

**Marsh writes to Felch that Survey funds may not allow them to start April 1<sup>st</sup>. He wants the number and kind of specimens showing in the quarry. He much needs Diplodocus and Stegosaurus skulls and feet, and asks if any have been seen where they left off. If so could he maybe get them with just a little work?**

Department of the Interior, United States Geological Survey  
Washington, New Haven

Jan 4<sup>th</sup>, 1886

Dear Mr. Felch,

Enclosed find check for \$43<sup>50</sup> as per account enclosed, which please return receipted.

It is possible that the funds of the Survey will not permit work to begin Apr 1, but I cannot tell now.

At all events I wish you to keep everything in good shape till work begins, even if not till July 1<sup>st</sup>.

I am now desirous of knowing all I can of the number and kind of animals in quarry 1, as far as explored. You have sent one or two diagrams that helped me much, and I would like more, especially the position with reference to each other. I want to separate each from the rest. I don't expect you will ever strike it as rich as you did the first season, but I hope you may. I want most of all Diplodocus, and Stegosaurus, skulls and feet, to complete my two volumes.

Were you near any skulls or feet just where you left off? I mean could either be got by little digging, either now or in the spring? If so, I might try for them, without going on with regular work. The more full you can make out the contents of boxes, and diagrams of quarry the better.

Yours Very Truly  
O. C. Marsh

P.S. You may use that balance as you suggest.

**Felch writes to Marsh inquiring about the next season's work. He starts by saying he will work if given a pay increase and a full nine months. He follows that he has been ill and depressed and says he may alter his decision somewhat. He encloses a sketch of the caudal series that Williston worked on in 1878.**

Canon City, Colo.  
Jan. 20<sup>th</sup>, 1886

Prof. Marsh  
Dear Sir

In your last letter you intimated that you would know by the first of this month in regard to next seasons work.

From the general unsatisfactory results of last season's work, I am compelled to say that I cannot longer continue without increase of pay, and a full season (nine months at least) worth promised before starting in.

If you cannot reasonably comply, let me know by Feb. 15<sup>th</sup>

If I work on fossils, I propose to rent my ranch, and have to give possession on Mar. 1<sup>st</sup> – when our farming year begins.

Very Respectfully  
M. P. Felch

(over)

P.S. Jan. 21<sup>st</sup>, 1886

I have just come in, and found yours of the 4<sup>th</sup> inst. with check for which receipt is sent.

I have been quite ill for some time, and feeling a good deal depressed about matters generally – and wrote about as I felt in regard to work on the first page.

I may qualify this to some extent – will write more fully in a few days –

Respectfully Yours  
M. P. Felch

I enclose a sketch that I made of a section of the caudal series in Box No. 20 – that I forgot to send when I made it.

I believe this to be Diplodocus – and the end of the series that Williston took out in 1878.

If I am right in regard to them, you will find them united at the point marked, - and perhaps from there to the extremity of the tail

M. P. F.



Natural Size

11

12

13

Sec. of diagram of group No. 4 1885 Showing the apparent union between Nos. 12 and 13 of the series at 0 and X

Felch July 29<sup>th</sup>, 1885

On the back of the drawing:

Diplodocus [?] tail as figured by Williston in 1878

**Marsh writes to Felch that the 35 boxes were received.**

Yale College Museum, New Haven, Conn.

Jan 22<sup>nd</sup>, 1886

Dear Mr. Felch,

The 35 boxes came in today in very good order one only being split. As soon as I receive your diagram of the Quarry for 1885, I shall go to work on the bones.

White is greatly pleased with his clams and will soon publish them.

Yours Truly  
O. C. Marsh

**Felch writes to Marsh concerning the conditions under which he can continue to work. He mentions the financial burden his loan from Marsh to purchase land as having been in Marsh's interest also and states that he should receive some consideration for having kept Lucas out of the quarry. He further needs the pay increase and the working season lengthened to be able to afford a good hand to run his ranch while he digs bones. He also needs to improve working conditions in the quarry with another work shed and a new bellows.**

Canon City, Colo.  
Jan. 24<sup>th</sup>, 1886

Prof. Marsh  
Dear Sir

I have been thinking over for the last few days about the matter mentioned in my last, and really do not see how I can vary much from the propositions then stated

I wish to write out fully some of my reasons, for coming to the conclusion I have and I think you will not deem me very unreasonable.

First in regard to putting off work 'till July 1<sup>st</sup>"

Suppose, as was the case last year, I go on with my farm work 'till that time, a time when help here is always scarce – crops need the most careful and constant attention; everything is driving. I have to drop my farm work, to go to work in the quarry – start out to get help for that work – also to work on the ranch.

I find all good hands, or men that are of much account either went to the mines in the spring or hired out March 1<sup>st</sup> for the full seasons work, and so am compelled to depend on some floating, transient help – for which in order to get at all I must pay the very highest price, as the labor market is in their hands

Suppose, even I am fortunate enough to get a first class hand to work my ranch, he is a stranger to the peculiar lay of the ground (an item of no small importance in farming by irrigation) and work as hard and faithful as he may will be unable to accomplish little more than half that I would with far less hard labor, besides more or less of my time must to some extent be given daily in planning and directing him and where the work may be applied to the best advantage that any good results may be had.

After my experience of last year in doing business this way I cannot take the same chances again – for the margin between my pay and what I had to pay my help, with board and other extra work made by increased numbers is too small to be of any consideration.

What I wish to do with my ranch is, either to let it to some good man – or hire a good man to carry it on from the first of March when I can stand a better chance of getting good men – and in

either case, I must, if I go to work in the quarry at all, begin by the 1<sup>st</sup> of April in order to meet expenses and not get behind.

I should have insisted on an increase of pay last July – but for the fact that I was in your debt – and I did not wish to take any seeming advantage of the situation, though in reality this neither should not have entered into the case, as the purchase made by which the debt was incurred was somewhat to your interest as well as my own – and I think I was deserving of some consideration for keeping Lucas and others off the ground who surely would have worked it for all there was in it during the interval from 1878 to 1883 if I had not persistently claimed it as mine and prevented them from coming on to it.

On the whole then, the best that I can do is to ask for an increase of pay – but if the funds from the survey are going to be somewhat limited, I will go on alone by myself April 1<sup>st</sup> and do the best I can 'till such time = say July 1<sup>st</sup> = as you wish to put on another man or more as the work may demand, and as I said in my last – would like to know by Feb. 15<sup>th</sup> so as to make all necessary arrangements before Mar 1<sup>st</sup>.

In regard to their being any more foot bones or skulls = wither of Diplodocus or Stegosaurus it is hard to say – but I hope and expect you will find nearly all the foot bones, if not the skull of Stegosaurus as I have already located them.

Should either be missing they cannot be far away – as I believe all of Sk. 11 lay nearly in position, and what is lacking of the skeleton = besides that sent on = is still here in the quarry.

The last block taken out (A + Gr. 5 – Sk. 11) had one or two foot bones, also part of a leg bone the remainder of which is here.

Before any more of this can be taken out however – a lot of Sk. 9 and the tail of Diplodocus will have to be removed first – as they lay in a higher and separate layer directly over it.

You will find a good many diagrams = mostly of separate groups however = with pretty full descriptions as to the positions etc – which if upon examination are not sufficient to show the relative positions to each other, I will make out one of the whole quarry as far as worked – that will show each year's work – and the location of each individual discovered.

It would be utterly useless to make any attempt at work 'till we have a warm spell – for I think the rock in the quarry is frozen ten feet = never since I have lived in this country have I seen such long continued cold weather.

For thirteen days the trains in Kas. were so blocked we got neither paper or letter from the East over the roads.

Hoping to hear from you soon I am Respectfully, M. P. Felch  
P.S. Jan. 27<sup>th</sup>

As I had no chance 'till to-day to send my letter I thought I had better inform you now of what will be required before going to work – and also as to some improvements that should be made on the quarry, that work may be conducted to better advantage

Our shed = or rather the roof of the shed where we make and store away the boxes, is in bad condition, in fact so far as being a shelter in weather is concerned, it is worthless.

It was originally laid with boards – these covered with tarred paper – with battens where the paper lapped

In the cloud burst and hail storm last August – this paper covering was beat all to pieces and washed off – and the roof now needs either another layer of boards or shingles.

The bellows to our forge is worn out – and unfit for service so that during the latter part of the season we had to take our tools to Canon to be sharpened, a matter of great inconvenience and expense as there is scarcely a day when at work in rock but what we have to sharpen more or less.

Further – In the present method of removing the bones in rock – by different groups, where the skeleton extends along for some distance – in order that no mistakes will be made in keeping the connections from one group to another – and also that correct diagrams and full descriptions made of each group before packing – after the first group is removed we have to have a place large enough for that to be placed, in the exact position it came from the quarry – and here it must remain 'till the next group is taken out to match with the first, and so on through the whole – so that we seldom have less than two groups at one time on the table

For this purpose I built a table close to the work 5 x 14 feet on a solid foundation about 18 inches from the ground – and on this table had sawdust bags laid closely together to make a soft bed of some six inches in thickness to lay the bones on as taken out, to harden – match up and prepare for packing – and for the purpose already described.

This table should be larger, and should also have some kind of a shelter from the hot sun and rain – and I think a good and cheap way would be to set up posts on the outside, around to support a roof, leaving the ends and sides mostly open so as to have plenty of light and air.

As a great part of the work is done on this table after removing the rock from the quarry – it could be done to better advantage, especially in the heat of summer, when it is almost impossible to withstand the heat and glare of the sun.

I have made an estimate for all the material, also to include bellows and find it would cost to carry it out as planned somewhere about fifty dollars besides labor and that would not take over a week's work, after the material was on the ground.

Respectfully Yours M. P. Felch

**Marsh writes to Felch that he hopes the Diplodocus tail belongs to Williston's type specimen. He asks for details about skulls and how many animals are represented in the boxes and asks for a detailed quarry sketch.**

Yale College Museum, New Haven, Conn.

Jan. 29<sup>th</sup>, 1886

I have examined the tail of Diplodocus in Box 20, and think you are right about its being ossified near the end. I am glad to get it, especially if it belongs with the tail Williston got hold of in 1878. That is the type specimen of Diplodocus, and hence precious.

I have not opened any other boxes, as I feared to make confusion before your diagram of the quarry showing work of this year arrived. I hope soon to get it. Can you tell me the difference between "Sk 5" and "Sk 5?"? Were both parts of a carnivore? and are they probably distinct?

Can you also tell me about the two skulls, "Sk 8"? One is Stegosaurus sure.

My next puzzle is Sk 9. Do you know what it is? The feet bones in Box 20 are peculiar. Probably all of these points will be clear as soon as I can examine the contents of the boxes, but it would help me to know what you consider each mark to indicate, and how many different skeletons are represented in what we now have out. Also just how they lay in the quarry. A rough sketch would make the latter point clear.

Hoping you can soon help me out on these points I remain

Yours Truly  
O. C. Marsh

**Felch writes to Marsh information on further effort to keep freight bills low and encloses a letter from the Quartermaster in St. Louis. He also mentions a letter from Marsh earlier in which he removed some land from Public Entry. Felch wants to know if this can be done for the quarry as a large cattle company is trying to buy them all out and if they get all the creek front land, they may succeed.**

Canon City, Colo.  
Jan. 31<sup>st</sup>, 1886

Prof Marsh  
Dear Sir

Enclosed is a communication that I rec'd from the Qr. Master in St. Louis, through Maj. Belcher of Denver that explains itself.

I wrote to Qr. Master, Foster that the freight should not be rated as 1<sup>st</sup> Class – from the fact that none of the contents of boxes were perfect as specimens – but were in a fragmentary condition – imbedded in rock as taken from the quarry – and might = in my opinion be classed in the 6<sup>th</sup> Class as “Stone Unwrought”.

If rated in 6" C. will save 78 37/100 dollars on the lot.

I further referred him to yourself if my explanation was not satisfactory.

Respectfully  
M. P. Felch

You spoke in one of your letters last spring of having some of this fossil ground in our vicinity set aside from Public Entry.

It would not be a bad move to have this done soon, as there is a large Cattle Company trying to buy all of our ranches with the plan of fencing and taking in all the country around – and this object they can attain for all the law, if they get the water frontage along the creek.

Smith and his brother – one more neighbor and myself have agreed to stick together and not sell – but if they (the C. Co) obtain the rest with a few springs of water by hiring men to preempt for them they might compel us in time to come to their terms.

If such sections as I might name could be withdrawn, = now unoccupied, = it would lessen their power to damage us.

M. P. F.

P.S.

I have just received yours of the 29<sup>th</sup>, Jan.

I have been so ill and miserable for the past month that I could not do anything, but will try and figure out what you need soon.

Very Respectfully  
M. P. Felch

Depot Quartermaster's Office, St. Louis, Mo. Jan. 22<sup>nd</sup>, 1886  
Major J. H. Belcher, Quartermaster, U. S. A.  
Denver, Colo.

Sir:

In order that this office may properly classify for payment the property consigned to my care on your B/L. No. 43 of Dec. 23<sup>rd</sup> 1885, I have the honor to request that the nature of the contents of the "35 boxes Geol. specimens", be given if known to you, - In the classification East of this point 'specimens' are 1<sup>st</sup> class or \$1.<sup>16</sup> per 100 lbs. to New York City, "ones," 5<sup>th</sup> @ 58¢ - "Phosphates" 6<sup>th</sup> @ 52¢ and "stone unwrought" 6<sup>th</sup> @ 52¢. -

If this shipment could be properly placed under either of the last three classes named above, it would result in quite a saving in cost of transportation.

Very respectfully  
Your obt. servant  
W.W. Foster  
Quartermaster U. S. A.   Depot Q Master      261/1886

51	RECEIVED, Quartermaster's Office DENVER, COLO.	JAN 25 1886
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1<sup>st</sup> ENDORSEMENT  
Office Disbursing Quartermaster  
Denver, Colo. Jan. 25<sup>th</sup> 1886

Respectfully referred to Mr. M. P. Felch - Canon City, Colo. for the information requested within.

J. H. Belcher  
Major Qr M  
U. S. A.  
To shipper Canon City - M. P. Felch

**Felch writes to Marsh that his request for a map of the entire quarry as dug so far will be very difficult, but he will do his best. Much of the difficulty lies in the fact that many of the bones were taken out for each skeleton in blocks or groups. Not knowing exactly what was in the unprepared material he can map them only as #'ed blocks and groups and an overall skeleton.**

Canon City, Colo.  
Feb. 11<sup>th</sup>, 1886

Prof. Marsh  
Dear Sir

Finding it was going to take more time than I expected, to make a full map of all the work done on the quarry up to the present time, I send on the enclosed diagram, giving a general outline of the seasons work.

I find it hard to represent on a map – how the different bones lay, for in taking them out in the rock, sometimes in very large blocks – we do not know only in a general way what the different groups contain.

The work began just east of the line between the “West End” and the “Cen. Div” where we left off work the year before and was carried East as in 1884.

Most of the work done comes directly back (North) and left of where Ceratasaurus was found.

As will be seen by the diagram, the bones came in two distinct layers – on the top layer and front side nearest to the Ceratasaurus – was the tail of another Diplodocus (“Gr. 14 – B” Sk. 9” Boxes 16 & 17) also the large humerus and some other bones = back of these – was the large series of dorsal and cervical vertebrae.

All of this top layer, Diplodocus tail and all, was marked in the different groups as taken out, as “Skeleton No. 9” – and as will further be seen by the diagram – each group took a straight slice – or run clear across the face of the working ground from left to right.

To describe what these different groups contained – is next to impossible – for I never made any note of them unless – something cropped out in sight, as a foot bone – or vertebrae in the Diplodocus Series – where they showed so plain there could be no mistake made – but in making and mapping out the diagrams of the different groups – which were sent with the boxes I always gave the fullest description on all essential points that could aid in restoration – that I could possibly do.

The most then that can be shown on a map is the location of the different groups of each Skeleton.

Skeleton No. 11 the last Stegosaurus found – lay mostly on the marl bed – under Sk. 9 and the other bones.

Some of the blocks of this are very large – big enough to hide more than one skull and any amount of foot bones or vertebrae – and from cropping's in Block 11 and other blocks of Group No. 1 – of this Skeleton I think the skull will be found somewhere in that group – but of this nothing certain will be known 'till work is done on them.

The three groups of vertebrae marked "Sk. 6" come back (north) of 9 and nearly to the bottom layer.

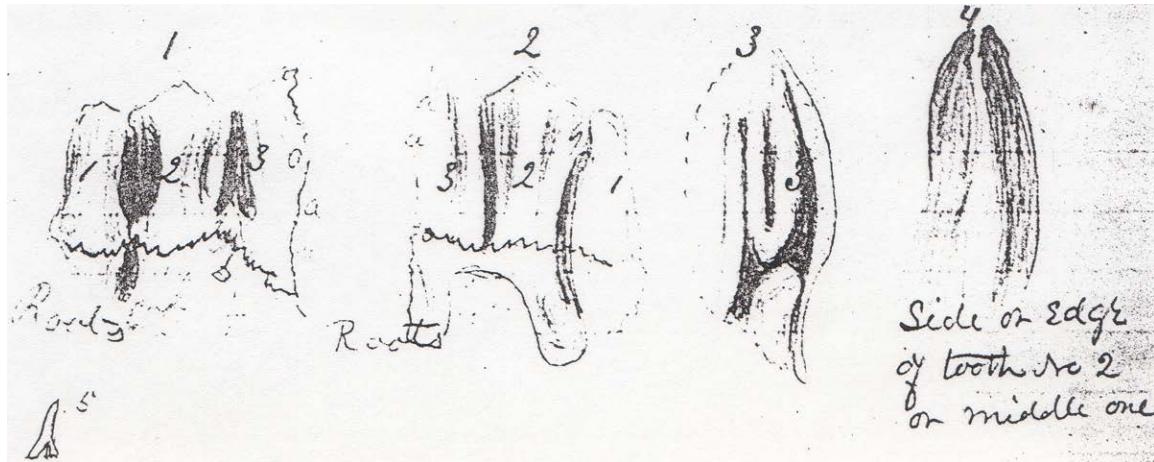
I think you will find these last, fine specimens, and something new – and apparently we are just coming on to a new Skeleton in this direction.

If the rest (No. 6) should come in as good shape, and in as good rock to work as these were – it would be some satisfaction to work them out – to what either No. 9 or 11 is – the last two being the hardest to work so far that we have had anything to do with.

I will get the map of the whole work done on the quarry, as soon as I can with other work on hand.

The weather is once more getting warm – frost is coming out of the ground and rock - and spring will soon be on hand

Respectfully Yours  
M. P. Felch



No 1 inside of tooth – half broken away at a  
2 outside of tooth  
3 transverse and vertical section where broken  
at [gap] light = bone = dark, cavities  
4 side view of tooth open with a pair of nippers  
5 a small prong or fang on the inside at b b between the middle and broken  
tooth

Are there any animals, living or extinct that have teeth shown as above – divided longitudinally so as to make 6 distinct parts above where united at the base?

This I think came from the Cretaceous  
(Feb 11<sup>th</sup>, 1886)

**Marsh writes to Felch about work for the 1886 season but he is short of funds and outlines a limited plan to resume work. He asks about the last few feet of the Diplodocus tail and wants to know what sections of government land should be withdrawn for sale in order to protect bone localities from cattlemen.**

Yale College Museum, New Haven, Conn.

Feb. 12<sup>th</sup>, 1886

Dear Mr. Felch,

I was sorry to learn that you had not been well, and hope you are now better.

I wish it were in my power to push on the work vigorously from April 1<sup>st</sup>, but I have only a limited amount and have to go slow, or suffer myself. Last year I paid several thousand dollars out of my own pocket, for Government work, because I had not counted the cost carefully before I made promises. I hope to have a larger sum next year, (after July 1<sup>st</sup>), and will do the very best I can for you then.

As it is, you may yourself begin April 1<sup>st</sup>, and I will allow you \$85. per month. - If I can possibly do it, I will give you one man to help you. Please let me know soon what this would cost, and whether this proposal is satisfactory.

I enclose a check for \$50. the amount you mentioned as the cost of the improvements for work. Would it not be well to have a tight wire fence around the quarry, and a gate with a padlock to close it.

The tail of Diplodocus is very interesting, but the lower ends of the chevrons are broken off and missing. The last foot or two of the tail was broken off and separated before what we have was covered up. Can you find it?

Yours Truly  
O. C. Marsh

P.S. Let me know what sections of Govt land it would be well to have withdrawn from sale to preserve you from the cattle men? Also just how they lie with reference to your place, and other bone localities.

**Felch writes to Marsh that he has the quarry map completed and will mail it. He has looked up information on the Labrosaurus (1884) and sends more information and a drawing to Marsh because he found fragments from it and sent them with the last shipment.**

Canon City, Colo.  
Feb. 16<sup>th</sup>, 1886

Prof. Marsh  
Dear Sir

I have the map ready to mail – and will send it with this, the first time I go in to town.

I will register the map so as to make it more safe in going.

You sent me notice nearly a year ago that this matter (Official) could be registered without fee – but I have always had to pay on it = as the P.M. here says he has never received any orders from the P.O. Dept. to do otherwise.

Would it not be well to call the attention of the Dept. to it and have him notified, as there are times when it seems necessary to register – and I do not like to bear all the expense.

I find that I am out of the labels = official pasters – such as are used in sending parcels, and have had to use two envelopes for the purpose on the one sent last week and on the map.

I have been looking up more about the Skull business of 1884 and run across an old sketch of No. 9 and though in bad condition – will send it on, merely as showing what I thought it to be when I found it.

I marked it as Labrosaurus – and also referred the section of jaw with four large carnivorous teeth to this skull.

On one corner of the enclosed sketch is something that was in the same block with the skull – marked “axis.” Of this last bone ( Axis? ) some fragments were overlooked in packing up in the fall of 1884 – but will be found in the last lot sent – in a cigar in box 28 – and another small fragment in box 29 – this completes all that we found of the skull.

Whether any of those bones found in the “west end” in 1884 prove to be Labrosaurus or no – of one thing I feel quite certain – you will find portions of a larger Carnivore among them than Allosaurus – and enough to identify a distinct skeleton from any others found in our quarry – for I know there were types of vertebrae there that I have seen nowhere else, or figured in any of your books.

Respectfully Yours  
M. P. Felch

P.S. 17<sup>th</sup>

My son who goes to school in Canon this winter brought up your telegram last night. I am glad to get it for there has been a good man waiting several days – that I shall now put on to my ranch – and can feel all right in that respect

M. P. F.

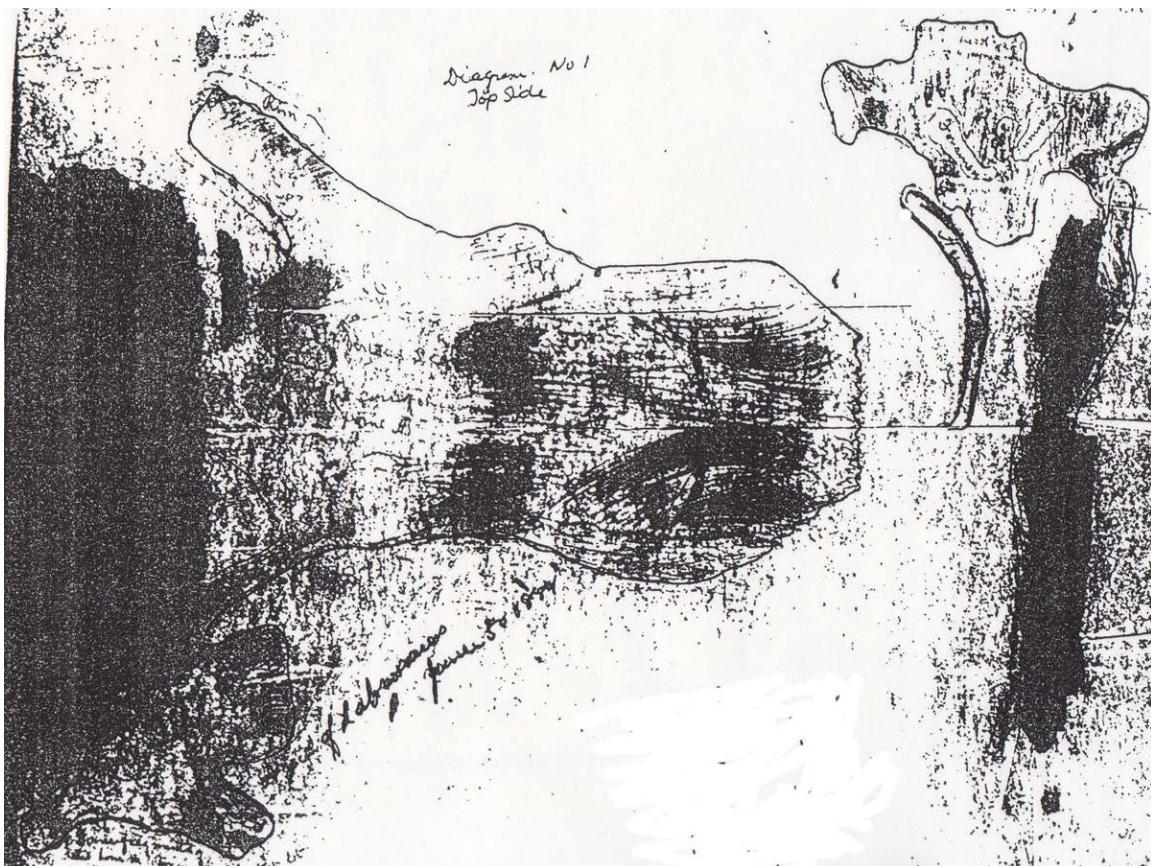


Diagram No 1 top side

Foramen      Foramen

— of Labrosaurus June 30<sup>th</sup>, 1884

**Felch writes to Marsh that he has received the \$50. for quarry improvements. He spells out the monetary conditions under which he will work so that it is clear to both of them. He sends a map toward getting some ground set aside by the government. He is looking for the Diplodocus tail but with no luck and describes how he could take a section of overburden out early to look for it.**

Canon City, Colo.  
Feb. 20<sup>th</sup>, 1886

Prof. Marsh  
Dear Sir

Yours of the 12<sup>th</sup> inst. with a check for \$50. came in due season.

The money will be applied for necessary improvements and a correct account kept of all expenses incurred.

The first work done, will be to build a strong barbed wire fence around the quarry.

I will go to work alone on Apr. 1<sup>st</sup> at the price you named = or if you can put on an assistant = I will, (until July 1<sup>st</sup>) get a hand that will do fair work – so that my pay = his and all current expenses will come to about 150 dollars pr. month.

To make this exact and plain I will say –

That after the preliminary expenses for the suggested improvements are made – including repairs for the old building – lumber – nails – paper for roof – bellows for forge – wire and staples for fence etc – and for which the fifty dollars already sent will pay all within some 10 or 12 dollars, (wire for fence was not included in my first estimate) – and after things are put in good running shape – I will for \$150. dollars pr. month =

Work myself = one hand = find team when needed = and this will be considerable in getting all the material on the quarry = also buy what new tools will be needed to replace those worn out = and all other items as glue, cotton – cambric – water glass – brooms brushes – paper – sacks and other packing material = all of which will have to be bought on starting in – for I run nearer out of all kinds of findings last fall than at any other time since we began work.

After the 1<sup>st</sup> of July it will cost more for help – and expenses will be more on account of lumber and other material for boxes which costs about as much as all other expenses combined.

This will be making the expense of the extra hand fifty dollars or less pr. month as current expenses average somewhere about 20 dollars pr. month I think.

If this is satisfactory to you we can start in, on or before Apr. 1<sup>st</sup> but if you do not feel like putting on more help 'till July. 1<sup>st</sup>" it will make no great difference to me – only that once in a while, for a day or two at a time – when taking out some heavy blocks – larger than I could handle alone – I would have to hire help to assist me for a short time.

Respectfully Yours  
M. P. Felch

P.S. Feb. 22<sup>nd</sup>

I will mail a map with explanations to-day. If anything is done toward getting some grounds set aside, it will have to be done soon,

I have been at work some to-day to see if I could find any more signs of the tail of Diplodocus (Box 26) – but without success.

It may be there will be more found as the last three feet of that - I had to work under the edge of a wall four feet high to get at it –

This lay close alongside the trail, going into the cabin from the quarry – and right across from our forge – and not four feet from it.

In the natural course of the work it would take two years to get to it – but I could take down a section of this wall for a few feet, in a week or ten days' time.

In the work to-day I got on to part of a singular vertebrae left by Brown as he worked here.

It will be remembered that from this point East, Brown done some work – located as "East End Extreme" and was abandoned by him to work over in quarry No. 2 – over the gulch.

**Marsh writes to Felch mentioning that he has been in Washington and seen Major Powell and asked him about preempting land in the quarry area. Powell says it can only be done on a small scale but Marsh will look into this further if he comes out this summer. He makes two suggestions for work which are concentrating on getting the remainder of specimens already exposed, and boxing as they go.**

Yale College Museum, New Haven, Conn.

March 11<sup>th</sup>, 1886.

Dear Mr. Felch,

I have been in Washington for some time, and hence have not been able to write, but will now try to make up.

In your letter of Feb. 11<sup>th</sup> you enclose a drawing of a tooth, probably you say from the Cretaceous. So far as the drawings show it might be a molar of a Ruminant, or allied mammal from the Tertiary. Send the tooth and I will tell you more about it.

When in Washington, I asked Major Powell, Director of US Geology. Survey about preempting land in you region. He thinks it could not well be done on any large scale. A quarter of a section with an important quarry on it, might be kept from sale, (as we have done in a few cases), but this alone would not help you. I will see what I can do when I come, as I hope to do this summer, but I fear it is now too late to do all you wish.

About work this year, let me make a few suggestions.

(1) Do not try to do too much, but if possible get the remainder of what you already have. Any fragments of Ceratosaurus, Diplodocus, or Stegosaurus especially the skull of the latter will be very acceptable. Also the hind feet.

(2) Would it not be well to box the specimens soon after taking them out? In all my other collecting, except your quarry this has been done. If boxing is delayed, pieces are sure to be lost, and these may be very valuable – quite as much so as the specimens themselves. One foot with all the fragments, is worth 20 feet that are not complete. Think this over.

I have great hope that your group system will keep the bones together so that we shall find both skulls and feet entire, when we work them out.

My assistants here say that gum arabic made thin toughens bones better than anything else. Paste (flour) is good for strips of cloth, and I believe you use both.

Hoping your health will be better with the spring weather, I remain

Yours Truly  
O. C. Marsh

**Marsh writes to Felch that he is very happy with the Stegosaurus skull sent. He now would like a hind foot. He will allow Felch to put on a man April 1<sup>st</sup> and to work slowly and concentrate on completing the skeletons already begun.**

Yale College Museum, New Haven, Conn.

March 17<sup>th</sup>, 1886

Dear Mr. Felch,

You have made us all happy by sending in Group Z(?), Sk 11, complete skull (or nearly so) of Stegosaurus, what we have been hoping and praying for, for years. It comes just in time to be of the most use, as we are just starting in on a restoration. Although badly broken, nearly all the pieces are here, with lower jaw in position.

Now get us a hind foot to go with it and we will let up on Stegosaurus. I hope we shall find one with this skeleton, - also something to tell us how the plates and spines go.

Yours Truly  
O. C. M.

P.S. If you can get the right sort of man, you may put him on April 1<sup>st</sup>, at the price you mentioned, \$150. per month for everything. I was afraid I could not do this, but this skull settles it. Better go slow, and use great care in taking it up and packing. Especially try to complete the animals we have in part here.

M

**Felch writes to Marsh about setting aside lands from Public Entry in order to have them reserved as fossil sites. He has the support of one congressman and others for this end but would like to wait until Marsh can come out. He also would like to know how Marsh feels about his proposition for pay and work.**

Canon City, Colo.  
Mar. 19<sup>th</sup>, 1886

Prof. Marsh  
Dear Sir

Yours of the 11<sup>th</sup> came in due season.

As the matter stand about withdrawing these lands from public entry, I think we had better wait awhile – or ‘till you come out, unless something should turn up – that one or two of the best fossil claims should be in danger of pre-emption, and in that case try and have them set aside.

I should think that if a petition was forwarded to the head of the Genl. Land Office in Washington to have these lands set aside for fossil explorations, and at the same time leave any or all such lands open for bona-fide Homestead Entry = bar out the pre-emption and timber culture nuisance = nests where all these frauds on the public domain are hatched = there would be no trouble in getting such a measure through – as it seems to be in the line of the present policy of that Dept.

Toward this end I could get many men of influence to take hold, besides the aid of one of our Colo. delegation in Congress, which has been promised if needed.

Your suggestions about keeping specimens boxed up as fast as collected I can follow out this season – should have done so last year - but the rainy season set in about the time we commenced work and our roads were in so bad a condition ‘till into October it was almost impossible to take a load of lumber for boxes over it during that time.

This year I shall try and have all lumber and other heavy material on hand before the rainy or flood season sets in.

I should use more gum arabic on bones than I do only it is much more expensive than any other preparation that I use = still would not dispense with the silicate solution – which under certain conditions does the best work of anything I have tried – especially where both rock and bone have to be removed together in a mass – and where both are shaley and rotten = with a hot drying day, I can make the water glass penetrate deeper and harden better than the gum.

As you did not say anything about the offer I made to work for \$150. pr month ‘till July 1” and furnish everything and an assistant, I presume you overlooked it.

When I made the proposition I had in view the hiring of a young man who offered to work cheap for this country, for two or three months – for the sake of learning the trade – after which time if he liked the work and done well at it he was to have more pay.

In regard to this I am not particular - only in the start – while cleaning up – building, and repairing the buildings, I will need the help one man for two or three weeks on such a matter.

If you should think best to accept the proposition made in my last please let me know soon.

That tooth I could not get permission to send – or I would have sent it – instead of trying to make a drawing of it – but I will see the man again who found it and try and get leave to send it on. It came from the shale beds on the South side of the river two or three miles below Canon – and is I think a trifle lower than the horizon of the Tertiary coal beds there.

With our nice warm Spring weather I am feeling first rate – and anxious to be at work again.

Respectfully Yours  
M. P. Felch

**Felch writes to Marsh that he has received his letters and is glad that the Stegosaurus skull has been finally found and is in good condition. He goes on to describe where various skeletons and parts of skeletons may be found.**

Canon City, Colo.  
Mar. 25<sup>th</sup>, 1886

Prof. Marsh  
Dear Sir

Yours dated 16<sup>th</sup> and 17<sup>th</sup> inst. came in due season.

I am glad to know that you have found the long hoped for Skull of Stegosaurus – and that it is in as good condition as it is.

I was well satisfied there was a portion if not all of a head in that group – as I wrote you sometime since.

It is a wonder, any of this skeleton has turned out as well as it has – for in our work in 1883 when we were working up end wise of the layers of rock – we worked clear up, and on to this skeleton in several places – and only left off – within a foot or so of this group that had the skull.

Since then it had weathered a good deal – season cracking in places so that in removing some of the blocks we found mud in the cracks, half an inch thick between some of them.

Now for the hind foot – go through Gr. 5 – Sk. 11 – which joined Gr. 1 on one side (East in the quarry) and if not found there try "Foot Gr. XX" and XX1 which joined Grs. 1 & 5 on the north side and if not found I shall be greatly mistaken.

Group No. 5 of Sk. 11 if unpacked and spread out according to the diagram, so as to have it look as it lay before taking up, will prove to be an interesting study – and will show the relative position of the different parts – I think – through the large dermal plate in Box 29 – and which lay directly over a rib and dorsal was taken out separate from the rest.

It was the position of this plate that gave me the idea – that the top of the plate rested on the top – of the neural spine and the lower end just covered the rib that lay horizontal at that point thus

 that there was one on each vertebrae – for the head of the plate was about the exact width, of the length of the centrum – and the whole width – or widest part of the plate – a little more than three times as wide as the head – and lapping on sidewise – would give three thicknesses at any point below the head.

Plates laid on over such a frame work – supported by those strong curved ribs would make a good design for an armor plated vessel.

The only vulnerable point for attack would be on the top, where the spines could be placed to finish up.

These are only surmises however, but if I should find in future explorations facts to fit the theory I should feel as well about it as I did when the united metatarsals turned up after a six months hunt for them.

About those vertebrae that were sent in 1883 – I will look back over records and see if I can locate them.

There were not over three or four at most – but with the seven taken out last summer – and what there is left here would make quite a long string.

Part of this series will be found in groups 12 and 13 of Sk. 9 – and it may be they started in group 11.

Whether they belong with Skull No. 2 or not is a question but if the big femur and humerus taken out that year were Brontosaurus they probably go with that skull.

I think Sk. 9 is Brontosaurus – and am positive that we shall get a skull on that when we get it all worked out – but it is too far ahead to get at this year. I shall have to start in and get out some of this tail before any other work is done as that comes first.

I will put on a man and go to work next Monday.

Respectfully Yours  
M. P. Felch

**Felch writes to Marsh that he is able to send the mammal tooth but that the owner , Thomas Stafford, wants it returned. He gives information on cervicals of Diplodocus requested by Marsh and how he will proceed with the new work of the season.**

Canon City, Colo.  
Mar. 27<sup>th</sup>, 1886

Prof. Marsh  
Dear Sir

I was in town yesterday for lumber for the quarry and met the gentleman who found the mammal tooth of which I sent a drawing – and he gave me permission to send it to you with the understanding that it should be returned to him after examination – so I have packed it in a box and will forward it the first time I go in again.

You can return it to him = Thomas Stafford, Canon City = or to me and I will see that he gets it.

In the same box is a calcaneum – that my daughter found up the gulch, toward the “White Hills” east of us – while collecting specimens. I thought it might be something new and so send it along.

You spoke of wanting some cervicals of Diplodocus.

There are three vertebrae, and portions of another, that from their location as much as anything else – I thought might belong with Skull No. 6 – marked and boxed as follows –

Ver. Nos. 1 and 3 – Sk. 6 in Box No. ~~26~~ 25

Group No. 4 Sk. 6 – Box 29

Ver. No. 2 Sk. 6 Box 4

All have diagrams with them.

Group No. 4 Sk. 6 has a part of a vertebrae – and also a part of a very large metatarsal – the remainder of this group being still in the quarry in good condition.

All of the above were close to each other = not connected = and probably belong to the same skeleton.

Ver. No. 2 (in 6 parcels) of this series can be easily examined and is I think in nearly perfect condition.

For an examination of Skeleton No. 9 Gr. 13 would be a good point as any to start in on; besides in this group are some of the tail of Diplodocus that matches up to those in “Group 14 B”

It would be some satisfaction to know whether No. 9 is Brontosaurus – and how much farther we have got to go to reach the head of it from Group 15 – the leaving off place last season.

As I said before - this - Sk. 9 lays so regular - and there is such a well-defined ridge along the whole course, not only of that taken out - but for a dozen feet ahead in a straight line - I almost know the skull will be found at the end of the series. I shall need some boxing cards when I get ready to pack up bones = the ones to go under the covers.

Respectfully Yours -

M. P. Felch

**Marsh writes to Felch that he has not yet found a Stegosaur hind foot. He lists other things to work for, especially mammals.**

Yale College Museum, New Haven, Conn.

Apr 2<sup>nd</sup>, 1886

Dear Mr. Felch,

I did not find the Stegosaurus hind foot in group 5, but hopefully one or two feet bones may be there. I want a foot together or so I can get it together if possible.

The Group in Sk 9, that I have looked over are very large vertebrae either Brontosaurus, or possibly a large Diplodocus.

I hope that you will get at the skull in this Sk. (9) this year, as later it will not be so much use. Try to run out the skeletons already found and let the new ones go, if you have a choice.

The Stegosaurus skull, and the small bones around it (oo), are just what I wanted, and are worth more than all the rest of the years fossils.

I want later a Laosaurus skull and breast bones (I have the legs and feet), and you may find one in your upper layer.

I wish also that you would keep a very sharp look out for mammals, in that layer just over the large bones. These must be there, and may be worth more than the large things.

Yours Truly  
O. C. Marsh

**Felch writes to Marsh more information on finding missing foot bones. He also where he has found the little round bones [ossicles] with the Stegosaurus skulls and a cervical vertebrae from the dump of 1884.**

Canon City, Colo.  
Apr. 8<sup>th</sup>, 1886

Prof. Marsh  
Dear Sir

Yours of the 2<sup>nd</sup> I received yesterday.

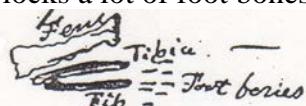
I was some disappointed in your not finding the foot bones in Gr. 5 – Sk. 11, and if they are not found in "Foot Groups" XX and XX1, Box 27 – there will be but one more place to look for them that I know of.

There is certainly enough bones to make a foot in the two groups – but they do not come in the regular position, as found in the hind foot of Allosaurus and it is seldom that any are found as good.

That these foot bones belong with Sk. 11 is evident = for there is not a sign of any other bones in the same layer near them, but the bones of this skeleton.

The other and last chance to find them, is to go back to the work of 1884 and look over the large blocks taken out with the sacrum and other bones of Stego's – Sk. 8

Under the sacrum and illium of that skeleton – was found the femur tibia and fibula, and at the distal ends of the last were seen on separating the mass into blocks a lot of foot bones.

The tibia and fibula were in position only doubled back thus  bringing the proximal end of the femur near the distal ends of the tibia and fibula.

In packing up these I made no record of what blocks or groups these foot bones were found – but I think I can locate them so as to be found with little trouble.

All of the sacrum, illium and leg bones – were comprised in two groups if I remember right – marked

Groups 17 and 18 Sk. 8  
Gr. 17- in Boxes 25 – 26 – 27 | 1884  
" 18 - " " 28 – 29

Many other bones of this skeleton were also packed in with these groups but in some of the large blocks that show the leg bones these foot bones can be found.

Those little round bones in clusters around the skull of Stegosaurus were found in

abundance around the (Skull) one found in 1884 – and also along the line of the cervical vertebrae = one of which I got last summer from the dump of 1884 and sent in Box 29 of the last lot.

This vertebrae is marked "Cer. Ver. Dump of 1884 and shows some of the same round bones.

I have not got to work much yet on bones – have been fixing up things and getting in order. In uncovering the work – I find the precautions taken last December to protect it – has done good service – as only a small portion where Sk. 9 was left in the wall had frost cracked or slacked off – and the most of this I think I can put in shape again.

All of the rest of the bones in the face of the wall – those of Sk. 6 – 11 – and the tail of Brontosaurus are apparently in good condition to commence on.

In regard to the manner of working – there is but one way to go on – the same as for the past two years – to work with the natural seams – take all along clean across the face of the quarry – good bad or indifferent, old and new as we come to it – any other method is liable to work ruin to many specimens as in the first seasons work.

I might go up on the line of the big vertebrae Sk. 9 to about where the skull should be found – and have success in getting that out separately, without damage to other specimens, but if there should happen to be something of equal or more value in the way and this be damaged or ruined we should always be regretting it.

I know this method is terribly slow and tedious – and half of our work has to be spent on bones that will probably be of no use whatever – but it is the only safe way – besides we can never know till a greater part of the work is done – what skeleton or bones are being worked out.

Until you come out I think it best to keep on as we have – and then if better methods can be adopted – by taking one thing at a time, by leaving out or throwing aside those skeletons fully described = or anything to conduct the work to better advantage we will take it up.

Respectfully Yours  
M. P. Felch

**Marsh writes to Felch, again asking for information on the layout of the bones in the quarry.**

Department of the Interior, United States Geological Survey,  
~~Washington, D. C.~~, New Haven

Apr 12<sup>th</sup>, 1886

Dear Mr. Felch,

We are puzzled to get the position of Sk 11 in the quarry, as you put no north or south mark on your diagrams of the groups. How did this beast head? and about how did the skeleton lie? You only indicated the general place of Sk 11.

We find two Groups 5. One is a rib alone.

The skull and neck becomes more important as we cut it out, and the position of the skeleton and its various parts become more interesting than ever. I have as yet seen no feet bones, fore or aft, that are certainly of this animal.

Yours Very Truly  
O. C. Marsh

**Marsh writes to Felch that he needs the 'up, down' position on the blocks as well as a north designation on all diagrams. This will help in determining the position of plates and spines on the animal.**

Department of the Interior, United States Geological Survey,  
Washington, D. C., New Haven

Apr 12<sup>th</sup>, 1886

Dear Mr. Felch,

We find one more difficulty about Sk 11. Did the animal lie on his belly or back? We thought we could tell by your markings on the blocks but have to give it up.

This year you better mark all blocks with "Top" for upper surface, and put N (north) on all diagrams large or small.

To determine the position of the plates, spines, etc on the back and sides of the animal will *require* much trouble, and the position and direction in the quarry become very important.

Is it possible that any of Sk 11. came in before this year?

Yours Truly  
O. C. Marsh

**Felch writes to Marsh to give a lengthy explanation to a question about the position of Skull 11 in the quarry. He into detail about quarry procedures and encloses an explanatory drawing.**

Canon City, Colo.  
Apr. 18<sup>th</sup>, 1886

Prof. Marsh  
Dear Sir

Yours in relation to the position of Sk. 11 as found in the quarry is received.

The enclosed outline may help explain matters, but so far as we could tell when working out the different groups the animal was badly out of shape – and the hind part of the body, partly on the neck - as would be seen if Group No 1 which had the head and neck, was matched up on Gr. No. 5 that had an illium and some other pelvic bones; also some of the dorsal vertebrae.

It will be seen by the sketch that the head came at S, Gr. 1 – and that through the whole group, out to the east edge that comes on to the west side of Group 5 the small round bones were most numerous – also that on the east side of Gr. 1 the illium was struck that continues clear across Gr. 5.

From about midway in Gr. 5, and on the right it seemed the dorsals and ribs lay in a more regular order and are so continued into the ground ahead.

One plate taken out, came from directly over where the head of a rib and dorsal vert. were apparently in position and there is a part of another plate now to be seen lying under more ribs and vertebrae.

There is a lot more of this skeleton to be worked out – as the anterior portion of the illium and other bones mentioned are now in sight – and with the exception of one humerus that lay almost under the nose of Ceratosaurus – and worked out at the same time, I do not think we have ever sent any of this skeleton before.

It may be in working out the balance we shall yet find more evidence of how the skeleton lays than we have yet – and also some foot bones – as both hind legs – or a part of both are still here – continued from Gr. No. 6. In regard to which side up the groups lay I believe I have heretofore explained that unless otherwise specified I group and mark the side up as found in the quarry.

Group No. 6 if I remember right was grouped bottom side up – and so marked on the diagram of that group.

With No. 5 I had a good deal of trouble – having to divide it horizontally = in places coming double.

About the two groups No. 5.

I will have to explain – that when we are at work on any special work – say as when we started in last season our center line of work was on the big ver. in Sk. 9 in the upper layer.

I intended then to work off all the upper layer first – then go back and take up what was in the under layer – and followed the plan 'till we found that the only way we could work under the big vertebrae was to work out a thin rotten streak between the two layers – and to do this we had to lie down flat, work out with chisels the rotten stuff, prop up 'till we reached the seam behind than take off the slice undermined and so on.

The lying down part was hard work so I concluded to go back, bring up the lower layer even, to give us room to work under without so much trouble.

In doing this and working by the seams the skeleton (Sk. 11) was found first where the shaded part of Gr. 1 is seen – and marked in sketch as “Break No. 1 Sk. 11”

You see in working out any bones, where there is a prospect of having to let some portion stay in the wall for a longer or shorter period of time – we must have some way to mark them before grouping – as that is the last thing done next to packing – so when we struck this, and being sure it was a new skeleton, I marked the break on the wall as “Break No. 1 Sk. 11” – and also marked the block to correspond – secured the fragments and located to place – and when we worked back and found more of the same animal – each break was marked in regular order – the pieces marked to locate where they belonged – and so on 'till we got up to “Break No. 6 Sk.” 11,” – and later on, after getting out enough more of the Skeleton to group up – that first taken out – went into “Gr No. 1.” “Break No. 2 & 3 – into Gr. 3 = “Break No. 5” = the rib = might possibly by mistake have been marked as “Gr. 5” – but had no connection with the large “Gr. 5” east of Gr. 1.

The whole method is somewhat complicated – but where there are two or three different skeletons to be worked out at the same time – and all kept separate = every fragment located to place = it takes a good deal of marking and figuring to keep track of things and make them come out all right – and a few mistakes are liable to occur – but as a rule I think the work will come out all right.

As I have said before – there is a lot more of this skeleton still in the quarry and before getting your letters I had written in regard to it – “Whether now that you had the head, if I had better spend as much time on the balance, or get it out and lay it aside?”

If not needed work might perhaps be more profitably spent elsewhere – still I suppose something new or interesting may turn up on this in working out.

The tail of Brontosaurus that I am now at work on will even run into the other illium of Sk. 11 – which just ahead comes up into the top layer of rock.

The position of this illium may tell something of how the skeletons lay when compared with the one sent in group No. 5.

The one here in the quarry I will mark on the sketch as "No.2"

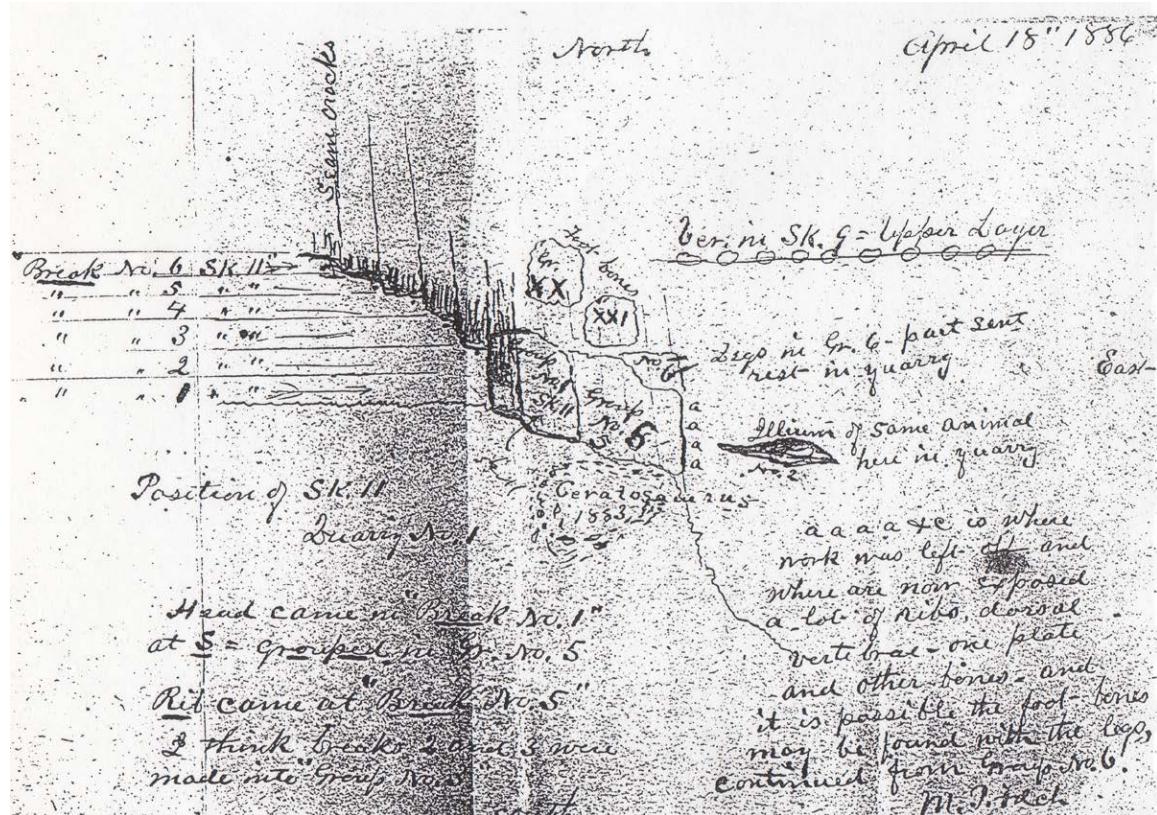
I can't tell you how it lays - only this - that the long anterior part lays thus  the distal end or front point pointing backward toward Gr. 5 - and that the rounded or outside of it lays up - which would I believe make this one the left illium.

Respectfully Yours  
M. P. Felch

P.S. 22<sup>nd</sup> Apr.

I wrote the above Sunday last but it has almost continually rained since, so that I could not send in till this morning.

M. P. F.



south

Apr 18<sup>th</sup>, 1886

Break No. 6 Sk. 11

" " 5 " "  
" " 4 " "  
" " 3 " "  
" " 2 " "  
" " 1 " " →

Position of Sk. 11

Quarry No. 1  
Head came in "Break No. 1"  
at 5 = grouped in Gr. No. 5  
Rib came at "Break No. 5"  
I think breaks 2 and 3 were made into "Group No. 3

Foot bones Gr. XX XX1

Group No. 1 Sk. 11 No. 6  
Ceratosaurus of 1883

Group No. 5 a a a a

Ver. in Sk. 9 = Upper Layer

Legs in Gr. 6 – part sent rest in quarry  
Ilium No. 2 of same animal here in quarry

a a a a & c is where work was left off and where are now exposed a lot of ribs, dorsal vertebrae – one plate and other bones – and it is possible the foot bones may be found with the legs, continued from Group No. 6.

M. P. Felch

**Felch writes to Marsh that he is inclosing the April statement and needs the money soon if possible. The quarry improvements have overrun the \$50. sent but he will settle with Marsh when he comes. The working comfort is so greatly improved the overrun is worth it. He goes on to give information on bones and current work.**

Canon City, Colo.  
Apr. 29<sup>th</sup>, 1886

Prof. Marsh  
Dear Sir

Enclosed please find my statement for April.

We are all very short of money and if you can remit soon will be greatly obliged.

In the above statement I have not figured the amount expended for improvements – or given credit for the fifty dollars sent for that purpose, as the amount (Expenses) with eight days work done in March overrun the fifty dollars – but I will let that stand over 'till you come out – when you can see my bills, and also what has been done – and we can fix up the matter then.

I shall not be particular about this anyway – for the comfort and convenience in working since getting things in shape – is a great item to me.

The weather has a last cleared up warm and we have been able in the past three days to accomplish more than in two weeks previous – but the long rains have soaked through every crack and crevice from top to bottom of our working ground so that it takes longer to harden up and dry the work than if not so wet.

Diplodocus

I send a sketch of one of the vertebrae in the tail of (Brontosaurus) which we have now got worked out up to the 15<sup>th</sup> in the series counting those taken out last year.

This brings us up to a large bone of some kind – that I struck on to in taking out the big humerus last year, sent in Box 26.

The humerus lay over this tail and this large bone – close up to the point where the coracoid joins on = but it seems = what there is exposed of it = too large and clumsy for a coracoid.

The vertebrae are coming out well – and so far have found four chevrons – which are detached from the vertebrae.

The one figured in the sketch lay alongside this vertebrae and probably belongs with it. They are singular looking things for chevrons.

I think I will not go on any farther at present on the tail – as this big bone will have to be removed first = but go to work next on the illium of Stegosaurus which lays to the right and partly under where the tail lay – and this out of the road will enable us to take out more of Sk. 11,

adjoining where groups No. 5 and 6 lay – and we may strike on to a foot in the next group of this skeleton.

I received your photograph and I, with my family – sincerely thank you for your kindness in sending it to us.

Respectfully Yours  
M. P. Felch

P.S. I will send the sketch of the vertebrae made by my daughter separate from this

M. P. F.

Canon City, Colo.  
Apr. 30<sup>th</sup>, 1886

Prof. O. C. Marsh  
To M. P. Felch Dr.

To work; for April 1886; self, help, team and expenses, at one hundred and fifty dollars pr.  
month ————— \$150.<sup>00</sup>

Rec'd pay -

**Marsh writes to Felch that his drawing of the caudal vertebrae shows it to be Diplodocus and asks if he is sure it goes with the tail they thought to be Brontosaurus.**

Yale College Museum, New Haven, Conn.

May 3<sup>rd</sup>, 1886

The drawing of that caudal vertebrae rec<sup>d</sup> today shows it to be Diplodocus. Are you sure it goes with the same tail that we thought to be Brontosaurus If so the base of the tail in both is alike and only the lower end of Diplodocus has the double chevrons.

Yours Truly  
O. C. Marsh

P.S. I enclose check for \$150.

**Felch has received the vouchers. Things are going well at the quarry.**

Cañon City, Colo . , May 4<sup>th</sup>, 1886

Prof. Marsh

Dear Sir

Rec'd vouchers (\$170) this morning which I return by this mail.

Am getting along splendid and shall in a week or so be ready to take out another group of Sk. 11.

In the next group there will certainly be a pubis and part of an illium – these join Gr. 5.

Will write and send on a diagram in a day or two of their position.

Respectfully Yours

M. P. Felch

**Felch writes to Marsh that they, with luck in hardening, have taken out a scapula whole. He gives details on other bones including an unusual bone with a hole in it that he mailed to Marsh last week with a jaw. He then mentions a six inch layer filled with all kinds of small bones, teeth, crocodile scales, etc.**

Canon City, Colo.  
May 16<sup>th</sup>, 1886

Prof. Marsh  
Dear Sir

We have done I think a pretty good weeks work – having taken up whole a big scapula = and though this was as usual – with all our large flat bones cracked and broken in all directions = by our process of toughening – hardening and pasting got it as hard as a marble slab – and have taken it out whole without losing a fragment – and I think I can pack and box it in this way to ride to New Haven safely.

It took some nice engineering to get the thing turned over after the top was in good condition – but we made a complete success of it and got it bottom side up without a break.

Partly under and close up to one edge we also took out a group of carpals similar to – and probably of the same skeleton as those found last season in Foot Group XX – XX1.

The diagram or pattern of the scapula sent with this shows the exact position of these foot bones – some massed together others separate.

A large leg bone was also found – running diagonally under the scapula – but nearly a foot deeper in the rock – coming in the top of the hard and lower layer of bones.

This leg bone must be a femur – is long for its diameter and nearly straight – cannot have any connection with the scapula or Sk. 9 - but may prove to belong with the foot bones found, above it.

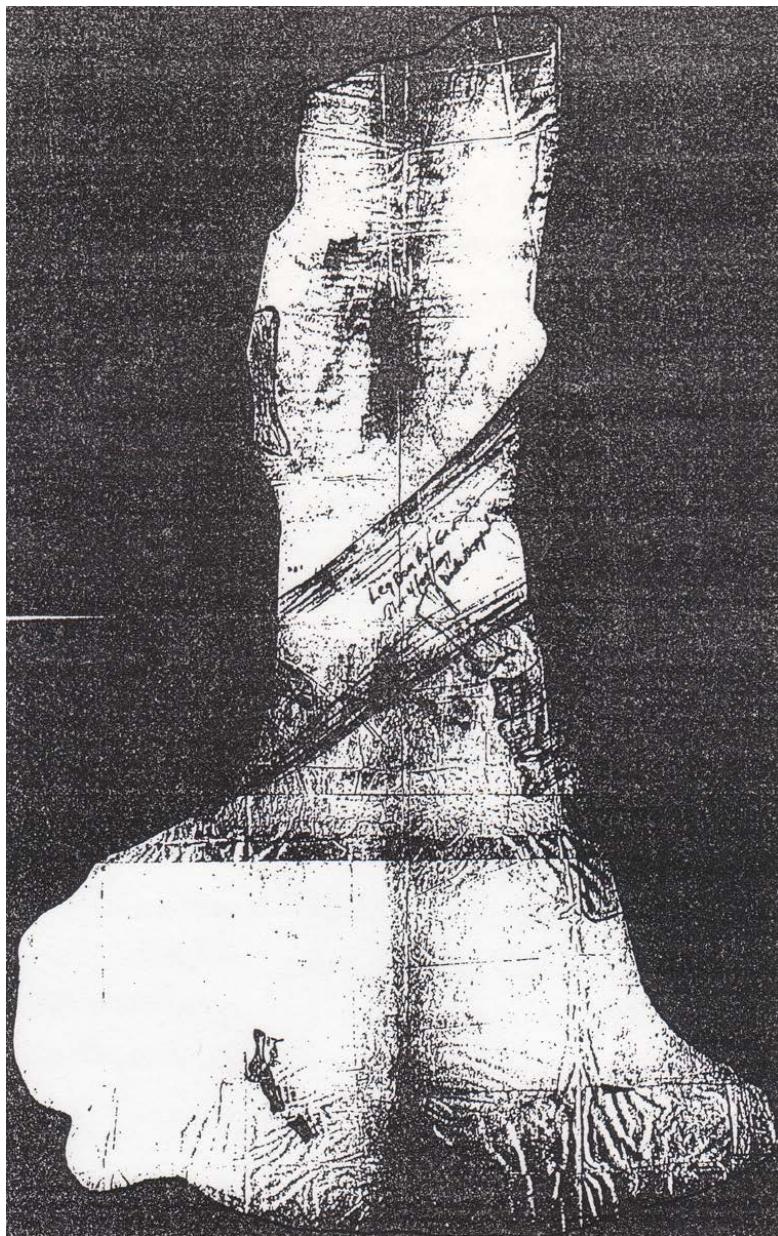
Another singular bone was found here – sent in the box by mail with the jaw last week – a bone with a hole through it – looked as much to me as a water worn vertebrae as anything else – though I marked it – “Foot Bone” (= jaw)

All around these bones is a strata some six inches thick = between the upper and lower layers, full of all kinds of small bones – teeth – crocodile scales etc – and from this layer the jaw was taken – and at first supposed to be but one of the little plates or scales.

To go through this mass carefully and hunt it all over, would keep one employed most of the time if it was an object to do so, but we have never made a specialty = laying it aside for a rainy day, or in keeping my assistants at it when there was nothing else for them to work at to good advantage.

We have got as far east after taking up the leg bone as I care to go at present – shall work off some of Sk. 9 next – and this will uncover quite a large extent of Sk. 11 – when we shall go at that, and have it most all by itself I hope – so as to make a clean job of it as fast as we go.

Respectfully Yours  
M. P. Felch



Leg Bon...  
...4 foot long...

**Marsh writes to Felch that he needs the number of vertebrae, from the last block sent, to the sacrum and gives Felch instructions for doing this.**

Department of the Interior, United States Geological Survey,  
Washington, D. C.,

May 18<sup>th</sup>, 1886

Dear Mr. Felch,

We are trying to make a restoration of Stegosaurus, and Sk 11, is our main defendant. Please let me know, as soon as you can, just how many vertebrae there are between what we now have and the sacrum. There can't be more than 6 or 8, but it would be an advantage to us to know soon. If you find out without much trouble, do so, but don't uncover the vertebrae very much and especially don't disturb the plates. I rather not know than to have the blocks marred or cut so that any bone would be injured or its connection lost with those around it.

If the vertebrae are lying regularly, it will be sufficient, I think, to measure the space from the block we have or the wall to the sacrum. We know the length so well that this would do, if you could not count the number. Send both if you can conveniently, but keep all perfect.

When you come to the tail look out sharp for both plates and spines and keep the position.

Yours Truly  
O. C. Marsh

**Marsh writes to Felch that the small box came and the small jaw is either new or a fetal Stegosaurus. Sk. 11 is going very well and he wants Felch to keep on with it, as it may clear up the mystery of the spines, plates and hind legs.**

Yale College Museum, New Haven, Conn.

May 18<sup>th</sup> 1886

The box with the small specimens came today by mail. The little jaw was especially interesting, as it is either new or a foetal Stegosaurus.

Sk 11. is turning out better and better. We have about 20 vertebrae in position, up to where you left off in the rock. It is very important to follow on from this point, and get all the rest of the skeleton. We leave off at blocks X, Z, and (A+). So far the plates are all in position, and if you can get the rest of the skeleton, we can then clear up the mystery of the plates spines and hind legs.

Therefore you must make sure of these if you get nothing else this season.

There is an attack on the Geology Survey just now in Washington, but I don't think it will amount to much.

Yours Truly  
O. C. Marsh

**Felch writes to Marsh that more foot bones and two claws have been found but they do not appear to be in order so may not be of much value. They are moving slowly as they should be coming on to Sk. 9, which they need to do before Sk. 11 which is lower. He wishes that Marsh could come out early this year, and look over the lay of the bones to indicate a course of work that would be to better advantage.**

Canon City, Colo.  
May 23<sup>rd</sup>, 1886

Prof. Marsh  
Dear Sir

We have nothing of any special interest to report this week, though in working around the leg bone mentioned in my last as lying under the scapula more foot bones including two claws certain were found – probably of the same lot as those recently taken out close by.

There seems enough of these now to restore a whole foot – but if I understood what you wrote in regard to the foot bones in Stegosaurus – they are not of much value, unless coming in the same order and position – as in the animals foot when alive.

If such be the case it is going to be a somewhat difficult matter to figure out many correctly - for with the single exception of one of the hind feet in Allosaurus which came almost exactly as figured all others have been separated more or less.

Having worked down the top layer in one direction = East = over Sk. 11 – as far as necessary for the present we have begun to work back on the left or north side to take off the top and shall continue in that direction 'till we reach Sk. 9 and take out some of that before breaking into the bottom layer with Sk. 11.

We have to go slow here – as we are treading on dangerous ground, being now pretty well up in the neck on Sk. 9 and are liable any time to be getting on to the skull in case it should be separated or swung around a little from the general course we have followed it - still it may be a good way off or entirely missing – but I want to make sure and not injure it if it lies in our path, and so go slow and take all the precautions possible

We find in working back other bones scattered along – the last one being apparently a large cervical vertebrae – aside from those in Sk. 9 – which may be of another skeleton.

Two were found in the same manner last year – that were sent in groups 12 – 13 & 14 of Sk. 9 I think – that lay alongside but not connected with the regular unbroken series of Sk. 9.

I am trying to work the quarry to the best advantage and make the most progress I can with the help I have – but it seems to go on slow and I often wish that if you come out this season it might be early, as you might by looking over the ground and see how the different skeletons lie make suggestions as to putting in the work to do the most good just now.

Transcribed at the Garden Park Paleontology Society's Dinosaur Depot Museum, Cañon City, Colorado.

Original material housed at the Marriott Library, Special Collections Division; University of Utah, Salt Lake City.

Respectfully Yours

M. P. Felch

**Marsh writes to Felch that the little jaw was very important and probably Nanosaurus.  
Marsh has eight plates of Sk. 11 and gives Felch instructions on getting more of it and how  
to deal with a large scapula.**

Yale College Museum, New Haven, Conn.

May 24<sup>th</sup>, 1886

Dear Mr. Felch,

I enclose vouchers for May, as before, which please return as soon as convenient.

The bone "with a hole through it," sent by mail was merely a piece of a jaw with the tooth out. The little jaw was very important and I am grieving deeply over the loss of the front half inch. We have the impression but the piece itself is missing. This little jaw is one of the most important things you have found, and is worth bushels of large limb bones. It belongs apparently to my genus Nanosaurus, and is the smallest known dinosaur in this country. You may find some more valuable jaws in that layer.

Of Sk. 11. we have now eight plates lying in regular order from the skull backward, to the face of the wall. From here on you ought to get the rest of this series. This is the most important part of Stegosaurus now, and if the skeleton lies at all regular you ought to get the whole thing in position, plates, spines, and hind feet. If you send this to us in even large blocks we can cut it out.

The large scapula you mention as taken out entire might be sent in two or three pieces if too large for one box. We can put such large bones together easily, if the fractures are marked.

Do you find any more mammals in that layer?

Yours Truly  
O. C. Marsh

**Felch writes to Marsh and gives detailed reasons as to why he wishes to proceed in a given manner with Sk. 9 and Sk. 11. Smith will be able to help for a day.**

Canon City, Colo.  
May 27<sup>th</sup>, 1886

Prof. Marsh  
Dear Sir

Your letters of the 18<sup>th</sup> I rec'd a few days since.

I have looked the matter over carefully to see if it would be safe to split off one or two runs of blocks from the face of Sk. 11 to get the measure and number of dorsals up to the sacrum – and find it won't do 'till one or two groups of Sk. 9 are first removed.

These dorsals do not crop out on the top surface exposed – but are buried from eight inches to over a foot in depth, there being a pubis – illium ribs etc laying directly over them.

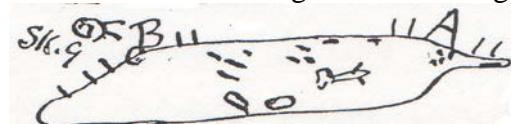
I send two diagrams, No. 1 a section of the top surface over the dorsals = and No. 2 the full front face of the wall = vertical section = where all the bones show of Sk. 11 that correspond with the back side of groups 5 and 6 that you have just worked out.

Diagram No. 2 is the exact size of this front – and shows all the bones there in view – size relative position – distance apart etc. and it will be seen here that the dorsal is about half way down – with a mass of bones above it.

If the sacrum is in position with the center of the pubis and illium – it would be somewhere from two feet to thirty inches from the first dorsal in the face of the wall up to the sacrum – and this measure will be not far from correct.

My reasons for not trying to open this up now – are that the run of blocks in Sk. 11 – go back under the big vertebrae in Sk. 9 and if 11 is moved first it will endanger the front in Sk. 9 – for as I have written before in regard to this, after uncovering this Spring we had long continued rains that completely saturated the soft rock in the upper layer – and since the dry weather set in the front has so dried and slacked up that in order to keep it from tumbling down I have had to prop and brace up this front where the big vertebrae are, to keep it in place 'till we got time to take it down.

Another reason is when I began taking out Sk. 11. I want to start on the extreme left of the section – and that is right under the big vertebrae. This outline will show how I want to work it



If we put in the gads to split off at A the first break will be just back of the dermal plate (see diagram No. 2) the next in the dorsal – the next in the leg bones, as everywhere – in breaking rock across, it is bound to break where there is a bone – there being the weakest place.

By getting well stripped down so as to find the natural seams – we start in at B. the strongest place in the rock – and where the resistance is the greatest – get our gads well set there and work toward A we get a clean break with little fracture the whole length and then can separate this in the most favorable places.

I have got this thing down to a fine point – and where I can see the work ahead – can tell to a hair where to start in to the best advantage.

These are the reasons I had rather wait awhile – for though I could in one day split off one or two runs – I know it would fracture a good deal worse – besides damaging Sk. 9 and that I am just as anxious to do good work on as the rest, for I think when you start in on restoration of Sauropoda this will be as valuable as Stegosaurus.

Respectfully Yours  
M. P. Felch

P.S.

In about a week from next Sunday if I can get ready Smith says he will come down and help on this for a day- when we can get- what- you want.

M. P. F.

**Felch writes that he has and will return the vouchers. He is sorry a small jaw was damaged and explains how jaws are often confused with the numerous crocodile plates by less experienced workers. The extra efforts to secure the quarry over the winter have really paid off.**

Canon City, Colo.  
May 30<sup>th</sup>, 1886

Prof. Marsh  
Dear Sir

Yours of the 24<sup>th</sup> I rec'd with vouchers, which I return signed with this.

I was sorry the little jaw was injured = but my assistant who found it, thought it only one of the numerous pitted crocodile plates which are so abundant in the quarry and in raising a thin fragment of rock that covered the teeth must have done it then – though I thought it perfect with only the exception of where he scratched the tooth nearest the base of the jaw.

There are hundreds of these pitted plates and both myself and Smith have been deceived many a time – thinking they were jaws – and it is most a wonder this was not thrown aside – for the part first seen (about the middle part) had every appearance of one of those pitted plates.

We shall be more careful in future of even these.

I have quite a large block with two small leg bones and some other small bones in sight that came out close by from where the jaw lay – that I will mark and record so you can find it = and send on with the rest at the close of the seasons work for you to work out there.

All of this strata is rich in small bones – but it takes a good deal of time to go through them as they should be in order to get all there is.

I have little fears now but what we shall be able to get the remainder of Sk. 11 in as good if not better condition than what we already have – one thing is certain – I have not lost a fragment or particle from the face of the wall where work was left off last year – the break is as smooth and clean as when first made and I will guarantee that it will match up to a hair on to the backside of Group 5 and 6 if that side is in as good shape as mine is here.

I took special pains after quitting work last season to make it secure and think it has paid although then I did not think it would prove of so much value as it has.

I have got ready to take down some of Sk. 9 – and when that is out of the way shall have considerable lot of ground cleared off over 11 – so as to take that out in good condition – and with as few breaks as possible.

Smith has promised to come down for a day or two when I get ready to remove it – and we shall be able to do good work = both of us are as anxious as you are there to know what there is ahead – but we have to go slow – and make no mistakes to be sorry for afterwards

Respectfully Yours  
M. P. Felch

Canon City, Colo.  
May 31<sup>st</sup>, 1886

Prof. O. C. Marsh  
To M. P. Felch Dr.

To work for U. S, Geo. Survey for the month of May 1886 – self – help and team at \$175<sup>00</sup> pr  
month \$175.<sup>00</sup>

Received payment  
M. P. Felch

**Felch writes to Marsh that They are still sorting out what belong to Sk. 9 and Sk.11 and think some vertebrae they marked Sk. 6 last year may actually be part of 9.**

Canon City, Colo.  
June 8<sup>th</sup>, 1886

Prof. Marsh  
Dear Sir

I have delayed writing, hoping every day that we might be able to open enough on Sk. 11 to get the points most needed just now, but finding it more difficult than we expected – with no immediate prospect of finding more than we know now I will write up the situation as it stands.

It rained all the first part of last week – and such time as we could work, was done on Sk. 9 and in working out some of the strata containing the small bones – getting some good specimens of the latter – but no small jaws.

We took off the loose and shattered part on the front of Sk. 9 and then took off a run of blocks clear across the front where the big vertebrae are – and had better success in this than we have ever had on this skeleton as both rock and bone are firmer and in better condition as we go in.

One large block here shows up a transverse section – with the centrum and all one side including



the cervical rib thus and measuring from the center of the centrum at a, to the outside of the rib at b it is seventeen inches making the transverse diameter of the whole almost three feet.

On the left side of the main series we took out several of the free cervical ribs – and I think now that all of those grouped and marked last year as "Sk. 6" are nothing more or less than portions of these big vertebrae broken away from the main lot.

I hope the skull of this has not become detached in the same manner – for I have been sure we should find it in place and have expected to get a good one where the rock is in such good shape to work.

Sunday, with Smith to help us we made a break into Sk. 11 – and with all our precautions to avoid breaking up – could only remove it in small blocks – as there is scarcely a rift or seam to be found after getting in where the bones are crowded the thickest – and you will find when you get the rest, that all around the pelvis the bones are massed in more closely even, than they were in group 5 of this skeleton.

Up to tonight we have only removed some fifteen inches across from the front to the backside and from top down to the bottom, and we are only sure of finding two dorsals in this – but there cannot be many more for we have got almost quite up to the ends of both leg bones and close on to both the right and left illium

We can here see how the animal laid out – back to the South on his left side – the left illium some higher than the right and legs in same order – on one of which the ischium is laid out nearly the whole length – with ribs in place above and below - and under the left illium but a little outside are two large dermal plates – “shingled on sidewise” as when the beast was alive.

I am going to take special pains to secure these as found lapped over each other – and also keep their connection good with the rest.

We also find underneath the bones of this skeleton, almost always on the marl bed some very singular bones that I cannot make out whether they are smaller dermal plats of this skeleton or some bones of another but all will be sent and if not grouped in with Sk. 11 – their relative position will be marked out.

Respectfully Yours  
M. P. Felch

P.S. 10<sup>th</sup> June

As I could not have a chance to send in my mail 'till morning will say that yesterday and to-day we have had pretty good luck – removing one block from this mass of hip and leg bones that took four of us to lift from its bed.

This takes it in back some twenty inches to two feet farther – and I think shows in one place something like the transverse sections or processes of the sacrum.

The whole is a mass of almost solid bone – but as yet we cannot trace out any dorsals

As we can only fix up and harden up one surface at a time – it will take us two or three days to get round it all to see what we have – and as soon as that is done I will investigate far enough to measure and make a few diagrams to send on.

M. P. F.

**Marsh writes to Felch telling him of the progress on preparation and figuring of Sk. 11. He hopes the few remaining parts will be found, especially the feet.**

Department of the Interior  
United States Geological Survey  
Division of Vertebræ Paleontology

New Haven, Conn.

June 11<sup>th</sup>, 1886

Dear Mr. Felch,

Enclosed find check for \$150. for month of May, which with advance makes \$170. as per account sent.

I am glad you are working with great caution on Sk. 9, and Sk. 11. The feet bones you mention are all important, and should be kept in the rock as much as possible, especially the carpal, and toes. A single piece lost may take away half the value. Of some 12 or 15 feet of Sauropoda from your quarry now here we have not a single one with all the bones present. In many cases, of course the bones were scattered soon after death, but I hope you will yet find one or two with all in place.

In neither Sauropoda or Stegosauria do we yet know just how the three outer fingers and toes were terminated, that is whether there were claws or only small knobs. Hence every foot bone is important.

We find that one fore leg and foot of Sk 11, is nearly entire, (left) and you must have the other (right) in the quarry. This one (left) has only 4 toes, the thumb being lost. It is therefore important to look out for the right fore leg and foot. The left was in Blocks A B and D. of Group 5.

We have made three fine lithograph plates out of Sk 11. and we shall make many wood cuts out of other parts of Sk 11. The sternum and hind foot are what we now most need, after the dermal plates and spines which you will I think find in place.

Yours Truly  
O. C. Marsh

**Felch has received the check and a receipt is enclosed. Work is progressing.**

Canon City, Colo.  
June 17<sup>th</sup>, 1886

Prof. Marsh  
Dear Sir

Yours of the 11<sup>th</sup> • with check was duly received, for which please accept our thanks – and find receipt enclosed.

Nothing of special interest has turned up since I wrote – as we are – and for some days will be cleaning up and packing some of the material accumulated during the past three weeks.

With this work however I am doing a little at a time on the dermal plates – as they lay outside, are in loose and shattered rock – and have to be handled with the utmost care to keep them in place. Will write Sunday and send a diagram of the manner in which they lie – size – shape etc

Respectfully Yours  
M. P. Felch

**Marsh writes to Felch that they have found the other fore foot of Sk. 11 curled under the first one but with the toes scattered. He continues to hope for more of it.**

Department of the Interior  
United States Geological Survey  
Division of Vertebrate Paleontology

New Haven, Conn.,

June 26<sup>th</sup>, 1886

Dear Mr. Felch,

I enclose vouchers for June as before, which please return as soon as convenient.

We have found the other fore foot of Sk 11 curled under the first one, but with the toes scattered. We are hoping that you will give us the full series of vertebrae from where we leave off, and especially the position of spines and plates all along to the end of the tail. Don't let anything prevent our securing all the rest of Sk 11 in full as good order as the part we have. It is our last chance as the plates of the volume are nearly finished

Yours in haste  
O. C. Marsh

**Felch writes to Marsh about removing more dermal plates. He gives details on the continued sorting of bones from Skeletons 9 and 11. He ends with a postscript about a disastrous flood through his ranch but the quarry escaped severe damage.**

Canon City, Colo.  
June 27<sup>th</sup>, 1886

Prof. Marsh  
Dear Sir

Work has gone on about as usual the past week – nothing of special interest having turned up.

The last, and largest of the dermal plates, of which a diagram was sent we took out in almost perfect condition, though separated into several sections.

Since removing that we have taken out another very large block – and two smaller ones on a line with the vertebrae – and in one of these smaller blocks containing one and a half of the anterior caudals, find a connection with the large plate.

That is - ~~an~~ one end of the block having the caudals – has the cast and a little of the rough rugose surface showing where the plate lay – and with these points marked on the blocks removed – together with the diagram, the whole thing can be made plain, as I feared it would not be when I had to work the plates out separately.

I may have been over-particular on some of these points but I wish you to get the whole skeleton there exactly as we find it – and also to keep the connection as accurately as possible – so there can be no guess work about it afterwards – or confusion in restoring the different groups

It seems that in this large block (the 2<sup>nd</sup> large one) there is as much of the sacrum as in the first one, of which I sent an outline two weeks since.

It is possible it may be broken apart – with a portion in each – where there are so many bones crowded into so little space – with but few points exposed in the rock it is hard to tell just what there is to a certainty. Of one thing however we are certain and that is – in one direction we have got through the body and into the tail, some three or four vertebrae at least

To the left of where these last blocks came out however is a portion of one large leg bone – and the whole of two smaller ones - the last probably being the tibia and fibula – and underneath all is a lower section next to the marl where we shall have to look for the feet and other missing parts of this skeleton.

These leg bones on the left side run under Sk. 9 – some six or seven feet from the front, all of which must be taken down of Sk. 9 before we can remove them entire.

In regard to the other fore leg – I don't believe it is here – for I took out and sent the humerus in 1883 – as will be seen by looking on the quarry map of that year.

It lay almost directly under the nose of Ceratasaurus and but a few feet from where we now are – and must have belonged with Sk. 11 as no other bones of Stegosaurus but Sk. 11 have been found in this division of the quarry.

In all of the work so far on Sk. 11 I have seen nothing that resembles a spine with one exception – and this a short one six or seven inches long just back of the sacrum.

There may be more but they do not show up.

After cleaning up what we have on hand again the next three or four weeks will have to be put in mostly on Sk. 9 I expect.

The last block on this Sk. 9 taken out, shows I believe the cervical rib united to the centrum. Does this show we are anywhere near the head?

Respectfully Yours  
M. P. Felch

Enclose "please find statement as before – to cover money advanced.

If you can send me this (\$150.<sup>00</sup>) so that I can get it by the 10<sup>th</sup> July will be greatly obliged as one of my men whose time is up then will leave and wants his pay in full up to that time.

Very Respectfully  
M. P. Felch

P.S. Tuesday 29<sup>th</sup>

Since writing my letter of Sunday (27<sup>th</sup>) we have met with a great damage and loss by flood.

A cloud burst took place about 11 P.M. Sunday Eve – cutting my ranch – land, crops and fences so that 500 dollars will hardly repair the damage.

The quarry grounds escaped the worst and but little damage was done there.

M. P. F.

Canon City, Colo.  
June 30<sup>th</sup>, 1886

Prof O. C. Marsh  
To M. P. Felch      Dr.

Transcribed at the Garden Park Paleontology Society's Dinosaur Depot Museum, Cañon City, Colorado.

Original material housed at the Marriott Library, Special Collections Division; University of Utah, Salt Lake City.

To work for U. S. Geo. Survey, self- help, team and expenses from June 1<sup>st</sup> to June 30<sup>th</sup> inclusive  
at \$170.<sup>00</sup> pr month \$170.<sup>00</sup>

**Marsh writes to Felch that he is sorry about the cloudburst and hopes the damage is not as bad as Felch thinks.**

Yale College Museum,  
New Haven, Conn.

July 3<sup>rd</sup>, 1886

Dear Mr. Felch,

Yours of 27<sup>th</sup> is at hand. I enclose check for \$150. as you request, at once.

I am very sorry for your misfortune by the cloud burst, and hope it will not prove as bad as you think.

Yours in haste  
O. C. Marsh

**Felch writes to Marsh that he is recovering from the storm but has suffered a serious drawback. Work is again progressing in the quarry.**

Canon City, Colo.  
July 4<sup>th</sup> 1886

Prof. Marsh  
Dear Sir

Yours of June 26<sup>th</sup> • with blank vouchers I did not receive 'till yesterday owing to delays on the railways east of us – which have been damaged heavily by recent storms.

I return the vouchers signed with this.

The terrible storm of a week ago tonight - has given me a serious drawback for this year, and caused a little delay in work – but we have got things to rights again as much as we can at present, and work is progressing again as usual.

We have removed since my last, some of the lower section – next to the marl bed – and find a mass of bones as badly crowded as in the layer above.

This last section comes directly under where the sacrum – pelvic – leg bones – and the first of the anterior caudals lay – and we find more leg bones, plates, spines, and some foot bones.

Whether all belong to Sk. 11 is more than I can tell - but it seems we have a full complement of leg bones without these last found.

I send a sketch of one of these foot bones as near as I could get it from what shows in the rock.

The whole of the distal end was exposed – and I have tried to show how it looks with but little success however.

The place I have marked "Ball" is on about a level with the rim or outer edge and there is a corresponding cup or deep depression in the other half alongside.

This may be common to all however but I have never noticed them before.

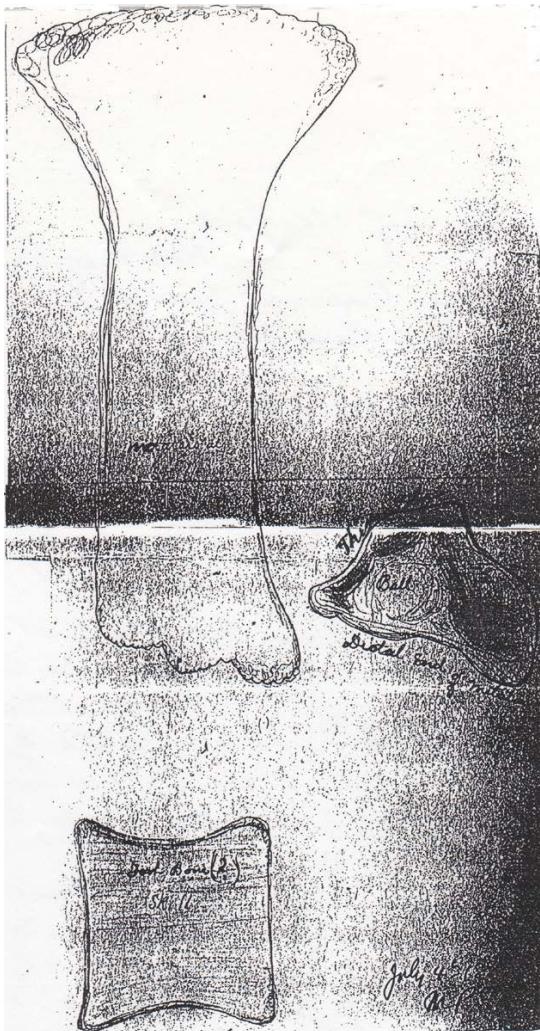
Another metatarsal lays close by this a little shorter but more clumsy than this one.

Other small foot bones are seen at different breaks but not exposed to get a good view of them.

From the position as far as I can judge the bones in the hind feet are going to be scattered more or less – but if we get all of both hind feet (and I see no reason why we shall not) I hope a restoration can be made of them.

The vertebral series so far I am sure are unbroken and complete = how they will hold out toward the end of the tail time will tell.

Respectfully Yours  
M. P. Felch



Metatarsal  
The...      Distal end of metatarsal      Ball

Foot Bone (?)      Sk. 11

July 4" 1886  
M. P. F.

**Felch writes to Marsh thanking him for the last check and they continue working on the difficult Skeleton 9, which is described as having nothing new and being very difficult. He lost about \$30.00 worth of lumber stacked below that washed away in the storm and must get more to continue boxing.**

Canon City, Colo.  
July 12<sup>th</sup>, 1886

Prof. Marsh  
Dear Sir

Your check came in due season – and in time to be of much use to me – for which I am greatly obliged

Enclosed find receipt for the same.

We are at work again on Sk. 9 and shall keep on this now sometime before trying to take out any more of Sk. 11.

Several times we have tried to work off a little of No. 9 – hoping to get room enough to take out No. 11 first but the latter on the left side is in large blocks that so run under No. 9 as to make it hard and difficult to get at it to advantage – so now we shall keep at work in the upper layer 'till we get plenty of working room below.

There is nothing new in this Skeleton (9), dull slow tedious and uninteresting, and I shall be glad when we reach the end of it – for all the way along in this – it has been the worst job we have ever had on the quarry to do good and satisfactory work on.

Respectfully Yours  
M. P. Felch

P.S. 15<sup>th</sup>

My team went to the mountains last week and I have had no chance to send this 'till to-day, when I go in myself for some lumber to make boxes.

In the big flood among other damages I had about thirty dollars worth of lumber washed away that I had piled up near the foot of the trail – away above where water had ever been and where we thought it safe

M. P. F.

Canon City, Colo.  
July 10<sup>th</sup>, 1886

\$170.<sup>00</sup>

Rec'd of Prof. O. C. Marsh one hundred and seventy dollars for work in collecting fossil  
specimens --from June 1<sup>st</sup> to June 30<sup>th</sup>, 1886 inclusive.

M. P. Felch

**Marsh writes to Felch (mistaking his name) about the spines on the tail of Sk. 11. He cautions them not to say anything about matters to outsiders.**

Department of the Interior, U. S. Geological Survey,  
~~Washington, D. C.~~ New Haven

July 16<sup>th</sup>, 1886

Dear Mr. Lakes,

I hope you find Sk 11 still entire, and can keep the connection with what we have here.

You will find spines (in pairs) on the tail, and probably four pairs. It is only important to keep them in position as far as possible, so that in no possible way can the connection, and relation to the other part be lost.

Of course you know the importance of not letting your men say anything about such matters outside.

Sk 11. promises to clear up several doubtful points and we are waiting for the rest with some impatience. Please do not try to uncover any part that you can send in the rock, and keep the connection. We can cut every bone out here.

Yours in haste

O. C. Marsh

**Felch writes to Marsh that the Sk. 9 skull may not be present after all, they will look a bit further and go back to No. 11. Between the two skeletons is a thin soft layer with a good many small bones in it, including a small vertebra which looks like Diplodocus but is only 1" long. He has had no mail from the East due to wet weather and railroad washouts.**

Canon City, Colo.  
July 25<sup>th</sup>, 1886

Prof. Marsh  
Dear Sir

I am sorry to have to report this week in regard to Sk. 9 - that we have come to a break in the series of neck vertebrae without finding the skull.

I have felt so sure that this line of vertebrae would remain unbroken to the end, that on coming to this break I am greatly disappointed.

For a distance of 15 feet or more that we have worked out the different groups in this skeleton - we have followed a well-defined ridge - directly under the center of which the line of vertebrae

run without deviation - thus  and as this ridge continued back as far as stripping was done last year - and far enough to take in the whole neck and head if continuous, I could have no doubt but what we should get the whole front entire

It may be this break is short and that we may catch on to it again - but the chances are that it will be more or less broken and scattered.

I will send a sketch of a portion of one side of the last vertebrae found at this break, which may give you some idea of its size, and also tell us how far this ought to be from the skull.

This shows the cervical rib united to the centrum, as were also the two that came before this if I am not mistaken - and in this last one there is no solid central body - or cup or ball that I can find, so I am inclined to think there could not be many more between this and the skull.

We shall keep on a few feet farther in the same direction before attempting to work out the bottom layer, with some of Sk. 11 remaining there; and may find more of the missing vertebrae of Sk. 9.

We find a good many small bones in a thin soft layer between the two skeletons - the same place that we found the specimen sent by mail a few days since.

One little vertebrae found yesterday in this layer, though not over an inch long is an almost perfect type of the large caudals in Diplodocus.

When I can get enough of these small specimens to fill a box, I will send it on by mail.

We are having a very wet time and have had no Eastern mail since Thursday last – four days on account of washouts.

Respectfully Yours

M. P. Felch

**Felch writes to Marsh that the mails have been irregular due to weather but things are better now. They continue to work on Sk. 9 and 11 though the ability to make timely progress on 11 is because of the quantity of other bone they must deal with in order to get to it.**

Canon City, Colo.  
July 30<sup>th</sup>, 1886

Prof. Marsh  
Dear Sir

Yours of the 16 I received only two days since, - but from this on the mails will be more regular – as the worst of our rains seem to be over.

In regard to Sk. 11 – so far as we have gone everything is all right – and no trouble will be had in keeping the connections all through – and full sized diagrams of all the different groups have been made as we went along – which will be sent on with the boxes.

We have done no extra work with chisels - none whatever – except in getting points of separation – or where it was necessary in trimming off waste rock.

Two blocks in 11 will weigh several hundred pounds each – and I had to use 2 inch plank to make the boxes strong enough to hold them – and any attempt on such a mass toward investigation here would be a useless waste of time.

Since my last we have continued in the direction of Sk. 9 – and as I supposed we find nothing more of the lost series of cervicals – but find plenty of other bones.

About two feet from where the last one in Sk. 9 lay and in the same line with those we struck on to another string of caudal vertebrae – and have now worked up the 5<sup>th</sup> one in this new series – one coming after another in regular order. These are very large – and different from any that I have seen – something of a cross between Brontosaurus and Diplodocus.

We have had no good chance to figure one of these as all the breaks have been across; ‘till this afternoon in taking out a block it broke so as to expose a side view – and of this I will try and get an outline on Sunday.

Besides these we find other bones – among them being a large claw – and a tarsal bone of which I send an outline.

From the above you may get an idea we are hunting around for something new – and neglecting work on Sk. 11.

On the contrary we carried the work in on Sk. 11 farther than we really ought too – to do work to advantage – hoping all the time to get to the outside of all but the but the tail – but found we

could not do it – 'till a good deal of work was done above it – and we shall have to do considerable more work yet – and some heavy stripping off before getting it all out.

If there was nothing in the way but rock to contend with we could clean Sk. 11 up in short order – but here we are so far advanced eastward that we now have caught up with the old front on the right – some 12 feet to be carried along – but all there is above and on the left side – but of the latter we shall only remove just as little as possible to get working room.

In all of this to be removed there are bones to be taken care of so – that the general progress in any one direction is slow.

Respectfully Yours  
M. P. Felch

P.S.

In case we shall have to strip off more of the high wall to get at the remainder of Sk. 11- I would need an extra man for a month or six weeks; as I am not able to much of that kind of work.

In view of this would it not be well to make out the vouchers as usual to meet this extra expense?

M. P. F.

[Two drawings are included but the copies are completely black.]

Canon City, Colo.  
July. 31<sup>st</sup>, 1886

Prof. O. C. Marsh  
To M. P. Felch Dr

To work on fossils – self – help team and expenses – from July 1<sup>st</sup> to 31<sup>st</sup> inclusive at one hundred and fifty dollars pr month \$150.<sup>00</sup>

M. P. Felch

**Marsh writes to Felch that he is sorry to find Sk. 9 may be without a skull due to a dislocation. He continues working on Sk. 11.**

Department of the Interior  
United States Geological Survey  
Division of Vertebrate Paleontology

New Haven, Conn., July 31<sup>st</sup>, 1886

Dear Mr. Felch,

I felt very sorry to learn that Sk 9 had the neck dislocated, and the skull probably lost. There must be three or four more vertebrae (perhaps more) between the break and the head, and you may find them near at any time.

We are working out Sk 11 still, and today found a tibia with the astragalus on the end. It is not like the Stegosaurus tibia we know and may turn out something else when we have fully uncovered it. There appear to be foot bones near.

I enclose vouchers for July, to save time. I hope to see you before the next lot but may not.

Yours Truly  
O. C. Marsh

**Felch writes to Marsh that he sends a sketch of one of a new caudal series that started where Sk. 9 left off. He is becoming sure the missing skull of No. 9 is not there. He tells Marsh that he thinks there are extra leg bones in with Sk. 11, of which two are hollow.**

Canon City, Colo.  
Aug. 4<sup>th</sup>, 1886

Prof. Marsh  
Dear Sir

Yours of July 31<sup>st</sup> I received this evening.

I return with this the vouchers for July, duly signed.

I also send an outline of one of the new caudal series that took the place of the neck in Sk. 9.

I thought when I wrote last that we had five of these out – but on arranging my blocks in order find but four.

I am satisfied however there are more of the same lot in place – and that these cannot be far from the sacrum.

They indicate a larger animal I think than Sk. 9 as Diplodocus – two of the chevrons being at least fourteen inches long – and nearly four inches wide.

Having decided to make a little search for the missing vertebrae and skull in Sk. 9 we – went back on the left side of Sk. 9 where we had quite a lot of unworked ground – and that was only partly stripped down from the top – and three of us have been at work all this week so far in stripping this down to the bone bed.

With this corner worked out and a few feet on the extension of the tail in Sk. 11 – makes all the ground we have to work before reaching the high wall – when if work is continued farther more stripping will have to be done.

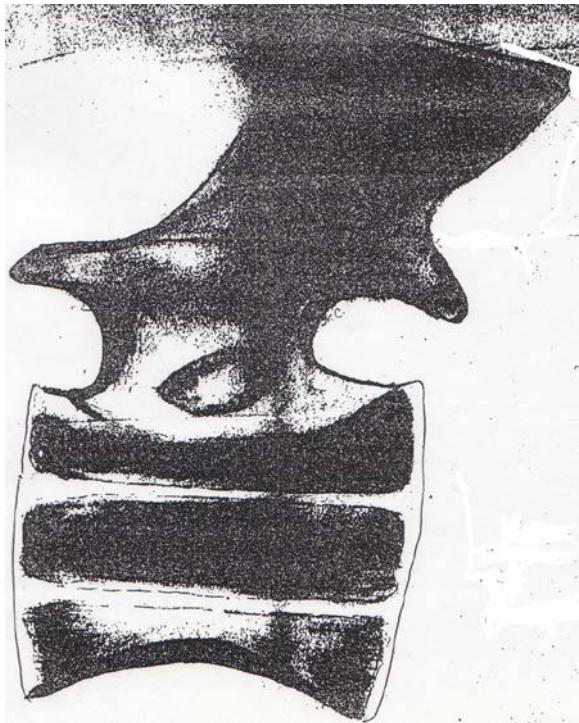
To clear up this however will take a good while and I hope in the meantime you can come out and look over the situation for yourself and decide upon what is best to be done.

I think in working out Sk. 11 you will find some extra leg bones – for as I wrote recently in regard to it, I believe we had already found more than a full complement of leg bones – and it may be the tibia you find is one of the extra ones. Two at least that I have observed are quite hollow – while I think you describe all the limb bones of Stegosaurus as being solid.

I shall hope to have something more of interest to report soon – but I have little hopes of finding the skull of Sk. 9 – and if it should not turn up – we may have to place skull No. 6 with this skeleton.

Respectfully Yours  
M. P. Felch

P.S. If convenient would like a remittance between the 15<sup>th</sup> and 20<sup>th</sup>  
M. P. F.



From a caudal...  
discovered July 27<sup>th</sup> ...  
Sk. 9            M. P...  
(sent Aug 4<sup>th</sup> 18...        [copy cuts off]

Distal end of chevron  
The balance of this chevron is in sight inches of rock making the whole length 14 or 15 inches

**Felch writes to Marsh that he has been ill for a few days and just now back at the quarry.**

Canon City, Colo.  
Aug. 16<sup>th</sup>, 1886

Prof. Marsh  
Dear Sir

I have been very ill for a few days – and have not been able to get to the quarry 'till to-day.

As soon as we can get the work packed up that we have out, shall start in again on Sk. 11.

Nothing of special interest was found last week – with the exception of some very large foot bones and a part if not the whole of another cervical vertebrae that may belong with the missing ones in Sk. 9

Respectfully,  
M. P. Felch

**Marsh writes to Felch that he is going to Buffalo and then will start west, where he hopes to see Felch. He will contact him from Denver.**

Department of the Interior,  
United States Geological Survey,  
Division of Vertebrate Paleontology

New Haven, Conn., Aug. 16<sup>th</sup>, 1886

Dear Mr. Felch,

Enclosed find check for \$150. which I hope will reach you by the date you mention.

I start for Buffalo Wednesday (18<sup>th</sup> inst) to spend a few days at the meeting of the Association of Science. After that I go directly West, and before very long hope to see you. I will write or telegraph when I get to Denver.

Yours Very Truly  
O. C. Marsh

**Marsh writes to Felch that he will leave Omaha for the Como area and then go on to Colorado Springs before coming to see him.**

Omaha, Neb.

Aug 26<sup>th</sup>, 1886

Dear Mr. Felch,

I am on my way West, and leave tonight for Wyoming to spend a few days near Como, and Rock Crick.

I shall probably get to Denver about Sept. 1<sup>st</sup>, and may go Colorado Springs for a few days before coming to see you.

If you write to Colorado Springs, I shall get your letter before I leave there.

The weather here is fearfully hot.

Yours Truly  
O. C. Marsh

**Marsh writes to Felch that he will be in Colorado Springs for a few days and will write before he comes.**

The Antlers Colorado Springs, Colo.,

Sept 1<sup>st</sup>, 1886

Dear Mr. Felch,

Reached here today and found your letter. I cannot now say when I will get away but will write you in time. Probably next week.

Yours Truly  
O. C. Marsh

**Felch sends a receipt to Marsh.**

Canon City, Colo.

Sept. 10<sup>th</sup>, 1886

\$150.<sup>00</sup>

Rec'd of Prof. O. C. Marsh one hundred and fifty dollars for work on fossils, self, help, and team  
for Aug. 1886

M. P. Felch

**Felch writes to Marsh that work continues on Sk. 11 and they have found the tail continuous.**

Canon City, Colo.  
Sept. 18<sup>th</sup>, 1886

Prof. Marsh  
Dear Sir

We are getting along well, have fine cool weather and everything favorable.

In taking off the next run of blocks in Sk. 11 we find the tail unbroken and continuous – with another plate coming behind the one you saw in the wall but on the opposite side, from that one – also another spine between the vertebrae and plate.

In cutting around for separating on the left side – we find what is apparently a large femur of a Carnivore, one end of which comes up close to the upper end of the plate on that side.

This makes the third leg bones of that kind found in with Sk. 11 and is probably where the foot bone (astragalus) you found in working out Sk. 11. All well –

In haste  
M. P. Felch

**Felch writes to Marsh that they couldn't give a quick answer to his letter from Colorado Springs as he headed home from his visit. They have been confused on Sk. 11, trying to decide what belongs to it and what are extra bones from other things. They have also found a plate associated with Sk. 11 that has fingerlike spines along the top and include a drawing.**

Canon City, Colo.  
Sept. 26<sup>th</sup>, 1886

Prof. Marsh  
Dear Sir

I should have answered your letter sooner from the Springs, but we got so badly mixed up on Sk. 11 I could not give a satisfactory report, until I found out what we had got.

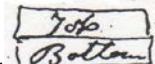
The outline enclosed will help show what we have found – and how the bones of Sk. 11 are mixed up with others.

On resuming work after you left – we first took off a run of blocks across the front, finding the tail all right – with a plate on the left and one or two spines.

This plate has one feature that may be common, but one I have not noticed in others, in having some well-defined spines – on the back part of the top – separated from each other and as well defined almost as the fingers of a hand – the outline of a section enclosed showing pretty well how they look.

Another run of blocks was then taken off – showing the tail to be continuous = and another plate back of the first but on the opposite side – with a spine lying under.

These two runs off we then went to work to remove the under part – for in all of the Skeleton

removed this summer we have had to divide it horizontally thus  
  
In this lower layer were found the bones of another skeleton mixed up with the spines of No. 11 – and on the left side what appears to be as good a foot as Allosaurus – the bones extending through a space of at least two feet by two and one half = showing up at every break = from the largest metatarsal to the smallest bones - and at one point a claw.

These cannot belong to Stegosaurus as they are too large and besides have the appearance of the carnivorous foot bones.

The last blocks on the left end, having broken apart what appeared to be two plates, one overlying the other we then had to start back to remove rock to get these out – and on working up to them found them to be the illium and ischium that run up to a big femur – that I should have stated before lay in the top part alongside the first plate on the left – as shown in the outline.

These bones femur – illium – ischium etc are the remains of a Carnivore that must be twice as large as Allosaurus.

That the pubis bones were found some time since – and pointed out to you as large spines – I am not satisfied – but unlike those in No. 4 in being separate at the distal ends.

To go back again a little when prying out a big block – that had so many foot bones – we found imbedded in the marl – under the block – a bone that we think must be a sternal bone – a sketch of which my daughter is now at work on to send with this.

The sketch shows only one side – the opposite side having a thick part making it nearly or quite three inches thick where I have marked it as having a face for union with another bone.

Whether this thick part is made by there being another bone stuck on to it I cannot tell as I did not wish to prospect it to close.

This possibly belongs with the Carnivore – as the body of that beast if here runs diagonally across the pathway of the tail of No. 11 ahead of us.

By this time it will be seen that we are badly mixed up – and I hardly know what to do – in view of the fact that you do not care for any new discoveries = whether we shall leave all outside bones = cutting a strip along wide enough through the bones to take out the tail of No. 11 = and leave the rest or take all along together as usual and save everything.

It will take nearly as long to cut our way through – as to keep all along – besides if we should have to destroy many good bones – that might prove of value in the future – especially should there be any Diplodocus bones or a skull along this trail

I have had a man = extra = during the past week one who has worked with me some before – and who can do pretty good work – and if I could keep him for six weeks or two months – we could get most all of this out clean and save all as we go.

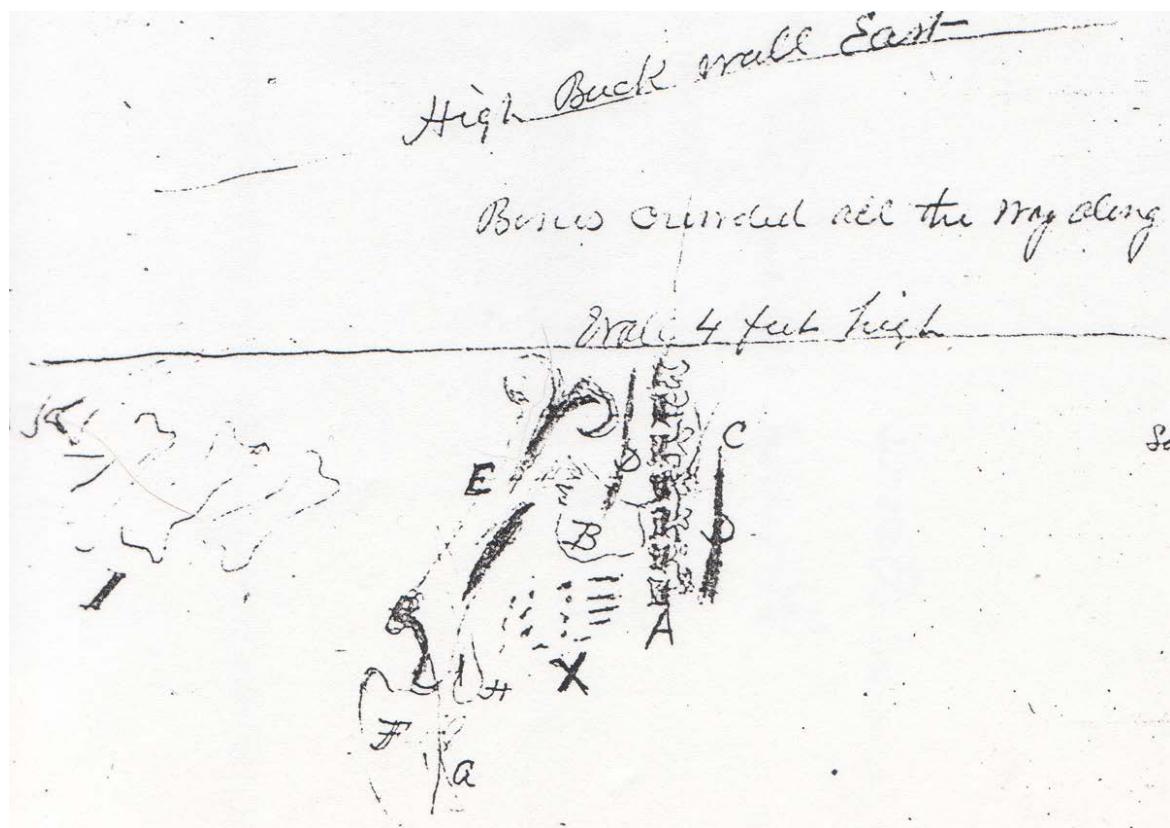
I can hire him for the time for about 50 dollars a month – 30 and board.

You can write me on these points - soon and until then I will go on as usual – though we have got to go to packing and boxing up soon, as we have the table and yard full of bones to take care of – and to get lumber from town – pack and box up will take a week to ten days at least.

If it would be of any advantage to ship now what we have boxed it would not be any more trouble now than at any time – as this skeleton is boxed by itself – and the balance could be sent later on. I refer only to Sk. 11 in the above.

Hoping to hear from you soon I am

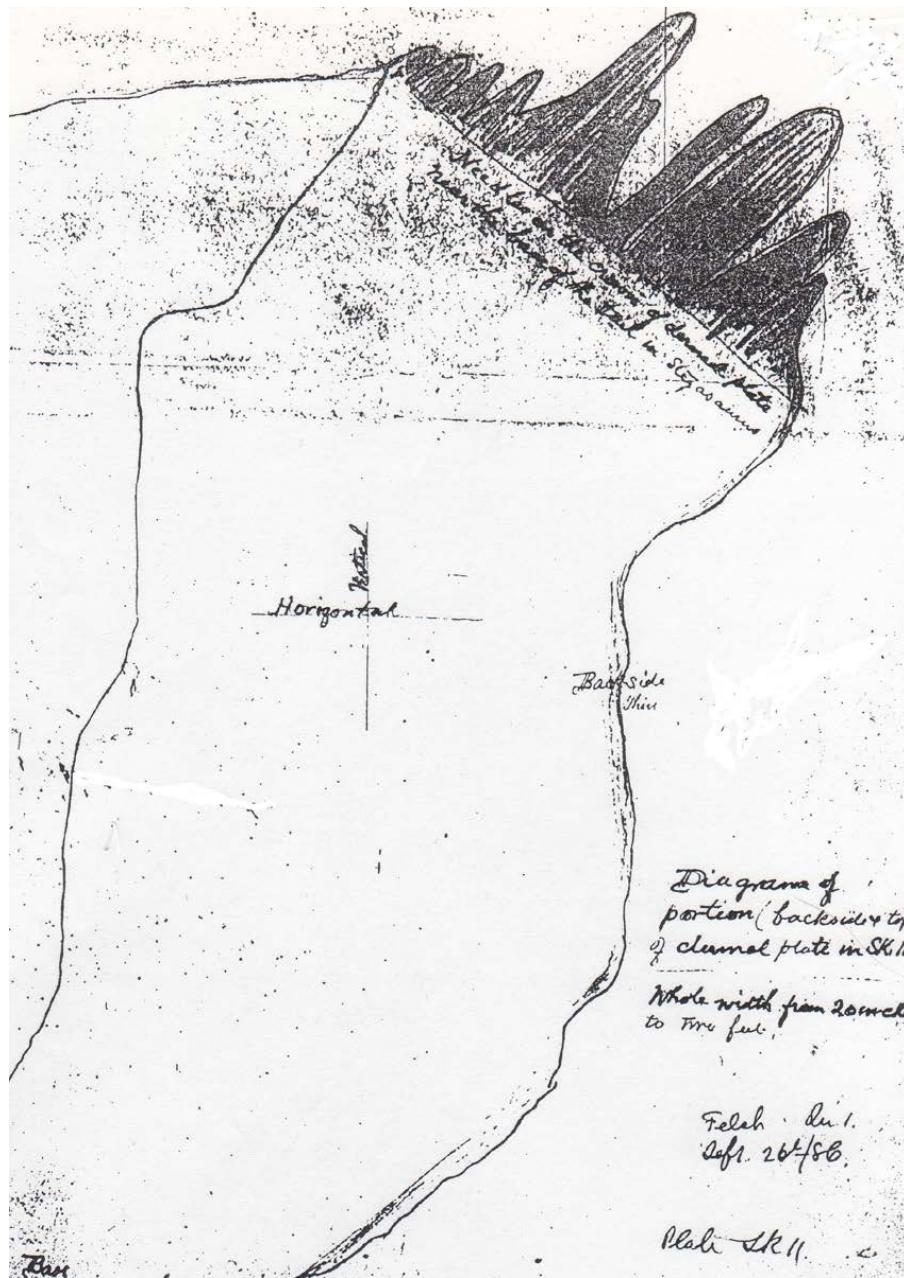
Respectfully Yours  
M. P. Felch



High Back Wall East  
Bones crowded all the way along  
Wall 4 feet high

South

- A Line of vertebrae
- B & C Dermal Plates
- D D Spines
- E Big Femur – Carnivore
- F Ilium
- G Ischium H Unknown
- X Large group foot bones, spines etc
- I Some very large foot bones of Sauropoda + ribs not referred to in the letter



Needles on the crown of dermal plate near the base of the tail in Stegosaurus

Vertical  
Horizontal

Diagram of portion (backside top of dermal plate in Sk. 11  
Whole width from 20 inches to two feet.

Felch Qu 1.  
Sept. 26<sup>th</sup> 1886  
Plate Sk. 11.

**Marsh writes to Felch that he is home and awaiting word from him and about vouchers he sent to Washington.**

Yale College Museum, New Haven, Conn.

Sept. 29<sup>th</sup>, 1886

Dear Mr. Felch,

I returned home safely (after one or two R.R. accidents) a day or two since, but have heard nothing from you except the note to Col. Springs of Sept 18<sup>th</sup>.

Have heard nothing from Washington in regard to those vouchers I gave you to mail. Did you post them that day (Sept. 11<sup>th</sup>)?

Am glad that tail is holding out.

Yours in Haste,  
O. C. Marsh

**Felch writes to Marsh that they are working in grouping and packing up. He outlines plans to continue work as they get things sorted out.**

Canon City, Colo.  
Oct. 3<sup>rd</sup>, 1886

Prof. Marsh  
Dear Sir

Most of the work done the past week has been in grouping together – and sewing up parcels ready to box up what we have out, - in getting lumber from town – and in repairing roads and the trail to the quarry.

We have also done some work in removing the upper layer of rock containing bones – beginning well to the left side and working toward the right – and taking all this layer clean, as far back (East) as the high wall on that side

Nothing of any account was found in this upper layer 'till we got a little to the right and over where the tail of Sk. 11 lays. Here we got into that mass of bones which have been in sight since the ground above was stripped in Aug. 1883.

The location of these can be found on the map of 1883 – just north of where so many bones were taken out in the "East End" that year, and East of where a Scapula and large humerus marked II = and many other large bones were found, that we have sometimes referred to Diplodocus.

Now to attempt to remove all these and prepare them for shipping with all the rest there is to be done is out of the question, and to clear it all over the dump is what I don't like to do, so I have thought it best to prepare a place on the quarry by laying down boards and then proceed carefully to take off one run of blocks at a time, mark them – and save the pieces and stack them up on the boards.

If anything should be found worth saving we can take care of it later on – if not dump it down the gulch.

In this way we can make fair headway – get over more ground – and have the rest of the work done before the season closes.

More bones of the new Carnivore were found where we started in on the left of Sk. 11 another of the pelvic bones, the end of the tibia – one caudal and more foot bones, and I think the large part of the skeleton is on ahead.

On another sheet will be found Statement for Sept.

Respectfully Yours  
M. P. Felch  
Canon City, Colo.

Sept. 30<sup>th</sup>, 1886

Prof. O. C. Marsh  
To M. P. Felch, Dr.

To work on fossils. U. S. Geo. Survey – self – help – team and expenses at one hundred and fifty  
dollars pr month \$150.<sup>00</sup>

Over

The foregoing statement does not include ten days extra work of my new hand as I expected you  
would send the voucher before you got the statement for Sept.

This can be fixed up any time later on

M. P. Felch

**Felch writes to Marsh giving information about the missing vouchers, which he mailed just after leaving Marsh at the depot to go home. They are continuing to box up bones to ship**

Canon City, Colo.  
Oct. 7<sup>th</sup>, 1886

Prof. Marsh  
Dear Sir

Yours of Sept. 26<sup>th</sup> • in regard to the vouchers I did not receive until the 5<sup>th</sup> of this month.

I mailed the vouchers within ten minutes from the time I left you at the depot – in fact it was my first errand as I went up town.

They might have been returned to you, and have been mislaid before your arrival home.

We are having our “Equinoxial” storm this week – the first bad weather for a long time, but the weather holds quite warm.

We have been working under cover, making and packing boxes mostly so far this week – have got over 30 in all – and things pretty well in shape to go on again to work out the balance of Sk. 11

I wrote out quite fully in my last how I proposed to remove all this that comes in the way – and can see no better way under the circumstances.

The ground lies in the direction and vicinity of where so many good bones came from in the East End in 1883 – and we may find some more good ones there yet – and though I do not intend to spend much time on them – shall try and take them out so as to save anything of importance – like a skull or foot bones.

Shall send this in, to-morrow and hope to get one from you.

Respectfully Yours  
M. P. Felch

We are out of “Shipping Labels” to put under the box covers

**Marsh writes to Felch that the vouchers turned up and that he needs what is available of Sk. 11 now.**

Yale College Museum, New Haven, Conn.

Oct. 8<sup>th</sup>, 1886

Dear Mr. Felch,

Yours of the 1<sup>st</sup> is at hand. The other vouchers mailed at Cañon City turned up lately all right.

I enclose vouchers for Sept.

We want that Sk 11. or what you have of it very much. How soon can you send it?

Yours Truly  
O. C. Marsh

**Felch writes to Marsh that they are on to more of a skeleton partly removed in 1883 leaving it aside to continue with Sk. 11. They are still on the tail of Sk. 11 but have hit a break and fear that unless it bears to the right it may go straight into the high wall.**

Canon City, Colo.  
Oct. 15<sup>th</sup>, 1886

Prof. Marsh  
Dear Sir

Yours of the 8<sup>th</sup> with vouchers for Sept. I received today – and I return them signed with this.

Since my last we have removed a lot of rock with bones = from the upper layer first = where we found a good deal of a large skeleton – some of which was taken out in 1883. So far as we went on this we removed the sacrum – scapula – two lumbar vertebrae part of a femur = this very large, twenty or more inches wide at the upper end – the illium etc. and the rest of the pelvis bones are in sight. None of this did we do anything more with than to take down and lay aside out of the way – some of it – especially the sacrum is so badly crushed up and broken it would not pay to bother with any way – but a good deal of the rest – as the pelvic, leg and foot bones might by careful handling be put into fair shape again.

I had always thought – since we uncovered this part of the skeleton in 1883 it would prove to be Diplodocus – but have found nothing yet to identify it any farther than one of the large Sauropoda.

Leaving this we once more started in where we left off on Sk. 11- and the first block we took out found the tail series for the first time broken, or at least we could not be sure that they were in place for at this point the leg bones of another animal together with foot and other bones were crowded in so closely that it was almost impossible to tell what there was to a certainty – but on working a little farther back struck on to it again – where one is plainly in sight – for to make sure I took the chisel and uncovered enough on one side to make sure we had found it again.

This last one is not more than two feet from the high wall – where we shall have to leave it, if it goes under – in a direct line but if it bears to the right we have several feet more of working room before striking the wall.

The two leg bones that cross the track here – are I think a tibia and fibula – extend in a line with and back from the big Carnivore femur but these unlike the femur are solid – not hollow in any if the several breaks and the bone seems to be the color and texture of Sk. 11 – and I am more than half inclined to think they may belong with Sk. 11 – and I certainly hope they may turn out so - for around the ends of them are several foot bones in sight and more in the breaks in the wall.

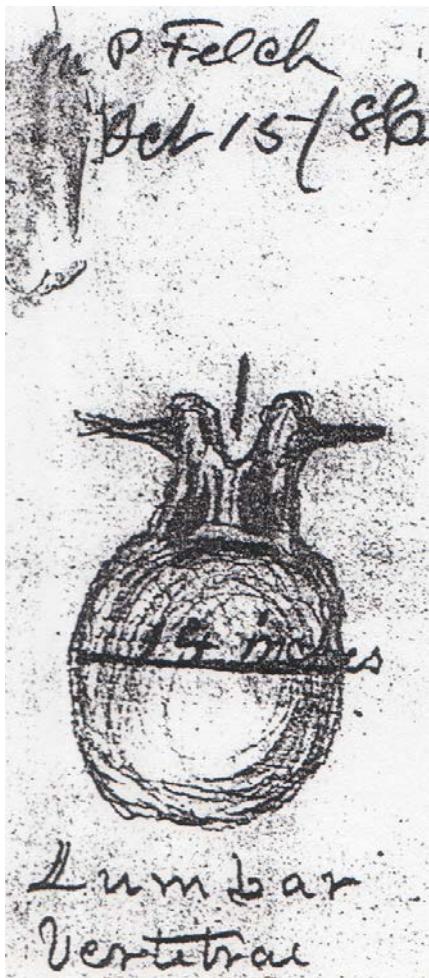
Besides these bones found along the track of Sk. 11 – that have been referred too – there are many others, to the right left – and underneath and among them you will find some strange and singular specimens – one found yesterday – somewhat like a coracoid but a puzzle that I could

make nothing of – and to-day a lumbar vertebrae – was found that I send a small sketch of – that I thought first was a skull – when working around the top of the neural spine. It is an odd subject.

I can begin shipping the boxes sometime next week – could tomorrow only that I have to wait for hoop irons from Denver.

Respectfully Yours

M. P. Felch



M. P. Felch  
Oct 15<sup>th</sup>, 1886

14 inches  
Lumbar Vertebrae

**Felch writes to Marsh that he will try to map the area in regard to bone and layer layout.  
They are shipping boxes soon.**

Canon City, Colo.  
Oct. 23<sup>rd</sup>, 1886

Prof. Marsh  
Dear Sir

I received your telegram yesterday.

I will do the best in saving the upper layer that I can -, will try and get time Sunday to measure and map out just how this lays in relation to the other layers and skeletons.

Shall send in to-day, the first load of boxes and try and get all this lot off next week.

I have not received a remittance yet, though I looked for it several days since.

Respectfully Yours  
M. P. Felch

**Marsh writes to Felch that he wishes him luck with the tail of Sk. 11 and save everything from the upper layer near the 1883 diggings.**

Department of the Interior,  
United States Geological Survey,  
Division of Vertebrate Paleontology

New Haven, Conn., Oct. 25<sup>th</sup>, 1886

Dear Mr. Felch,

I enclose check for \$150. and also voucher for Oct. which return soon.

I hope you have had good luck with Sk 11. tail, and also have saved everything in the upper layers near 1883 diggings. There were so many good things in that region that every bone may be important, and so I telegraphed you.

I am very busy, and will write again soon.

Yours Truly  
O. C. Marsh

**Felch writes to Marsh that they hope to ship 26 boxes of Sk. 11 on the 29<sup>th</sup> of Oct. There is still more of Sk. 11 at the quarry in the lower layer. He details finding of other bones that include a possible pre-maxillary of a carnivore. He writes that he is out of money and wishes to hurry the long process of vouchers and confirmation along to meet upcoming payments.**

Canon City, Colo.  
Oct. 26<sup>th</sup>, 1886

Prof. Marsh  
Dear Sir

If nothing happens to prevent – we shall take in the last of this lot with Sk. 11 – 26 boxes in all – to-morrow.

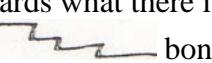
As soon as weighed shall make a requisition on the Qr. Master in Denver for Bills of Lading – and if received by Thursday will have them shipped on Friday the 29<sup>th</sup>

We should have had them off last week but had to wait for hoop iron – which I had to order from Denver.

This makes all of Sk. 11 that we have out, excepting a little which comes in a very large group of rock removed from the lower layer – and which will take some time to finish up – as more yet of this lower layer will have to be taken out before finding a good place to leave off.

I tried to find some point to separate what there was here of Sk. 11 from the other bones – but being partly hidden – and interwoven and mixed up so much together it was impossible to divide it safely and so I conclude to send it all along together.

I enclose an outline showing where we have reached on No. 11 also the ground to the right where we had to remove some of the upper and under layers.

It will be seen here that we have carried the work on the line of Sk. 11 farther than on either side – and it has made bad work as regards what there is left – if the bones there are to be saved – as in most all of the zig zag corners  bones are broken into much worse than as if we had kept the whole front square along as we went.

I should not do this again in any case but I was anxious to reach the terminus of Sk. 11 and pushed along that line at some expense to the rest.

What more work I do this fall will be to bring up as far as possible this ground on the right – even with the rest – and not do any more of running by and leaving a lot – for here at one point F - there are some indications that a skull is in the vicinity – and I want to go as careful as possible and take all the advantage of the rock that I can.

At "F" there is what I think must be the right pre-maxillary of some large Carnivore – possibly the same one that crossed the tail of No. 11 – and as we find here close by small hollow leg bones – apparently of the fore limbs and plenty of foot bones of the same character I am inclined to think the forward part of this skeleton is not far ahead and to the right of F.

In this last group spoken of – taken along the whole front from X – past F G G →  
under layer we have never anywhere found bones crowded more closely together – and the most of them so far come out in splendid condition – considering the way we had to work the rock and that this ground has been stripped since August 1883 and weathered all that time. The top layer of bones we will do the best I can with – and fix them up later on.

I am out of money – and am way behind on Sept. accounts for purchases and help – and shall have hardly enough to go around with Sept. payment – besides I have a note due Nov. 15 of 90 dollars that worries me somewhat as the time is not far ahead.

I wish you would send on the vouchers for Oct soon – so that you can get them in earlier than last month.

These will call for 200 dollars – 50 dollars for the extra hand up to the 20<sup>th</sup> of this month.

I shall not keep him longer than necessary – but I want to push things as long as good weather lasts and try and get all closed up by Dec. 10 so that my son can begin with the winter Term to go to school

Respectfully Yours  
M. P. Felch

**Felch writes to Marsh that he is sending the vouchers back signed and details further expenses that are not yet covered. The Bills of Lading have arrived from Denver and the boxes are on their way. He relates information on the remainder of Sk. 11 and sends drawings done by his daughter, Sadie.**

Canon City, Colo.  
Oct 30<sup>th</sup>, 1886

Prof. Marsh  
Dear Sir

Yours with check and vouchers I received to-day.

The vouchers do not cover expenses for Oct. account but I will sign and send them on – and if will suit you, I will fix it so as to come on the last of the quarter as follows.

My extra man I will keep only until the last of next week – a trifle over a month and a half – making his wages including board 75 dollars.

If I can close up all the work as I would like to do by Dec. 15 – the account would be – for Oct. \$200. - Nov. \$175. (\$20.in Sept) - Dec. \$75. – Total \$450.

By paying me \$150. for Oct. Nov. and Dec. total 450. it would make the account regular for each month without changing the vouchers.

As I said in my last I am behind in money matters some of which I promised soon and if you can send me one more payment so that I can get it by the 18<sup>th</sup> at the latest, I can get along all right and stop some interest – and what will be due on Nov. and Dec. I can wait on each month respectively until you get your returns from Washington on the vouchers

The monthly statement enclosed is to correspond with the vouchers

Yesterday I got Bills of Lading from Denver and to-day turned the freight over to the Station Agt here – who will forward them immediately.

I will send on list of "Contents of Boxes" soon.

We are working in the direction mapped out in my last – bringing up what we left on the right of Sk. 11 working now on the bottom layer – where we took off the upper layer some two or three weeks since.

Here is any amount of good bones – but it requires great care to remove them on account of the rock being badly shattered up from weathering so long.

Among others of interest are three bones 19 inches long that must be foot bones - metatarsals

I first thought the first two struck, were leg bones – but on finding the third but a little way off – and finding close by = almost joining in place = two more very large foot bones – probably

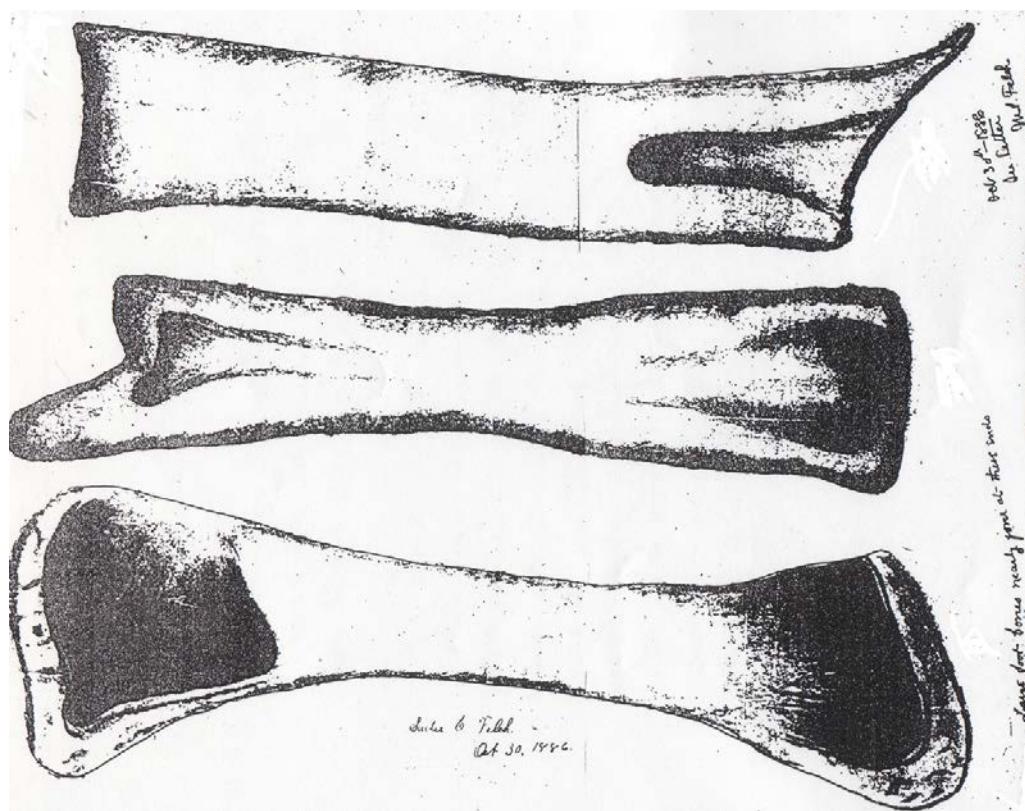


astragulus and calcaneum = thus and the whole but a little distance from where the big femur lay. I think the whole belong with this big Skeleton – and that the forward part of it is a head in the rock running under the high wall on the East Side

In group 16 and 19 of Sk. 11 – that come out on the front and left of this Skeleton, also another large lot which we have not grouped up yet, there were = it seemed to me = more foot bones than we ever found before in the same extent of ground – and among so many – it seems as though some of the doubtful points could be made out.

Whether there is any one foot entire in the whole lot is hard now to tell – but I am sure when all are worked out some valuable specimens will be found.

Respectfully Yours  
M. P. Felch



Sadie E. Felch  
Oct. 30<sup>th</sup>, 1886

Large foot bones nearly join at these ends  
Oct 30<sup>th</sup> – 1886 See Letter M. P. Felch

Canon City, Colo.

Nov. 1<sup>st</sup>, 1886

Prof. Marsh  
To M. P. Felch      Dr.

To work on fossils for U. S. G. Survey from Oct 1<sup>st</sup> to Oct. 31<sup>st</sup> inclusive at one hundred and  
seventy dollars pr month \$170.

Canon City, Colo.  
Nov. 1<sup>st</sup>, 1886

\$170.

Rec'd of Prof. O. C. Marsh the sum of \$170. for work on fossils for the month of Sept. 1886

M. P. Felch

**Marsh writes to Felch that he is sending a check. He says he will be absent for a while.**

Yale College Museum, New Haven, Conn.

Nov. 5<sup>th</sup>, 1886

Dear Mr. Felch,

Yours of Oct. 31<sup>st</sup> is at hand.

I enclose check for \$150. which will help you out in the matter you mention. I send it now as I shall be absent for a while.

Do your best to keep all those... [rest of letter missing]

**Felch writes to Marsh that he has sent the list of contents of the Oct. 30 shipment. They continue to take up more of Sk. 11 and the miscellaneous bones with it, including some hollow bones that are quite unusual.**

Canon City, Colo.  
Nov. 10<sup>th</sup>, 1886

Prof. Marsh  
Dear Sir

I send to-day the list of Contents of Boxes – shipped Oct. 30<sup>th</sup>

We are getting along very well with the work – are getting that portion we left behind on the right of Sk. 11 pretty well up with the rest – a week or ten days more of good weather will bring the whole up nearly square again.

There will be a big lot of this to group up – when all out and it will take most of the season to fix it up – pack and box it up.

The bones here hold out as thick as ever – and among them will be found some entirely different from anything heretofore found in our quarry.

One peculiar feature is in the leg bones which are so hollow that one end for some distance is but a thin shell.

If we had found but one of these I would have supposed it to have been water worn or something of that kind – but on finding 5 or 6 of different sizes – all with the same general make up – and apparently perfect I think there is a plan to them of some kind.

Some vertebrae and other bones found with these will probably tell what they are

Respectfully Yours  
M. P. Felch

**Felch writes to Marsh that the weather has been too stormy to do much. He has cleared the shed and will install a stove and move the blocks in out of the snow to work on them. The blocks have been difficult to separate as the bones are massed together and he is unable to say what goes with what.**

Canon City, Colo.  
Nov. 18<sup>th</sup>, 1886

Prof. Marsh  
Dear Sir

Since my last we have been unable to make any headway at all to speak of.

Up to that time with the exception of two or three days we had the finest kind of weather but the next day after writing may last, it began storming – and it has kept up – one following another so that we could not accomplish but little – and unless it comes off better soon we shall have to wind up altogether

We have a large amount of blocks out – enough for two or three very large groups and – owing to the way we had to take them out – we cannot group any one separate till all are completed on account of keeping the connections all right.

I done my best to find at different points some place where I could divide them, but they are so badly crowded and massed together it was out of the question – so we kept on, and will till the whole work comes up square to a good leaving off place and then try to so arrange and map out the work that there will be but little trouble in getting it together again.

I got everything cleaned out of our store shed to-day – and shall take the blocks in out of the snow – and set up a big stove that I have, so that we can do most of the work under cover while the cold spell lasts.

I am unable to tell whether we have reached the end of the tail of No. 11 or not – but am of the opinion there is a break near the last blocks taken out, on that line.

In the last one seen distinctly (tail vertebrae) there are in the same run of blocks – a lot of foot bones, some dorsal vertebrae, and ribs of another skeleton – probably of the Carnivore that is mixed up with No. 11 at this point.

To the right of these two is the “hollow leg” skeleton and also some bones of the big one all more or less connected – which has made the work so difficult for the past two months

I have not worked out any of the foot bones separately – only those long ones that I thought might be metatarsals - and there is enough rock with bones left on the most important places to show where they belong in connection with the rest.

I hardly think now the long bones are foot bones – but two of them are so closely connected with a very large astragalus and other large foot bones it at first seemed as though all should go together.

In these last groups that we are at work on there are many strange and odd bones that I can form no idea of where they belong.

Enclosed find receipt for money sent – for which I am greatly obliged – as it came when most needed

Respectfully Yours  
M. P. Felch

P.S. Would it not be well to send on vouchers to sign so that I can get them by Dec. 1<sup>st</sup>

Canon City, Colo.  
Nov. 10<sup>th</sup>, 1886

\$170.<sup>00</sup>

Rec'd of Prof. O. C. Marsh the sum of one hundred and seventy dollars – for work on fossils for the month of Oct. 1886

M. P. Felch

**Felch writes to Marsh that the weather continues stormy. He does not wish to strip off any more before winter so they have done all they can on Sk. 11 until they do strip off more in the spring. They continue to prepare blocks for shipping and explore other areas already clear.**

Canon City, Colo.  
Nov. 29<sup>th</sup>, 1886

Prof. Marsh  
Dear Sir

Enclosed please find the vouchers duly signed – which I received today.

We have done about all that can be done toward taking out bones, without doing a good deal of work stripping, and as the weather continues bad I think it best not to uncover any more new ground this fall.

On the line of Sk. 11 – and all the ground to the left of it is now worked clear back to the high wall on the East or backside = but on the right there is some old ground to work – and here we have partly uncovered what appear to be some bones of the pelvis of the large skeleton close by.

I want to get these out to send on with the rest this fall as they may belong to Diplodocus and will work on them at such times as the weather will permit – while grouping packing and boxing what we have on hand – and by that time we shall be ready to wind up the seasons work.

As I said in my last it is impossible for us to tell just where we left off on Sk. 11 – or how much more there is of it – but it would be impossible to go further on that line 'till two months or more of work is done in stripping off.

Respectfully Yours  
M. P. Felch

Canon City, Colo.  
Nov. 30<sup>th</sup>, 1886  
\$1.70

Prof. O. C. Marsh  
To M. P. Felch      Dr.

To work on fossils – U. S. Geo. Survey – self – help team & expenses at one hundred and  
seventy dollars pr. month      \$170.<sup>00</sup>

**Marsh writes to Felch that the boxes have arrived in good condition**

Yale College Museum, New Haven, Conn.

Dec. 7<sup>th</sup>, 1886

Dear Mr. Felch,

The boxes have arrived in good order, but I have not yet started in to unpack them.

Please put on the next lot USGS instead of Yale College.

Yours Truly  
O. C. Marsh

**Felch writes to Marsh that he is almost ready to ship and needs a form for the Bills of Lading. He is concerned about the lumber he is using for boxes and asks how the last shipment came through.**

Canon City, Colo.  
Dec. 8<sup>th</sup>, 1886

Prof. Marsh  
Dear Sir

I have commenced packing and boxing up – having taken out nearly all that we intended to this season – and find that before I can ship the boxes I shall want a blank to fill up, for a requisition on the Qr. Master at Denver for Bills of Lading.

I suppose you have the form there – and shall be ready to ship as soon as you can send them on.

There is another matter I have been some anxious about = to know the condition in which the first lot got through = whether they stood the handling without breaking? The lumber of all the boxes is very brittle and brash and I have to take the utmost pains in making – but it is the best Colo. lumber to be had and cost me nearly 50% more than formerly on account of Govt. making the dealers in native lumber pay for stumpage – and the best we can do is to use it, or pay 55 dollars pr. M. for Chicago lumber.

If any of the boxes that went through first got broken – please let me know and I will try and strengthen this lot by extra hooping and cleating.

Respectfully Yours  
M. P. Felch

**Marsh writes to Felch that he wants to know box content and departure date for the next shipment and are working on the new material from Sk. 11.**

Department of the Interior,  
United States Geological Survey,  
Division of Vertebrate Paleontology

New Haven, Conn., Dec 11<sup>th</sup>, 1886

Dear Mr. Felch,

Enclosed find check for \$150. for Nov. account, which reached me some days since.

Please let me know when the boxes leave and also their contents.

We have just begun on Sk 11., and hope soon to make connection with what you sent last.

Yours Truly  
O. C. Marsh

**Marsh writes to Felch that the boxes have come in good shape.**

Department of the Interior, United States Geological Survey,  
**Washington**, New Haven

Dec 14<sup>th</sup>, 1886

Dear Mr. Felch,

All your boxes came in good condition, so I think Col. lumber will do.

We have begun on Sk 11. and hope soon to know more about it.

Yours Truly  
O. C. Marsh

**Felch writes to Marsh to in regard to new marking instructions and wants to verify the inscription.**

Canon City, Colo.  
Dec. 14<sup>th</sup>, 1886

Prof. Marsh  
Dear Sir

I came in town with a load of boxes this morning and find yours of the 7<sup>th</sup> inst. in regard to marking.

Have already boxed and marked over twenty in the old manner but can mark over if necessary.

If I understand aright the inscription will be -

“U. S. G. S  
Museum  
New Haven  
Conn.”

Is this right?

In haste  
M. P. Felch

**Marsh writes to Felch that they are having trouble with Sk. 11 as they do not find expected pieces connecting last year's material.**

Department of the Interior, United States Geological Survey,  
~~Washington~~, New Haven

Dec 15<sup>th</sup>, 1886

Dear Mr. Felch,

We have come to grief with Sk 11, and I write for help.

Last year you sent us from head back to vertebrae 23. The last half of this was left in wall. Also the neural spine of vert 22 was left in wall, both with clean breaks. The parts here were in Box 30, group 5.

Now in Boxes 1 2 and 3 which we have just opened we find nothing to fit on to our slab, although from your notes we expected it in No 3.

I hope and pray that we shall not lose the connection, as this would be fatal to our restoration. Can you help us out? If so, please do so at once.

In Box 3, there are some "ribs from back of Gr 5 front of 7," but these do not fit anything from last year, apparently.

I hope we can bridge over the gap in some way

Yours Truly  
O. C. Marsh

**Marsh writes to Felch explaining why the shipments need to be marked U. S. G. S. and not have Yale on the box.**

Yale College Museum, New Haven, Conn.

Dec 18<sup>th</sup>, 1886

Dear Mr. Felch,

Yours of the 14<sup>th</sup> inst is at hand.

The point about the boxes is to leave off "Yale College" and put on U. S. G. S.

They are government property and have nothing to do with Yale. I had trouble last year on this point.

Prof O C Marsh

U. S. G. S.

New Haven, Conn.

is quite sufficient and all that should go on Boxes or bills of lading.

Yours in haste

O. C. Marsh

[Ed. Note: The following is written upside down on the bottom of the letter. It is apparently a tally of the boxes received.]

1-2-3-4-5-6-7-8-9-10-11= 11  
21-22-23-24-25-26-27-28-29= 9  
30-31-32-33-34-38  $\overbrace{6}$   
12-13-14-15-16-17-18-19-20  $\overbrace{9}$   
35-36-37-38-40-41-42-43= 8  
44-45-46-47-48-49-50-51-53= 9  
5-3-8-4-5-5-5-6-5-7  $\overbrace{5}$   
 $\overbrace{31}$

*John C. Marsh*  
*John C. Marsh*

**Felch writes to Marsh that he has received the letter with the blanks for shipping and boxing instructions for which he will send a list of contents and map.**

Canon City, Colo.  
Dec. 19<sup>th</sup>, 1886

Prof. Marsh  
Dear Sir

I rec'd yours with check for Nov. payment, also the blanks and instructions for marking boxes.

I shall have to erase and mark over nearly thirty, all in fact but the two last – as I have 32 boxes in all of this lot to send.

I was glad to know the first lot got through without breakage – and think there will be no danger of this lot for we took extra pains in making and have them stronger hooped than the first lot.

I have just finished up the last group – in which I think you will find an ischium perhaps of Diplodocus.

I send an outline of it – as near as could be made = the wide part being partly in the rock – so that I could not get its exact limits.

In the same group is one of the "Odd" bones – a puzzle to me.

I also send a sketch of one of the hollow leg bones, several of which will be found with other parts of the same skeleton in Gr 3 – 16 – 20 & 21.

Before the boxes get there I will make out the list of contents – and map out where these last groups lay.

I have a good deal to do yet before closing up the quarry. Shall get the boxes off by the 24<sup>th</sup>.

Respectfully Yours  
M. P. Felch

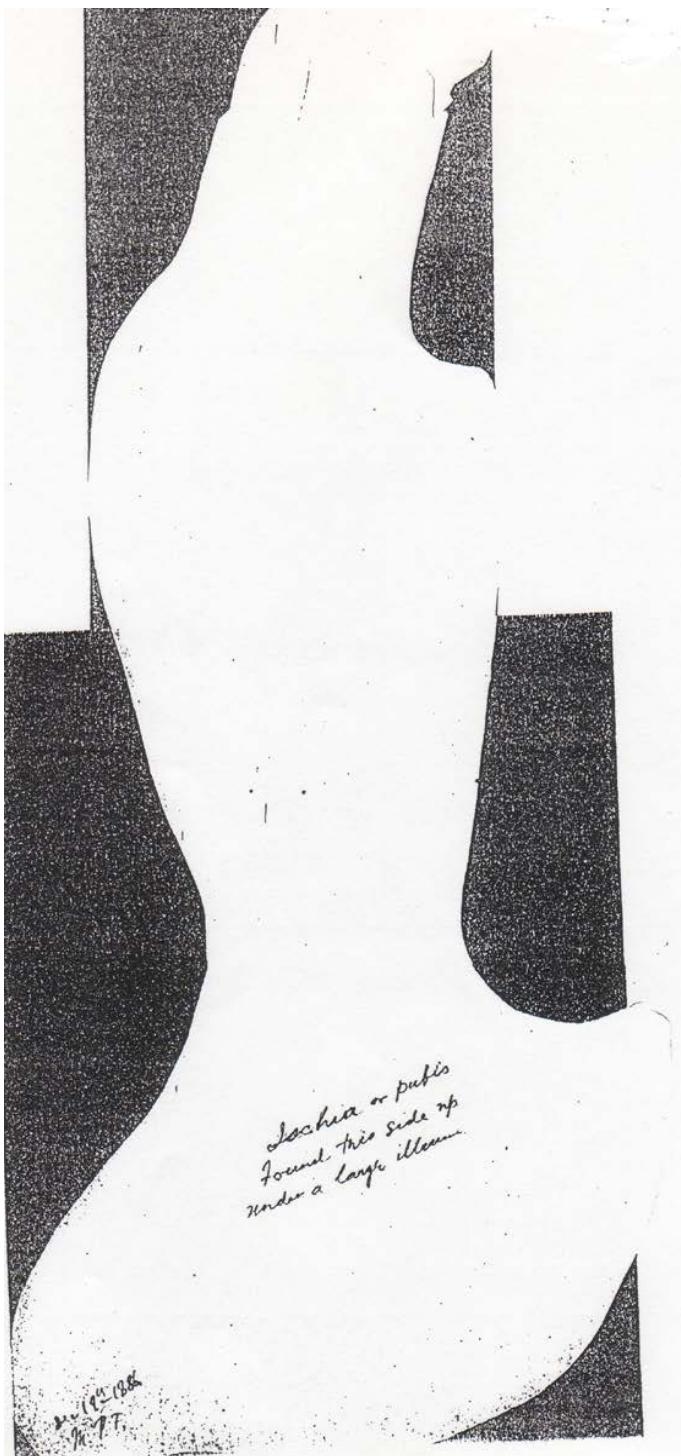
Canon City, Colo.  
Dec. 18<sup>th</sup>, 1886  
\$170<sup>00</sup>

Rec'd of Prof. O. C. Marsh the sum of one hundred and seventy dollars for work on fossils for the month of Nov. 1886

M. P. Felch

Transcribed at the Garden Park Paleontology Society's Dinosaur Depot Museum, Cañon City, Colorado.

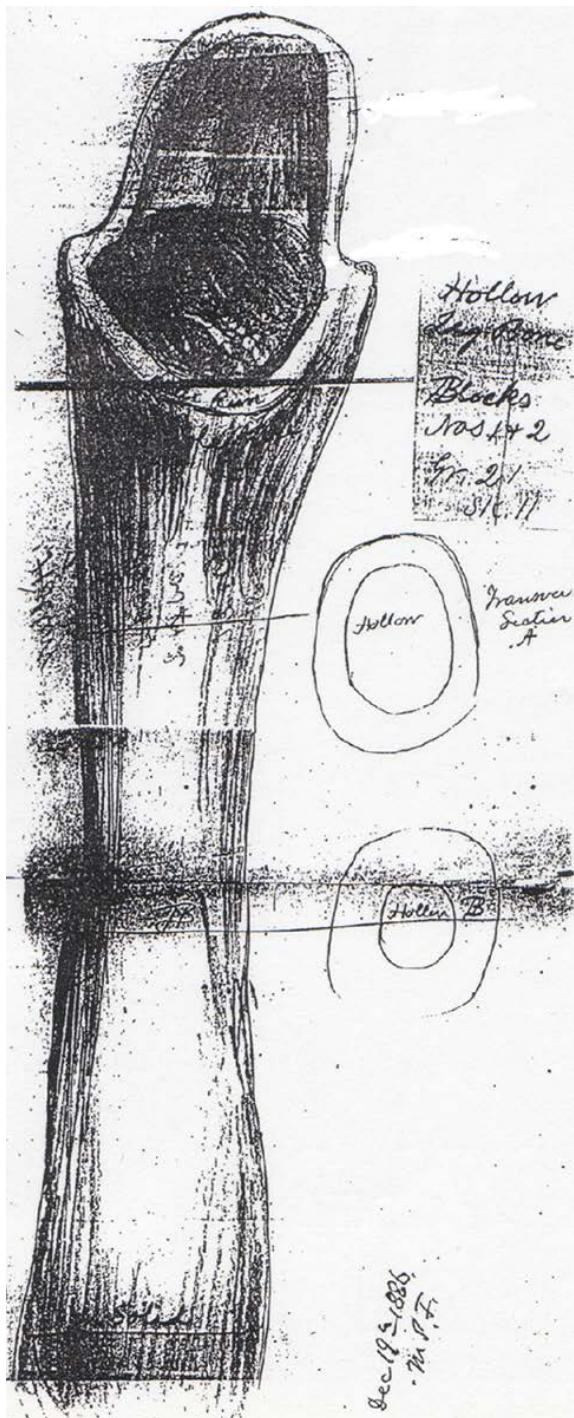
Original material housed at the Marriott Library, Special Collections Division; University of Utah, Salt Lake City.



Ischia or pubis found this side up under a large illium

Dec 19<sup>th</sup>, 1886

M. P. F.



Hollow Leg Bone      Blocks Nos 1 & 2   Gr. 21   Sk. 11  
Outer Rim  
Hollow Transverse section A  
Hollow B   Solid

Dec 19<sup>th</sup>, 1886

M. P. F.

**This letter is written for Marsh reassures Felch on the fitting of Group 7.**

Yale College Museum, New Haven, Conn.

Dec. 21<sup>st</sup>, 1886

M. P. Felch, Esq.,

Dear Sir:

Your telegram of last night received. We have fitted on Gr. 7 all right. Thanks.

Yours Truly  
O. C. Marsh  
pr *Lt.*

**Felch writes to Marsh that he has sent the boxes and will send a list of contents and map out positions of groups. He outlines what has been laid out where it is safe, to be sent later if wanted.**

Canon City, Colo.  
Dec. 30<sup>th</sup>, 1886

Prof. Marsh  
Dear sir

I send with this the "List of Contents" of the last lot of boxes shipped a few days since = all of which were marked and described in Bills of Lading - as you directed.

I will try and map out in a few days the general position of the groups in Sk. 11 in relation to each other, though really there is no particular need of one as each separate group has a full diagram, showing its place and all other necessary explanations.

I have a good deal of material on hand that I could not get ready to send = among the rest is what there was of the large sacrum in the upper layer to the right of Sk. 11 – also the illium connected with it and part of a femur – two or three of the large lumbar vertebrae etc.

The illium and the lumbar vertebrae might be put in order to make something of, but the sacrum was in so bad condition before removing but little if anything could be done with it – all this I have laid aside on the quarry where it will be safe – and can sometime be sent if wanted.

Another specimen that I have fixed up since the boxes were sent - is a very large vertebrae – lumbar I think that came from the left of Sk. 11 – was taken out in the summer and laid aside. The vertebrae has some features different from anything I have ever seen in a vertebrae – and is I think complete. I will try and make an outline of what there is in sight of this – and have it- the vertebrae- laid away in the house where it will be all right.

I enclose statement for Dec.

Respectfully Yours  
M. P. Felch

Canon City, Colo.

Dec. 31<sup>st</sup>, 1886 [K.C. note - Fri]

Prof. O. C. Marsh

To M. P. Felch Dr.

To work on fossils - U. S. G. S. from Dec. 1<sup>st</sup> to 31<sup>st</sup> inclusive - self - help, team and expenses  
at one hundred and seventy dollars pr. month \$170.<sup>00</sup>

Rec'd Payment

M. P. Felch