

UNIVERSITY OF COLORADO  
BOULDER, COLORADO

3/7/16 7 samples

JUNIUS HENDERSON  
CURATOR OF THE MUSEUM

Feb. 15, 1916.

Series H. = Hopi - ancient

Doctor A. E. Douglas,  
University of Arizona.

Dear Sir:-

I am shipping today the specimens of wood gathered at the request of Dr. Wissler from ruins in northern New Mexico.

Those marked No. 3, No. 4, and No. 6, are from buildings erected after the Spanish conquest in western Rio Arriba county.

The identity of the builders has not been determined thus far.

These numbers are those by which the ruins from which the respective sections were taken are designated in my notes.

The green pinon from ruin No. 3 had grown since the place was abandoned.

The beam from Johnson Canyon was taken from a cliff house ten miles southeast of Cliff Palace, Mesa Verde National Park.

The great cedar was growing in the remains of a building on the divide between Johnson and Mancos Canyons, Montezuma county, Colo. It was alive and flourishing when cut.

I would be greatly obliged if you would give me your determinations concerning the age of the green pinon from Ruin No. 3, and that of the large cedar, as I would like to incorporate them in my reports.

It will be a pleasure to furnish further details about the specimens if those contained in this communication are not sufficiently explicit.

Very truly yours,

Carl H. Marrie.

Postal receipt FEB 28 1916  
receiving 4 packages & 1 block  
of wood (cedar) received.

H-3, 4  
(pine)  
H-5-6  
Cedar

H-2

H-7

H-1

H-2

- H-1. living Cedar. cut summer, 1915, 46<sup>cm</sup> diam - 43<sup>cm</sup> high  
 from Durán Johnson - Mancos cañon - Montezuma <sup>County</sup> ~~Cañon~~  
 Colo. About 300 rings. (no mark on it) Max ryp 295  
 Prob 275 ± 20 Min 225
- H-2. Living Piñon, cut summer 1915, 23<sup>cm</sup> diam 40<sup>cm</sup> high  
 from Wm Rio Arriba Co. N.M. About 135 rings  
 marked "Court Ruin No 3." Rings ~~137~~ ± 264
- H-3. Ancient Pine, collected Summer, 1915, 28<sup>cm</sup> at top 45<sup>cm</sup> ±  
 at bottom, including branching roots, 54<sup>cm</sup> high ±  
 marked "No 3" Western Rio Arriba Co. N.M. 360  
 about 7 rings & 1<sup>cm</sup> & 16.6 rad. gives age total 288 yrs.
- H-4. Ancient Pine. Collected Summer 1915. Oval 21 x 35 in section  
 43<sup>cm</sup> high. (best section) marked "No 4" Western  
 Rio Arriba Co. N.M. About ~~150~~ 180-190 rings
- H-5. Ancient cedar. Collected Summer 1915. 20<sup>cm</sup> across top  
 30<sup>cm</sup> across bottom 40<sup>cm</sup> high. marked "No 4" Western  
 Rio Arriba Co. N.M. About 128 rings but uncertain as H-1
- H-6. Ancient cedar. Collected Summer 1915. 15<sup>cm</sup> diam. 60<sup>cm</sup> long  
 rings strongly marked. (one end chipped) marked "No 6" from  
 Western Rio Arriba Co. N.M. 75 ± rings
- H-7. Ancient Cedar. Collected Summer 1915  
 15<sup>cm</sup> diam 78<sup>cm</sup> long. Beam from  
 Cliff House in Johnson's Cañon, 10 miles  
 SE of Cliff Palace, Mesa Verde National  
 Park.  
 About 20 rings

H-1	Max 295	11	395
	Min 222	14	395
	Prob 275 ± 20	13	100
		13	2100
		11	5

UNIVERSITY OF COLORADO  
BOULDER, COLORADO  
PRESIDENT'S OFFICE

February 21, 1916.

Dean A. E. Douglass,  
Tucson, Arizona.

My dear Sir:

In reply to your inquiry of February 12th I beg to say that the specimens of tree sections from certain ruins in the Southwest were shipped to you from Boulder several days ago. I had assumed that information concerning them had been sent by Mr. Earl H. Morris who collected them in the course of his researches last summer. If this is not the case, I will see that Mr. Morris communicates with you.

Sincerely yours,

*Livingston Fairbank*

Form 1881

10M 12-15 H B 59359

El Paso & Southwestern System

*Dr. A. E. Douglass Tucson Feb 1916*

You are hereby notified that freight consigned to you (described as below) has been received and is held at your risk, delivery of which will be made upon payment of charges and surrender of Shipping Receipt or Bill of Lading.  
If not removed within 24 hours the freight will, thereafter, be subject to storage or car service charges, or removal to a public warehouse.

Description of Freight	From	Freight Bill	Car No.	Total Charges
<i>5 ft Wood</i>	<i>Boulder</i>	<i>877</i>	<i>FEB 28 1916</i>	<i>Paid</i>
<i>1 BUR</i>			<i>Paid</i>	

If consignee desires delivery made to another he should sign order below

The Agent will deliver above described shipments to party named below who will receipt for and pay charges on same.

Delivery to be made to

Signature of Consignee

UNIVERSITY OF COLORADO  
BOULDER, COLORADO

JUNIUS HENDERSON  
CURATOR OF THE MUSEUM

March 2, 1916.

Dr. A. E. Douglas,  
University of Arizona.

Dear Sir:-

The shipment of wood consisted of the four sacks and the large section of cedar which you have received. The fifth sack was an error on the part of the man who made out the bill of lading.

I trust that you also have my letter giving brief data concerning the specimens.

April first I shall begin excavations among the ruins in the La Plata valley, San Juan county, New Mexico. If you wish, I shall be glad to secure for you sections of all wood that may be found. And if you would like to have a series of sections from living trees in this region, it would be a pleasure to gather them.

Truly yours,

*Carl H. Marris,*

March 21, 1916

Professor Earl H. Morris,  
University of Colorado Museum,  
Boulder, Colorado

Dear Professor Morris:

As I wrote you on a postal, the samples of wood sections which you sent have reached me safely. I have been looking them over with a great deal of interest and desire to say that I have numbered them from 1 to 7 in my series H as follows:

- H 1 living cedar
- H 2 living pinyon
- H 3 ancient pine with roots *Ruin 3*
- H 4 ancient pine cut in oval shape *Ruin 4*
- H 5 ancient cedar with flaring base *Ruin 4*
- H 6 ancient cedar beam *Ruin 6*
- H 7 ancient cedar or pine beam from cliff house in Johnson's Canyon.

I think this will enable us to identify the various ones. You spoke of being especially interested in the living cedar and the living pinyon. I have not made a final examination of these rings, especially because I am not well acquainted with the characteristics and the reliability of cedar rings or pinyon rings, but the large cedar section has some two

hundred and seventy-five (275) rings, plus or minus twenty, and I think they can be taken as pretty near the age of the tree.

The pinyon impresses me as giving a more reliable number, having about one hundred and thirty-seven (137), plus or minus five.

The old pine, H 3, has about three hundred and sixty (360) rings, showing very slow growth indeed.

The large oval beam has between 180 and 190 rings, showing a very normal pine condition.

The old cedars, numbers 5, 6 and 7, are much less certain in their number of rings as indeed is the case with the first living cedar above mentioned. This is probably because the cedars grow nearer the lower limit of snow and the strong demarcation between winter and summer is not so perfectly recorded in the trees. I am very familiar with the characteristic ring appearance of the pine tree and much prefer those if they can be obtained. I would certainly be extremely glad to have you collect more pine beams this summer if possible and also to send me sections from living pine trees in that vicinity of about the same age or size as the beams which you are able to procure. It is not necessary to send long sections, such as you have done in this case, although, of course, in some respects these give me a little better idea of the exterior of the specimens in determining the question

E H M - 3 -

of whether the outer rings grew shortly before the use of the sections for house building or not. Sometimes of course the outer rings of the tree might wear off.

The size of the section which I have mostly used is only about two inches in thickness. That usually gives plenty of permanence to the sample. In the case of large trees or where it is very difficult to get a full section of the tree I make two slanting cuts into the top of the stump which, meeting an inch or two below the surface, give me a piece of wood of triangular cross-section extending across the top of the stump and including the heart. This is the kind of wood sample which I have obtained from the big sequoias of California.

The best number of samples both of living and of ancient trees would be in the neighborhood of five.

If you are able to carry out this program during the coming summer I think we shall be able to get some really tangible results and to verify any conclusions which I may make from examination of the samples already in hand.

Very truly yours,

D-J

Here are one or two questions or notes:

1. What makes you think these ruins were built after the Spanish conquest? (especially ruins 3+4)
2. What is the relative age of building of Ruins 3+4? according to your estimate?
3. I believe 5 fices (5 old + 5 living) would be worth more than 20 cedar sections.
4. Then compared the old fices you sent with my Flagstaff (Arizona) sections of 500 year age and as yet do not catch identity: but it may merely be obscure. That supports these ruins (3+4) to have been built near or since the conquest, say 1450 to 1650. My means of tracing identity are by no means exhausted - I have merely tried the most obvious and easy methods. But for this purpose I should have sections of living fices, at least 5, from that vicinity. In taking such sections keep a record of the locality, date, altitude, rainfall (approx) and slope of land (amount + direction)



April 1, 1916

Professor Clark Wissler, Curator,  
American Museum of Natural History,  
77th Street and Central Park West,  
New York, N. Y.

Dear Dr. Wissler:

I had intended writing you a couple weeks ago about the tree sections and if I did not it was an oversight. I have received seven samples from Mr. Morris of the University of Colorado Museum and have looked them over with great interest. I will have a copy of the letter which I sent to him forwarded to you, as that will contain a good many details which will be of interest to you.

These are the first cedars that I have had the opportunity of looking over and I hold their rings in question as to their annual character until much more thorough examination is made of the habit of living cedars in that respect. On the other hand I am very familiar with the way pine trees act with respect to seasons and I can form a good judgment as to the reliability of pine tree rings. So I am anxious, if possible, to have a group of pine tree sections rather than cedar. I would prefer to have from five to ten samples in this group. It would be better that they should all come from the same ruin if

C W - 2 -

possible. If that is impossible then they should come from ruins of the same age. If they come from ruins widely different in age then the number of samples should be considerably increased but if they come from the same ruin three, four or five would probably answer.

For comparison with these I should have a similar number of living pine trees of about the same age.

The samples above referred to need not be long and heavy sections as were sent by Mr. Morris. The length of the section may be as little as two inches, or even less. In the case of large trees I have had plenty of material to work on by taking a cut across the top of the stump in such a way as to bring out a continuous piece of wood crossing the stump and v-shaped in cross-section. This you will find referred to in the copy which will be sent.

Thanking you for your interest in this and believing that with material which you may get this summer some valuable and interesting results will be obtained, I am

Sincerely yours,

D-J

AMERICAN MUSEUM OF NATURAL HISTORY

77TH STREET AND CENTRAL PARK WEST

NEW YORK

Aztec, N. Mex.

Jan. 27, 1919.

DEPARTMENT OF ANTHROPOLOGY  
CLARK WISSLER, Ph.D., CURATOR  
PLINY E. GODDARD, Ph.D.,  
CURATOR OF ETHNOLOGY

Professor A. E. Douglas,  
University of Arizona.

Dear Sir:

I am sending to you by express prepaid six wood sections from the Aztec Ruin, and three from Pueblo Bonito, Chaco Canyon, N. Mex. If you wish more sections from the Aztec Ruin, they can be secured from time to time as the work of excavation proceeds.

As soon as the roads become passable in the spring I shall go to a small mill which is operating in the area from which the timbers in the Aztec Ruin were most probably brought for the purpose of getting sections from the largest available trees cut at a known date. It may be six weeks or two months before I can get these to you.

Truly yours,

*Carl A. Marris*

*Recd.  
2/10/19*

February 14, 1919.

Mr. Earl H. Morris,

Aztec, N. M.

Dear Mr. Morris:

Your letter of January 27th and the boxes with ten sections of timbers from the old ruins came safely in the last few days. The tree sections look extremely promising and I hope to be able to get at them seriously within a few weeks, perhaps before the end of March. I will try to ask you a question or two about them which will help me very much during my investigation: (1) how many different trees do you think these ten sections are from; (2) How many different <sup>species</sup> or timbers are these ten sections from; (3) how near alike in date do you think these sections are?

I notice that you speak of only nine sections, six from Aztec ruins and three from Pueblo Bonito, Chaco Canyon. I will look over the number again and see if I have made a mistake.

Also you speak of getting comparative sections from a small mill operating in the area from which the timbers in the Aztec ruins were probably brought. I am very glad to find you referring to this matter for I consider the sections ~~of~~ growing trees in that locality to be of the greatest importance.

I believe all of these sections are of yellow pine which is a good feature.

Very truly yours,

Director Steward Observatory.

*I find there  
are only  
nine, as  
you say.*

AMERICAN MUSEUM OF NATURAL HISTORY

77TH STREET AND CENTRAL PARK WEST

NEW YORK

Aztec, N. Mex.

Feb. 23, 1920.

DEPARTMENT OF ANTHROPOLOGY  
CLARK WISSLER, Ph.D., CURATOR  
PLINY E. GODDARD, Ph.D.,  
CURATOR OF ETHNOLOGY

Doctor A. E. Douglass,  
Tucson, Arizona.

My dear Doctor Douglass;

H8-13 | I am sending under separate cover a blue print of the Aztec Ruin which will give you the information you want as to the locations whence came the various wood samples. The first specimens I sent you came from the block of rooms bounded on the west by rooms 93, 94, and 95, and on the east by rooms 77, 75, and 72.

It was a great surprise to me to learn that those beams of which you have specimens were all cut within an eight year interval, as I had assumed that the structure was a very long time in the building.

I think your dates represent the actual time of cutting, for it is highly improbable that trees would have been girdled and left standing, since partly seasoned wood would have been vastly more difficult to cut with stone tools.

The beams from which my samples were taken have the numbers cut into them with a chisel near the holes from which the cores were taken.

I shall await your further determinations with great interest.

Very truly yours,

*Carl H. Morris*

AMERICAN MUSEUM OF NATURAL HISTORY

77TH STREET AND CENTRAL PARK WEST

NEW YORK February 24, 1920.

DEPARTMENT OF ANTHROPOLOGY  
CLARK WISSLER, Ph.D., CURATOR  
PLINY E. GODDARD, Ph.D.,  
CURATOR OF ETHNOLOGY

Dear Professor Douglass:

I have been very much interested in your correspondence with Mr. Morris, copies of which you forwarded to me. I am sure we shall find something out about these ruins yet.

I hear from Mr. Morris that you can have the new tool made under your supervision. This will be more satisfactory I imagine. I suggest that you let us bear the expense of this, though I assume Mr. Morris has made this arrangement with you.

Very truly yours,

*Clark Wissler*

Prof. A. E. Douglass,  
University of Arizona,  
Tucson, Arizona.

AMERICAN MUSEUM OF NATURAL HISTORY

77TH STREET AND CENTRAL PARK WEST

NEW YORK

DEPARTMENT OF ANTHROPOLOGY  
CLARK WISSLER, Ph.D., CURATOR  
PLINY E. GODDARD, Ph.D.,  
CURATOR OF ETHNOLOGY

Aztec, N. Mex.

Feb. 25, 1919.

Dr. A. E. Douglass,  
Director, Steward Observatory,  
Tucson, Ariz:

Dear Dr. Douglass;

Your letter of Feb. 14th. reached me today. I will reply to your questions in the order they were given: (1) I have every reason to suppose that the nine sections I sent you represent that number of trees. The aborigines used logs with very few knots, and as the length necessary for each stringer was from 15 to 18 feet, it is improbable that they would find trees offering enough clear timber for two lengths; (2) Each section is from an individual beam; (3) It is safe to assume that the timbers from each locality were cut within a very few years of the same date. Although Pueblo Bonito is 65 miles south of the structure known as the Aztec Ruin, the architectural similarity of the buildings is so close that I would proceed on the assumption that they were contemporaneous. However, that is not an established fact.

I sent sections of yellow pine because I understood they were most suitable for your purposes. I have found no spruce in pre-Spanish ruins, the only other timber

that was used for heavy beams having been native cedar.

Just as soon as the roads into the mountains are passable, I shall get the sections from living trees, or those felled within the last year or two. But I have no hope that these are old enough to overlap the period of growth of those logs found in the ruins. Still, they might corroborate the sequence of growth cycles for this region that you have established for areas from which older trees are to be had.

Very truly yours,

*Carl H. Merriam*

*I might add that it is known that both Pueblo Bonito and the Aztec Ruin ceased to be inhabited prior to 1540.*



2-14-50  
"Bridge" dates  
Method described in  
this letter

May 22, 1919.

Dr. Clark Wissler,

American Museum of Natural History,

New York City, N. Y.

My dear Dr. Wissler:

This letter is an informal, but a fairly full report of the work done up to date on the sections from the ruins in Northern New Mexico. Mr. Earl H. Morris sent me nine sections early in February of this year. I have given them numbers as follows:

H-8 to 13 from Aztec ruin

H-14 to 16 " Pueblo Bonito, Chaco Canyon, N.M.

I find the first six from the Aztec ruin to be exceedingly fine and satisfactory material. The trees are full of individuality and I can readily trace the same rings thru all of them. I am able to say that the dates of cutting these six trees extend over about two years. I have for purposes of reference adopted a hypothetical date of about five hundred and twenty-four years for the time of cutting. The six sections show the following probable dates of cutting in this assumed system:

523	autumn
523	summer
525	early spring
523	mid-spring
524	late autumn
524	" "

The erection of the building, therefore, occupied just about two years so far as these timbers tell the story.

It is evident to me that these trees grew somewhat near the lower limit of altitude at which pine trees could grow in that day; also I am inclined to think that they had a better average condition of rainfall than has existed for the most part for the last two hundred years.

The three sections from Pueblo Bonito are far less valuable chiefly because they are what I call complacent in character, that is the rings are wide and very much alike so that there is little character or identity to the sections. This is an indication of a climatic condition very favorable to the growth of the trees and probably <sup>to</sup> a swampy region or at least a region in which there was very active conservation of moisture. I was not able to get any certain result as to the existence of one of these ruins while the other was being built, that is to the relative age of these two ruins from this material and I would be deeply interested in seeing further collection from this ruin so that I might make some reliable inferences. I however, gained the impression as a fair possibility that this ruin might have been built about 25 years before the Aztec ruin, but I would not like to be quoted as saying that the two were co-existent. <sup>to that extent.</sup>  
1

I have made extensive tests of ~~the relationship between~~ the short period cycles appearing in these timbers as indicated in the growth of the annual <sup>ring</sup> ~~rings~~. This has been done by the periodograph, an instrument which I have specially constructed for the purpose of studying short cycles. I am going to describe this instrument next month in Pasadena at a meeting of the Pacific Division of the A. A. S.S.

For purposes of comparison I have made similar minute study of the short period cycles in the giant sequoias of California whose tree record extends back to 1300 B.C. I have found from other studies that the pines from Northern Arizona show substantial agreement with the sequoias with respect to these short cycles. I have found it very easy therefore to select the point on the sequoia record where the Aztec timbers show best agreement. I have then taken the actual curve of growth in the two regions and compared them minutely and made a provisional conclusion as to the exact date of correspondence, but I feel still uncertain as to the reliability of this procedure when applied to that particular region of northern New Mexico and do not feel like quoting any results until I have made a comparison between modern tree growth in that region and the sequoias in California. For this purpose I need a set of 6 or 8 sections from trees recently cut down in or near the localities from which it is likely that these ancient timbers came. Mr. Morris is going to supply such a set but I have a suggestion to make which I would like to submit to you in connection with the next subject I prefer to.

I believe that you told me at one time that you would take care of small expenses in connection with this work. There is a bill of \$5.75 for smoothing and planing, polishing and oiling the sections and another bill of \$6.30 for measuring the rings. The former bill is to F. W. Brown and the latter to J. F. Freeman. The total is \$12.05.

The matter which I wish to submit to you in this connection is whether you would think it feasible and desirable to stand the expense of a trip which I could make this summer for the purpose of selecting these comparison trees. I would be able to select trees of the same general type of growth as the timbers in the ruin and believe that it would be distinctly more valuable than trees selected at random by some one else. I am expecting to make a trip east this summer and I shall certainly make a trip to Flagstaff. If I make the trip east my expenses would only begin at the nearest point on the Santa Fe Railroad and at most it would only begin at Flagstaff in case I do not go east. I do not know how accessible that region is and it may be more difficult to reach than I suppose.

2-14-52  
Bridge  
Method

This trip would also inaugurate another plan which I think well worth while and which I think would be worth some endeavor. As I look at the method which I am here using for determining the age of those ruins I see that it is not easy to give a conclusive check on the result, or to put this matter in another way there is a possible independent method of getting a complete check on the result. That consists in obtaining groups of timbers of different ages so that one group will overlap another and by combining them we may bridge over a great many hundred years in the past without depending on a comparison with the sequoias for the result. Even if we can not bridge fully back to the date desired we may be able to get several groups near together whose combined period will be many times as long as the period covered by one group and whose comparison with the sequoias will be more conclusive. I suggest then the great importance of making all possible collections of the character which you have sent me from the Aztec ruins. I myself saw years ago a pine stump in perfect preservation

In the wash at Flagstaff Arizona which had been buried for hundreds of years, I suppose, under 16 feet of soil. I always regretted that I did not take a section of it. In my trip to Flagstaff this summer I am going to look up any further samples of that sort for they might help very greatly in building up this chain which may join us to the past and supply a check upon the results which I have already obtained from the study of cycles.

Expressing my deep interest in this subject and my appreciation of the interest of which you have also taken in it and of the work which Mr. Morris has done, I am,

Sincerely yours,

HARVARD COLLEGE OBSERVATORY  
CAMBRIDGE, MASS.

August 1, 1919.

Professor A. E. Douglass,  
Steward Observatory,  
Tucson, Arizona.

Dear Professor Douglass:-

We have a case containing a number of skulls. There is a tradition that they were collected by you, and that therefore they may be your personal property. If so, do you wish to have them sent to you, or presented to the Museum here, in case they are wanted? I think they should be disposed of in some way.

I hope you and Mrs. Douglass are well and will come to see us when you are near Boston.

Yours very sincerely,

*S. I. Bailey*

*Recd*  
AUG 7 - 1919

August 7, 1919.

Prof. S. I. Baily,  
Harvard College Observatory,  
Cambridge, Mass.

Dear Professor Baily:

I have just received your note in regard to the box of skulls. I can see a twinkle or some such thing in your eye when you wrote that letter. I sent that box from Arequipa while I was there. They were collected in Mejia near Mollendo. I supposed that they had gone to some museum twenty years ago, but as long as they have not I would be greatly obliged if you would ship them here to the museum of the University of Arizona.

*Express-collect*

You might find other things with some signs of my touch and if so put them in the box and send them along. I have in mind sundry bottles of sand which I collected in the desert La Joya. They used to be in the closet off Professor W. H. Pickering's room over the library.

I hope to be in Cambridge for a short call on you during the last week of this month.

With best regards to all.

Sincerely yours

AED/LOT

Director

AMERICAN MUSEUM OF NATURAL HISTORY

77TH STREET AND CENTRAL PARK WEST

NEW YORK September 29, 1919.

DEPARTMENT OF ANTHROPOLOGY  
CLARK WISSLER, Ph.D., CURATOR  
PLINY E. GODDARD, Ph.D.,  
CURATOR OF ETHNOLOGY

Dear Professor Douglas:

I was sorry to learn upon my return to New York that I had missed you once again. I have had a very interesting letter from Mr. Morris expressing great pleasure at your visit to Aztec and indicating that you got what you came for. He said that you did not file a bill of expenses with him, but would forward the same to me. I should be glad to have this bill at your convenience so that we may make payment.

I am especially pleased with the development of this work and I am sure you can make some important contributions to the chronology of the Southwest. We can establish relative chronology by archaeological means, but it is almost impossible to estimate the time intervals. For this reason it seems to me your work offers great possibilities.

With best wishes, I am

Very truly yours,

*Clark Wissler*

Prof. A. E. Douglas,  
University of Arizona,  
Tucson, Arizona.

*Ans*  
OCT 6 - 1919



*Morris' copy  
marked  
"Copy"*

October 7, 1919.

Dr. Clark Wissler,  
American Museum of Natural History,  
77th Street & Central Park West,  
New York, N. Y.

Dear Dr. Wissler:

I have your letter of the 29th and am enclosing a statement of expense.

The trip was very successful and tree sections collected from Basin Mountain in southwestern Colorado have reached me, and I had them very nearly ready for measurement. I shall be deeply interested to see the information which comes from them.

I was very greatly impressed with the work which you are doing in the Aztec Ruins and found my entire visit of the greatest possible interest. I went over very carefully with Mr. Morris the matter of selecting beams from which to take samples and since seeing him I have had made a tool with which I hope to be able to get samples of beams in place without injury to the beam itself, and without endangering the floor above. I hope with this to get a sample from a large number of beams in the same ruin and check the order of construction as worked out by you. If I can do that and obtain records from trees that were cut at small intervals one after the other I can make out a very much stronger case for myself in the dating of the ruin. I feel the necessity of making out as strong a case as possible.

In carrying out the idea of getting corroborative evidence and possible overlapping and continued series of tree records, I made a collection in Flagstaff of buried trees. Just above the town of Flagstaff is an extensive field on which very good crops are grown. A small creek, called locally the 'River de Flag' goes down through this field. About 1890 to 1894 it cut a very deep channel in this alluvial deposit. About 1904 I was walking down this stream bed and at a point where it was about sixteen feet deep I found an Indian burial at a depth of about eight feet from the surface. The burial consisted of a skeleton and two nests of pottery. The observer who was at the Weather Bureau at that time and whose name I forget helped me to excavate this burial and took most of the objects found. In searching for houses in connection with this burial I found on slightly higher ground nearby. That is the point now occupied by a house

belonging to D. M. Francis of Flagstaff.

During that same summer I found at a depth of sixteen feet below the surface the stump of a pine tree in its original position. The tree was torn loose and carried down stream, I think, in 1905 and was used in building a bridge. I always regretted not getting a section of it. This summer I decided to see if there were any other buried trees and immediately found one somewhat further up stream than the one I first noticed fifteen years ago, but evidently belonging to the same group. I left a sum of money with a friend in Flagstaff, for him to have the tree cut out and a section obtained, and on my return to Flagstaff about the 10th of last month I found that he had procured a very fine section. On this second visit I enlisted the assistance of Mr. L. F. Brady, who has been for some years connected with the Evans School of Mesa. Mr. Brady and I made further search and found more than a half dozen trees from which sections could be obtained. Most of these, I believe, belong to the period before this valley was filled. One at least was about four feet below the present surface and may belong very closely to the period of the Indian burial. It seemed to me that in these buried trees we might get help in bridging over the time between the present and the Indian era, or else get some idea of the age of these specimens, so numerous in Arizona and connected often with Indian building sights.

With best regards.

Sincerely yours,

Director.

*Wissler's*

*"I am sending a copy  
of this to Francis"*