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Gumbinnen, July 15, 1872.

Dear Doctor,
I should have written you earlier if I had anything to report. The entire trip from St. Louis to Gumbinnen was without any accidents. Thursday evening, April Ilth, we left St. Lovis and arrived Saturday $100^{\prime}$ clock after a trip of approximately 41 hours in New York. We stayed there until the following Thursday afternoon and left the same day on board the steamer "Silesia". We reached Hamburg after eleven days on April 3lst, where the vegetation had already much progressed, especially the lilac blossoms were about to open and the willows were full of leaves. But the year 1872 seems to be an unusual one with regard to the weather and I was told that there had not been such a spring for the last 30 立ears. On the other hand, in New York, I found the weather still rather harsh and the vegetation much more backward. According to your request, I turned over to Prof. Braun the little packages on the 3 rd of May and weas very cordially received by him and invited to a meeting of the Botanical Club at 9 in the evening which meets in a manexexoxdexary a brewery and where $I$ would have had the opportunity to meet many excellent young botanists, but since $I$ had to leave very early next morning, I could not accept. When I asked for George, Prof. Braun told me he was unable to find his address, since he mentioned only the xaxesots street name, but not the house number. On May 5th, we arrived in our hometown and wer eeceived with open arms. Our four boxes of books which left St. Louis by rail several days prior to our departure, arrived here only on the 8 th of June. They weighed approximately $11 / 2$ centner and the shipping costs amounted to 62 Th . for the whole way from St. Louis to Gumbinnen. They were kept back in Königsberg for eight days since they had to be opened first to see whether they contain any taxable, however, nothing of this kind was found. Up to now, I find the climate here very agreerble and the temperature in the shade never went above 81 F. , even though the people here complain about the excessive heat. The lowest temperature here up to now was 40 F., but that only once. I am glad to tell you that our health is much improved by our journey. When we left St. Louis, we both did not only have a bad cough, but also our eyes hurt and furthermore, I wąs suffering from rheumatism. Already, after our arrival in New York, our cough was a little better and when we arrived in Gumbinnen, we were completely cured. Also, my exesight is better, so that I use now weaker glasses which is probably due to the damp atmosphere here. We are very satisfied with the climate, but some customs and habits here we don't like very much, even though some progress had been made, especially the situation of the working classes here has been improved considerably. Since on my way here, I passed


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through Königsberg ad midnight, I thought it better to visit Prof. Caspary at some other time. Therefore, I left Gumbinnen for Königsberg on June 20th and after giving Prof. Caspary your letter, was received very kindly. He was busy with artificial pollination of several Nuphar flowers. Afier he was finished, he showed me his enormous water containers full of Nuphar, Nymphae etc., etc. as well as his tropical acquaria, the latter in a magnificent glass building. Everything here was growing abundantly, but the heat is is so unbearable that shortly after we entered, we began to perspire from all pores and we could only stand it a short time. Later, he led me through several greenhouses where I found many beautiful specimens of palms, Lycadaceae, but only few ferns, also the little rose trees were doing well. On the whole, it is clear that much is done for the support and improvement of the Botanical Garden and the costs must be great. The Botanical Garden in Cambridge compared with the one in Königsberg is very poorly equipped. Prof. Caspary is a very friendly man and still in good health and a diligent botanist especiall concerned with water plants. He told me, among other things, that he would be willing to pay 50 Th . for a living specimen of a blue Nymphea which is supposed to grow in Mexico and of which an illustration of the dried plant appeared in an English journal. Also, one time he travled to Lappland to obtain a water plant below the 69th paralell of northern latitude.

I cannot say anything about our future. At iirst, I thought we could live on the interest of my small capital if we economized, however, I find the interest rate too low, less than $4 I / 2$ percent, and therefore, I think I might try to earn some extra money by giving English lessons, for instnace in Königsberg, but I am not sure yet. In any event, we shall stay here probabazy until next spring. Reading, writing and making some excursions are my present occupation.

I hope this letter reaches you and your dear wife in good health and am looking forward to receive a note from you how things are with you, Dr. Gray (pleqse, give him my greetings) and in St. Louis in general, since the local newspapers contain hawdly anything about Amexica and its peopel.

Many greetings from my brother and myself. Mau you continue to be happy and in good health. This is my sincere with.

Yours,<br>A. Fendler

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Missouri botantcal garden
CE MGE FNEET MANN PAPERS
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Dear Doctor,
III received your letter of December 10th on December 30th. I was glad to hear from you; I almost believe you had had an accident since you had not written for such a long time. From your letter I see that the weather in St. Louis is still not very agreeable for the growing of Nelumbium; the summer hot and dry and the winter cold. May this also be the reason for the extinction of the woods? How was the last wine crop? I am still surprised by the East Prussian climate as it was in the Fall of 1872 and even now. We had no frost until November 13 th; raspberries bloomed twice and even had fruits, daisies, gilliflowers and some other flowers bloomed again in November. I believed to be back in Colonia *ovar as far as the climate was concerned. ... In my youth I lived through so many rainy days and claudy skies in the autumn monthe, these months in this year (1872) were almost without rain and comparatively mild. According to the newspapers, the situation is different in Angland and France where there were storms and rain almost daily. The memorable November storm at the Baltic Sea coast as well as at the coast of Denmark did not do much harm in Pillau and Gumbinnen, 15 miles from the coast; it was only noticeable by unusual strong winds, which did not, however, even topple one chimney. As you see we are quite satisfied withe the climate here; compared to it, the American seems unbearable. But, regardless, we shall return to America and probably already at the end of February or beginning of March if the weather should not be too cold. Most everytiing here is more expensive than in America, with the exception of cloths, but even they are not much cheaper. We donft like the still ever-present narrowminded spirit of the bourgeois, the soldier and officials and my capital is not sufficient to live on.

I am rushing this letter so that I might possible receive an answer from you before our departure, so please write as soon as possible. It is my intention to go not much further noth than washington, D. C. and possibly to take up residence there. If you can give me any advice in this respect, you would oblige me very much. The climate in St. Louis is too continental for me.

On August 10th I traveled to Berlin with my brother-in-law and stayed for six to seven days. During this time I not only visited many places of interest, as for instance the acquarium, freskizgocy Zoological Garden, museums, etc. etc., but also Prof. Braun who very kindly drove me through the Botanical Garden and showed me all its interesting things. I was pleasantly surprised to see the large

collection of living cactus plants with their strong and baalthy growth. Wome of the Norch American forest trees, however, are rather distorted. Prof. Braun invited me to his table for the next day and I met there his family with the exception of his wife who was on a trip. I also learned that George Engelmann jun. had passed his doctors examination.

During the summer I made several excursions in the vicinity of Gumbinnen. The rest of my time $I$ spent reading and writing. Apart from some rheumatic pains, I was very well.

Also Torrey, just as Gray, went to California! You yourself planned several times to take such a trip, perhaps you will to so next summer. Your discovery of the pollination of Yucca by insecta and the cause of the sterility of this plant in arama Germany, where these insects to not exist, is a very interesting one. Any news from America appear only very seldom in the newspapers here, since the Berliner State Newspaper and the Colonge newspapers only mention the considerable changes in the American government. Therefore, your information concerning the generally widespread horse disease in St. Louis and the resulting slowing down of business was news to me. One can well imagine what kind of disturbances this may cause, but cannot quite grasp its entire impact.

I am glad to hear that you and your family had been wel.l. Many greetings for the New Year to you and your wife and son.

Cordially yours,
A. Fendler


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MISSOURI BOTANICAL GARDER GEORGE ENGELMANH PAPERS frendler

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I received your kind letter of the 25 th of last montth on February 14th and was happy to hear from you so soon. I still have not set the date of my orther our (my and my brother's) departure. Perhaps we shall let the quinoctial time pass by first. Our first stop would be in New York, from there probably to Philadelphia. I don't know whether we shall stay in the latter city. I know the soil and the climate southern Texas since I travelled there myself for twelve months and it would have been better if $I$ had never known it. The trip to California is too expensive for me, so I shall probably have to choose the east of the United States for my residence.

The weather here is again almost springlike. From January 2nd to the 25th the thermometer was a little bit above freezing and from then on until February 16th went down to $-2^{\circ}$ to $66^{\circ} \mathrm{R}$, on the first of February even to $-11^{\circ} \mathrm{R}$; since February 18th, it is thawing. Our health is good.

I am so familiar with your handwriting that again I had not trouble reading your letter, even though the pen-strokes are longer than usual.

You will probably have heard from the American newspapers about the church troubles in Germany. There is nothing else to report. With Iriendly greetings,

> I remain Cordially yours
A. Fendler

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Philadelphia, 221st Lombard str. May 17th, 1873.

Dear Doctor,
I left Gumbinnen on April 4th together with my brother after an eleven months stay there, arrived in Berin on the 5 th and in Haraburg on the 10th. Here, we found that all available steerage passages on the emigration ships had already been booked two weeks ago, so we had no choice but boarding a sinaíl steamer headed for Leith, Scotland, and from there by train to Glasgow where we arrived on the 15th. We left Glasgow on April 17th, the ship anchored the following morning near the Irish coast and we took about 250 Irishmen on board to that there were a total of 500 persons in steerage and only five to six in the cabins. The food on the so-called steamer was not as good as on the Hamburg steamer; but the interior arrangements of the sleeping places which consisted of one snall room for twenty persons were very satisfactory. Women and children were separated. Our steamer "Ismaila" was not the fastest and took a full 14 days for the trip from Glasgow to New York, where we arrived safely on May lst. Exactly on May Ist 1872 we arrived in Hamburg and on May lst 1873 in New York.

Since I learned upon my arrivel in New York that Dr. Torrey had died several weeks ago and I did not have any other business there, I left the same day for Philadelphia. Here, I immediately visited my old acquaintances, but found that Mr. James had moved to Cambridge, others had died or were absent, so there was only Thomas Meehan whom I visited in Germantown and where I was received with great hospitality. The next day we went together to the Academy, I was presented to several members and was very friendly received. I found only one other old acquaintance, that is Dr. Le Conte who remembered me from the times I was with Shaw.

I had promised Meehan to visit the Academy again on the 13 th, but was not able to do so since that day we left our boarding house, boutht household furmiture and moved into the rooms I had rented, where we have again our usual bachelor household. For the rooms I pay 7 Dollars per month, but shall probably stay only one month since the rent is too high for me and I don't especially like the accomodations. At the present, I am working on some small scientific papers which I intend to present to the Academy. I still have not yet made any definite plants for the future. I should be happy to hear from you soon.

Cordially yours,<br>A. Fendler

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 SEUGGE ENGELMANA PAP M



## TRANSLATION

Philadelphia. S.E. corner of Union and Fourth Str., July 9th, 1873.

## Dear Doctor,

There is not much to report today. I still have not yet chosen any business from which we could earn something. We made several excursions in various directions, up to 38 miles from here, in order to look over small farms for sale, but could not find any thet we liked. Some were priced too high, others did not have good soil. After long thoughts, I believe it best to stay in Philadelphia since many advantages and comforts are connected with city living which one would miss in the country; one especially feels that if one gets older and cannot do much moreas a farmer. We gave up our rooms in Lombard Street and moved to the S.E. corner of Union and Fourth Street so that we are closer to the center of town and the Academy and are living in a much cooler and more beautiful room for 6 Dollars (that is one dollar cheaper than the old one was). In our old locality the thermometer sometimes read $94^{\circ}$ and at $9^{\circ}$ 'clock $89^{\circ}$. Since then, we have cooler weather. During one ff my hikes in New Jersey, I was exposed to the hot sun for four hours and then immediately drank ice water and so contracted a fever which, however, I got rid of soon by using cathartic pills and some quinine. We were not affected at all by the many storms which caused so mudh devastation in the West and North West. At the present, there is not much oorrespondence with the members of the scientific societies, since most of them left the heat of the city during the summer. Also Meehan is going on a long trip which is paid for by the railraod companies for all editors. He will also come to St. Louis and visit you; from there to Texas, from Texas via Kansas to Nebraska, Laramie and Salt Lake and then return on a more northern route of the middle statex.

Dr. Hutawa, whom you mention in your letter, I have not seen since approximately 25 years ago. His sister-in-law told me about three years ago that at that time he was almost 80.

Gray is supposed to have inherited a got from an uncle of his wife. This will be good news to all his friends.

Cordially yours,

A. Fendler

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## Dear Doctor,

Your kind letter of January 25th was forwarded to me by me former landlady in Philadelphia; I received it only yesterday. I am glad to know that you and your family are well and that your scientific work is still taking up a great deal of your time. But in all your talk about the comfortable study of yours, a fact sticks out, namely that old age slowly takes the place of youth. If I think back to the old times when I first made your acquaintance in 2 nd street, then later at the corner of 5th and Elm with little George at the hand of his nurse, still walking with difficulty, with his full red cheeks and that he now takes his place besides you in your scientific work, I see again the course of human life. We old ones are joining the ranks of the aged while the fresh life of youth is still continuing.

As far as I am Eoncered, I have lived very quietly and satisfied after writing my last letter to you, but not idle. During my stay in Philadelphia, I worked hard in the library of the Academy of Nat. Sci. to learn the opinions of others concerining my own work. I spent a great deal of time in Seaford enlarging and completing this small work and am going to try to see whether one of the local newspaper publishers might print it.

After I made several fruitless trips to New Jersey trying to find land, I went in the middle of October to Federalsburg, 121 miles south of Philadelphia, located on the peninsula in Maryland where cheap farms were offered for sale. I had planned to go there first and then to look around. However, since I was unable to find living quarters and I had liked the little town of Seaford while I was passing through, we moved there on November 7 th and were fortunate enought to rent an empty apartment the next day, the only empty one, for two Dollars per month. Seaford is a town with a population of 1800, in Delaware, situarted at the railroad going from Philadelphia via Wilmington and Dover to the southern part of the peninsula. The distance from Philadelphia is 111 miles. Seaford is located on the right shore of the Natiticoke Riv., has a bank, two hotels, three churches, one mill and two sawmilis. Apart from us, only one other German is living here (a Jewish merchant). During the last two and three years, many families moved here from Michigan and bought places on various parts of the peninsula, which means a straam of immigrants from the Northwest: Seaford has a rather blooming trade in oysters which are being brought here during the months of October to April by small ships from the Chesapeake Bimy, being openen here by local gster dealers, then packed and sent to Philadelphia. Somes times I have seen

25 such oyster ships on the pier. Also, two magnificent ships are being built here since the necessary oak wood can be obtained in the vininity. Around Seaford as in all of southern Delaware, peaches and strawberries are being cultivated. Immediately after my arrival, I walked through 300 acres of orchard, planted mostly with peacher trees. The trees are 25 feet apart and between them rows of raspberries and blackberries are planted which are growing very well, also some times apple trees and pear trees take the place of the peach trees, which all look very healthy and strong. The land is even and very sandy, but is supposed to have further down a thing layer of clay. It is mystery to me that this sandy and sterile looking soil can produce such huge oak trees as I have seen myself. The tide from the Chesapeake Bay extends to Seaford, and with the beginning of spring, enormous masses of herrings, shads and other fish is supposed to come up the river and are being caught here. The climate here does not seem to vary as much as it does in St. Louis. We had only one very cold night during this winter with a themometer reading of plus $18^{\circ}{ }^{\circ} .$, and only two days of snow enought to ride a sled. The air here, probably because of the nearness of the ocean, does not seem to be so harsh and dry as in Missouri and is very good for people suffering from consumption, but unhealth for people suffering from rheumatism and gout. Up to now, the climate was good for us two. Approximately thirty miles north from here is the ocean port Lewistown where it is supposed to be comfortably cool in the summer.

Fie like to be here; also we can live here cheaper than in Philadelphia and can take of our expenses with the interest coming from our U. S. bonds. Fresh oysters cost here 20 cts per quart, good beef 10 to 12 cts , lard $121 / 12$, groceries are only a little bit more expensive than in Philadelphia; oakwood for the fireplace 3 dollars per cord delivered, flour 5 cts per pound, very good corn meal 76 cts per bushel, also vegetables are rather cheap. The soil, even though sandy, brings good crops if fertilized, especially trees and shrubs grow everywhere in the gardens and are very tough. Nowhere else have I seen the European aspen and edjigg box as fresh and strong as here. After having left the larger cities and taking up a more permanent residence, my interest in botany began to rise again. Since the month of November until end of December (unfortunately not a very good season for this purpose) I have collected some specimens, of course, mostly only with fruits and without leaves, altogether 63 species. With fruit and green leaves, I found the following: Ascyrum Crux Andrea 16/12; Crataegus species $21 / 11 ; 2$ aster species, one in bloom, 19/11; Achillea Millefl. 19/11; Mitchella repens 16/12; 3 Ericaceae unknown to me 21/11; Kalmia latifol由a 21/11; Mentha arvensis ? 21/11; Betula nigra 29/11; Pinus inops, P. Taeda, Juniperus virginiana, Thuya occidentalis, Smilax laurifolia $21 / 11$; some plants $I$ have found here which $I$ never previously collected, among them Rhus venenata which grows in low meadows. It is a small tree GARDEN

4-5 feet high and when I aaw it from a distance with its close branches and silver gray berries, I was surprised that such a beautiful decorative shrub would not be planted in the gardens. However, when I broke off some branches and examined them. I knew that it was a Rhus and that it could be anything else but $R$. venenata.

From home I received the news that my two boxes with herbaria and books etc. have been sent from Gumbinnen to Hamburg on January 8 th and were supposed to shipped to New York, Philadelphia to Seaford, but I have not heard anything more. Several weeks ago I received some letters via Philadelphia addressed to me in Allenton, Mo. One was dated August 27th, 1872 from Hiberty, Bedford Co., Va. written by $A$. H. Curtis announcing that he was intending to send out a botanical checklist and asking me whether I would complete the list regarding Trans. Miss. species. He must have been surprised never to have received an answer.

I should appreciate it very muck if you would keep a separate of your Yucca work for me and send it to me as soon as $I$ have a permanent address. The only members of the Academy with whom I was contact in Philadelphia were Meehan and Burk. These are the only botanists who regularly work at the Academy every Tuesday four to give hours, filing newly arrived specimens and making lists. Furthermore, Mr. Parker who lives in Camden is very much interested in botany. I do not know Martindale. Xinmoncidock When will Gray's North American Flora be published?

Cordially yours,<br>A. Fendler



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Hissouri botanical garden GEORGE ENGELMANN PAPERE


Dear Dockor,
I just received your letter of March 3 lst as well as the "Synopsis of the Flora of Colorado" which I am very happy to own and for which I thank you sincerely. It would be better if you would mentioned such shipment in your letter since, had I not been given the Synopsis I would not have known that you had sent it to me. I hope you have received my letter of February 16th which contained my answer to your letter of January 24 th. However, in your last letter of March 3lst you ask whether I received your letter. Is it possible that you sent me a later one?

I shall be pleased to fill your request with regard to the oak blossoms. But don't know how long we are going to stay here, but in any event three weeks longer.

If you could send me soon the issue of the Academy containing your work on Yucca I don't doubt that I would receive it from the local post office.

Cordially yours,<br>A. Fendler



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612 Jefferson Str., Wilmington, Del. July 27th, 1874.

## Dear Doctor,

As you see, I am still living in the same place. Here in Wilmington you have to rent a house at least until the 25 th of month and to give notice at least a month before one intends to leavd. Since I don't know exactly when the printing of my book will be finished, I have to keep my apartment at least until the 25 th of September, even thugh the rent ( 8 Dollars per month) is much too high for me.

Wilmington is a very pretty and orderly quiet town. From the hilly part of it, one has a beautiful view of the Delaware Bay. Basiness here is pretty slow at the present and many houses are empty. Because of its nearness to Philadelphia, I should prefer Chester as my somcalled permanent residence. Chester is only fourteen miles from Fhiladelphia. Shall look over the little town some time soon.

For some time, if dont have anything else to do, I spend the mormings plant possining at Canby's. Could it be possible that if one continues this work, that the vapors rising from the liquid and getting into one's face might be harmful.

I made a contract with the local Commercial Printing Comp. beginning of July according to which they will print 300 copies of my ms until the 20 th of August for $\$ 230$. The binding will cost 20 cents more per copy. I have already read and corrected ten pages of galley proofs. Also, yesterday I received from Philadelphia the littographs which I ordered there.

Canby is an eager botanist, seems to be quite wealthy and to have plenty of time to spend on his hobby. The weather has been comfortably cool for the last 14 days.

Cordially yours,<br>A. Fendler







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george Engelmann Papers



> 1708 Gilpin Ave., Wilmington, Del. April 15th, 1875 .

## Dear Doctor,

Even though I have not written you for a long time, there is not much to report, since my days here pass rather monotonously. Unfortunately, I have not always been well and especially in January suffered a great deal from rheumatism which finally turned into some kind of gout. Whenever I was able, I poisened plants at Canby's and finished this work beginning of March. Since Nes Year, I spent my time translating Goethe's Faust, part I, metrically, into English, which gave me great pleasure. I finished this some weeks ago and intend to write some notes about it. I did not care about the rhyme, but retained the sense and verse. We already planted some vegetables in our garden 25'x25', the weather is still too cool to complete the planting. I also intend to sow some flowers. We had here an extremely lorg and cold winter. On April 19 th we had $17^{\circ} \mathrm{F}$.

It was a pleasure to see Gray for a few minutes, after ten yaars when he passed through here returning from a meeting of the Regents of the Smiths. Inst. Since the last time I saw him, his looks have changed considerably. I also talked with Dr. Parry at Canby's recently.

The sale of my book is making slow progress. Prof. Henry sent me an order yesterday for one copy. Münch reviewed the book rather critically in the "Mississippi Blätter" of the 24 th of January 75 and also gave a reply to Mallinkrodt in the "Westliche Post" of Bebruary 5th.

I am very glad to have found in Canby such a pleasant man who already has given me much advice, especially with regard to the sale of my property. I intend to make some botanical excursions this summer if my foot, which is still swollen, permits it.

With my best greetings and hoping that you all are very well, I remain,

> Yours,
> A. Fendler

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1708 Gilpin Ave. Wilmington, Del. November $9 t h, 1875$.

## Dear Doctor,

I received your very welcome letter of October 27 th on the 30 th. You ask whether I am no satisfied with my life. It seems to be a natural train in a human being who has moved around so much and so contantly, that he wishes to have a quiet home at least in his old age where he can spend the last days of his life without worries. I believe I have reached this aim. Whatever I was looking for, I found. In the winter I am busy with literary works I like, in the summer plant collecting and I find much satisfacticn and pleasure. Scme times I have the desire, as in younger years, to go far into the woods and meadows and to read the "1000 flowers" which the earth offers in such abendance even in the most distant lands. Especially, I should like to see again the jungle of the tropical mountain areas where $I$ once wandered adn took up the old and well known vegetation in all its hiding places. But physical weakness from which I sometimes suffer, remind me to stay quiet at home. However, I had given some serious thoughts to find enough subsdribers to Venezuelan ferns to support such an enterprise financially. The Sea of Valencia with its beautiful and pleasant natural scenery, its pictoresque surrounding hills and its eincomparable lovely climate is very tempting to me and I should like to enjoy again the balsamic evening and morning air. However, I would only decide to take such a trip if the rhoumatism which attacks me regularly during the winters in Delaware continue and makes my life miseamble. The climate here in Wilmington is much better than in St. Louis, but still too horrible in the winter for someone who has lived in areas with a more temperate climate.

I just cannot see how Dr. Parry can earn so much just by plant collecting to cover the expenses of his long trips (and even take his wife along).

Last summer, I made numerous excursions to find out how many plant species can be found in the imediate vicinity of Wilmington and in the city itself, about $11 / 2$ miles from my apartment and I believe I came up with a collection of 600 to 700 species. I have not counted them all yet since we are now busy building a basement for our house; but the Graminae I collected around Wilmington and which were determined by Canby, amounted to 70 species. Among the other plants, I ffound many which are not native in the West.

I was always surprised that Letterman did not make a herbarium. He now also is interested in entomology as he wrote me some time ago.

Even though Gray told me during our meeting last spring, that I still look as I did ten years ago, I feel the coming on of old age since next January I shall have

completed mye 63rd year. I believe you are five years older than $I$ and Gray three years, Parry ten and Canby ififteen younger.

We also had a rather cool summer as you did in St. Louis. During the autumn, we had night frosts rather early and on the 13 th and 14 th of October we even had $28^{\circ}$ and $27^{\circ}$ at 7 in the morning.

I have exchanged photographs with Canby and should also like to have yours if you have one left and would you mine. My health was not too bad lately, but I am dreading the coming winter since the rheumatism will probably start again. There seems to be no kind of fever in this area, however much rheumatism and gout.

Hoping to hear from you soon, I remain with heartiest greetings,

> Yours, A. Fendler


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GEORGE Botanical Garden gios

He Gendler.
 April 3rd, 1876.

Dear Doctor,
Many thanks for your notes on Agave which I received in January. Since I wrote my last letter to you I have been in rather good health and am very happy to have escaped any attacks of rheumatism during the last winter.

Wilmington has a rather bood public library and reading rom which $I$ use since January lst and for which I paid $\$ 5$ per year. They don't have any strictly scientific works, however, I find much which interests me.

Since January lst I began again xixkkxy to make meteorological observations; thermometer, amount of rain, cloudiness and wind directions and will let you know the results for the last three months. In order to compare the climate of St. Louis with that of Wilmington, I ask you to send me the results of your observations for the same time, i.e. for January, February and March.

## Cordially yours,

A. Fendler
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MISSOURI BOTANICAL GARDEN GEORGE ENGELMANN PAPERS


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612 Jefferson Street, Wilmington, Del. January 12th, 1877.

Dear Doctor,
Yesterday I received your letter of January 7th. Nany thanks for the meteorological observations contained therein. .... Since I have become very sensitive to coldness and expected a rather unusual stormy winter, I decided to daly my trip to Trinidad for a few months. Also, I have to find the best way to sell my book. I wasunable to make a deal with Cassino of the Naturalist's Agency. Then I asked Colby \& Rich, publishers of the Banner of Light in Boston and sent them a copy. They liked the contents, but found the price too high; I told them that if I fixed the price at $\$ 1.30$ gave them 40 percen discount for selling the book, I could send them at the present twerty copies, which I did. Yesterday, I received the same offer from another publishing house.
 silver in St. Louis. But since I believe that this instrument is an absolute necessity in Trinidad and since it furthermore has become very rusty through continuous use and does not look very good. I all the medal parts of the instrument apart so that not a single screw remained undisturbed, boiled the swaller parts in a strong pot-ash solution-mubbed off the lacquer off the larger parts which did not fit in the pot and treated them with same hot solution. Then I dipped the various parts into saltpeter acid in order to give them a new shine, rinsed them off in clear water, threw them quickly in a pile of sawdust and wiped them dry kdixy with this. Then I put lacquer on with a hot solution made with alcohol of seed-lac, turmeric and dragon's blood and now the instrment looks like newly gilded. I also obtained from Philadelphia clear, once distilled quicksilver which the barometers need and filled the glass rube with it, which $I$ first emptied of all air and steam by a coal fire. ... But soon the quicksilver was escaping through the little leather sack and I was therefore forced to take off the barometer. I had had to glue the little leather sack onee before in Venezuela and find now that it has to be replaced by a new one. However, I was unable to find the necessary leather here in Wilmington and have to wait until I go to Philadelphia again. I also kave to see what can be done for the thermometer which gelongs to the barometer and which broke in Venezuela. The highest mountain range in Trinidad (running along the north shore) reaches a height of only 3000 feet, however, it would be of the greatest interest to learn about the meteorological conditions of this mountain area since the island is very peculiarly located.

We are both rather well, I did not have any rheumatism and if everything stays well, we intend to leave end of February or beginning of April. Not many ships go to Trinidad and only from New York schooners or brigs.

It must be interessting to observe the development of the blossoms of Agave Shawi and without doubt, hundreds of people, horticulturists and botanists will come to see this magnificent plant.

There is still snow here on the streets and the young people are amusing themselves sledding in the hilly streets of this city.

## Cordillay,

A. Fendler

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612 Jefferson Street, Wilmington, Del. February 10th, 1877.

Dear Doctor,
I just received your letter of the 6 th and the enclosed 5 dollar note suprised me very much. Many thanks, also for the meteorological observations from which $I$ see that you had again a rather peculiar winter. The difference between the max. and min. temperature for January amounts to 71.5 degrees! It was not so bad here, all in all, January was rather mild.

I shall pay attention to the cacti; you recommended that I study the cacti, but did not mention whether I shoumd send you living specimens and if so, how many of each species.

I am very busy packing and have many things to do to get ready for my departure. Four heavy boxes packed full with books and plants will be ready for shipment in a few days.

Cordially,<br>A. Fendler

 Sinlens yb Doctor


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Gfor tt. Fendler.

MISSOURI BOTANICAL GARDEN GEORGE ENGELMANN PAPERS


Wilmington, Del. May 6th, 1877.

Dear Doctor,
I have received your letter of April 5th, but a painful illness prevented me from writing you earlier. Never in my life did I suffer such torture. The convalescence is slow and I feel hardly strong enough foo the trip. However, looking at the vegetation in the surrounding yeards and gardens and being unable to do anything, I am losing patience and have decided to leave for Bermuda next Thursday, the 10th, from New York on the steamer "Canima". I intend to leave Wilmington Tuesday morning.

In his Flora of the British West Indian Islands, Grisebach only described one single species of Cactaceae growing in Trinidad, namely Rhipsalis Cassytha. From all the British West Indian Islands, he had of Mamillaria I, Melocactus I, Cereus 7, Rhipsalis 2, Opuntia 5, Peiriscia 1, all in all only 17 species. I very mudh doubt that this is the complete number. I shall try to follow your arrangement in your preferred order.

## Fare well.

> Yours,
A. Fendler


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Missouri botanical Garden
George Engelmann Papers


Port of Spain, Island of Trinidad West Indies, August 26th 1878.

## Dear Doctor,

I received your note, written in a huary, which was enclosed in Lettermants letter and see that you are very busy still but also health and well even though you are approaching your 70th birthday. With regrard to age, you are not much older than $I$, since $I$ shall be 66 end of 1878. I hope you may at least have 15 more years for your work, but it is my sincere with that you have even more time than that.

There is not much to tell you. You will probably have hard from Canby about the disgusting affair with the police. Since the British mail steamer is leaving tomorrow and I intend to send five letters with it and weak eyes do not permit me to write or read in the evening by the light of a lamp and since I am very busy now drying the fresh plants, which cannot be neglected, I cannot write a long letter.

End of May I sent Dr. Gray a box with fifty sets of ferns: each set containing 75 to 78 species and received the welcome answer from him on the alst of June that the box had arrived in good condition and that the specimens ware "nice and satisfactory". I have now 125 species in my own collection and intend to get up to 200. The number of the few I still need is becoming rarer and, therefore, I started to collect plants with blossoms of which, however, I intend to to collect only 9 to 10 sets for sale. I have already collected a considerable number. Cacti are missing almost entirely, but Euphorbiaceae are strongly represented.

Here in Trinidad, a small railroad is being built (the second one); it is a pity that I did not learn about this earlier so that I could have been present at the cutting down of the trees. The highest mountain of the island is Tucuche, 3100 feet high, which has been rarely visited. I intend to go up there some time soon.

Hy health is still not very satisiactory. The wealness of my spine is a great nuisance. I also had a very bad cold in July with a cough and a kreist head cold, poobably some kind of influenza which $I$ cured myself after a long time of suffering. The place where our house is built will soon become a jungle of banana trees, yams etc. Behind the house, the vegetation is very abundant--, many flowers are blooming in front of the house--the time for mangos and breadfruit has almost passed, but the branches of the two orange trees are bending down already under the burden of their fruit which will not be ripe until October.

The weather in July and August of this year is much more rainy thatn in July ${ }_{\mathrm{q}}$ nd August of 1877.....

## I remain,

Cordially yours,
A. Fendler

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 MíGOREE FNGEI MANN PAPERS


Port of Spain, Island of Trinidad West Indies, March 26th, 1879.

## Dear Doctor,

With sincere regret and deep sympathy we are reading ( $I$, as well as my boother) your letter of February 27th in which you informed us of hard fate you have suffered lately and I can well imagine how very much it must hurt you to have host your dear, faithful life companien. I hope that the hand of your son will heal better than you think and also that your health will be improved in the meantime, so that you can still count on a long and fruitful life. It must be a comfort to you that you are surrounded by many admirers and friends and that you enjoy all the comforts a human being craves. But what can I say about myself? "'andering around in a strange country at my old age, living among people of a race which are enemies of the white man, cunning and living in crudest sensuality. Instead of resting from all the hard work in my lifetime, always having moved around, I still have to climb mountains, rocks and abysses, make long trips on foot under the strong sun and often soaked by dew and rain to be happy to find in the evening in the woods a lonely roof consisting of leaves to spend the night. Add to all this the mockery and contempt of the rude, ignorant people who think of an honest collector often as a crazy man, a magician or even a thief. The only thing that makes life bearable here is the mild climate which is good for my health, the beautiful plant world and the desire to bok in new places for plants which I consider rarities. But what will by future be when finally the number of species valuable to collectors has been reduced to a minimum? In our garden we find some things to live on as far as fruit and vegetables are concerned, but the expenses for cloths etc, are still to high for our income.

One of our orange trees brought this year 1027 oranges which we almost all ate ourselves, from September until now. However, one can count on such a good crop only every two years. ©n July 31st, 1878 I broke off a $6^{\prime \prime}$ long branch of an old cut-down cactus, almost rotten and put it into the ground. Seven months later, it showed the first signs of life and now ( $31 / 2$ veeks later) 4-tippled new sprouts measuring $11 / 2^{\prime \prime}$ in height and $21 / 2^{\prime \prime}$ in diameter appeared. In February, we felt a small tremor of an earthquake. The last summer (rainy season) we did not have as much rain as usual and this year's dry season is not as dry as the one in 1878. The breadfruit tree delivered many fruits for us for some time. The Mango tree was in bloom two weeks ago. Bananas and plantains developed blossoms and we enjoyed their fruit after $4-5$ weeks.

My healt is not too bad now, and I made a lons trip into the interior on foot lately without getting too tired, ten miles there and ten miles back between $8 o^{\prime}$ clock

in the morning and $40^{\prime}$ clock in the evening and collected a thiak bundle of plants. However, my eyes are getting weaker and weaker and I don't like to read by the light of a lamp.

You mentioned that you wrote me a note on October 3rd and thatyou received an answer on December 3lst and that you seemed to be of the opinion that these letters were written in 1878 and that they were the last letters we exchanged. But both letters were written in 1877 and in 1878 I received a few notes from you which you enclosed in Lettervan's letter dated July l2th in which you did not mention any illness in your family. Not much later I wrote you on August 26th, 1878, which letter you probably received end of September or did it get lost? Ten cents for a letter here is enough; the reason Gray's letter did not travel as long as yours was because he wrote shortly before the departure of the steamer. According to what you say, Eggert seems to be full of energy and furthermore good on his feet if he can still make long trips on foot after delivering the newspapers and make important collections. Shaw will. probably live up to 90 , as his father did. I have received your works about Juniperus, Hgave, Abies and cuercus before I left for Trinidad. Newspapers and other printed matter can be sent here by mail just as to Europe, but I believe it costs a little more postage. I receive regularly the weekly New York Tribune and some times other printed matter. I have not found here any wild growing Juniperus also no conifers. The only one I possibly might still find, would be Podocarpus criacens. The orders of Rubiaceae, Melastomaceae, Leguminasae, Piperaceae and Euphorbiaceae are strongly represented. I still collect as before, go on long trips, but don't find much more interesting in ferns. I already have some boxes full of plants with blossoms, but have frocxs not put them into sets yet. On November 28 th I received 108 Doll. through Gray; the first profit, from the sales of my ferns. A $12^{\prime \prime}$ long cup of a mimosa fruit serves me for some months as a hygrometer. The instrument seems to be quite sensitive to humidity and always gives me a good idea of the humidity in my room in which the boxes with the dried plants are sitting and shows me the right time to handle them. Best greetings to Letterman. He seems to like it in Allenton. Now, fare well. I remain with best greetings,


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Missouri Botanical









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## FIFrgliff yrmos

George Emgelmande Pra


Port of Spain, Island if Trinidad, West Indies, September 6th, 1879.

## Dear Doctor,

I received your kind letter of July 20 th on August lst. It again reminded me that I still have here and there, far away, some friends whose familiar language brings up pictures of the past, long years ago, youthful strength and work. For the last 35 years since we became friends, I never lost track of your successful career. That your usual good health is becoming worse, is probably due to the late sad events and I hope that you will be weil again soon. Yes, it was a surprise to hear of your son's marriage, but I am sure that this seemingly hurried step was well thought over and possibly with the intention in mind to rebuild your broken-up household and as you say, not to leave it to itself entirely. My best wishes and a long happy future for the young couple.

As far as $I$ am concerned, I am not too satisfied with my health, but don't want to complain if I think of my previous sufferings ( $21 / 2$ years ago). On one hand I am enjoying my life, on the other, there is much I miss. By the way, you are right when you say $I$ am too sensitive. By nature nervous and easily upset, I am often annoyed by the most trivial thines which would not have affected anyoody else at all. I have often thought to myself: Why am I concerned with the rabble which surrounds me constantly and which only reminds me too vividly of the degradation of the human race into animals or the opposite, from an animal to a human being; but the disgusting impressions remain the same. Fortunately, the masses have not much to say in this country.

Should I find during my long trips into the interior of the island which I intend to undertake during the next dry season, a little place planted with fruit trees which could give enough fruit for my brother and me to live on, I shall try to buj it mo that I can live out the rest of my years, enyoing nature. After the death of my borther-in-law, which occurred recently, my sister asked us urgently to come back to Gumbinnen since she feels lonely. But since we ar used to the mild tropical climate, such a step would be very bad for our her and we, therefore, decided to turn down her request.

Since I wrote you last, that is during the two months in April and have visited for the first time the woody regions of the mountains on northeast shore and found there some interesting ferns, and once had the whole night sitting under a tree waiting anxiously for the day Up to now, I have collected 150 species of ferns, among them are
never been collected by any collector. The cactus cutting which $\tau$ planted in our garden and about which I wrote you that on March 26 th it reached a new height of 7 1/2 feet, again grew in the last five months about $14^{\prime \prime}$ higher; the diameter remained the same. It is probably Cereus Peruvianus, which is planted here in several places and which is higher than the houses next to it. I studied one of them recently more thoroughly. It just so happened that a man of $5^{\prime} 10^{\prime \prime}$ was standing next to it and so I had an idea as to its height which I believed to be 40 feet. The diameter of the trunk is about $11 / 2$ foot. The lower part of this trunk is easy, further up it is interbranched, sometimes very much so. Auricles: not woolly, with 5 small thorns, of which the upper two are hardly noticeable. The blossom I gelieve to be white. I have not yet found here Perescien, Juniperus and Vitus. If one of the latter is native here, it will probably be nothinp else but Vitis Caribaea which I also have in my Venezuelan collection. However, I shall look around.

From the New York Tribune I see that tremendous progress the "far west" especially Colorado is making lately, especially with regard to population and wealth. If one thinks back of the times and conditions of the countries of the territories west of the Mississippi when we came to St. Louis, I in 1838 and you even earlier, it seems that the developments made during the last years is as wonderful as the tales of from "1000 and one night". But how will things look in the United States after another 40 years?

Mr. George Wall wrote me from England that he had bought one set of my Trinidad ferns and that he had sent me a package containing 220 species of Ceylon ferns. Unfortunately, I see from the bill of lading that the address says: A. Fendler, New Haven, Conn.". The letter to me was written in care of Prof. Eaton. What you say of Egert shows his energy and that the love for botany in St. Louis has not disappeared, but is still growing.

Best greetings to Letterman. I should like to have another letter from him soon in order to know how things are in Allenton and what all the old acquaintances are doing. I don't know whether he has received my letter and the local newspaper I sent him shortly afterwards. Since that time, I found out that there is still another better newspaper published here of which I also sent him a copy. Now, fare well. May the could resting over your family soon be replaced by a gay bright light.

Best greetings,

## Yours

A. Fendler.
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Missouri Botanical gardere George engelmann papers


Port of Spain, Island of Trinidad, west Indies, February 11, 1880.

Dear Doctor,
Since $I$ suffered from a painful swelling under my chin resulting from a bad cold, I was not able to write you sooner, but now wish to answer your kind letter of December 14 th. I am glad to know that you got rid of your rheymatism. Now, also Lindheimer passed away. He reached an old age, Iived longer than $I$ believed. I saw him in Houston in 1839, but not again since then.

The Cassytha of which I sent you a small sample looked in its habitat just like a cuscuta, when not looked at too closely, so that $I$ thought it was one without examining it any further and sent it to you. I found it only in one locality, in the Savannah of Aripo, 28 miles from here, not far from the area where, according to the newspapers, namely on December 9 th, a boa snake killed a man by squeezing him to death. Workers in Agotini's cocoa plant, which I visit quite often, heard his calls for help, but arrived too late to save the life of the man. Only after the snake had been cut through in various places, could they free the body. It was taken to the police station of Arima and as soon as I have time, I shall try to find out more about this peculiar incident.

We had a very dry October which good for collecting, but shortly before, I had accepted a position as clerk at Prestoc's until he found somebody else. So I lost the good collecting time. End of October, an exceptionally wet period set in which lasted until January 24th. During forty-five days, from December 11 th on, we did not have one day without rain. The rain did not only last a short time and occurred at certain times only, as it does in the usual rainy months of the summer, but fell during all hours of the day and night. On several days, the sun did not come out at all. So that the time which was supposed to be the dryest was the wettest which I had lived through here and I could not make any botanical excursions until the end of January. When the dry weather began, I started to make some excursions again, but had to give up soon because of illness, that is a cold from which I am still suffering, but I hope to be able to start again soon. I have not yet been able to find Peirescia here.

Cereus Peruvianus does not have blossoms or fruit at the present time, but I shall try to collect those at the right time, if you wish.

Some days ago, another ship arrived from Calcutta which brought 609 Indian coolies to Trinidad. Three of such ships have arrived here every year.


My young Cereus which grew beautifully all last summer, was damatged in a rather peculiar way. In order to prevent it from bending down too far, I put a rotten stick into the ground next to it at an angle so that the upper part of it touched the plant. Shortz thereafter, a black spot appeared at the point where it was touched by this rotten stick, this spot expanded rather quickly and almost penetrated the plant. The sick spot was hollow and only the skin offered some resistance. After opening it, a thin brown liquid came out. It seems to me that the fungus in the stick contaminated the cells of the Cereus. Since then, I have cut off the damaged part and covered it with coal-tar; we shall see whether that will save it.

Best greetings,
Yours,
A. Fendler


## Ninbur bo Doctor











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Port of Spain, Island of Trinidad, W.I. January 6th, 1881.

## Dear Doctor,

I have received your kind letter of May 23th of last year. I was happy to hear the news of your intended trip to Oregon and California, since I see that you are in good physical and mental health and that your energy has not left you in your old age. Even though I recently received a letter from Canby, I did not hear anything about your trip. All I know about it, is is that what I read in a letter from Gray of July l9th from Cambridge wherein he said that you had arrived in San Francisco and went on board a steamer to Vancouver. Since I wrote my last letter to you, we have had here an unusual wet period, so wet that I could not do any plant collecting. However, I did not stay entirely idle during that time, since $I$ have been working for some months in the office of the Superindendent of the local Botanical Garden, Henry Prestoc, helping him to figure out the average numbers of his fourteen years of meteorological observations and to put them down, also those afxke for the four previous years, in the the form of a diagram-barometer, temperature, humidity, cloudiness and rain, on six sheets, each sheet containing the results of three years. I finished this work during the last days of 1880. But it seems to me that Mr. Prestoc might have more work of this kind for me. However, the approaching dry season lures me into the mountains. I don't really know what to do or when I shall start to botanize again.

You asked wheter we have Vitis species here. I have four of these in my collection which I gave Prestoc to determine. He confessed, however, that he never studies this species very much, but that he thinks that one of them is Vitis Caribea. Should there be an opportunity to send these to you without great expense, I shall do so. But, I don't believe you will find anything new among them.

My and my brother's health is good now and we are beginning to believe that we are going to stay here and that we won't find easily a better area, even though the climate is rather dry during the summer months and the people could be a little less uncouth. We believe the reason our health is so satisfactory is due to eating ripe oranges and boiled bananas (plantains). We eat an average of 10 to 12 oranges, that is 5 to 6 per person daily. Also, we have been preparing our own chocolate for the last two months from the cocoa beans growing here which we buy for 15 cents a pound. We are now sure that
we eat pure chocolate instead of the chocolate one buys so often for good money and which contains starch, tallow etfe. One of our orange trees has brought us already 1006 oranges since September and will probably have 200 more if nobody steals any and we can truthfully say: we are living in luxury as far as oranges are concerned. We gave away a relatively small amount as presents, but most of them we ate ourselves.

I can report the following regarding my Cereus. On July 3lst, 1878 I stuck a piece of an old Cereus plant into the ground; on January 28th, 1879, the same began to grow -4 -ribbed. The new sprout grew $201 / 2^{\prime \prime}$ until September 2nd, then remained unchanged until May 26, 1880; from then on until November 20th, 1880, it grew 301 more, first with four ribs and then soon with 6 ribs. The first sprout of 1879 is $341 / 1$ wide, the one of 1880 , however, $51 / 2^{\prime \prime}$ so that it looks as if the upper part will be too heavy for the lower part. The rotten spot has healed again. Since November 20,80 , the entire plant has come to a complete standstill as far as its growth is concerned.

The two young coco-nut plants (the one trunk you don't have yet) which I planted three years ago as young sprouts have already leaves 12 to 18 feet long. I find that it takes an average of 45 days for a new leaf to appear. The 23 rd leaf has just appeared.

I find it surprising that the human body is so sensitive here to even the slightest change of temperature. For instance, one feels uncomfortable cold if the temperature falls from $72^{\circ}$ to $68^{\circ} \mathrm{F}$. and one has hardly any feeling in ones finger tips.

The immigration to Trinidad from the neighbouring islands and even from the mainland has increased considerably wisker during the last years; there is a general upswing in trade, building of homes and in business of all kinds and many improvements have been made. We have now a new Governor. We could use some more land for cultivation, but for the present have to be satisfied with what we have.

I hope you had a very interesting and pleasant trip and returned safely and in good health to your home. Hoping very much to receive a letter from you soon, which be a great joy to us, I remajn,

Always yours,
A. Fendler

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 A. Fiender.


Port of Spain, Trinidad, Vest Indies. July 6th, 1881.

## Dear Deotover,

I was very harpy to receive a letter from you again. Yes, you traveled and saw a lot in such a short time. When I traveled to New Mexico in 1846, I hardly thought that the changes in the great, then so distant est would take place to quisik! I can weil imagine that the pleasure and the impressions you had during this trip great and will stay with you a long time. May you still have many years to enjoy these memories. But perhaps you will go on mofe trips to the Vest in the future in these days of quick transportation. Also, the southern route of the railroad to California via Arizona is now completed-a. The only reason I can imagine for your taking up practicing medicine again is that you like the exercise and diversion which may contribute to your physicald well-being.

I whs very much surprised to hear that yoir health was not quite satisfactory lately and that you are suffering from a painful illness, which hopefull will pass soon.

My health too has not been what I had wished it to be. Lifting a wooden fence which we tried to put into the right place, I infured myself (apparently my chest and back) and then immediately suffered from an attack of rheumatism, from which I have not yet recovered. The pains in the chest are a great nuisance sometimes, especially if theyoccur around the hert.

After the unusual rainy season in 1880 followed a just as unusual long and completely dry period from the middle of December until end of May. The average temperature in January 1881 was $76 .{ }^{\circ} 3$, February $77^{\circ} .8, ~ M a r c h ~ 81^{\circ} .1, ~ A p r i l ~ 81^{\circ} .3$, May $81^{\circ} 9$, June $80^{\circ}, 1$. Wthouth any doubt, April and May are the hottest months of the yar here. But this yeax, the great heat had an especially bad effect on my health, namely on my nerves, mind and eyes; my boother suffered mostly from an eye infection so that we often longed for a dooler climate in the mountains, about two to four tbousand feet above the sea level as you find it in Jamaica. the cooler weather which started in June brought a certain relief and made us postpon our decision to leave. Here, we enjoy the advantages of a port town and are lфcated in a place where we can get the necessities of life easily. Also, we are reluctant to leave the new plantings of ornamentl plants and the improvements we made on our land.

We rould like to live in the mountains of Jamaica, but obtaining the necessities of life there will not be easy and quite expensive. In the mountains

we would be spared one nuisance which we have here in Fort of Spain, namely the horrible damage done by the termites to books, paper, furniture, woodvork of all kind, wooden floors, sidewalls of buildings, etec. Some times one touches a picture frame, wall maps, door jambs, etec. which looked quite solid and all of a sudden cruminle to pieces as if they were made out of aper. They also destroy plant collections. An enormous amount of American wood, planks and boarde is being used here for building houses and is being imported.

There is certainly a Cissus among my Vitaceae. Asiso young people are affected by the temperature changes here, as for jnstance the head gardener at the Botanical Garden who came to work here only two years ago from Kew and can stand the heat well, but complains some times of the stiffness in his fingertips. Even though this happens when the temperature falls only from $72^{\circ}$ to $68^{\circ}$, it does not happen if the temper ture is higher and falls from $78^{\circ}$ to $74^{\circ}$, even though there is the same difference of four degrees.

I learned from a very dependaple source, there are no longer any pure, unmixed Caribbeans here in Trinidad and even the descendants of this mixed race are very rare.

In your letter you seem to be of the opinion that my orange tree bearx ripe fruit all year round. I don't believe I indicated that in my letters. In the summer of 1880 we had the first ripe orange on September 2nd and in March 1881, I picked the last dozen; that means seven months. The entire swaxime number was 1285. I have read in books that the orange tree has a full crop only every second 女ear and rests one year in between. That is also what my orange tree did previously, but by loosening the soil around it and with good treatment, it seems to bear as much fruit this year (1881), perhaps even more, than last year.

Abiut three weeks ago I sent five sets of my phanorogams to fooker; at the same time I wrote to Gray.

I sm glad that Letterman has become such an eager and energetic collecto: and observer, especially, since as you say, I gave him the first push. If one thinks that the population in the United States during the last census amounted to fifty millions, one can imagine the work of future generations in all phases of science.

Perhaps you will be interested to learn something about the last census in Trinidad which took place on April 441881.

Total number of population 153,128 . In 1857 the total population amounted to 77.500, it doubled during the last 24 years.

衫
Missouri Botanical


## Yours

A. Fendler

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## Dear Doctor.

I received your letter of May 24 th on June 20 th and was glad to learn that you did not suffer from raesmatism for quite a qhile. What $I$ mistakenly thought was rheumatism when I wrote you my last letter on January 4th, turned out to be a congestion of the liver, a dangerously one, as the doctor told me; after taking the medicine he prescribed I felt quito well several weeks later.

Lately, however, I don't have much appetite which is probably the result of the continuous heat and humidity. I also suffer from a weakness of in all bones and egpecially the bacl. I believe too thata hirgher area would be better for ray health, abouk 4000 to 5000 feet above kwazix sealevel. I also should like to visit Colonia Iovar agrin and collect ferns there and am waiting for a reply to my letters to several gentlemen with regard to the sale of these, and also to learn something about the present condition of the colony. It was destrgyed several years after I left there; I have not yet been able to find out whether it was rebuilt again.

## You will receive again Mamillaria papyracantha.

It certainly is a great undertaking in your moteorological work to find the rormal average for each daye from the highest and lowest temperature which requires much patience. In order to study the local area with its relatively little change in temperature to its highest and lowest temperature and to find the normal average, I made a list of what $I$ found in old records (during the later years no hourlyobervations wore made) and the result is the following:

You can see that these results are not sufficient.
The new sprout of my Cereus continued to grow until March 26, 82, grew up to then $543 / 8^{\prime \prime}$ and since then came to a standstidl.

There is nothing new to report except that we expect to have streetcars in Port of Spain which will be a great convenience for me. Also, the building of several small railroads in the Southwest part of the island will start soon.

Business is not very active. Please sive my rrectings to Dr. Wislizenus as well as to Letterman.

With best greetings, I remain, cordially yours, A. Fendler.


