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File No.

Regarding

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Harper 1905
Early Appointments
Zoology
Bacteriology

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Name or Subject C. B. Mitman

File No.

Regarding

Date

SEE

Name or Subject

Harper 1905

Early Appointments

Zoology

Bacteriology

File No.

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Apr. 9 '95

Whitman

THE UNIVERSITY OF CHICAGO.

File

Dear President Harper,

I would like to consult you in regard to the situation, and the outlook here for the development of my plans. It is now possible for me to abandon the whole and step into another place, although not without sacrifice and great disappointment. Had I not had unbounded confidence in you and in the possibilities here, I could never have endured the conditions. While my confidence in you has not abated in the least, and while I feel under great obligation to you for your unvarying kindness and earnest endeavor to meet our needs, I cannot think it would be best, either for you or me, or the department, to go on as blindly as I have hitherto done.

I can find no fault, for I am satisfied you have done your best — and far better than any one else could have done under the circumstances, — but the fact remains that, at the end of three years,

I am still laboring under difficulties and uncertainties that seem to mock the conditions stipulated.

The withdrawal of $125,000 pledged to me for a building, without my consent or knowledge, was, I cannot help feeling, a great wrong, and yet I would not ask to have any right of contract observed which was not at the same time a right of desert. The whole is greater than the part, and the interests of the whole must not be made to suffer for the part.

I have no envy of any other department; I rejoice in their good fortune. I have no complaint to make that some departments that came later and with far less promised, have nevertheless fared better. However, I do not see in this ample consolation for what I have failed to realize.

What I especially need to know, is, not what may come to pass in course of time, but what I can now depend upon, if I remain here. Do not think me ungrateful or inappreciative. I assume you I do not place personal

interests above everything else,
nor do I forget many obligations.

Very truly
C. O. Whitman.

Dear Dr Harper—

It appears to me that Prof. Whitman makes out a strong case in the inclosed letter. My judgment is that we had better let the original arrangement of buildings stand.

Yours truly

P. V. Smith

GR

The President's Office.

No. 562 2-17, 1896

Mr. F. A. Smith

[Will you please reply on back of this memorandum, or return the memorandum with the reply.]

Mr. President

Whitman

THE UNIVERSITY OF CHICAGO.

Zoology

Feb. 14, 1896.

My dear President Harper:-

I am surprised at the contents of your letter of February 12th, just received. I can hardly understand just what this proposition to exchange places with Physiology means, or what considerations have been presented to lead you to suggest it.

"Difficult for us to fill up the space of the building assigned to Zoology"! Indeed, it is the very contrary; it is difficult to see how we can provide the space needed in a building 120 ft. long. We have had to sacrifice both the general lecture room - having cut it to 2/3 the size wanted; we have had to cut down the museum room, and have far too few research rooms.

Do you propose to assign these buildings on the basis of plans for expansion? Do you think we should fail on that basis, if it were so understood?

Is it not certain that the plans and needs of Zoology are far greater than those of any other department? Which departments take the lead in marine work and in experimental Biology? Certainly it is Zoology; Botany comes next. Physiology and Anatomy (I mean the Anatomy designed for medicine) both fall far behind either Zoology or Botany.

Where do you expect to get the biology needed by the general students of the University? It is now supplied mainly by Zoology, and this must in the nature of the case continue to be so. Botany will come next to us, but Botany does not touch so many departments outside of Biology as does Zoology. It does not stand in such close relation to medicine, to psychology, and sociology.

If you have any doubts on these points, I hope you will give us a chance for a hearing. It might be well to look into the pretensions held up by different departments. I do not think Zoology will suffer from comparison.

I do not understand how it is possible that a Committee could be ready to vote on such a matter, contrary to what has up to the present been taken for granted on all sides. This is the first intimation of such a view to reach me, and I am sure it will surprise some others as well as myself.

I hope you will yet see the advisability of assigning the two larger buildings to Zoology and Botany, for I feel sure that the future will show that to be correct.

Let me call your attention to the following facts, which may fairly illustrate the relative importance of the departments, if we except Botany:

Number of Students for 5 Quarters.

(Autumn '94 - Winter '95)

Whitman 88

Wheeler 64

Watase 56

Jordan 86 + 35 (Bacteriology) = 121 { Bacteriology represented for only two terms.

Total =329 in <u>Zoology</u>.

Donaldson 37 in <u>Neurology</u>.

Baur 38 in Paleontology.

Loeb 68

Lingle 113

Total 181 in Physiology.

Eycleshymer 46 in Anatomy.

Total in Neurology, Palentology, Physiology and Anatomy is 292

Total in Zoology is 329

The number in Zoology is thus greater than that of all the other departments (Botany not included) put together.

As to interest shown in the plans, I think the fact that we have been more prompt than most other departments in our interview with the architect, and that we have given him all he has asked for and more, goes to show that we are above criticism in that regard.

At our last interview we were asked why a certain department had not yet reported, and we took it upon ourselves to aid in getting the report. In fact we have, I believe, done all we could to hasten the work.

I want to see you Saturday morning without fail, before this matter is decided.

Yours Very Truly,

C. O. Whitman

Zoology

THE UNIVERSITY OF CHICAGO

Whitman

Mr Dorrance
Please return to me

March 13, 1896.

Dear President Harper:-

I hope the question of Fellowships will be decided early. Let me briefly call to mind a few points that should not be forgotten in the distribution of Fellowships. I may be accused of claiming the "lion's share", if even you can take that view. But this view will not hold in face of facts patent to all. I beg you to consider the following points, and then tell me if you discover any mistake in them.

1. Zoology has had more students than the four other departments combined.

2. Zoology has turned out five Doctors and all have found positions. This is more than all the other departments of the whole Ogden school have done!

3. Zoology now has <u>three</u> more candidates for Ph. D. coming up for examination next Quarter, also one for M. S.

4. The number of applications for Fellowships that have come to my knowledge is greater this year than it has ever been before. I have one from Leland Stanford University, one from the University of California (Berkeley), one from Toronto, and one from Harvard. I am very anxious to do something for each of these men, as I <u>know</u> them to be really desirable men. They are all men who would enter at once as candidates for Ph. D. Besides we have a larger number among our own students, who have shown themselves worthy of Fellowships.

5. Zoology is that department of Biology in greatest demand among the schools. I believe every teacher appointed to High School work in Biology in Chicago has been trained as a zoologist. The same is true in other places, so far as my knowledge goes.

6. In the colleges, as every one knows, Zoology is the department generally wanted first. We can place our men as rapidly as we can turn them out. Should we not try to hold this important field?

7. Zoology is the department which must supply the larger part of the general biology to students. Botany comes next in this regard. I recognize the importance of Paleontology and Neurology, but these departments are not wanted in schools, and very few colleges are ready for them. Physiology is in greater demand, but for every place in physiology there are ten in zoology. This is no exaggeration. The proportion of students is no exception in this university. We have done all we could to encourage botany and physiology at Wood's Holl; but the demand for instruction in these departments is small. Out of a total of 199 for 1895, Botany had only 24, and Physiology only 8. These figures show where the interest in marine biology lies.

It is about the same in regard to experimental biology. The zoologists since Darwin's time have almost monopolized the field. Among the physiologists of this country, I doubt if half a dozen could be named, who have taken any active interest in this direction. It is strange that Physiology, which is so largely an experimental science, should be the last to come forward in general biology. The reason is not far to seek. Physiology has found its raison d' etre in medicine, and has limited its field to man and higher vertebrates. This ought not to be, and physiologists are beginning to see their mistake. You will remember that in nominating a physiologist for

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Chicago, I did the best I could to secure a man who represented the neglected side of physiology.

Am I wrong in thinking that such facts as I have pointed out should be of decisive weight in the distribution of fellowships among the departments?

Are we to have a gift of a million, and no additions to the number of Fellowships? Can you not now restore to me the 6 Fellowships I had when I came here? This gift was for Biology, and it would not be right to turn it to the advantage of other departments of the University. The letter of gift expressly states that the money is to be used to extend our present resources, not to replace them. That is a vital point, which I hope will be strictly observed.

Fellowships and assistants are what I want to see secured.

I have a plan to propose for the extension of the instruction in general biology next year, but I will serve it up separately.

Yours truly,

C. O. Whitman

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Yours truly,

C. O. Whitman

Chicago, Jan. 31.

Whitman

Dear President Harper.

We are trying to get the Smithsonian Institution to maintain an American table at Naples. A memorial has been signed by most of the biologists of the country, and the inclosed resolutions were unanimously adopted by the Society of American Naturalists at its meeting in Princeton.

If the chief justice of the U. S. who is an Ill. man, and chairman of the Board of Directors of the Smithsonian Institution, could be induced to favor the matter, I think the Secretary Mr Langley, would not hesitate to grant the table.

Can you give me the name of the Chief Justice, and would you think it best to write yourself, either to him or to Mr. Langley?

Yours truly C. O. Whitman

TREMONT HOUSE,

Whitman

Senate

BOSTON, May 31 1894

My dear President Harper.

I suppose the recommendation of the Ogden Committee on degrees will soon be considered by the Senate. I am deeply interested in the decision of the question, and regret that I shall not be able to be present and cast my vote.

I am decidedly opposed to multiplying degrees. The argument for differentiating degrees to correspond with special lines of work is self-refuting - for it is based on the idea that the degree is given for the kind of work rather than the

quality, and that leads, if consistently carried out, to as many degrees as there are distinct lines of original work.

To me, the degree of Ph.D. means a mark of scholarship and ability to do ~~the~~ original work of a scientific order in any line whatsoever. So far as I know, this is the general view.

I fully concur in the opinion that the specialist needs a broad education in the languages both ancient and modern, and I shall always vote on this side.

But we have to look both ways — at what is best for the student entering our university and at what is best for graduate students coming to us from other universities. For my part, it goes without saying,

that our success as a university depends upon our graduate work. It is our interest to draw to ourselves as much of this work as possible. This is a consideration of the utmost importance. In this we have strong competitors, and we can hope to succeed only as we rise to the opportunity and deal fairly by those who come to us. It would surely greatly injure the scientific departments, if we could not do as well by graduate students as they do at Johns Hopkins or in Germany. So far as instruction goes, we can do so; but if we refuse the Ph.D. to a worthy man or woman, coming to us as a graduate student from another university.

TREMONT HOUSE,

BOSTON, ... 189

we place ourselves at a most serious disadvantage. A mistake in this direction would be deplorable; for, even if corrected, its effects would continue long afterwards.

I think this is a time when the men who hold that a classical training is essential to the higher education should be reasonable in their demands, and not ask more than ~~the~~ any man of science could consent to.

I have here but roughly expressed my convictions, but I hope that you will not allow the question to be settled against the whole Ogden School without giving us all a chance to vote.

Yours truly
C. O. Whitman

TREMONT HOUSE,

BOSTON,.....189

Whitman

Wood's Hall, Mass. Aug 21.

69

no date

92

My dear President Harper,

I am sorry you were not able to visit us this summer. We have had 133 in attendance and from 70 different institutions. The interest in the Laboratory is growing, and I think the coming year will develop some funds.

In regard to the situation in Chicago, I feel very much discouraged. We ought not to wait another year for a building.

Our work must fall very far short of the mark while we are placed in such unfavorable circumstances. I really feel humiliated at the present state of our departments, as compared with what we had planned, and were promised. I need not go into particulars, for I am sure you need no such reminders. One thing I insisted upon, that I was not going to Chicago for a higher salary. I feel now precisely the same on that question.

It is quite possible that you may prefer to develop other departments of the University - and very likely it may be best to do so, even if Biology has to wait. You have perhaps only had seemed to be a too expensive group of biological departments. Now, I am quite willing to withdraw, if it seems best. I am sure you will not attribute any bad feeling to me. I am looking at the question from other points of view than those that might weigh, if salary were the first consideration

I hope it will be convenient for you to talk over the situation with me after I return to Chicago, which will be about the 20th of Sept.

I always feel sorry to have to tax your time and patience, but I do not see how to avoid it. I can assure you that you will find me willing to do the best thing for Biology whatever that may be.

I hope the summer has proved successful in every way to you and the interests identified with you.

Yours truly
C. O. Whitman

Culver

Sept. 8th, 1899.

Prof. E. O. Whitman,

Wood's Holl, Mass.

My dear Professor Whitman:

I am very glad to have your letter of September fourth and to have you state as frankly as you have done your feelings. I am sure that you will in turn allow me to do the same.

1. I agree with you that Wheeler's departure is in many ways a loss. I am not prepared to believe, however, that we cannot find as good a man. Wheeler had his strong points, but, as you yourself know, he had also his weak points.

2. I wish to say, very emphatically, that so far as I am concerned, personally and officially, I wish to do absolutely everything that can be done to build up the biological department. I am perfectly free to say to you that I have had more personal interest in this department than in any other single department of the University outside of my own.

3. I do not recall any promotions in the departments of science in recent years. Loeb is still an assistant professor although, you will agree, he ought to be a professor. There are other cases of the same kind. You are aware, I am sure, that in December last when the budget for the year beginning July first, 1899, was made, the Trustees by formal vote directed me to present no recommendations for promotion from an instructorship to an assistant professorship, from an assistant professorship to an associate professorship, or from an associate professorship to a professorship. This action of the Trustees was intend-

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ed to cover the scholastic year beginning July first, 1899. It was simply impossible for me, under these circumstances, torecommend Wheeler's promotion. It was not a question af choice. No matter what I might personally have wished to do, it was out of the question. Further, you are aware that some of the strongest men in the University, as, for example, Vincent, and Thomas, are assistant professors. I could name a long list. It would be impossible for me to have recommended the promotion of Wheeler without at the same time making certain other recommendations. This would have been true even if the Board had not forbidden all such recommendations. In the present financial situation, the Trustees would not have considered such recommendations even if there had been no formal objection. You will remember that Jordan had been offered two or three positions, one of which, at least, was for three thousand dollars. To have permitted Wheeler to be promoted, without promoting Jordan and many others of these men whuld have done the University far more harm than to lose Wheeler.

4. The University must object absolutely to promoting men simply because they are called to other positions. A university that practices this will soon find itself in great trouble. To have promoted Wheeler now, just when he had received this call, and to have done it because otherwise he would go away, would have put us in a very undignified position. If he had been willing to wait, I assured him in a telegram, that he would be in the first group of men recommended for promotion. This is all that any reasonable man ought to have asked, and I really

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feel that his action in this matter reveals an unreasonableness which lowers him very greatly in my esteem.

5. The scientific world cannot criticise the University for the loss of Watase. It was natural that he should go back to Japan, and there is nothing we could do to hold him. You yourself saw that. I do not think that his case should be associated with Wheeler's. The scientific world does not expect the University to have in one department an indefinite number of men occupying the highest positions. No other university has a large number; why should the University of Chicago be expected to have it?

6. I am very glad indeed to know that my statement in reference to your connection with this recommendation was wrong. This he himself points out in a later letter. My statement, however, was based upon this clause in his letter to me.

> "Prof. Whitman, while regretting my desire to go to Texas, believes that the outlook there is excellent, as I should have new laboratories and equipment and be in charge of one of the most popular departments in the institution".

This, of course, is perfectly satisfactory.

7. I should like to propose that we look about to find two men who will take the places of Wheeler, Watase and Childs. I am of the opinion that Childs is not a strong man and that at the close of the present year we would better let him go. I think we can find a man who will be strong and who will at the same time cultivate more thoroughly the lower work, which I believe is very essential for the sake of the

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higher. It is very unfortunate, I think, that we have not had more of our own college students doing higher work in biology.

8. I am very much embarassed by your request for leave of absence until the latter part of October. You will remember, of course, that I have every year gladly approved your plan to leave the University a month earlier than the usual time. I can easily understand that you have had a severe strain, but let me ask, what would our graduate students coming to the University on the first of October say if there was absolutely no one to meet them here? The work of the department for the year would be seriously injured. I should be unable to explain to the Board of Trustees the situation. I do not quite see how you yourself could contemplate absence at this critical point. On the other hand, I have been tempted to write you asking you to come back to Chicago at once, in order that we might confer as frequently as possible and as early as possible in reference to the filling of the appointments. This, I think, would be the right thing to do, and I should like to suggest that the interests of the University are of greater importance just now than those of Wood's Holl. That, after all, your responsibility is just as great for the department at the University as at Wood's Holl, and that the department will suffer in the eyes of the scientific world, as well as in the eyes of the University, if, at this particular time, very vigorous action is not undertaken by yourself and Professor Jordan. I appreciate very much indeed the desirability of having you take a rest and of having you go with Mrs. Whitman, but I really believe

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it would be a serious blow to the interests of biology.

9. We should be very glad to arrange the scholarship for Eugene W. Harper, whom you recommend.

10. I notice what you say concerning the lack of aquaria, museum and laboratory service, and I appreciate all this. I do not see how this could have been helped. I am hoping that with the present autumn all our difficulties will be past and we shall be able to move forward. I agree with you that reorganization is necessary and I should like to add that it would seem to me important that you should give to the work of reorganization and to the immediate work of the department the closest and most careful attention. I am willing to render you all the help that I am able to command, personally and officially, and I think that if we put our hands together at this point we shall be able to get ourselves into a better situation even than we have been in.

Hoping that I may hear from you promptly, and sincerely trusting that you will return to the University at the earliest possible moment, I remain

Yours very truly

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Hoping that I may hear from you shortly, and sincerely trusting that you will return to the University at the earliest possible moment, I remain

Yours very truly

July 21st, 1904.

My dear Mr. Whitman:-

Your letter of July 19th was received and in accordance I have arranged as Mr. Tower has been informed for the $200. I have written to the Superintendent of the Rock Island for a pass.

Some time I should like to show you Mr. Tower's report of his trip to Mexico. It contains by actual count thirty-six blunders. Is it consistent with scientific accuracy that a man should submit a report of a few pages abounding in errors as did this report? Is it perhaps conceivable that a man who makes so many errors in the presentation of a report is careless and neglegent and are some of the difficulties which Mr. Tower has perhaps to be charged to his own carelessness rather than to the short-comings of others? I present these questions for your consideration. I do not understand that you will communicate the content of this letter to Mr. Tower.

Yours very truly,

W. R. Harper

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My dear Mr. Whitman:-

Your letter of July 19th was received and in accordance I have arranged as Mr. Tower has been informed for the $200. I have written to the Superintendent of the Rock Island for a pass.

Some time I should like to show you Mr. Tower's report of his trip to Mexico. It contains by actual count thirty-six blunders. Is it consistent with scientific accuracy that a man should submit a report of a few pages abounding in errors as did this report? Is it perhaps conceivable that a man who makes so many errors in the presentation of a report is careless and negligent and are some of the difficulties which Mr. Tower has perhaps to be charged to his own carelessness rather than to the short-comings of others? I present these questions for your consideration. I do not understand that you will communicate the content of this letter to Mr. Tower.

Yours very truly,

W. R. Harper

Trustees

(4)

ZOOLOGICAL MUSEUM

THE UNIVERSITY OF CHICAGO

REPORT OF THE EXPEDITION OF THE MUSEUM TO

MEXICO

DURING THE MONTHS OF JULY,

August and September, 1903 .

ZOOLOGICAL MUSEUM

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REPORT OF THE EXPEDITION OF THE MUSEUM TO

MEXICO

DURING THE MONTHS OF JULY,

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THE UNIVERSITY OF CHICAGO

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During the Months of July, August and

September, 1903

Object of the Expedition.

The expedition was sent to Mexico with a two-fold purpose in view: first, to enable me to continue my researches on the distribution and evolution of certain genera of Chrysomelid beetles; and secondly, to collect and bring back to the Museum as large an amount of material, both vertebrate and invertebrate, as was consistent with the primary object of the trip.

At the present day, the museums of America are, on the whole, exceedingly poor in their possessions of well-prepared and carefully
5 labelled material from the tropical regions of Mexico and Central America. While it is true that we possess large collections of animals from that area, the data supplied with these is entirely too meagre to satisfy the requirements of modern zoological research. It was accordingly deemed advisable by the Department to acquire as rapidly as possible material whose data was sufficiently accurate to meet the demands of modern conditions. The only way in which this material can be obtained is by sending expeditions composed of trained observers to that portion of the world from which the desired collections are to come.

Our present needs are for material from Mexico and Central America, and accordingly the first expedition ever sent out from the Zoological Department was sent, under my care, to the southern

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portion of Mexico during last year.

5 Personnel of the Party.

The party consisted of myself, Mr. R. W. Hegner, a student in the University as assistant, and was joined at the last moment by Mrs. W. L. Tower, who served as artist and kept the records of the expedition throughout the trip. This service was entirely gratuitous on her part.

6 ITINERARY

We left Chicago on July 17th over the Chicago, Rock Island & Pacific, and arrived at El Paso on July 20th. After two days' bickerings with the Mexican customs officials, we succeeded in getting across the border with a part of our equipment, but our preservatives such as alcohol, formalin and various other chemicals, were held in bond because the Mexican officials thought they must have some ten days to two weeks in which to properly classify the things before they could begin to assess the import duties. The actual time consumed by them was a little over seven months, the material crossing the border long after we had left the Republic, and it is now in store in Mexico City, awaiting the arrival of another expedition.

We left El Paso on July 22, and proceeded directly to the City of Mexico. As originally planned, the expedition was scheduled to stop at various points along the plateau country between Juarez and the City of Mexico, but for some reason, the July rains on the plateau had not begun and the country was 7 dry and desolate as it is possible to imagine. All the animals had retired to escape the drought and the scorching sun.

We arrivedin Mexico City on July 23rd and the following morning began work.

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is a perfectly flat, open area, surrounded on all sides by high mountains. To the ~~w~~ westward rise the Sierra Ajusgo, to an elevation of 14000 to 15000 feet; to the eastward the Sierra Guadaloupe, and these are united, to the south by a cross chain composed largely of volcanic debris and larva flows thrown out on the eastern slopes of the volcano of Ajusco. The valley itself is unquestionably an old lake bed and even at the present time five remnants of this ancient lake remain ~~as the Mexico Lake~~ known as Texcoco, Xochinilco Chalco, Xico and one or two smaller lakes. So flat is the country that water stands everywhere immediately after a shower and the country is intersected everywhere by an intricate system of canals

We began work at Tlanpan, a town about fifteen miles south of Mexico City on the flanks of Mount Ajusco. . The country about Tlanpan was as rough and hard travelling as one could wish, being entirely composed of badly eroded volcanic scoriae. To make things more unpleasant, the vegetation consisted mainly of acacias with extremely long spines and cacti of various sorts. In this area our collections consisted mainly of those forms characteristic of cactus fields, or those few species which can find a foothold along the sides of torrential mountain streams.

After pretty thoroughly exploring the rocky sides of this mountain, we worked downward along the course of the Rio San Buenaventura towards the country about Lake Xochinilco. Failing to do as well as we thought we ought in this area, we next went to a small town about six miles north of Mexico City on the shores of Lake Texcoco, known as Guadaloupe Hidalja, the seat of the temple of the patron saint of Mexico. At this place we were extremely successful for there I first found the animals which I went especially to study,

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12 went to Santa Fé, a small town of some hundred ~~of~~ inhabitants, located on the eastern slope of the Sierra Ajusco, about twenty miles from Mexico City. Santa Fé has an altitude of about 8,500 feet and here we encountered a fauna quite different from that which we had found upon the valley floor. Further collections were made at San Angel, at Tacubaya, Tacuba and Tlalnepantla.

At each of these localities we made as large and as complete collections as time would permit, buying as much material as we could when it would serve our purpose and enlisting the native help wherever possible. On July 30th I sent Mr. Hegner over the mountains to the southward to make collections in the upper portion of the valley of the Rio Amacusac with headquarters at the City of Cuautla. At about the same time I proceeded westward over the mountains into the valley of Cuernavaca, both of these valleys, being located on one of the main tributaries of the Rio Balsas.

The Valley of Cuernavaca proved to be one of the richest and most interesting areas we entered. The City of Cuernavaca, a town of some 15000 people with an elevation of 5,000 feet is situated in a valley about twenty miles wide and running westward to the main valley of the Rio Balsas. The valley floor itself is nearly flat with deep cut barrancas which run upward to the mountains on either side of the valley which rise to an elevation of about 12000 feet. The tops of these mountains are covered by growths of pinus moctezuma and various other plants which gave it the appearance of a northern forest. Below these on the sides of the mountains a broad, well-marked oak zone extends down to an altitude of about 7000 feet. The oak zone is remarkable for the immense number of orchids. Hardly a tree is without one or more large orchids

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carrying, in the majority of cases, blossoms of wonderful form and coloring and often of great fragrance. Below the oak zone came an
13 area in which banana, oranges, avocates, mangoes, bamboo and va-
rious other tropical plants grew in luxuriance. The junction of
14 the valley floor and the foot of the mountains is decidedly abrupt, likewise the transition from the thick vegetation of the mountain side to that of the arid, hot valley floor is equally abrupt. The reason for this is that the rain which consists mainly of isolated showers strikes the mountain sides and is there in the main precipitated. This water is speedily gathered into streams and flows outward across the valley floor in deep barrancas to join the main stream which flows westward down the valley. As a result, the mountain sides and the sides of the barrancas show the richest kind of vegetation while the valley floor in places is almost destitute of it. This distribution of the vegetation and the control of the rainfall in the valley has a very marked and interesting effect upon the distribution of animal life. For instance, in the barrancas we encountered tropical lizards, like Iguana and Ceratosaurus, as well as the beautiful Coral Snakes of the Genus Elaps and a great number of tropical insects. These, however, did not go except as stragglers, over the edge of the barranca into the valley floor. Upon the valley floor proper the animals consisted of a few small harmless snakes, a few lizards, principally of the genera Anullus and Scleropus and a few small sparrows. The insects in this area consisted largely of Pieridae and Nymphalidae, forms which are pretty common over the entire continent.

Passing from the valley floor to the sides of the mountain, in the lower zone one encounters again several genera of tropical

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insects, one or two genera of tropical tree-toads, but none of the large lizards or snakes whic h are characteristic of the barrancas. Such forms as do occur in this zone, however, are often marvellously abundant.

Passing upward through this lower zone into the oak zone, one encounters a gradual change and a diminution in the character of the animal life, until, when one reaches the point about midway in the oak zone, practically all animal life disappears. As the result of two long days of collecting in this area, I succeeded in getting one small specimen of Gecko, two specimens of Pamphila, a small butterfly, a half a dozen beetles and a few flies - less than twenty-five specimens in all. This seems remarkable in view of the fact that the oak zone is an area with abundant moisture, plenty of sunshine, a great variety of plants and an area which would seem wonderfully adapted to the development of insect life. That there were but few insects there is shown by the fact that the leaves of
15 the plants were uniformly uninjured and I was unable to find scarcely any traces of insect larvae. Why this should be, we could find no reason which seemed at all adequate to us.

On August 7th I started westward down the valley to the City of Iguala, situated in Eastern Guerero. Iguala, a town of about 7000 people, typically Mexican in every respect, even to its water-works carried in a 7/8 inch gas-pipe on the top of the street, is located in a valley about fifteen miles long and ten miles wide surrounded on all sides by high mountains. The entrance to the valley on the eastward is to be had only through a deep and dangerous canon, the walls of which rise perpendicularly to an altitude of from 1000 to 2000 feet. An exit to the westward is found only through a canon

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of equal depth and impassibility. On the sides of these the railroad has found a foothold along which the express trains crawl at the rate of four miles an hour.

At Iguala I procured the services of the most unpromising looking native that I ever laid my eyes upon. His first question was if I was a doctor, and if I were going to use the plants and animals I collected for medicine, and if, when I had manufactured the medicines, I would not cure him of some ten or a dozen ailments, which he thought he had. His principal ailment seemed to be an acquired habit of stopping at every place where he could get a glass of tequela or mascal, which he asserted he had to have in order to go on.

Collecting in the canons about Iguala is not only difficult but rather dangerous for several reasons. The steep, almost impas-
16 sible nature of the mountain sides, renders travel along the beds of the rivers almost absolutely necessary, and this during the rainy season is dangerous. In addition to this, the natives are said to be untrustworthy and ready to murder and rob on the slightest provocation. The reputation given the natives, is, however, I believe entirely incorrect. At Naranjo, said to be one of the worst towns in that vicinity, they treated me as courteously as I could have desired, and although I was alone, and spoke the language but imperfectly, not the slightest unfriendliness was shown in any respect whatever.

In the canons about Iguala I succeeded in obtaining rather large collections of very interesting and rather rare butterflies. These were the forms characteristic of the Sierra Madre del Sur
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One of these butterflies I cannot refrain from mentioning because of the wonderful adaptation which it presented for protecting itself from the pursuit of its enemies. I found three species of
18 the genus ? , in which the upper surface of the wings is mottled rather irregularly in dark grey and black and with the under surface a light cream yellow with darker markings. When resting upon the rocks these butterflies exactly resemble a piece of rough lichen, so much so, that you may look over a rock for a long time without discovering them. When one is startled from its hiding-place, it gives one the sensation of its having come into existence instantaneously and flying along beside the cliff you may follow it for some distance in your endeavor to capture it and then sudden-
19 ly, with an exceedingly rapid movement it disappears as suddenly as it came. You may search the rocks over perhaps for an hour before you succeed in discovering the butterfly resting calmly within three feet of your head.

The collections from the Iguala region were among the richest and most valuable that we obtained.

On August the 11th I started back towards Mexico City with about six thousand specimens of insects which I succeededin capturing and preserving in the Cuernavaca and Iguala regions.

20 In the meanwhile Mr. Hegener had been working in the western branch of the Rio Amacusac making collections at Cuatula, Yautepec Jojutla Chietla and Matamoros de Izuca. Mr. Hegner's work in this region, while in the main satisfactory, was marred somewhat by his inexperience, his unfamiliarity with the country and his failure at times to recognize what was essential.

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On our arrival at Mexico City we sent back to Chicago our first consignment of about eight thousand specimens of insects from the upper part of the valley of the Rio Balsas.

On August 12th we started southeastward, making our headquarters for a few days at the City of Pueblo. Leaving Mr. Hegner to carry on the work in the country immediately about Pueblo, I proceeded southwestward down the valley of the Rio Cuetzala as far as Huehuetlan, making collections at this place, at Tlancualpican, at Chietla, Matamoros de Izuca, at Atlixco and Santa Maria. Then I proceeded eastward along the line of the Interoceanic Railroad
21 making collections between trains off the insects in which I was especially interested. I was enabled to do this with great satisfaction to myself and the greatest ease in travel through the courtesy of the General passenger agent of the road, Mr. White, who not only gave me a pass over the entire system, but gave me permission to get on and off trains wherever and whenever I liked, both passenger and freight. Material for my own special research was gotten along this line at the following points: Acajete, Pinar, San Marcos, Verez and Tepeyahualco, Perote, Los Vegas, Banderilla, Jalapa El Palma, Colorado, Rinconada and La Antigua. No general collecting was done in this area. It was raining hard all the time and the only way in which collecting could be done at all was to dodge out between showers, carrying a blanket with you to keep off the rain in which you were almost sure to get caught.

On August 15th we left by the Mexican Southern Railroad for the City of Oaxaca where we arrived that evening. We had intended on arrival at Oaxaca to purchase an outfit of horses and go overland

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In the region of Oaxaca fairly extensive collections were made in the valley of the Rio Verde to the westward, on the high hills to the north of the city, at Coyotepec, at San Juan de los Inebrios at Tlacolula, at Mitla, at Matatlan and Soledad. O

On account of the rain we deemed collecting in this area unprofitable and so decided to go northward into some part of the country where we should be able to see the sun at least once a week. The ride back from Oaxaca to Pueblo, a distance of a little over 200 kilometers, occupies normally about twelve hours, but heavy rains slippery rails and some fifteen or twenty land slides upon the railroad track lengthened the running time to a very large extent. We proceeded back at once to Mexico City where we arrived on August 22d and where I came down with an attack of pernicious malaria. Deeming it best to go to a cool high altitude, we went the following morning to Teluca, a pretty town, but disgraced by the worst set of Americans we encountered. We remained here until August 28th when we returned to Mexico City, I having succeeded in breaking up my attack of malaria. Leaving Mrs. Tower and Mr. Hegner in the valley of Mexico to make a second set of collections at the places where we had collected earlier in the season, I proceeded to the lowlands in the region of Vera Cruz. Though still weak from the effects of the fever and the quinine, I felt that time was precious

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From Mexico City we proceeded northward as far as Irapuato and thence westward over the Mexican Central Railway to Guadalajara. Guadalajara proved in some respects an exceedingly interesting lo-
25 cality. Situated in the broad, open valley of the Rio Grande de Santiago at the point where the valley breaks through the Sierra Madre del Nord, the region presented quite a diversity of topographic and climatic conditions. The broad, open valley floor, largely occupied by extensive plantations of corn, wheat and allied products presented, on the whole, an appearance not unlike that of western Kansas. The insect fauna also presented many strong points of resemblance. Through the middle of the valley the Rio Grande de Santiago had cut a canon known locally as La Barranca to a depth of something over 2000 feet. Up this valley a considerable variety of tropical vegetation had migrated from the pacific coast so that

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on passing over the edge of the Barranca one entered rather abruptly a fairly rich area of tropical vegetation. In the barranca also we found numerous genera of the tropical insects well represented but relatively few of these extended out of the barranca onto the level valley floor.

Another locality in the region which we found interesting and profitable was about the small lagoon in the suburbs of the city known as Agua Azul. The marshes about this pool were exceedingly rich not only in insect life but also in lizards, especially of the genera Gecko, Annulus and Scleropis. After collecting as long as we thought profitable in this area I went southwestward to the town of

26 ? which presented very much the same conditions as those found about Guadalajara. From this place our next main stopping point was a small country town, Ocatlan, on the shores of Lake Chapala The region about Chapala proved a very rich collecting ground, but not one of very great scientific interest. The most interesting thing that we got there was a large and extremely variable series of lizards of the genus Scleropis It was a little late in the season when we arrived at Chapala and our collections amounted to only a few hundred, but among these may be mentioned a rather interesting species of Hemiptera, of gigantic size and very disagreeable odor, which in places almost covered the acacia trees.

From Ocatlan we went to the mountains to the north of Guanajuato, but these mountains were at this season of the year practically destitute of vegetation and the only animal life we succeeded in

27 finding were a few small lizards and such insects as are able to exist

28 in cactus fields. Only a short stop was made in this area and we again started northward, stopping at Marfil, at Salio, at

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Jimenez and Torreon. At Torreon I did considerable col lecting in the deserts south of Gomez Palacio and on the hills to the westward near Lerado. This work netted us almost nothing except lizards. Insects were conspicuous by their absence, their absence being due to the fact that there was nothing upon which they could feed, but what the lizards lived on I was unable to ascertain. From Torreon we went to Chihuahua, where we made a stop of a few hours; thence to Moctezuma, and then to El Paso.

At Mexico City the party divided and Mr. Hegner went eastward into the State of San Luis Potosi where he made collections at Rio Verde, at San Vartolo and at Aguas Calientes, and then proceeded directly to Chicago, carrying with him a considerable amount of living material, which, very fortunately arrived in Chicago alive and in good condition.

From the preceding pages it will be seen that the expedition covered in a more or less hasty manner a considerable portion of the plateau of lower Mexico. Our most extensive collecting was done in the Valley of the Rio Balsas, that of the Rio Grande de Santiago, the Rio Panucho and the Rio Verde. Collections at other points were small in amount and only of minor importance. Owing to the unfortunate nature of the season no work could be done in the region where we had expected to make our richest and most valuable finds. Collecting in the low country along the coast and in the mountains bordering the eastern slope of the plateau was completely out of the question. The collections from the plateau however, were satisfactory and represent one of the largest collections ever obtained in that region by any American institution. In the following section of this report I wish to summarize briefly

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RESULTS.

The statements of the results of the expedition may be grouped under two heads: first, a general statement concerning the collections obtained, and second, a brief statement of the work done in a continuation of my research.

1. The collections obtained may be grouped as follows:

	No.	Value
Insects already mounted and ready for cabinet display	20,000	$1,000.
Insects not mounted (largely Lepidoptera)	5,000	500
Mollusks		100
Other specimens,		100
Total value of the collections, estimates being based on the lowest market rates,		$1,700.00

The actual cost of the expedition was a little over $600, so that the value of the material brought back was considerably in excess of the cost of the expedition. It should be understood, furthermore, that the value of the material will be more than doubled during the ensuing year, after it has been thoroughly worked over, identified and arranged in a permanent cabinet.

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33 so that the university now owns what is probably the best collection of this group in existence. Much of the other material is of value for class instruction, museum display or for the beginning of researches for our students.

2. In the prosecution of my own research I was able as I mentioned in my letter of transmission, to do far more than I had even anticipated. I went to the country without the slightest information as to where
34 the animals that I wished were to be found, nor did I know the time of year, their food plants, nor anything about them except that they had been brought back from Mexico from time to time by collectors. We
35 succeeded, however, in obtaining large series of the most important species, and in the majority of cases, were able to get all the stages in their development. A number of these, together with their food plants were brought back to Chicago for breeding and experimentation. These arrived in Chicago safely and were progressing finely until incompetence and negligence on the part of the Power House people in cut-

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Even with the unfortunate circumstance mentioned above, I have been able to carry on my research in a very satisfactory manner, and I hope shortly to have ready for publication a rather extensive paper embodying the results obtained in Mexico.

FINANCIAL STATEMENT

An itemized list of expenses was submitted to the Auditor of the University of Chicago and approved by him soon after my return in October. Without having the figures before me it is impossible to give an exact statement, but my recollection of the expense is as follows:

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