



Hunt Institute for Botanical Documentation
5th Floor, Hunt Library
Carnegie Mellon University
4909 Frew Street
Pittsburgh, PA 15213-3890
Telephone: 412-268-2434
Email: huntinst@andrew.cmu.edu
Web site: www.huntbotanical.org

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About the Institute

The Hunt Institute for Botanical Documentation, a research division of Carnegie Mellon University, specializes in the history of botany and all aspects of plant science and serves the international scientific community through research and documentation. To this end, the Institute acquires and maintains authoritative collections of books, plant images, manuscripts, portraits and data files, and provides publications and other modes of information service. The Institute meets the reference needs of botanists, biologists, historians, conservationists, librarians, bibliographers and the public at large, especially those concerned with any aspect of the North American flora.

Hunt Institute was dedicated in 1961 as the Rachel McMasters Miller Hunt Botanical Library, an international center for bibliographical research and service in the interests of botany and horticulture, as well as a center for the study of all aspects of the history of the plant sciences. By 1971 the Library's activities had so diversified that the name was changed to Hunt Institute for Botanical Documentation. Growth in collections and research projects led to the establishment of four programmatic departments: Archives, Art, Bibliography and the Library.

people often write to the college to get copies of my Contributions to Western Botany under the supposition that they are the property of the college.

It might be well to say that the Pomona College never has had any interest in my publications, never will have and never has attempted to have, nor control nor tried to control them, ~~over them~~ nor would I tolerate it if attempted.

Since 1923, when I sold my herbarium to Pomona college all the specimens collected by me have been taken and mounted as a part of the herbarium and deposited in the herbarium but I have never made any arrangement permitting the appropriation of my material till 1926 when I undertook the exploration of Lower California. The types of all the new species have been put in the herbarium till the close of the 1930 trip to Mexico, since then I have kept out all the types in my own herbarium where they now remain.

I have never had any official ^{not} connection with the college, and don't have at this time, and am under no obligation to deposit my types in its herbarium nor to consult its management as to what I shall do, and I would resent any invasion of my rights to individual expression if attempted, but ^{far} as none has been attempted. I do not consult anybody as to what I shall print, nor do I ask any advice, I know enough about my own business to tend it in my own way, without external assistance.

The college participated in raising the money for the 1926, 1928 and 1930 trips to Mexico and the 1934 trip to Texas and the types of those collections are in the herbarium, ^{is} but the publication on them are my own. and the herbarium without interest in them. I print 200 copies of each Contribution and distribute to my special correspondents free copies and to those who buy sets, and I charge the actual cost of publication for the rest. No 12 was only 150 copies and is now out of them. Nos. 8 and 10 are also out of print and not available. now. I do not advertise my publications nor send any to magazines for review, nor wish them reviewed, for reviews are back performances at best, done by cowardly pussfeet. as a rule. and men who are not systematicists as a rule.

At this point on June 3, 1934, my father, Prof. Marcus E. Jones met with a fatal accident. He was returning alone from a day's field trip in the San Bernardino Mts. enjoyed in company with the Samuel B. Parish Botanical Society when, at an intersection ^{in San Bernardino,} his car was struck in the rear by another car and overturned. He was thrown out, suffering a basal fracture and other injuries, and instantly killed. He died as he had wished, "in the harness". In his home, or workshop, where he lived alone, were found his printing press, fonts of type, the completed pages of his "Contribution" and a binder of various manuscripts, most of which he must have intended to work over and print; for he planned 100 pages more. I have done my best to arrange the material, condensing as necessary. His recent notes on *Opuntia* can be found in "Desert", a magazine on succulents published in Pasadena. He probably intended to include his list of plants collected in a recent trip through Mendocino County and into Oregon, but it ^{is} impossible for me to include it. The rather long manuscript has been left at the herbarium of Pomona College with Dr. Munz, where it can be consulted by anyone interested. There also can be found his many books of manuscript of his unfinished "Flora of the Great Basin".

In these pages I have not tried to delete all of his caustic comments (although not assuming responsibility for them). I did not like to destroy so characteristic a flavor, which many of his correspondents evidently enjoyed; else why did they ask for more? Those who knew him well, knew that his "bark was worse than his bite", that he would go to unlimited lengths of unselfish kindness to help or accommodate a fellow nature lover or scientist; but his own pride together with his hatred of sham, pretense, self-seeking, or domination sharpened the barbs of his criticism and sometimes affected his judgment. Perhaps some allowance or forgiveness may be granted him in appreciation of his remarkably keen mind, enormous fund of information, great versatility, his more than 50

years of wide and varied field experience and painstaking investigation, and his amazing vitality and determination, which made him continue his field trips and even the printing of his own books after the age of 82.

Mabel Jones Broedman

(continuing NORTH AMERICAN BOTANY. See also Cont.15:74;12:82; 13:78)

About the time Pursh's Flora came out, there came to America a talented Frenchman by the name of Rafinesque, -a man with an exalted opinion of his own importance, who became the pest of American botany. He was three y
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 years older than Nuttall. Nuttall was a high-strung Englishman, who became curator of the Harvard Botanical Garden and later on an instructor there. Rafinesque published his ideas in Silliman's Journal for years, till he wore out his welcome and began to publish himself the American Monthly Magazine and Neogemmyton, etc, where he had no one to restrain him.

John Torrey, twelve years younger than Nuttall and a genial gentleman who had no enemies and many friends, was made professor of botany and chemistry at West Point and soon became the semi-official government botanist. After Lewis and Clark's Expedition to the northwest, he took up the work of naming the collections of government expeditions.

Nuttall, who had named specimens collected by Wyeth, was eager to get into the great West, especially after meeting Wyeth and hearing him tell of his explorations. In 1833 he applied to the directors of the Harvard gardens for leave of absence to go on a trip with Wyeth, but was refused. This attempt to dictate to him ~~so~~ aroused his anger, that he promptly resigned and arranged with Townsend, a geologist, to go with Wyeth and explore. They outfitted at Independence, Mo. or Leavenworth, Kan., near by, and started out afoot, carrying their packs on their backs.

Just what was Nuttall's equipment on that trip is unknown, but it must have been poor; for all of his specimens seen by me were mere snips such as a school-girl would take on a ride into the country and preserved in the same way, by being put into a book and left to blacken. After meeting Wyeth's party at Boneville, no doubt he was allowed to carry his

luggage in the mess wagon, but his space was surely limited.

The trip began April 28, 1834, too early, Nuttall complained, for botanizing along the way until they got about to Independence Rock in Wyoming. From there on he was able to get specimens of the flora, particularly along the Green River west of the present town of Green River, at Granger on Ham's Fork, at what became Fort Bridger and along the Bear River to the Pierre Meadows (now Soda Springs), where they feasted their animals on the rich grass. Then the road crossed a low range, down along the Portneuf River to what is now Pocatello, and down further to Fort Hall on the Snake River. There some of the party revolted and built the new Fort Hall 29 miles up on the Portneuf. There was a ford on the Snake River here which they used, going up Lost River and over the range to the Salmon River, which they followed down a way before going over to the Snake again below what is now Boise. Then they followed the Snake down near to the present Huntington, where they ferried across the river and went up the creek above Huntington to the divide leading down to what is now Baker City, where there were fine meadows for their stock. They continued down the meadows to what is now La Grande and there they went over a high range to avoid the box canyon leading down the river to what is now Umatilla. Here they reached the Oregon or Columbia River and followed it to Walla Walla, their destination. There the party broke up and Nuttall went down the river to Astoria. From here he sailed for California, finally reaching San Diego, where he remained for some time botanizing. He then went by boat to the Sandwich Islands and back to the Atlantic coast by way of Panama. This monumental trip was the most productive of new species and new genera of any of the transcontinental trips, and yet it did not cover more than one fourth as much territory as I have covered in my botanizing. But it was made by slow wagon-travel, while I have traveled over Nuttall's route several times by auto or train through Wyoming and west, botanizing at critical places on the way, and visiting many of Nuttall's type places.

After this time the Government sent out many exploring parties equipped for botanical work. Gray, who was a pupil of Torrey's in the early days, naturally shared with Torrey the naming of the botanical material. Together they got out also the Report on the Mexican Boundary Survey.

When Nuttall returned from the west with all his collections, he deposited his types in the herbarium of the Philadelphia Academy of Science and was elected a member of the Academy and a fellow of the Philadelphia Society. He continued his relations with that body until his death. It is evident that he had some plans about getting out a flora of the United States, for in 1818 he published his Genera of North America and in 1842 his Trees of North America. Just what was the cause of his hostility to Gray is not known, but professional jealousy was not unknown in those days when Rafinesque was making himself odious by his publications, but the fact remains that Nuttall did not at all like Torrey and Gray's handling of his new species and genera in their Flora of North America. That Nuttall regarded Gray as an upstart was evident, for Gray was 24 years younger than he. Yet so far as I can find out Gray never entered into any controversy with Nuttall, but only with men who were younger than he. Gray was a savage partisan and did not hesitate to try to crush them.

In his later years Torrey deposited all his types in the herbarium at Columbia, which school was to become his botanical executor. The small fry who followed him frittered away their time in institutional jealousy against Harvard, being too cowardly to defy Gray, who had become a botanical dictator, and who was looked up to by us younger men as the only authority in American botany. We sent him all our specimens for identification until we began to see that his judgment of species was often erroneous, and began to publish names of our own for plants that we had collected. This caused his hostility and resulted in his trying to suppress us by shutting off our avenues of publication. While Gray lived,

most of those who disagreed with him, kept a discreet silence. The two leading objectors were E.L. Greene and I. I ceased publication until after the death of Gray, but Greene, who became rampantly hostile and vowed he would devote the rest of his life to undoing the work of Gray, continued to publish in the California Academy of Science Proceedings and later he got out Flora Franciscana and Pittonia, a series of publications, followed by Leaflets and other issues. He got Jepson to start Erythea, a Calif. Journal which held on for some years till it finally died from lack of support. Then Jepson started Madrona, a similar publication, which had a precarious life. Greene went insane before he died. Gray finally died of old age. His work was continued by Watson, his chief aide, and by B.L. Robinson, his successor at Harvard.

Very soon after Gray's death, N.L. Britton of Columbia began trying to dominate American botany. ~~But he did not have enough brains for the job and met with great opposition from the conservative botanists of America.~~ He then enlisted the services of J.N. Rose of the National H. Herbarium, and between them they got out a revision of the Grassulaceae and Cactaceae at Britton's expense. Not long afterward Rose died.

Britton had started the New York Botanical Garden, from which he published Memoirs at various times, and at last began the publication of a flora of North America, enlisting the efforts of P.A. Rydberg, Curator of the herbarium, until Rydberg's death. Britton has certain peculiar ideas about species and genera that are not favored in America, and he has not ceased to try to throw discredit on the work of Harvard and of others who oppose him. ~~Once in the Torrey Bulletin he attacked Mrs. Brandegee's comments on Greene's work as showing lack of botanical intuition. Since that time he has been challenged to show some himself.~~

(This article was obviously left unfinished. M.J.B.)

It is for that I should have this as a
don't it? I have omitted the worst.

HOW I BECAME A BOTANIST

I have often wondered why we do not know more of the early days of the older botanists. So far as I know, there is hardly a word said about what led men to become botanists, or naturalists. I have even asked older men to tell us of their earlier days. What a fund of interest could be unearthed as to incentives, early influences. But these men will seldom talk or reveal anything, perhaps from modesty or because they cannot imagine that anyone else would be interested or helped. How I would like to know why Torrey, Nuttall, Pursh, Gray, Engelmann, Watson, Brandegee became botanists! When I urged Mrs. Brandegee to write about her life work, she turned to me in disgust and blurted out almost savagely, "What does the world care for me?" The world cares much more for us than we care for it.

In my own case, I feel that I can trace the events and influences that led me to be a botanist.

First and foremost, I had an angel mother. I flatter myself that there never was another like her. She was a little, frail woman, but pure gold; never quarreled, never fretted, always an optimist. She lived for us seven boys and my sister. Her ideals were high. In the first place, moral cleanliness was our obligation to God. Furthermore life was a magnificent opportunity as well as an obligation to utilize all our powers, mental and physical, for the benefit of the world, and not for personal gain. And also to her all the wonderful adaptations and machinery of plant and animal structures were illustrations of the infinite care of the Creator for his creatures. She loved flowers and always had on the mantle a fresh bouquet that she had encouraged us to gather for her.

When we were very little she told us of the funny Dutchman's breeches (Cucullaria), the squirrel corn (Dentaria), the bloodroot with red sap, (Sanguinaria), the ground nut, good to eat, (Erigenia), the squaw-

berry (Epigaea) with the little red berries hidden under the snow, the trailing arbutus, the bethe (Trillium), the moccasin and lady's slipper (Cypripedium), the golden rod of the fall season, the gentians, and the asters. All these she pointed out and named for us as they bloomed. She was always delighted to have us bring her freaks of nature, odd and unexpected forms. One day we boys came across some tree roots that had crossed and grown together. None of us had ever seen such a thing before. So she told us to show it to Mr. Olds, the minister. This is one of my earliest remembered introductions to nature study.

My father owned a sawmill and taught me all about lumber, -how to tell the different kinds of oak, hickory, ash, maple, and birch. He was a fine woodsman and a great lover of animals. On nutting expeditions and at "sugaring-off" parties in the maple woods I absorbed much of his knowledge and love of the out-of-doors.

For the sake of better influences for their large family, Father and Mother decided to sell the old mill and move to Iowa some five miles east of Grinnell on the pristine prairie; and here I grew up from my early teens on the wonderful prairies. Everywhere were flowers in the spring and summer time, all of them strange except those growing in the natural grove a mile east of us. The miggerheads (Heliopsis and Eryngium) we used to flip off with our whips as we drove along. There were sunflowers, rattlesnake weeds with prickly heads (Eryngium), the compass plant (Silphium) whose leaves pointed north and south, the blazing button rods (Liatris) of different kinds. ~~Then~~ In the sloughs (wet places) we used to find many asters and gentians. Then there was the prairie apple (Astragalus crassicaarpus), and in the thickets the lady's slipper (Cypripedium), Habenaria, Spiranthes, etc.

To get an education was part of Mother's religion; so, of course, I went to college, walking five miles back and forth. In the worst

weather I boarded myself in town. Grinnell was a small college with half a dozen devoted professors, mostly ministers. Some of them were great men (such as Dr. Magoun and Prof. Macy), but none of them looked upon science as anything but an educational freak. Education meant proficiency in literature, languages, and religion. I became proficient in Latin and Greek and studied Sanskrit. I also knew some French and German. All this time my recreation was with wild flowers. My mother was always spurring me on to know more about them. I never thought it any work to study flowers; it was just a part of my life. There was no one else at college who knew as much about them as I.

The only botany text-book I knew was written by Mrs. Lincoln, who used the system of Linnaeus and who tried to describe the flowers of the middle United States. The descriptions were brief and inadequate, and the genera were arranged not in families but in the order of their stamens and pistils. Everywhere were such names as Syngnesia, pentandra, tetrandria, polyandria, etc. For some years, with the help of my mother, I tried to identify plants by Mrs. Lincoln's Botany.

In my senior year in college I used Gray's Manual of Botany and his Lessons in Botany. Our professor of Natural Science, H. W. Parker, was a scholarly minister, devoted to building up a great museum at the college, but botany was of little interest to him. Our teacher was the Lady Principal, Miss Ellis, an old maid who had traveled in the Holy Land, had been to Rome, and had brought home a few scraps of plants clutched as she went along past old ruins. I remember her giving me a specimen of *Asplenium ^{ruta} muraria* from the Colosseum. She was a lover of flowers but had no training in botany and never did really identify a dozen plants by analysis. So it was up to each student to get the names the best way he could. There was always a conflict of authority as to what was the real name for a plant.

Thomas T. Baker and A. C. Hart, who had graduated the year before me, were really trying to name our Iowa flowers. Both of them had

considerable skill, and were very helpful to us when Miss Ellis got beyond her depth. After my graduation, I was so exhausted from over work and undernourishment, that it was not long before I fell a victim to a slow fever that incapacitated me for work and left me a ~~per~~ perambulating wreck. To keep my mind occupied I rambled over the hills and prairies, collecting plants and trying to name them. That fall I had 625 species.

During the following year of post-graduate study at the college, where I was also a Latin tutor on the faculty, I met J.C. Arthur, a protege of Bessey at Ames, who visited ^{Gunnell} ~~the college~~ to find out if any of us was doing botanical work. The acquaintance begun ^{then} ~~lasted~~ all through the years. A year later he published a list of Iowa plants, both native and introduced, and among them he mentioned a few which I alone had found.

About that time I began to correspond with Dr. Engelmann of St. ~~4~~ Louis, who named many plants for me. Then, at his suggestion, I wrote to Gray, Watson, Wm. Boott, and others to aid me in naming our plants. Gray was efficient, careful, and genial. Watson was as business-like as a phonograph and about as cordial. Boott was right there with all his names and a pleasant correspondent. Engelmann was very efficient and genial. I found something especially attractive in the personality of Pringle, just as I did later in that of Dr. Kellogg, Cusick, Mrs. Brandegee, and Mrs. Austin.

About that time an Austrian gentleman in Europe wanted me to gather the flora of the Great West and send him sets to sell. My disgust at the thought of spending my life teaching Latin, and my poor health, which demanded an out-door life, conspired to suggest my becoming a real botanist. More and more the idea obsessed me, until I decided to take my life in my hands and go to the wild and woolly West.

on June 3, 1934, ^{my father,} ~~Prof. Jones~~ met with a fatal accident. He was returning alone from a day's field trip in the San Bernardino Mountains, ^{enjoyed Samuel} with the S.B. Parish Botanical Society when, at an intersection, his car was struck by

^{characteristically} I have not tried to delete all of his ^{characteristically} ~~caustic~~ comments, although not assuming responsibility for them, ^{which he did not like to do} because many of his correspondents ^{evidently} enjoyed them, ^{and he may have} asked for more. ^{any} Those who knew him well, knew that his "bark was worse than his bite", that he would go to unlimited lengths of ^{business} ~~usefulness~~ to help or accommodate a fellow nature lover or scientist; but his ^{unpleasant} ~~hatred~~ of shame, pretence, ~~self-~~ seeking or domination ^{unpleasant} ~~shaped~~ the ^{business} ~~banks~~ of his criticism and ^{his judgment} ~~his~~ ^{perhaps some allowance or forgiveness may be} ~~granted him in appreciation of his remarkably keen mind, enormous fund of information, great versatility, his more than 50 years of wide & varied field experience & dominating in~~ ^{which} ~~that~~ ^{made him} ~~continued his~~

(continuing NORTH AMERICAN BOTANY) ^{for} ~~the~~ North Am. Botanist, Cont. 15:74

⑥ About the time Pursh's Flora came out, there came to America a talented Frenchman by the name of Rafinesque, a man with an exalted opinion of his own importance, who became the pest of American botany. He was three years older than Nuttall, ^{Nuttall was} a high-strung Englishman, who became curator of the Harvard Botanical Garden and later on an instructor there. Rafinesque published his ideas in Silliman's Journal for years till he wore out his welcome and began to publish himself the American Monthly Magazine and Neogemyton, etc, where he had no one to put any restraint on his ideas.

John Torrey, twelve years younger than Nuttall, and a genial gentleman who had no enemies and many friends, was made professor of botany and chemistry at West Point and soon became the semi-official government botanist.

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sw #15 P. 74

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Leavenworth and started out a-foot carrying their ^{with Wyeth's party at Bonerville.} packs on their backs. ~~These~~
were the days of the buffalo on the plains, and of Indian hostilities.

In such a place the heat is such that if you do not have plenty of water along in a canteen to drink you actually suffer from thirst. ^{and you feel the skin drying up on your face as you go along} ^{P.S. find here} In later years I found all the silly equipment useless that I had used so long and I began to use my reason to evolve equipment that was usable and inexpensive. ^{P. 12} This consisted of buying corrugated cardboard double faced, and having it cut to the proper size of 12 by 18 inches. for driers, and taking along with me 300 to 400 of them. ^{I bought this} and buying unprinted newspaper ^{press the} ^{new} for local paper and having it cut to 23 by 18 inches and folding it ^{in quires} ^{9 sheets 2 to 6 quires for a trip.} so as to fit the driers. ^{Then I lay my} fresh specimens ^{on an open sheet} ^{between the folds and put in the press or portfolio if in the field.} I found that the only way to make good specimens was to put the fresh specimens directly in the press and not to let them wilt before tying them up. In this way the leaves will usually lie flat and things look natural. I found that all the putter about a press was so much bunk, and could be avoided by buying No. 14 tar board of the binder, and having it cut to 12 by 18 inches and then ^{covering it with oil cloth.} ⁹ ^{the oil cloth} and cutting it so that it would be four inches wider all around than the driers, and then laying it down on a board and covering ^{the cloth side} it with LePage's glue and the putting one of the sheets of boards down on the cloth ^{into center} and pressing it tight and folding the edges over ^{holding them under pressure until dry.} and pressing down, I usually take four to six of these sheets covered with oil cloth along for the press and I use straps made of sole leather ^{and}

best that achieving you must travel light with the least possible baggage. So I take a first class postcard camera, a ~~heavy~~^{strong} tripod, a color screen, a fine field glass, a barometer, a pick with long handle, a pocket folding Coddington lens, a heavy pair of overalls with plenty of pockets, a wool shirt, a cork hat, heavy socks & tennis shoes, and I let the dudes have the rest. If it is very dry & the fast trip long, I carry a small canteen.

Don't let anyone fool you by saying that any one way is the only way of doing things. Use your own horse sense. If you can make good specimens standing on your head or dragging heavy boots, then do that. Results are what count. ~~If~~ I find it best to do my ^{routine} work with the least possible effort, saving my energies for more important things, and so at over 80 yrs. of age I am still climbing the mountains with the young folks.

North American Botany - cont. - #18.

Nuttall's equipment & specimens.

poor - simple - blackened -

Details of trip -

Great results -

Contrast my covering same terr.

many govt explorers for bot. work

Systematic work done by Gray & Torrey.

Also Mex. boundary -

Nuttall -

column - Phila.

displeased with Gray -

Torrey's types with Columbia -

successors jealous of Harvard.

Gray's dictatorship -

suppression - Trease & M. J. independent

Jefferson's editorships.

his successors -

Britton at Columbia - kept of Rose.

Opposed by conservatives -

Help of Rydberg - Flora N. A.

Idea of species & genera

Cont. of Mrs. Brandegee.

~~Nuttall's death - Torrey's -~~

naming, and form the types of the early species of western plants. Specimens collected by Wyeth were submitted to Thomas Nuttall the curator of the Harvard botanic garden for identification, and which caused him to apply in 1833 for leave of absence to take a trip to the Pacific coast, which application was refused by the authorities which so incensed Nuttall that he peremptorily resigned his position and left. So he and Townsend a naturalist arranged to go with Wyeth on his next trip west which was in 1834. They outfitted at Independence, and started out a foot and met Wyeth's party at Loneville. Just what was Nuttall's equipment on that trip is unknown but it must have been poor. For all of his specimens seen by me were mere snips such as would be taken by a schoolgirl on a ride into the country and preserved in the same way, such as being put in ~~alcohol~~ and left there to ~~decay~~ ^{blacken}. No doubt he was allowed to carry his luggage in the mess wagon of the party, but his space was limited. The trip began April 28 1834, and Nuttall complained that it was too early for botanizing along the way till they got about to Independence Rock in Wyoming. From there on he was able to get specimens of the flora particularly along the Green river west of the present town of Green River, and at Granger on Ham's Fork, and at Fort Bridger and along the river to ~~what is now Soda Springs~~ ^{where they fed their animals on the rich grass.} called the Pierre meadows, where they ~~fed~~ ^{fed} their animals on the rich grass. Then the road crossed a low range, and down on the Portneuf river along to what is now Pocatello, and down farther to Fort Hall on the Snake river. There part of the party revolted and built the new Fort Hall 29 miles up on the Portneuf. There was a ford on the Snake river here which they used, and went up on Lost river and over the range to the Salmon river and followed that down a way and then over to the Snake again below what is now Boise, and then followed it down to what is now Huntington where they ferried across the river and went up the creek above Huntington to the divide leading down to what is now Baker City where there were fine meadows for their stock. They continued down the meadows to what is now La Grande and there they took over a high range to avoid the box canon leading down the river to what is now Umatilla. Here they reached the Oregon or Columbia river, and followed it to

Willawalla their objective, where the party broke up and Nuttall went down ^{from here he sailed to} the river to Astoria, and California, finally reaching San Diego, where he remained some time and did some botanizing. He then went by boat to the Sandwich islands and back to the Atlantic coast by way of Panama. This monumental trip was the most productive of new species and new genera of any ^{of the} ~~then~~ transcontinental trips, but did not cover more than $\frac{1}{4}$ of as much territory as ^{I have done in} ~~Island covered~~ many botanizing, but was made by the slow progress of travel by wagon, while I traveled by auto and train several times over Nuttall's route through Wyoming and west, and botanizing at critical places on the way, visiting many of Nuttall's type ^Pplaces. After his time the Government sent out many exploring parties equipped for botanical work, and the specimens so gathered were submitted to John Torrey or Asa Gray for naming, ^{probably} ~~the way this~~ ^{because of} ~~Came about was doubtless due to~~ Torrey's being a ^{case} ~~ref~~ of Botany and Chemistry West Point, the G. V. naval station and school. Torrey was 12 years younger than Nuttall, having been born in 1798 and Nuttall in 1786. Gray was a pupil of Torrey's in the early days, and naturally came into share with Torrey the Naming of botanical material. ^{Gray & Torrey together got out the report on the Mexican boundary survey.} When Nuttall returned from the west with all his collections he deposited his types in the Herbarium of the Phil. Acad. Sci. and was elected a member of the Academy and a fellow of the Phil. Soc. and continued his relations with that body till his death. It is evident that he had some plans about getting out a flora of the United States, for in 1808 he published his Genera N.A. and in 1842 his Trees of N.A. Just what was the cause of his hostility to Gray is not known but professional jealousy was not unknown ⁱⁿ those days when Rafinesque was making himself odious by his publications. but the fact remains that Nuttall did not at all like Torrey and Gray's handling of his new species and genera in their Flora of North America. That Nuttall regarded Gray as an upstart was evident, for Gray was 24 years younger than he, and so far as I can find never entered into any controversy with Nuttall, but ^{only} with other men who were younger than he. Gray was ^a savage partisan and did not hesitate to try to crush them. ^P In his later years Torrey deposited all his types in the herbarium at Columbia college which school was ~~the~~

to become his botanical executor. ~~but~~ The small fry who followed him frittered away their time in institutional jealousy against Harvard, ~~and~~ being too cowardly to defy Gray, who had become a botanical dictator, and who was looked up to by us younger men as the only authority in American botany. We sent him all our collections for identification till we began to see that his judgment of species was often erroneous., and began to publish names of our own for plants ~~that~~ we had collected.. This caused his hostility and resulted in his trying to suppress us by shutting off publication. (The two leading ~~objectors~~ ^{our enemies of} were E. L. Greene and myself. I ceased publication till after the death of Gray. ^{While Gray lived, most of those who} ~~became~~ ^{became} ~~comparatively~~ ^{became} ~~hostile~~ ^{hostile} ~~and~~ ^{and} ~~he would devote the rest of his life to undoing~~ ^{the work of Gray. (But the end he met Gray trying to do it & die.)} ~~Gray~~ ^{Gray} continued to publish in the Calif Acad Sci. "Proceedings and later on he got out Flora Franciscana and Pittonia, a series of publications", followed by "essays and other issues. He got Jepson to start Brythia a Californian Journal which held on for some years till it finally died from lack of support. Then Jepson started "Madrona", a similar publication, which has had a precarious life. Gray finally died of old age, ~~and was followed by Watson~~ ^{later} his chief aid, ~~and~~ ^{and} ~~after the death of Gray~~ ^{his chief aid}. His work was continued by B. L. Robinson, his successor at Harvard. Very soon after Gray's death, N. L. Britton of Columbia college began trying to dominate American Botany. But he did not have enough brains for the job and met with great opposition from the conservative botanists of America. He then enlisted J. N. Rose of the ^{Internal} ~~Herbarium~~ ^{Herbarium} and between them they got out a revision of the Grassulaceae and Gactaceae at Britton's expense, and it ended ^{with} in the death of Rose. Britton had started the New York Botanical Garden from which he published "Memoirs" at various times and at last began the publication of a flora of North America enlisting the efforts of P. A. Rydberg, Curator of the herbarium, till Rydberg's death. Britton has certain peculiar ideas about species and genera that are not favored in America, all due to his hate of Harvard, and he has not ceased to try to throw discredit on the work of Harvard, ^{and others who oppose him,} ~~by personal vilification~~ ^{in private and of others who oppose him.} Once in the Torrey Bulletin he attacked Mrs. Brandegee's comments on Greene's work as showing lack of botanical ~~inspiration~~ intuition, and since that time has been challenged to show some himself.