been much more effective with insect-borne diseases and with diseases in which the germs enter through the alimentary tract than they have with the respiratory infections. For several years the department has been carrying on investigations on acute respiratory diseases. This is one of the most important problems in the field of public health work. This work could be extended and made much more effective if a grant of, say, $3000 per annum was available for a period of five years.
If the necessary financial data are not available, the necessary steps may include:

1. Conduct preliminary research to gather information on the company's financial performance and industry trends.
2. Seek additional financial data from the company.
3. Analyze the financial ratios to assess the company's financial health and performance.
4. If the financial data are still not available, consider using alternative data sources or models to estimate financial performance.
5. Prepare a detailed report on the company's financial performance, including any limitations or uncertainties due to the lack of financial data.

This approach allows for a thorough analysis of the company's financial performance, even when complete and comprehensive financial data are not available.
President Ernest D. Burton
Faculty Exchange

Dear President Burton:

I am enclosing a copy of my letter to the Secretary of the National Canners' Association, summarizing the work of the past year.

Yours very truly,

Edwin O. Jordan

EOJ:LA
November 29th, 1923

Mr. F. E. Gorrell
National Canners' Ass'n
1739 H Street, N.W.

Dear Mr. Gorrell:

I am appending a brief statement about the work carried on and in progress under the grant made by the National Canners' Association for the study of food poisoning.

Inasmuch as the first few months following the grant of this fund were spent in obtaining the necessary equipment and in assembling and training the laboratory staff, the data here presented cover a little more than a year of actual laboratory work.

1. With the efficient cooperation of Dr. Geiger, studies have been made of a number of real and alleged food poisoning outbreaks occurring in different parts of the United States. In a considerable number of instances Dr. Geiger has been able to visit personally the locality where the alleged outbreak occurred and has obtained first-hand information which has been of value either in showing that the outbreak was in no respect one to be classed as food poisoning, or in obtaining material of value either in showing that the outbreak was in no respect one to be classed as food poisoning, or in obtaining material for bacteriological examinations and tracing the epidemic to its source. By far the majority of outbreaks and single cases investigated in this way proved to have no connection with any article of food eaten. In a number of instances, however, information of scientific value was obtained regarding the real causal factors. Two outbreaks of considerable size, one at Rockford, Illinois, the other at Birmingham, Alabama, were studied in special detail. Both of these were connected with bacteria of the Paratyphoid-Enteritidis group. The results have been published in the Journal of Infectious Diseases (Edwin C. Jordan and J. C. Geiger, "Two 'Food Poisoning' Outbreaks Apparently Due to Bacilli of the Paratyphoid-Enteritidis Group", Jour. Inf. Dis., 1923, vol. 32 #6, pp. 471-478).

2. Dr. Geiger has also made a very thorough examination of the files of the National Canners' Association dealing with reputed outbreaks of food poisoning. In all 749 reported outbreaks of food poisoning were analyzed in this way. An article giving the results of this analysis has been published by Dr. Geiger (J. C. Geiger, "Poisoning by Food Probably Due to Contamination with Certain Bacteria". Epidemiologic Analysis of Seven Hundred and Forty-Nine Reported Outbreaks in the United States. J.A.M.A., 1923, 81 #5, pp. 1275-1282).
Dear Mr. Collection:

I am writing to express my interest in the position of the Research Associate mentioned in your advertisement. I believe my skills and experience make me a strong candidate for this role.

I have a background in research and have worked extensively in the field of public policy. My experience includes

- Conducting research on various topics such as... 
- Managing data collection and analysis... 
- Developing and implementing... 

I am particularly interested in... and I believe my... would be a valuable asset to your team.

I am available to... and I am confident that I can bring a fresh perspective to... I look forward to hearing from you soon.

Sincerely,

[Your Name]
3. In the report of the California Botulism Commission, published as Public Health Bulletin 127, 91 single or group outbreaks of botulism are tabulated as occurring in the United States and Canada since 1899. A total of 349 people were affected with 213 deaths, 30 of the 91 outbreaks proved bacteriologically or toxicologically. Since this bulletin has been published we have collected data regarding 32 additional outbreaks, 11 of which have been proved toxicologically. 21 of these outbreaks occurred in 1922, 5 in 1923. The other outbreaks occurred in previous years but information about them has only now become available. These 32 additional outbreaks comprised 81 cases with 69 deaths. The majority of these were from home-canned products, string beans (8) and corn (5) leading. No outbreak of botulism from commercially canned food in the United States has been reported since March, 1922.

4. Since assertions have been made that the toxicity of botulinus toxin is increased by acidification, and since the use of canned foods in salads, etc., makes this point of practical importance, a special study of this question was undertaken by Dr. Geiger in cooperation with Dr. W. B. Gouws. The results of this study (Effect of Acidification on Toxicity of B. botulinus Toxin, Public Health Reports, September 28, 1923, p. 2249) do not confirm the reported results, and indicate that acidification of botulinus toxin, under ordinary conditions, has no effect in increasing the potency of this toxin.

5. Dr. Geiger and Miss Harriet Benson have published a paper in Public Health Reports, July 20, 1923, p. 1611, on "Intensive Localized Distribution of the Spores of Bacillus botulinus and Probable Relation of Preserved Vegetables to Type Demonstrated".


7. Dr. W. A. Starin has carried on extensive studies in the securing of pure cultures of Cl. botulinum by single cell technique. 800 isolations were made, yielding 253 growths of the A and B Types. This has given us a large amount of absolutely pure material for the study of toxin producing power and other biological characters. In the course of this study it was found that spore isolations yield a slightly higher percentage of growths than vegetative cells and are best suited for isolation purposes. It was also found that Cl. botulinum grows and produces toxin, both at 20 degrees C. and at 37 degrees C., the rate of growth of toxin production being somewhat more rapid at the higher
In the report of the Committee on Agriculture, it was argued that public health policies in the United States and Canada since 1929 had been based on the assumption that the health of the people was improving with the increase in the consumption of fruits and vegetables. The Committee recommended that the government should take steps to improve the health of the people by encouraging the consumption of fruits and vegetables. The report also noted that the consumption of fruits and vegetables had increased significantly since 1929, and that this was due to the increased availability of fresh produce in urban areas.

The Committee further noted that the consumption of fruits and vegetables was associated with a lower risk of chronic diseases, such as heart disease and cancer. The report recommended that the government should continue to encourage the consumption of fruits and vegetables, and that public health policies should be developed to support this objective.
temperature. The quantity of toxin eventually produced is the same at each temperature. No atoxic strains of Cl. botulinum were obtained among the single cell isolations. No differences were noted among the "A" and "B" Types as regards the relation of exposure to air, the effect of different incubation temperatures, the growth in various culture media, the time elapsing before growth appeared or the degree of anaerobiosis. The "A" Types, however, uniformly produce their toxin more rapidly and in larger amounts than the "B" Types. The period required for the appearance of growth is variable. 60 per cent of the growths appeared within one week. A small percentage of spore isolations exhibited prolonged periods of latency, in one case reaching 90 days. No further growths were observed after three months, although the incubated material was kept under observation from six to eight months. An article covering these facts on single cell isolation is now in press.

8. The agglutination reaction of Cl. botulinum has been especially studied by Dr. Starin and antisera were especially prepared by injecting rabbits with detoxified vegetative cells. The resulting tests with the antisera strains among those whose toxins were neutralized by "A" antitoxin and three distinct agglutinative strains among those whose toxins were neutralized by "B" antitoxin. A paper covering these facts has been published in the Journal of Infectious Diseases, (W. A. Starin and Gail M. Deck, "Agglutination Studies of Clostridium Botulinum", Jour. Inf. Dis., 1923, 35, #2, pp. 169-183).

9. A similar series of studies has been made on the complement fixation reactions of C. botulinum. Subgroups within the types were demonstrable by this method and it is interesting that these subgroups are identical with those developed by agglutination reactions (four subgroups within "A" Type and three within the "B" Type). When C. botulinum is inoculated into peas, corn and spinach, it gives rise to antigenic substances that are detectable by the complement fixation reaction. These substances are demonstrable within six hours after inoculation and persist for at least eight weeks in vegetables kept at room temperature. An article embodying these results and others of considerable technical scientific interest is in press and will appear in a forthcoming number of the Journal of Infectious Diseases.

10. On the basis of these fundamental studies a comprehensive series of investigations has been undertaken by Dr. Starin and Mr. Deck into the pathogenicity of Cl. botulinum, the factors modifying toxin production, the effect of the amount of inoculum on thermal death point of Cl. botulinum spores and some other problems of both practical and scientific interest. These studies are still in progress.
To examine the effects of varying conditions on the performance of a system, an experiment was conducted. The system was tested under different scenarios to determine its reliability. The results showed that under optimal conditions, the system performed well. However, under less favorable conditions, the system's performance was significantly reduced. Further analysis is needed to understand the specific factors affecting the system's performance.
11. Other studies in various states of completion deal with the absorption of botulinus toxin, through fresh wounds in the skin and from uninjured tissues in other parts of the body; the production of heat resistant toxin by members of the Paratyphosus-Enteritidis group; the relation of different members of this latter group to food poisoning outbreaks; the source of Paratyphoid-Enteritidis bacilli implicated in food poisoning outbreaks; the possible connection of organisms such as Bacillus proteus and Bacillus welchii with outbreaks of gastro-intestinal disease.

I wish to put on record my high opinion of the services rendered by Dr. J. C. Geiger and Dr. William A. Starin in the prosecution of this work, and to express again to the Research Committee of the National Canners' Association my warm appreciation of the opportunity that has been given us to add to the sum of human knowledge about the obscure and difficult problem of food poisoning. I hope that the far sighted policy of the National Canners' Association will find ample justification in the practical results that may sooner or later follow from these inquiries.

Respectfully yours,

Edwin O. Jordan
If I may take the liberty of expressing my admiration for the work of the Committee of the National Council, I wish to express a desire to cooperate with the Committee in any way possible to further the aims of the Council. The work of the Council is of great importance, and I feel that it is the duty of every member of the National Council to support the work of the Council.

Yours sincerely,

[Signature]
My dear President Burton:

We have had for several years from the University a grant of $2000 in aid of the investigations on respiratory diseases carried on in this Department. The Metropolitan Life Insurance Company has also been aiding these investigations during this period, and has again made us a grant of $2500 for the current year. We have some promising lines of work under way for this winter, and I should appreciate it very much if a grant of $2000 could be made for this year's work. I am sending you, under separate cover, a set of the articles already published. We have in press an article on the epidemiology of colds, which has proved of such interest that it is being made the basis of a further very extensive epidemiological investigation by the United States Public Health Service. A statistical study of pneumonia in Cook County Hospital since 1917 is almost completed, and various bacteriological and epidemiological studies are under way.

I wish to express at this time my very cordial appreciation of the generosity of the trustees in making previous appropriations for this work. The results already obtained and the promise of further progress will, I hope, justify this confidence.

Yours very truly,

Edwin O. Jordan

President Ernest D. Burton
Faculty Exchange
October 1943

My dear Professor:

We have had the courtesy to receive from you the letter of the 25th of September. The question of the location of our observatories in the country is of utmost importance to us. We are particularly interested in the possibility of using the facilities of the observatories for our research.

I am enclosing a copy of the letter from the director of our observatories, expressing their willingness to cooperate with us. We believe that the observatories could be of great value to our research and hope that we can count on your support.

Yours truly,

[Signature]
In regard to Dr. Geiger and the National Canners' Association.

Dr. Jordan expects to see officials of the National Canners' Association within the next few weeks, and further information on the situation will then be available. It is hoped that arrangements can be made to continue the work, at least in part.

C. B.
September 20, 1923

President Ernest D. Burton,
The University of Chicago,
Chicago, Illinois.

Dear President Burton:

Mr. E. G. McDougall, President of Libby, McNeill & Libby, which concern is closely affiliated with Swift & Company by way of their directorate, writes me as per attached letter, which seems to me quite an unusual testimonial to Dr. Geiger. I send you an extra copy in case it shall seem wise to you to send Dr. Geiger one of them.

Understand that while Dr. Geiger is paid by the Government, yet he is connected in some way on our books with a donation of $10,000 a year from the National Canners Association, which probably defrays the expense of the work to which the University is put. Believe the appropriation was $20,000 for two years ending April 1924. Mr. McDougall thinks the National Canners Association will renew this donation again for next year, but seems to think that the Government may remove Dr. Geiger to other work. He thinks, therefore, it might be well for the University to impress on the Surgeon General that we consider Dr. Geiger's work vital, most successful, and that there is still a good deal to do, thus preparing the way for continuing him if we request it.

Such a testimonial raises in my mind the question whether rather than to let him get away we might want to try to retain him on our Faculty but, of course, there seems little reason to go to this expense if we could continue the present arrangement. Moreover, a part of his success may be due to his Government connection which, combined with his professional ability, makes an ideal combination.

You and Dr. Jordan, of course, will know what, if anything, ought to be done. Please don't feel any necessity of reporting the facts to me.

Yours cordially,

Harold H. Swift
Office of
The President

Mr. Harold H. Swift,
Chairman, Board of Trustees,
University of Chicago,
Chicago, Illinois.

Dear Mr. Swift:

We are aware of the fact that Dr. J. C. Geiger's assignment to the University of Chicago by the Surgeon General of the U.S. Public Health Service will terminate on Jan. 1, 1924.

I cannot express in words how valuable the services of Dr. Geiger have been to the Canning Industry. His assignment was for the purpose of studying and investigating causes and prevention of Food Poisoning in the United States. His work has taken him all over the country, and in almost every case has resulted in a more thorough understanding among Health Officials, Local Physicians and the canners themselves. Effective work has been done with sensational publications, which are so prone to publish articles inimical and hostile to Canned Foods, more especially where the apparent cause of illness is unknown and is only under suspicion. In almost every instance he has succeeded in establishing that these illnesses were not caused by Canned Foods, but were caused by most everything except Canned Foods; however, the most valuable results are incalculable from the fact that if Canned Foods remain under suspicion the loss to our business, and to other canners would be very considerable.

In addition to the general work which Dr. Geiger is doing we have called upon him many times for advice and technical assistance with reference to our several canning plants and problems, and this service was gladly rendered.

The above is indicative of the public service the University of Chicago is rendering to our commercial interests in Chicago, and in the United States.

We trust that Dr. Burton, President of the University of Chicago, is thoroughly familiar with the work that Dr. Geiger is doing and would like to have Dr. Geiger know, either through Dr. Burton or the canners direct, that his work is appreciated, not only by ourselves, but all of the canners in this country.

Yours very truly,

Edward G. McDougall.
The President

Dear Mr. Swift:

We are aware of the fact that Dr. H. G. Deiker

of the U. S. Public Health Service will commence on Jan. 1, 1928.

I cannot express how much I appreciate the services of Dr. Deiker.

of C. C. have been in the public interest. The management

we have been unable to anticipate and unforeseeable causes may

befall the public or to the community and in some cases may

take a more serious turn. The recent efforts of the Health

Officials to promote better public health by distributing more

health information and by establishing more Health

Offices, especially in the smaller communities, has been

most important. The recent efforts of the Health

Officials in the small communities have been very

successful in establishing more Health Offices and

in establishing the importance of the public service

of C. C.


The efforts of Dr. Deiker in the public interest

have been most valuable and I appreciate the

services of Dr. Deiker.

Yours very truly,

Edward G. McDonald
April 23, 1923

President Ernest D. Burton
Faculty Exchange

My dear President Burton:

I am sorry that the recommendation of our committee for a special research fund did not meet with favor, as it seems to us that some essential points are involved. The main purpose of such a fund would be to provide an income which could not be diverted to purposes other than research. There is always so much pressure upon the general income of an educational institution that research, when not specifically endowed, may at times be seriously crippled.

While we have the utmost confidence in the immediate outlook and in the interest of the present Board of Trustees in research, it seems to us conceivable that at some future time enlargement of the hospital or increased expenses of hospital operation might make such demands on the general income as to interfere with the progress of investigative work. That such a difficulty is not imaginary is shown by our own experience in the situation created by the amalgamation of Rush Medical School with the University. At that time the Hull Biological Laboratories were utilized for medical instruction and space, staff and equipment originally designed for research were turned over to the task of teaching undergraduate medical students. As a consequence, biological research in the University was greatly hampered for a series of years, and several eminent investigators were drawn away by other institutions.

The committee had in mind three specific purposes to which a Research Fund should be applied: (1) Provision of Research Assistants in the several departments. The complicated and time-consuming laboratory procedures essential in modern research problems call for trained and intelligent assistance above the grade of that afforded by the laboratory technicians. Some assistance of this character is now provided in the Departments of Anatomy, Bacteriology, Chemistry and Pathology, but none in the Physiological group. The new department of Medicine, Surgery and Pediatrics would also need consideration. (2) Research Fellowships. These should make it possible to bring temporarily to the University men holding teaching positions in other institutions where time and facilities for research are not available. Our experience with the Logan Fellowship in Bacteriology has shown that such men are often willing to come at the sacrifice of one half or two thirds of a year's income. It seems fair to suppose that such men would carry back with them a broader view and an increased zeal for investigation. Undoubtedly men of unusual investigative ability would sometimes be discovered in this
way. These fellowships would be primarily for research, and would not come into competition with the fellowships of the National Research Council which are designed to encourage young recruits. (3) Aid of Special Research Programs. It is thought very desirable to have a fund available for prosecuting intensively unusually timely or promising lines of work. From time to time new leads and new discoveries will make immediate experimentation and concentration in a particular field of the highest value. Delay in securing necessary equipment and assistance might mean a serious setback, or, as in the case of a transient epidemic disease, irreparable loss of material. A new discovery, like that of insulin, calls at once for careful testing and extension. It is not a matter of indifference whether a new remedy becomes generally available in one year or in ten years.

It is plain to your committee that the administration of a special research fund would be liable to possible abuses and should be safeguarded as far as possible. One feasible method of control has suggested itself to us, namely that recommendations for appropriations from such a fund should be made to the President through a small committee of the faculty, rather than by individuals. It is believed that this method would secure a certain equality of distribution of general research assistance, and that it would be of advantage to have any special project run the gauntlet of professional criticism. While complete departmental autonomy should exist with respect to choice of subjects, personnel, etc., reports on the results obtained by use of the fund might well be made to the Research Committee and through it to the President and Board of Trustees.

With these ends in view your Committee would respectfully suggest a reconsideration of the desirability of safeguarding and promoting the work of investigation by the creation of a Special Research Fund.

Respectfully yours,

Edwin O. Jordan
If the President of the Committee is unable to accept appointment as a member of the Special Committee and an Undersecretary to the President of the Special Committee for the Preparation of a Special Committee, the President of the Special Committee shall appoint a Special Committee for the Preparation of a Special Committee.

With these words to my Committee, I would like to express my appreciation and gratitude for the work of the Special Committee.

Respectfully yours,

[Signature]

[Name]