Rec'd Jan 12
Ans — 15

Decatur Ill Jan 11/70

Dr. Engelmann
St Louis

Sir

Ever since I became old enough to study botany I have been familiar with your name, and now scarcely feel myself a stranger. In the fourth Vol. of Pacific R.R. Reports I have a most interesting work on Cactaceæ by yourself and Dr Bigelow. I would be glad to obtain other papers on this order, which was always a delight to me when a child as I found it well represented in my mothers conservatory, and which I have not yet studied to any extent except as they are cultivated. I have thus far in vain, tried to

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possess myself of your "Synopsis" of this order published in Silliman's Journal long ago, in 1852 I believe, so I now take the liberty of addressing you, to enquire if it is possible for me to obtain that or any other papers on Cactaceæ by any means that you know of. I purpose going west in the early Spring as far as Colorado and thence possibly Southward, and know that I shall be especially interested in the study of these plants.

Prof Gray has suggested that I should submit to you my collection of Tradescantias. I am of the opinion that in Dr G. works two species are included in his T. Virginica. I have found in the section where I work two remarkably distinct forms, one tall and smooth with linear leaves and another low pubescent with lanceolate leaves. The latter in the same soil flowering six weeks earlier than the former. My collections are

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at home in Wis. otherwise I would send you specimens. I would add that the tall smooth plant is the only L. radiscantia I know of in Minn Wis or Iowa. L. pilosa grows here nearly I believe three species in this section.

You have probably travelled much in these parts of the country. Have you taken any note of these fonds?

Will you indulge me with a reply with regard to your visitings on Cactaceæ and oblige

Your Obedient Servant

Edward L Greene

Drawer L.

Decatur

Ill.

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Rec'd Jan 26
Ans same day

Decatur Jan 21. 1870

Dr Engelmann

Dear Sir

Thanks for the letter and the Synopsis. I shall feel myself greatly indebted to your kindness and will remember you in any anticipated rambles in the mountains, and gratefully will I accept your proffered assistance in my studies, or rather shall not I be the assistant?

I am going west chiefly to indulge my passion for botany in a region which I suppose to be but imperfectly known. I shall be glad to submit to you specimens, and notes on Cactaceæ, and thus do the greater service to science.

The Synopsis I consider very satisfactory. I like your brief diagnoses, and believe them less liable to lead the botanist into

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confusion than longer ones.

If, as you think possible, you have a copy of the Cactacea of B. C. R. to spare, please lay it aside for me, and I will satisfy you with collections or cash.

It is interesting to me to know that some particular species are greatly desired. I will do my best to obtain them; I will enquire of Mr. Hall concerning his locality of E. Simpsonii. With the regard to the Fraxinus let me ask, do you take the tall later flowering form to be the original F. Virginica?

I have never seen Linné's description, but from the geographical distribution of the plants and from the limited knowledge Linné must have possessed of our great Flora, I infer that he knew only the low hairy form, which I believe is ~~the~~ the exclusive form of Virginia and the south-east generally. Even in Tenn. Ala. and Ken. and among the mountains I have seen no other; no approach even to the tall smooth form, which, rare in central Ill. is the only form I have met in northern Ill. Wisc.

It is abundant in southern Wis. (the low one never seen,) and from its almost exclusively northwestern habitat I suppose it to have been unknown to Linné.

I know that in forms of leaf and in pubescence plants of the same species vary. but it seems that these two must be distinct, so greatly do they differ in general appearance and in time of flowering. In Pickett Co in this state I find them growing on the same sod of ground the low plant in fruit and decay, when the tall one is beginning to flower. This on open prairie in shaded places I have found the low plant growing taller with blue flowers but in another respect approaching the late flowering form. The tall plant always bears blue flowers is perfectly smooth save a few long hairs at base of leaf. has a dark green color throughout. while the low one is I believe always pubescent and in open situations bears purple flowers, (often nearly crimson) and plant much paler green than the other with rather broadly lanceolate leaves, while

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those of the tall one are linear.

Since I first saw the Cow plant in the south I have thought them distinct and my observations here where the two come meet upon the same soil have confirmed my opinion.

It may interest you to know that the extremely rare Quercus Lauro. Nutt. is represented in this county. I have found a young tree eight miles north east from Decatur, bearing fruit however in abundance this year.

Prof Gray says the leaves and fruit correspond exactly with Dr Meads specimens of the same. I believe the leaves I took this fall are nearly all gone I have a couple of dozen acorns yet. If desirable I can send you yet both leaves and fruit.

I sent a number of specimens to my own collection in Wis. a year ago, but did not then know what it was, nor did I last fall, until past the season for collecting.

You shall hear from me, if I get into Colorado, at an early date next spring.

With great Respect

E. L. Greene

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Rec'd April 15 1870
Ans same day

Denver Colorado.
Apr. 11. 1870

Dr. George Engelman
St. Louis Mo.

Dear Sir.

I find myself obliged to apply to you for instruction with reference to the method of preserving specimens of the Cactaceæ. I have never seen any collections of dried specimens of these plants. What shall I do with these cylindrical and globous forms. Am I to slice off with a knife such a portion of the plant as will show the flowers, protuberances and spines, and then press that? Or must I remove the flowers and press them, and dry the remainder of the plant entire? The latter suggests itself as more desirable, but I

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do not know whether it can be done. The flat jointed Opuntiæ, I suppose I can preserve by removing the under surface of the branch, and with it, most of the fleshy part, and then press the rest without detaching the flowers.

Will this do, or must the entire joint or branch be preserved with both surfaces?

I am inexperienced in the art of preserving these plants and will you be so kind as to give me counsel?

I have just arrived in the Territory and find that I did not come too soon. Already there are flowers on the hills at foot of the mountains.

If you are especially interested in other orders or genera than the Cactaceæ, please tell me what ones and I will be particularly careful to make more complete collections of such for you. I am not privileged to devote all my time to my favorite pursuit of botanizing, consequently I shall not be able to gather and preserve complete specimens by the hundred, of everything I may find,

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and I wish to make the best possible use of my time, by collecting and studying most, those plants which are less perfectly known, or are being more particularly studied by our authors. This is why I make such a suggestion. I wish to do what little I may for the advancement of our favorite science and have come to this part of the country, not as others do, for gold, although I am a young man of no pecuniary fortune; but that I might have the pleasure of some botanical rambles in the Rocky mountains and perhaps, aid somewhat in developing their botany.

The specimens of Juncus Leana you requested. I will send you with what I may soon have for you from these parts. I have only three or four left but they are yours.

If I may hear from you soon, please direct to Golden City, Colorado.

I am Sir Your Obdt Servant

Edward L. Greene.

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Rec'd Aug 21
Ans 26

Denver July 16. 1872

Dr. Engelmann.
St. Louis.

Dear Sir

I am now prepared to furnish you, as you desired, living specimens of Echinocactus Simpsonii. And how shall I send them? and how many? I could send small or medium sized ones by mail, but I suppose you desire a considerable number, and in this case they had better be expressed. Please give me instructions in this matter.

I have now found several localities of the plant and shall have probably hundreds of them [illegible] [illegible]

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You wished for seeds of Manillaria uniflora and I fear I shall hardly be able to secure many. The plant can hardly be said to be common here, or at least I observe only now and then one, & have seen but a dozen of them. They are perhaps widely distributed over the plains but I have scarcely seen two on the same acre of ground; do not know where I could find half a dozen plants. At home I have seen hundreds, where Mammillaria is more common but as it retains its fruit during the winter I am able to gather seeds abundantly.

If you wish living specimens of any other plant beside the Echinocactus I will furnish them; and if I can obtain from you in exchange, any botanical papers or [illegible] or any copies of any [illegible]

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monographs on any genus, I shall be delighted. I am a kind of "botanic bookworm"!

Now direct me with regard to the sending of the dried specimens and [illegible]

Your Ob'd't Servant

Edward L. Greene

Denver

Colorado.

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Rec Aug 8
Ans Oct 1

Denver Aug. 2. 1879.

Dr. Engelmann

Dear Sir

Your favor of the 26th ultimo is just received.

As I purpose remaining in this country during the fall and winter I will obey your suggestion and wait until fall before sending the plant you desire.

I am quite sure I have Echinocactus simpsonii, and it was the first cactaceous plant I saw in flower after I came here. I took specimen flowers on the mountains [illegible], when I may say a-

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GEORGE ENGELMANN PAPERS

was in full flower. At that time I had not seen Mann. virginica, and I supposed it to be that plant from your description in the synopsis. Another reason why I mistook the plant was this. In your letter (?) you said E. simplicissimi has small pink flowers, but I found the flowers quite bright-purple. And now that I have since seen M. virginica in flower I may say that its flowers are but shade more deeply colored than are those of E. simplicissimi. I mailed one of the letter plants to my mother (who is a careful florist) before the flowering and the seed ripened. The flowers were pale pink. Now I anticipate that in the green house the flowers do not attain their full brilliancy of color. The plant is common

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enough on table lands and sides of the lower mountains. To the eye of a botanist it is readily distinguishable from the Mammillaria when one has seen both, even when not in flower. But I was not satisfied that my plant was the Echinocactus until on the falling off of the flowers I saw that they had grown from the apex of the tubercle. This fact I did not notice at first; because the tubercles were but partially developed and the origin of the buds was obscure.

Mammillaria Nuttallii is not common here. My locality for it is Dudley's Ranch on Deer Creek fine small specimens from Denver. I have not met it elsewhere. Fine specimens however both simple and proliferous. Have Dead-wood Plum found a number of fine proliferous

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specimens of R. nivium.
Dried berries of R. Nuttallii I enclose in this letter. I have not yet received fruit of E. Sandfordii.
You ask if I am going to travel further. No, not at present: probably I shall remain here for a year or two. I only change in wishing I knew that I had other not chemic employed. But I find even here about Denver and the mount mountains some interesting which have been overlooked by those who have preceded me in this field. I have just received a very enthusiastic letter from Mr. Gray the carcographer. A package of Sonora I sent him was found to contain the rare and precious "Cosex Torreyi!!" found in the U.S. only once before and that by Torrey long ago. By and by you shall hear from me again with the desired fruit. E. L. Greene.

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Rec Octo 7
Ans Oct 12

$3.00

Golden City Co. Y.
Sept. 30 1870

Dr. Engelmann.

Dear Sir.

I send you by tomorrows express, a box of Echinocactus Simpsonii.
You wished for a few Mamillariae but I know of not a plant growing near, when I now am. so I must ask you to wait until I make a trip to the plains.

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Specimens, and seeds of Yucca
I will send by mail by and by.

Very Truly Yours.

Edward L. Greene
Golden City
Colorado.

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Rec'd Oct 24
Ans — 30

Golden City. Oct: 19.
1870.

Dr. Engelmann.

Dear Sir.

Yours of Oct.
1st is at hand. It will afford me
pleasure to serve you in collecting
specimens, as you direct, of the
Abies, so soon as I can find
time to go to the mountains
where these things grow. I or I
suppose that the evergreen
Coniferæ may be studied very
well, from full or winter specimens
though possibly I shall not be
able to get seeds now, at so late
an hour of the year. I have
never had opportunities for
studying the Coniferæ until now,

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and have not yet collected any specimens since I came here. You have I suppose received the box of Echinocactus simpsonii before this, and I am anxious to know if the box will, the rough shipment I gave them. I did not get seeds. I believe I was too slow in my expectations. They were all gone when I first went to look for them, though thought then, that it must be too soon to look for them, and so did not notice the little dry shells, empty of course, which I afterwards discovered.

I will enclose in this a few berries of Mammillaria vivipara, all I have been able to find. You assure me that I sent you seeds of M. Nuttallii and ask if we have any other

Cactaceae in this district.
In reply I will give you some account of all the others I have seen. Of Mammillaria and Echinocacti, I have seen no others than those mentioned, but I find simple, and proliferous specimens of both species of Mammillaria. and will send you living examples in the Spring.
Cereus viridiflorus var. minor, is one of our most common Cactaceae. Growing low among the short grasses it is not easily discoverable when out of flower, but about the twentieth of May, the knolls and ridges of these foot hills, are at noon-day bedecked with its yellowish flowers, as is the evening sky with stars.
Near Golden City I have seen many fine specimens of var. B. cylindricus. elongatus, aculeis longis rigidis. Flores non vidi.

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Opuntiae puzzle me.

However we have plenty of O. Missouriensis, in several well marked varieties. Var. a. rufispina on the plains. Var. δ subinermis in the lower mountains and ε. albispina, among the foot-hills. none of them rare.

Now day before yesterday I found one, which I can not determine at all. It is a Platopuntia, and of the section Herreanthea. I believe, though mostly sterile, I found only two seds, which I will enclose. They were contained in a small ovate fruit about spring long on the ground. Large as are the seds, the plant is small. The obovate or frequently elliptical joints are 1'–2' long, thickly beset with long stout spines. The whole plant forming a spreading mass a foot and a half broad. It looks as if it might be a hybrid between O. Missouriensis and rufispina

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Rec Oct 24 1870

and O. fragilis, Haw. I do not say that I think it is such.

3 The other Opuntia seeds belong to another which I can not determine. The plant belongs to the section Vulgares, has a large cylindrico-clavate, dark purple fruit of which each of the fascicli bears a red spine 3"–6" long and which is usually strongly deflexed, and which with the bristles, falls off at the slightest touch when the fruit is ripe. The large joints are broadly obovate, and very well armed with long stout, red and white spines. Another closely allied

4 Opuntia, has a smaller, clavate green, or slightly purplish fruit and joints thinner, less densely armed, and more truly obovate in outline. Seeds of this I will send next time. This last I thought to be your O. macrorhiza

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until I examined the roots and found them fibrous. I am familiar with O. Rafinesquii, as it grows east of the Mississippi, and both these last mentioned species I suppose to be closely allied to it, but their fruits are as different from that as they are from each other.

5 O. fragilis Haw. is common on the plains east of Denver, but usually sterile. There are two other forms of Opuntia, of which I have seen neither flowers or fruit, which I shall notice more particularly when I meet them again. If my Echinocactus reached you safely, please send me whatever you please of botanical papers. I should like much your monographs of Cuscuta, and Euphorbia.

Very truly

E. L. Greene
Golden City
Colorado

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Ans - Oct 28
Ans — 30

Golden City Oct. 20.
1870

Dr. Geo. Engelmann.

Dear Sir

I am very happy to know that the box of Echinocacti reached its destination safely. Anticipating the possibility of your not being very familiar with the habit of the plant; I selected of all sizes and ages. Some very ill looking large ones I suppose to be older than the rest; Had I been collecting only for the

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horticulturalist. I should have chosen a more uniform and elegant set of specimens.

I am obliged to prepay the express charges on all such packages, for the express offices here, consider such things of no value and will not send them unprepaid. I shall not ask the return of the $3.10 for you have kindly promised me botanical papers, which will be far more highly prized than that amount of money.

If you wish to see living specimens of any of those Opuntiae, or of any other of our Cd. Cactaceae it will give me pleasure to forward them at the close of winter, when

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I shall perhaps have ample time, to run about and gather in rarities. If you mail me any thing of what I have requested in the line of the scientific, let it be from your own works, your monographs of different N. Am. genera. I have many of the works of Torr. & Gray, and of Gray, but of your own, I have only the Synopsis Cact. you sent me, and Engm Bigelow on Cucurbaceae of Pac. R.R. Survey. As soon as I get from Prof. Gray an account of my collection, so that I am certain what I have, I will send whatever is not enumerated among

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Hall and Harbours plants.
My address will be for the
winter, Golden City.

Yours Truly

Ed. L. Greene.

Ed Greene

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Rec Nov 16th 1877
Ans — 30th

Golden City Nov. 12

Dr. Engelmann.

My Dear Sir.

Those charming pictures on Yucca and Cucurbita were duly recd. Yes your letter of the 31st ult. I would recommend a joint and wipe fruit of the Opuntia which I told you had a fleshy and edible berry. I should have added that the stems fall off at the elevated knots even before the fruit is fully ripe. At this date I can find none with edible seeds. They correspond exactly with those of the gourds, that is, are quite long and longitudinally

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fingerlike, shorter
and deflexed. color of both, red.
Now I will next-season bring
& send you a single fruit-stem
for every in the blooms. O. Nelsoni
flowers are constant, yet I can
not say positively. The fruit
bearing fruit are larger than
the sterile one I send you.
The flowers I call the diel
and eve, or at least time diel
distinguish between the
and here in the other forms.
With regard to the fruit of
O. Missouriensis, I will say
that the fruit becomes dry
very soon after maturing.
Even, in August, I picked
it as it was falling off, and the
seeds were perfectly ripe. The
flowers are rare. O. Missouriensis
flowers here about the 25th of
May, & then with for the other

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Opuntia. You should have another fruit from me next season as you express desire. Thanks for the promised cuts on Mey. Crataegus, I lost for it, but it has not yet come. Look for another small package of Opuntia cuts before long. In March or April I will send long specimens of them with the other things you expect.

Very truly

Col. L. Brewer.

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Rec'd Dec 10th
Ans Feb 8

Greene

Golden City. Dec. 6. 1870

Dr. Engelmann.

My Dear Sir.

Last night, I received that splendid work, the N. B. Cactaceæ. Many, many thanks! Your letter which accompanies it, is full of interest; but I did not know that your means of knowing these Cactaceæ, had been so limited, or I should have given them closer attention during the flowering and fruiting season.

With reference to Opuntia arborescens, I have not seen it wild. Those fruits were taken, by me, from a plant in the garden of Mr. Marion of Denver. A number of this, and Cereus Fendleri, were brought from the vicinity of Santa Fe. last Spring, and both species, planted in the sun ground, flowered

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and matured their fruits abundantly. Mr. Marion says there are several varieties among his twenty specimens of C. Fendleri; but he founds them upon the color of flowers only, I did not see the plants until the fruits were ripe and I detected no differences, which a botanist would consider as of any moment. These plants are left in the open air, unprotected, and I hope they will survive the winter in this latitude, and altitude.

As to the falling out of the seeds of C. Missouriensis, the seed does fall out. Usually the fruits fall as soon as fully mature, and the thin and brittle shell is easily broken, perhaps by the hoofs of animals, and perhaps it bursts by contracting itself upon the mass of seeds within, so that the seeds lie scattered on the ground in the fall. I frequently have noticed the empty shells unbroken except at the top, as if the umbilicus (I believe it is called) had detached itself

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and fallen. I have also seen the fruits in two or three instances while yet remaining on the plants and full of seeds, yet with the umbilical cord, if I may so name it, fallen off. This would certainly show a tendency toward a true dehiscence, but I am not satisfied that anything can made of it. For I have this morning broken several fruits which I gathered a month or two ago, and they sever just as readily anywhere else as at the top. I shall look to this more closely hereafter.

No 2. of my enumeration, which you think may prove to be your O. brachyanthera, will, I believe, prove to be something else. The fruit is shining like that of O. Missouriensis. I will visit its locality in the course of the [illegible], and will mail to you a joint or two, and any remains of

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fruit I may possibly find.

I have referred to the figure of O. brachyarthra in Whipple's report and think it will not answer to my plant at all, notwithstanding the imperfection of the specimen from which the figure was made, but, down near Denver on the high sandy plains, growing with O. fragilis is, I think, your O. brachyarthra! It is one of the "two Opuntiae" last mentioned in my Oct. letter, of which I said I had not seen either flower or fruit.

Of the two Opuntiae which you have provisionally named. O. phlocarpa and O. Greenei I will write when I have opportunity to examine them more particularly, and I will send. you by mail, a better variety of fresh specimens of joints that you may examine bristles etc. for yourself.

Very truly Yours

Ed. L. Greene

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Rec'd Dec 14
Ans Nov 8

Opuntia

Golden City Dec. 10. 1870

Dr. Geo. Engelmann.

Dear Sir.

During the past week I have been examining more closely those Opuntiae and will now give the result of my observations. I have enclosed, in a box, some sections of very old joints of each, so that you may see for yourself just how they develop. Also a young and sterile joint of each, the smallest, almost, that I could find. I found one fruit which had retained some of its spines

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George Engelmann Papers

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This I wrapped in a bit of paper so that you may perhaps find the spines if they become detached from the berry on the way.

In speaking of them I will, for convenience sake use the names you have provided in case they shall prove new and distinct. In O. oplocarpa I find the bristles always long and very conspicuous in all the mature joints, except the youngest: In the latter, such as grew the last season, they scarcely appear at all, except on the lower half of the joint. In O. Greenei they are short, except on very old joints, as you will see on the one enclosed, but present, and equally conspicuous on fertile and sterile joints.

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So that - to your inquiry as to the constancy of length of bristles as a character, I can answer in the affirmative. I distinguish the two forms very readily by other circumstances, which may however, be less reliable characters by which to distinguish species. i.e. by the shape and color of the articulations, and by the number and color of spines. The joints of O. opuntiocarpa are broader than long, of a dark purplish hue, and thickly beset all over with whitish spines. Of O. Greenei they are usually larger, and also longer than broad, green

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except the purplish ring around the pulvillus, and unarmed below the middle of the joint, frequently only the uppermost pulvilli spine bearing. The spines too are rather longer and more inclined to be purple or red. But you can see these things for yourself when spring comes so that I can send good flowering specimens. I believe they are distinct species, but whether new or not I cannot judge.

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On visiting the locality of the doubtful little one I found two more patches of it from which I gathered a few imperfect fruits all of which I have enclosed in the box, with also a root and several joints.

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Yr Rec'd Dec 14 1870

The plant grows in spreading masses from one to two feet broad, which is different from the habit of C. fragilis and its little tumid jointed very spiny, and fragile associate, which grow on the plains about Denver. Moreover this one I send is not fragile like the other two referred to. I shall be anxious to hear your decision as to what it is. It seems to be quite rare.

You ask if our Opuntias are all prostrate. I answer that they are. And I want to inquire of the little dark but brilliant purple grub which I find imbedded in a white cocoon on joints of O. Missourensis and O. phaeacantha, is the Cochenille insect?

Very truly Yours.

E. L. Greene

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Rec'd Feb 7 1871
Ans Feb 8 —

Golden City Feb. 5. 1871

Dear Dr. Engelmann.

I send herewith several cones of an Abies, and wish to know if they represent that particular species you wished me to notice ~~for~~ more especially?

The tree is common on the lower mountains and the older cones have a silvery appearance.

Of the younger ones I see trees of apparently the same age, one dark and glaucous(?) or silvery, the other of a ~~little~~ lighter green without the silvery coat, but can discover no other differences. I have taken specimens of these

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in accordance with your wishes and will send them soon if this is O.K. But will if practicable examine it in, and take specimens for other localities first.

I noticed a different species with much longer cones, and indeed a much larger tree, high in the mts. in canyons, but further away from R. Can get fine specimens for 20. When no further on Rocky Mt. Conifers and send you a full collection for that I may get from you this summer. But this I can not do for the close of next season.

Yours truly

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Rec'd July 28
Ans Aug 26

Greene

Golden City, July 22. 1871.

My Dear Doctor:

Your favor of the 17th inst. is at hand. My time has been so fully occupied with other things, that during all the spring and summer, I have given little attention to the flowers. I thought to have sent you a good box of Cactacea before they should start to grow in the spring so that you could see them in flower, but I was too slow. I could not find the time to

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go about and gather them in. I have not been on the grounds where C. fragilis, and those other kindred and uncertain forms grow, since I last wrote to you. By this time they are all out of flower, and wither pink perhaps fully grown.

If I can possibly find time, I will before the first of August, go out and get some more of those little ones, and send them to you by mail. Perhaps the young joints will get home and shed their leaves.

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I shall also try to send young plants of those two uncertain forms which you say you have growing from my specimens, and bore seed.

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I believe I wrote you that in Denver there were growing in a certain garden, specimens of Berberis Fendleri, and of Juniper arborescens. I may add that both those species moulded the mulch in the open air, and flowered finely last month. They were brought from New Mexico.

I live in hopes of getting into New Mexico at some time, not far in the future, but not this season.

Look, then, for some more packages from me before many days: and by the way, Prof. Gray did not give me the names of the Junci, in any

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APERS

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last years collection, but said "Send them to Dr. Engelmann."

With your permission I will do so, as soon as I have time to get at them.

As Ever, Sincerely Yours,

Ed. L. Greene.

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Rec'd Sept 5
Ans — 19

Golden Col. Aug 31. 1871.

My Dear Dr. Engelmann:

Yours of the 26th inst. is just received.

The Opuntia with small dry fruit, is precisely the same as what I sent last winter, and which you thought might prove O. brachyarthra. Indeed I took the latter from the same root or "clump" of roots, as I did the former. In the winter, when shrivelled by the cold, these plants appear very different from the same in summer when growing. The enlarging and reviving of the Cactacea, is an event which distinctly marks the return of Spring in this country.

No, it is not all the same as the common O. fragilis of the plains at Denver. The latter I will try to send you before long. It agrees well enough with the characters you ascribe to it. But it does not seem to me that this plant of mine is described by you, unless it be O. brachyarthra, which you

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must determine, if anyone. This plant produced fruit quite plentifully, which C. fragilis does not. The flowers I have not seen, nor the leaves. I hope this specimen will grow with you.

I have duplicates of six hundred species of Colorado plants, and if I knew of any of them that you would like, I would gladly send you them. I do not collect extensively, nor for distribution.

I am a young clergyman, and do not have sufficient time, to spare from my work as a missionary. I botanize a little for recreation, and for love of the science, as I have opportunity.

If you can give me the names of any Col. plants you would like, I will send them if I have them with the Junci, and as for the Herbarium Junceorum Bor. Am. I shall be delighted to possess it, if at any time in the future I shall be able to do enough for you, to compensate you for so valuable a thing.

Here after my address will be Greeley Col. instead of Golden.

In Haste

Yours Truly

Ed. L. Greene.

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Rec'd Nov 6th
Ans Dec 19

Greeley, Col. Nov. 2. 1871.

My Dear Dr. Engelmann;

Both your letters are received. Pardon me for not having written more promptly. Mr. Gunnison was away even at the cañon of Golden twenty miles from here, and when I go down I will bring them with me and send you a set, which may be within three or four weeks.

Yes, I have probably seen the mistletoe you enquire about. I found it last winter, growing on one of the pines of the lower mountains, some five miles from Golden City. In the summer season I have never seen it. But this fall I noticed it in another locality. But here I now am, thirty miles from the mountains, and seventy from ~~my~~ the localities where I rambled during the first two seasons, and whether I shall be able to get the mistletoe next season, in flower or fruit is uncertain. But I will find it in some shape if I can, and if possible will make collections at different seasons etc. as you desire. At Greeley I am evidently in no very favorable situation for botanical researches. Not a cactus here, except the

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small, red-spined var. of Opuntia Missourensis, and this is well nigh omnipresent on the Plains about, quite different too, in appearance from the "rufispina" about Denver, not half so large.

There is no end to the varieties of this species I believe. Next time I visit Denver, I will get and send you C. fragilis, if snow does not prevent me from finding it. Last Sunday I was in Cheyenne Wyoming Ter. I noticed Echinocactus Simpsonii growing on the plains there among the buffalo grass, though I have never seen it before, except in the mountains. Its presence on those plains is accounted for in the fact of their higher latitude, and altitude.

Can't you manage to make me, and the Rock Mts a visit next summer? You are not so far away, and how delighted I would be to see you, and to conduct you to some of my favorite haunts about Golden, and then to the higher mountains!

But I must conclude, and subscribe myself,

Yours in Haste

Ed. L. Greene.

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Rec'd Dec 13 1872
Ans " 14 —

Greeley, Col. Dec. 10, 1872.

My Dear Dr. Engelmann,—

I write enclose herewith, my very last specimen of your unpublished Gentiana procumbens. I obtained three (only) very good specimens of it on Gray's Peak, and Dr. Parry, as he informs me got it afterwards on Mt. Flora, some twenty five miles distant from my locality. I found it growing with G. prostrata. I part with my last specimen, very reluctantly, but it will enable you in your description, to give Gray's Peak as a locality, and I shall hope to find it again next year.

Very Truly Yours,

Edward L. Greene.

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Rec'd Jan 27
Ans same day

[illegible]

My Dear Dr. Engelmann:—

Your letter reaching me just before I left home, I have been able to send a few words in response. I may say that I have always been of the opinion that the species of Quercus in question are perfectly distinct species. Can you determine the species from the photographs of Quercus texana Buckl. [illegible] Dr. Engelmann's [illegible] Schneck's specimens. But I have never had a good opportunity of examining the Texan species all about Galveston, of course.

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Rec^d Febr 2^d
An — 5

Address: Vallejo, California

Denver, Jan. 28, 1873.

My Dear Doctor:—

At last I have been able to find a few good roots of Opuntia fragilis, for you, which I send to-day. I am in Denver, and there is no snow, and I went out this afternoon and readily found the locality. I hope the plants will reach you in some shape, but the condition in which I put them in the box shows how well the plant deserves the name "fragilis". The joints which are but one or two seasons old, are separated from the plant if you scarcely more than touch them.

I received your very

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interesting letter on the Cerci which I sent you, but not until almost two months had elapsed, after the date of my sending the box, and I had begun to think you had failed to receive it.

I do not wonder that Opuntia puzzle you. For among the living plants I get completely confused. Even the dry-pinned Missouriensis, and the fleshy pinned seem to me together!

Very truly Yours
E. L. Greene.

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Address me at Pueblo as heretofore.

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Rec March 22
Ans May 31

Pueblo. Col. Mch. 20. 73.

My Dear Dr Engelmann;—

Your favor of Jan. 21. giving me the name of the Cuscuta, was duly received. I had not a duplicate of the plant and so could not send it. It is probably rare in Colorado.

You see by the heading of this that I am in Southern Colorado. I wonder what I shall find here in the line of the cactaceous. for you. Opuntia arborescens is one of the very commonest plants, all around me on the plains, growing about 3 or 4 feet high.

Cereus Fendleri is at the foot of the Mts west and northwest of this point. and also with it a Echinocactus with joints 4 or eight inches broad. The one with flashy spring point which I sent you

from near Golden. I also found fifty miles north of that locality and I find it here, in greatly river bottoms along the streams. The only variation I discover is in regard to the Spines on the leaves. they are sometimes pretty nearly wanting. I hope to have a very interesting season. One of my rarities of last season, was the true Cirsus undulatus found at Greeley, Col. I will send you a specimen as soon as I come across the package that contains them.

Yours Very Truly,

Ed. L. Greene

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Pueblo
Colorado

Yes, I have your
Cat. Syrups & Juncus.

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Rec'd June 10
Ans June 25

Pueblo. Col. June 6, 1887

Dr. Engelmann

Dear Sir:—

Your favor of the 21st ult. is just at hand. I am glad to hear from you, and am hoping to be able to send you by next fall, some dried specimens of my South Colorado Cactaceæ.

Cereus viridiflorus is not more common here than it is in the latitude of Denver and Golden, but I have my eye on three other species of Cereus, all of them now in flower, though I have not been able to visit the locality of C. Fendleri for two weeks, and I fear I shall fail to get its blossoms. The other two are apparently C. macracanthus and C. fasciculatus as figured in Emory's Report—except that ~~C. Fa~~ C. fasciculatus is caespitose in every case, which

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I have seen. But as to spines and general appearance, my plant is precisely what is given as C. paniculatus in Lemon. The flowers are ~~bright scarlet~~ deep red, and as near like those of what I call C. emmenanthus as can be, except in color. Those of the latter are bright scarlet. I have good specimens of flowers and spines of both these, well preserved, and am awaiting to see the fruits.

None of the Opuntias are yet in flower. The large platyamantia is frostrate. Do you know that O. arborescens, is sometimes in the fall overtaken by cold weather before the fruit is ripe, and that those immature berries, are ripened during the next season? I noticed some fruits without on the decaying post without branches, in the winter, and now that the plants are erect again and budding out anew, those same fruits are

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are fresh again, and apparently going on to maturity.

I do not know except J. angustifolia, and it seldom flowers. The cattle are not fit it. They eat the young flower stalks with buds as soon as they appear.

There does not seem to be much variation in the species.

There is one species of Vitis on the Arkansas, and the same on clear creek north, in the Cañons. It is the V. riparia, I think. I have never made specimens of it, but will do so this season, and send you some.

It grows in the Alts along the streams up to 9,000 ft at least.

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I should be glad to get some Yucca on Yucca. Dr. Parry thought I might possibly find the Y. baccata so far north as this, but I have never yet seen it.

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About Opuntia fragilis. I saw it very often about Denver two years ago, and there was one form (the most common) which could not have been anything else; then there was another which would seem to be intermediate between that and the little Plutoopuntia. Just you from near Golden.

I never saw C. fragilis in flower, but seen several fruits. I don't know when I shall be able to visit the locality again, but it was not more than a mile from Denver. Yours as ever,

E. L. Greene.

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Rec'd July 5th
Ans — 6

Pueblo, July 1. 1873.

Dr. Engelmann

Your favor of the 23d inst., came last evening.

I am very glad that one bulb of the Opuntia opened for you; but I suppose its color was somewhat paler than natural, from having been developed in the dark. In a package which I shall send herewith, you will find a dried flower and young fruit. I can not discover the slightest differences in the plants except in the color of flowers. They grow all in the same soil, and the purple and yellow and orange flowers will be found when the seeds are sixfeet of ground. There are gradations of color from clear yellow (without orange at the base of petals) to yellow with orange lines, the orange sometimes extends almost to the tips of the petals sometimes leaving

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And while there are no different shades of purple, in the pink flowers, all of the colors, assume a purplish hue in withering; that is, after the petals are entirely closed and twisted together they will look as if they might have been purplish.
But the difference between the yellow and purple flowers as we see them in the middle of the day is indeed quite remarkable. Year Friday last year I saw the var. nipissiana sometimes bearing almost white flowers, only faintly yellowish, with a tint of pale rosy lilac added. The Apinecus are not flowering this year at all, among thousands of specimens I have seen but one, that had even attempted to send up a flower stalk.
Two plants which stand in a garden right in town, when they had cultivated flowered nicely. The stigmas were rather dark green. Possibly these plants will perfect fruit.
This general failure of the flowers is a puzzle to me. Heretofore I have noticed that cattle would always eat off the stems if they could get at

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from that this year as others have appeared.

No body has given this region credit for more than one species of oak, but in the package you will find flowering specimens of <u>two</u>. I shall be careful to get mature leaves and fruit of them both when the time comes.

Cercis Canadensis, I failed to see in flower, but Mr. Brandegee has pressed flowers. Strength ordering he makes bad very miserable specimens. He is quite enthusiastic but not a very careful observer. In my next visit to Cañon City I shall hope to get ripe fruit of all the Cercis, and will send you living plants of all three. The three that grow there are quite distinct.

The large fruited Platosphulin I guess is a form of P. Rapinesquii.

Very truly Yours.

E. L. Greene.

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Rec July 22d
Ans Oct 2

Pueblo, July 17. 1873.

Dr. Engelmann.

Dear Sir:- Your letter came several days since, and yesterday the very interesting work upon Yucca. The two scarlet flowered Cereei do not appear to run together. I see nothing like intermediate forms. The localities of both are 30. miles away, and I begin to fear I shall not get the fruits this year. I failed to get flowers of C. Fendleri. Yesterday I added to my list of Colorado Cacti Cereus Coccineus, a single, beautiful fruiting specimen of which I found on the bank of the Arkansas five miles above town.

Do you know that when the seed of C. visnaga flowers is ripe the berry opens longitudinally on one side, lets the seeds drop out, and that the empty shell does not fall until later? This fact I have just observed, never having found ripe fruit before this season. It reminds me of Echinocactus Simpsonii, which has about the same way of shedding first its seeds, and then the shell.

Very truly Yours.
E. L. Greene.

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Rec 9 Oct 11
Ans — 14

Pueblo, Oct. 7. 1883.

Dr Engelmann.

My Dear Sir:

Your favor of the 2d inst. came to hand last night. I will mail herewith a few of my plants of this season's collecting. Frankenia Jamesii, Torr. ined. is perhaps my most interesting discovery: never before collected in flower, and char. not yet published, for want of material. Dr. Gray says he will now publish it. Eriogonum lachnogynum, of Torr in Whip. Rep. I suppose you will be glad to see, for it must yet be very rare in collections, and also Linosyris (now Bigelovia) Bigelovii. I have also a few specimens of the very rare Eriogonum Gordonii, but they are too large to send in this ~~[illegible]~~ small parcel. If you particularly desire one let me know, and I will get and send it. I have yet a number of other things not determined, which might interest you but I wait for names in Prof. Gray.

I will make an effort this fall some living Cactaceæ,

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but those more interesting were your forty five miles away from where I am, and so I can not so easily get them. I failed to get fruits, so you must be patient with me until another year, and then may be &c.

Yes I have found Pinus edulis, but did not know there was an Arceuthobium to be looked for on it. Is there yet published any monograph of that genus? You will find in the package a spec. of A. cupressophorum, collected for me by my mother. I also found the other (A Americanum I believe) on P. contorta later in the season, and in fruit only.

Very truly Yours

C. L. Greene.

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Rec'd Oct 24
Ans Oct 28

Same Coll. Same
No 62

Pueblo, Oct. 20. 1873.

Dr. Engelmann,

My Dear Sir: —
Your interesting letter of the 14th inst. is at hand, and I send you today a specimen of the very rare Eriogonum Jamesii together with two or three other, of my rarities of this season, and one or two common things, which may interest you as coming from this part. No, I have never seen

your Herbarium Specimen, but should prize it highly if I find it. Please send me a set then, and I will repay you either in specimens, or pay the price whatever it is. You go to Cañon City again soon, when the Cacti grow, and I am going to get some for you, and send by express. Yours truly, [illegible]

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Mundtlich angekündigt Herr
Dr. Sporleder
Alsdann persönlich

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Und ist offenbar Wasser
welche ich widerfahren
die Liste ist zu blass
obwohl sie gut klingt
und sich wohl ebenso
spricht

die Liste ist Spreizer, perlen
genommen.
Muss ich nun auf
ein neue zurückgehen
ob Gut genug?

Rec'd Oct 24
Ans – 28

My Dear Doctor:

I forgot to enclose specimens of the Pinus contorta & Arcenthobium in the parcel I mailed you to-day, so please find them herewith. In a letter of mine written in December last, I said that the time of flowering was not then known to you. One would think from these specimens of mine, had flowered either in June or early July, judging from the freshness of the remains of the staminate specimens.

You say Dr. Parry has found it in bud in Oct. but my impression is that in both species known to me the buds are formed in autumn, for I find them on the plants in mid-winter.

I might add, that the spec's included under Pinus contorta are perhaps not much more than 8,500 ft. where Arceuth. usually flowers earlier than at a higher altitude.

Yours
E. L. Greene.

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Rec Oct 31
Ans Dec 14

Opuntia erecta ?
Camanchica ?

Pueblo. Oct. 27, 1873.

My Dear Dr. Engelmann:—

I have this day taken to the express office for you a box of Cactaceæ from Cuivre City. The larger cereus, you will recognize no doubt as being the two of which I sent flowers awhile ago. The small, mostly simple, one is what I take to be C. Fendleri, of which, however I have not seen flowers or fruit. But ~~Brandage~~ Mr. Brandage's description of the flower, accords with yours in Mex. Bound. Cud: The Opuntia, you will see is like one I sent from Golden in 1870, only that this is

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APERS

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three or four times as large as that, I find also, the smooth-fruited, or rather the one with spineless fruit growing with this, at Carson and hereabouts, and it is correspondingly larger than the similar one which I sent from Golden. It must be the more southern latitude and better climate, which makes the difference in size. Although there is considerable difference in the appearance of the fruits, those of the one, being almost cylindrical and armed with spines, and of the other long pear-shaped and unarmed; and although the spiny-fruited on has joints much more spiny

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them the other, yet I am not satisfied that the two are not mere forms of one species. I think they run together.
As for the two second flowered cases. They certainly do not run together in this district. I never met with a specimen which I can not at first glance refer to its proper species. The characters of spines to be very constant. I am sorry that I could not get fruit. But we will hope to get them next season.

Very truly Yours.
S. L. Greene.

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Rec'd April 2d
Ans June 7

Vallejo, March 25, 1874

My Dear Doctor:-

Your guessing is not correct, this time. I have sent you no package from Cal. I thought I had answered your letter of Feb. 6; but I judge from the remark at the end of this last - that I have not. No. I have seen no Yucca here. I observed the other day on Napa River the dead remains of a last years Cuscuta. Yes, I have your monograph of that genus, and I guess also nearly all of your monographs. Unless you have revised Vitis and published it without my knowing of it. I have seen no wild grape no yet here. I had laid aside some mature-leafed specimens of those S. Col. oaks, and

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some other things, partly expecting to bring them to you the first winter, but, instead of going West, hither I have come.
I will, however send you the oak leaves. S. Watson says they are both Q. undulata, and that the small one is the true, or typical one. I have no doubt he is correct, for since I got those spring specimens at Cañon City, I have observed the species quite carefully, and find all sorts of intermediate forms, as to the size, and the characters of the leaf, and the fruits are all alike, so far as I can see, in all the forms. I had a few acorns, but suspect I have lost them in moving. I fear I shall not be able to do much in botany this season. I am too far from the hills, to make much study of oaks and junipers for you, and besides I have my hands quite as full as
ever

E. L. Greene

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Rec'd Jan 22

Vallejo. Jan. 15: 1895.

My Dear Doctor: —

I have just rec'd. your favor of the 7th inst., wherein you give the name of my Callitriches from the Sierra Nevada, and also settle the matter of the little "Gentian". Thanks for the specimen of its European cogener.

I must also here acknowledge the receipt of your letters of Nov. 11, and Dec. 1, both of which were full of interesting and instructive notes on the specimens I send you.

I have been finding a few more things which I wish to send you, and will try to get them all together, tie them up, and mail them before many days more have passed.

Very Truly Yours.

Edwd. L. Greene.

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Rec Jan 27
Ans Febr 7

Gnetka, Jan. 18. 1886.

My Dear Doctor,

I am glad the plants have reached you safely. The price of the 300 specimens is $30, which you can remit by post-office order.

I will try to do more in the line of Conifera &c if I collect here another season, as I expect to do

Very truly Yours
Edwd L. Greene

To Dr. Geo. Engelmann
St Louis, Mo.

P.S. I put in a new ticket for No 857. The other name is wrong.

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Rec'd Aug 14 ans same day

Yreka, California
August 6. 1876.

My Dear Doctor:

Almost ten months have slipped by since I saw you in St. Louis. I came to this extreme northern part of California last March. For botanizing I find I have a very interesting field. I have collected a great many rarities, and some eight or ten new species. I will send you a nice parcel by and by. Oaks are not numerous here; but I am making good specimens of the few I find. I hear you have come out with a monograph of that genus and one of Agave. I have not seen either, for I have

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Missouri Botanical Garden

been as yet no advertisement of them.

I see no Cuscutas here except one on Alfalfa which I presume has been introduced with that plant, and of which I can not yet get specimens the farmers fight it so desperately.

The Vol II of Botany of California now at hand redoubles the interest one feels in California botanizing. It is a grand book. I hope the 2d Vol. will come before long.

I am only forty miles from the northern base of Mt. Shasta and hope to be collecting on its snow-streaked sides a month or six weeks hence. There is yet too much snow there, and no one has attempted to ascend it this year.

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Dr. Parry, still here in California will doubtless bring you a rich harvest when he returns to you this fall. I am very likely to spend yet another season here in N. Cal. I have not ~~half~~ half done studying this charming region. Hoping some time to hear from you again. I remain

Very Truly Yours,
Edwd L. Greene

To Dr. Geo Engelmann
St Louis Mo.

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Rec Nov 24 74
Ans Dec 22

Cal

Geneva, Nov. 15, 1876.

My Dear Doctor;

Your interesting and valued letters of Aug. 14 & 17, telling me so much about the western conifers, and indicating how they are to be studied &c, were received long ago, as also were your papers on Oaks & Agaves. I send you herewith a small parcel containing specimens of two of the three oaks that I have observed in this region. 2. Chrysolepis, rather frequent at altitudes of from 6000 to 8000 ft., in a number of forms. I made no specimens of. Of the "No. 758" Podomonas is I have flowering specimens some

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where, but can not find them this morning. I shall run across them to morrow as like as not, and whenever I do I will send them. About Pinus and Abies I fear I almost provoke you to wrath by the confession that I have scarcely looked at them. Since your letter came I have been too busy with other things, to botanize at all. Moreover, from my situation at Ypsilanti it would be a difficult matter for me at any time to visit the localities where those interesting trees you name are to be looked for. The mountain heights where they are probably to be found, I can look at with longing eyes every day. But to reach them would require a week, of time

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of which I can not yet find the space. It is only now and then a day that I get to devote to my much loved studies in botany, and I can not often get more than a half dozen miles from town, while the nearest high mountains and several days travel away, and the way to them is through a region inhabited only by Indians and wild beasts, and I am not rich enough to fit out expeditions of my own though such organizations if I had time. In the middle of July I did make the summit of "Goose Neck" a beautiful extinct volcano some forty miles distant and then I saw what I suppose must have been the Pinus

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albicaulis you refer to, for I thought it was P. flexilis. Anyhow it was not yet in flower, and I saw no cones. But those trees (there are other species of Pinus & Abies there) have been half buried in new snow for a month past. I could not get there in time for collecting leaves and fruit this fall, as I had mine both of doing when your letters came.

I find the region a most interesting one in every way. There appear to be about 10 new species among the little more than 300 I have made specimens of, and I have rediscovered many an obscure & rare thing. I expect to stay here for at least one more season, and perhaps longer. Will you be so kind as to let me hear from you on those Oaks, Junipers, Cupressus &c. at your leisure? Have or send those circulars to any one you may think might like to buy, and oblige

Very sincerely Yours, E. L. Greene.

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Rec'd Jan 9th 77
Ans same day

Yreka, Cal. Dec. 30, 1876.

Dear Doctor;

Your report on my little parcel has just come. Many thanks for your interesting notes; and also for having sent my circulars away; though it will only be some shorts that I will have to spare, even if they are called for. I have for some time reserved one very fine set of 300. specimens for you, in case you should want it; and since you ask me to "put aside" me for you. I shall mail

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it at once. I have seen no large trees of *Juniperus occidentalis*. This is by no means the tree which grows in Colo. south about Pueblo, which you once referred to that species.

Very truly Yours
Edward L. Greene.

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Rec Jan 11th
A — 17

Yreka, Jan. 2. 1877.

Dear Dr. Engelmann:

Your postal card is just received. I have seen no Sagittarias in Cal. yet except some large ones which I noticed in one or two Chinese gardens near here last summer. The plants I supposed to be of some oriental species, inasmuch as they were under cultivation. I meant to get in and see what they were and by a plant or two for my herbarium but neglected to do so.

You will have received before this my two parcels, containing specimens of nearly all the plants I collected this season. I hope to hear from you soon. In the specimens of the white oak I sent you the leaves were too narrow. More commonly they are broad and deeply lobed. I made all my specimens from one tree, for at the flowering time I did not observe the variability of the foliage on different trees.

In size the trees are medium compared with ~~that of~~ American oaks in general

Sincerely Yours E. L. Greene.

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