

Josiah Hale, M.D., Louisiana botanist, Rafinesque's pupil

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“They pass”, writes Professor Samuel Wood Geiser, “these naturalists of the frontier, across the stage of history – some of them men of brain and heart and honor, others men of whom we cannot speak with admiration. They are not all to be gauged by the same standards: their environments, diverse and not always favorable, helped to make them all. But they were one in their devotion to the advancement of our common knowledge.”

And so it is with Josiah Hale, born in Virginia, received the M.D. degree at Transylvania College at Lexington, Kentucky, a pupil of Rafinesque, who began practice at the river town of Port Gibson, Mississippi, but lived most of his life at Alexandria, Louisiana. There he was a successful physician, but he lost a fortune and in an effort to regain his losses he moved to New Orleans. By then, however, he was sixty years old and six years later he was to die. Today he is a little remembered figure in American natural history.

We have no information as to exactly when Josiah Hale was born, or who his parents were, and we know only from an obituary of the New Orleans Academy of Sciences¹ of which he was president, that he was born about 1791 near Richmond, Franklin Co., Virginia, – not the well known capital of the state, but a town no longer recorded on the state's maps. This Richmond was situated on the eastern slope of the Blue Ridge Mts. Sometime between ten and fifteen years of age, Josiah migrated with his parents to Harrodsburg, the first settlement in Kentucky, in present Mercer Co. Harrodsburg was laid out in 1774 by James Harrod, marksman, soldier, “almost uncanny in his knowledge of woodcraft.” Harrod had arrived before Richard Henderson and his Transylvania Company which Harrod opposed. The settlement on the Kentucky River was favored by mineral springs, and one of its early leaders was George Rogers Clark. We have no record of Josiah Hale's life or schooling at Harrodsburg, but pioneer settlements hardly proffered rich educational delights. There was the abundance of wildlife and the flowering wilderness to delight him. In 1819 he came down river to Louisiana on a sightseeing excursion, and perhaps visited Alexandria which had been laid out in 1810 and incorporated in 1818.

There is no personal record of Hale's tutelage by Rafinesque, or so much as a reference to that experience by either Hale or Rafinesque. Transylvania College records Hale's enrolling in 1821 from Monticello on the Pearl River, present Lawrence Co., Mississippi, as a first year student in the Medical Department.² The Minute Book of the New Orleans Academy of Science records that Hale was a “private pupil” [*sic*] of Rafinesque, and “imbibed from him his passion for botany.” In 1822–23 there were 138 “pupils” enrolled at Transylvania College and 37 degrees awarded. Hale received his degree at public commencement on March 18, 1822. The title of his thesis was “*Ascaris lumbricoides*.” On February first Rafinesque wrote to Charles Wilkins Short, who had graduated with honor from Transylvania in 1810, that he was “delivering a course of lectures on medical botany to a class of medical students,” and that he already has “several subscribers” for a course to follow in 1823.³ Rafinesque complained that the Trustees had not fulfilled the promises they had made when

he joined the faculty in 1819. "I am almost resolved to leave Lexington," he wrote — join the Western College of Kentucky. He told Short that he had a "miscellaneous library of 1000 volumes," an herbarium of 15,000 specimens and 5000 items in his cabinet. When Hale was a student, Charles Caldwell was "Professor of Institutes of Medicine and teacher of materia medica," well known for his often vitriolic remarks on fellow physicians, and so singular that Dr. Caldwell left none on his fellow faculty member. Rafinesque's title was Professor of Natural History and Botany. In addition he taught French, Spanish, and Italian. Transylvania's historian Dr. Robert Peter said Rafinesque's "success as a teacher was not great" but the later history by James F. Hopkins called Rafinesque's seven years part of "Transylvania's Golden Age."⁴ The faculty were "in tastes and pursuits, as unlike as mountains could be, . . . in epitome, a renewal of the long-continued warfare between the classics and science, without that tempering of zeal and expression which is so characteristic of real culture or of exact knowledge." Rafinesque's years there were among his most productive — botanizing, collecting fish and shells, writing, publishing — his *Ichthyologia Ohiensis*, a remarkable pioneer work, appeared at this time — teaching, reading papers before the Kentucky Institute, sketching portraits of his lady friends, corresponding here and abroad, lecturing by subscription on phrenology, materia medica, etc., etc. "There was both frailty and strength in him," wrote the botanist Pennell, "He retained to the end of his days a child's freshness of outlook, a love of discovery for its own sake, and, whether an animal, a plant, or an idea, the fact that it was new made it appeal mightily."⁵ The love of discovery a new plant surely left its imprint on the young medical student Josiah Hale.

Hale began his medical practice in Port Gibson, Mississippi, a river town founded in the late 18th century, a shipping point to the Cotton Kingdom. In writing his *Florula Ludoviciana*, published in 1817, Rafinesque remarks on "the fate of Louisiana to be explored by individuals, very imperfectly acquainted with Botany, and whose blunders, wherever they attempt to state any thing above mere facts, assume the most singular character." He added, in relation to William Darby's suggestive writings, that "[Darby] has confirmed my ideas on the unexplored vegetable treasures of that State."⁶ Evidently Rafinesque talked with Darby about the vegetation of Louisiana. Did he encourage Hale to carry on in this little known district which he himself had not visited? There is no record of Rafinesque's multifarious writings that he received plant collections from Hale, either from Port Gibson or later from Alexandria.

Again we must fall back on the unsatisfactory record that Hale left his medical practice in Port Gibson for "botanical travel in Louisiana." In any event in 1825 he settled at Josiah Johnson's plantation,⁷ twenty miles from Alexandria, on the Red River, and there he practiced medicine for the next three years, moving into town in 1828. By this time Hale's income "averaged nine thousand or ten thousand dollars a year," and though he continued to botanize and study the local flora, he evidently had either scant opportunity or motivation to write on his botanical findings. That brings to mind the other Mississippi Valley physician, Dr. George Engelmann, who managed to write botanical monographs between his medical calls. Engelmann's talents and European scientific training, however, had far exceeded Hale's, and Engelmann had the cultural and scientific character of frontier St. Louis as a foil to his productivity.

Alexandria, which was to become Rapides Parish seat, and a center of cotton, sugar, lumber, and farm products industries, had not been laid out when Dr. George Hunter ascended the Red River in autumn of 1804. Then he noted the courses of the river, the quality of the soil, the kinds of trees on the banks, the fish and shellfish in the river, the

first pelicans seen, and the diminishing number of alligators away from the great Mississippi.⁸ William Darby in 1817 had mentioned 29 trees in his *Geographical Description* — the account which Rafinesque had annotated with his own identifications in his *Florula Ludoviciana* that same year. Hale surely knew of Rafinesque's *Florula*.

Back in the eastern seaboard study centers, Lewis de Schweinitz had written from Bethlehem, Pennsylvania, to Zaccheus Collins in Philadelphia of the "difficulty of procuring Southern plants," and of the need to encourage botanical exploration by subscribing, for example, to the *exsiccatae* to be made by Mr. Frederic Foltz of Tübingen, who had come to America on the recommendation of Dr. Steudel expressly to botanize in the Southern states.⁹ Foltz otherwise has not been noticed, and evidently nothing came of his plan. That same year yellow fever spread from New Orleans and about fifty cases developed in Alexandria, with fifteen proving fatal. Dr. Hale reported his "Observations on the fever which prevailed in Alexandria, La., in the Autumn of 1830," in the *Transylvania Journal of Medicine* the next year.¹⁰ The standard treatment then consisted of bloodletting, calomel (in doses of a scruple to a drachm or more, repeated every four, six or twelve hours!), vesicatories or blisters, sponging with cold water, and, in the third state of the disease, sulphate of quinine.

In 1834 Dr. Hale retired from practice to devote his full time to botany and the pursuit of natural history. In 1836 Dr. Short lamented the progress of botany in the "South Western States": "we regret not to be able to give a more favorable account; but we have not the pleasure of knowing personally, or by report, a single botanist, or collector of plants, resident in Tennessee, Alabama, Mississippi, Arkansas or Missouri. What a wide, interesting and almost exhaustless field for future explorations! In Louisiana Dr. Clarendon Peck has made some investigation into the plants of Sicily Island; and Drs. Hale and Ingalls are respectively engaged in the exploration of the country adjacent to Alexandria and New Orleans. Whilst the extreme limits of our frontier borders have been occasionally more or less attentively examined and explored by Drs. Leavenworth and Pitcher, Surgeons in the U.S. Army, as they have happened to be stationed at the different outposts."¹¹

Dr. Thomas Russell Ingalls, who is mentioned in Short's roster of botanists, was one of seven appointed to the Medical College of Louisiana as Professor of Chemistry and Pharmacy in September, 1834, but Ingalls held the position for only two years.¹² John Leonard Riddell, who took his M.D. at Cincinnati Medical College in 1836 and arrived in New Orleans that summer, succeeded Dr. Ingalls. Torrey and Gray cited six herbarium records for Ingalls in their *Flora of North America*, all made in the vicinity of New Orleans. With this Ingalls left the botanical scene but Hale and Riddell grew in stature in Louisiana botany.

In 1838 Torrey and Gray began the publication of their *Flora of North America*. In the preface they acknowledged "Dr. Hale of Alexandria" with frequent textual citations, adding the usual "!" to mark the fact that they had seen his collection. Hale's first dispatches of herbarium specimens evidently made were in 1838, when a box was shipped to Elias Durand of Philadelphia on June 5th.¹³ About that date, another was sent to John Torrey. Unfortunately very few of Hale's specimens carry either a date of collection or a number and therefore we cannot reconstruct his travels. There is evidence that Torrey shared his Hale specimens with Asa Gray since we encounter sheets in the Gray Herbarium inscribed in Gray's characteristic hand "Louisiana, Hale." When Torrey and Gray dedicated the genus *Halea* of Compositae (later construed by Gray to be *Tetragonotheca*) the dedicatee was noted as a "zealous botanist, who has favored us with extensive collections and important observations, illustrative of the botany of that [western Louisiana] region." An example of Hale's

"observations" is that recorded on a specimen of *Ulmus crassifolia* in the Gray Herbarium. Hale wrote that it "grows in swamps, subject to inundation, Red River — flowers late in Sept & ripens its fruit in Oct. It will be seen by the present sp[ecimen] that the expression "ramis teretibus" does not universally apply."

Hale evidently visited Philadelphia during 1837 and met Elias Durand. In a letter of 10, 1839, Hale inquired whether a box of specimens sent by the Schooner *William Archer* at New Orleans had indeed reached Durand.¹⁴ Hale's collection of *Limnanthemum* now at the Academy herbarium, labelled simply "Alexandria, Louisiana," attests that some of his material was received by Durand.

Hale first approached John Torrey by letter in 1838, evidently on the suggestion of Dr. Melines Conkling Leavenworth of the U.S. Army medical corp. Rogers McVaugh says that Leavenworth, at the time of his graduation from Yale in 1817, was considered "one of the rising stars of the botanical firmament." From October, 1831, to May, 1833, Dr. Leavenworth had been stationed at Fort Jesup (or Camp Jessup) in Sabine Parish, south west of Natchitoches, but McVaugh knows of no botanical correspondence surviving from those years. Leavenworth spent the summer of 1833 at Opelousas and it is possible Hale may have met him there.¹⁵

New Orleans, June 6, 1838

Dr Sir

At the request of my Friend Dr. Leavenworth I have put up & shipped on the brig *Mary Ann* Capt Wade, a box of specimens of Plants growing in the neighbourhood of Alexandria. Circumstances which will not be detailed here, have prevented me from forwarding them earlier & also from making the collection more extensive. Many of the sp[ecimens] are imperfect & badly prepared, and not knowing how to make a selection, I have put up, all of which I have duplicates, consequently many of no value to you.

I have annexed names (in a great many instances incorrect) or a number, for the convenience of reference.

Should you desire better specimens, or any information, with regard to any of the species sent, or as such as I may hereafter collect, it will afford me great pleasure, as far as practicable, to make out, & send them.

Please direct, for me to Alexandria, La., & if parcels, to the care of Mess^{rs} Peroux, Arceul & Co. N. Orleans.

Very respectfully y^{rs}

Josiah Hale

Professor Torrey

Dr. Hale's second letter to John Torrey mentions the sale of copies of Torrey and Gray's *Flora* to two "botanical friends" who are otherwise unknown in Louisiana plant records: John Casson,¹⁶ M.D., and J. B. Callana.¹⁷

Alexandria, La. Oct. 4, 1838

Dear Sir:

Your esteemed favour of Aug^l 6th was duly received I delayed answering until I could see the only two botanical friends I have in this part of the State, John Casson, MD, J B Callana and myself each will take a copy of the *Flora* of North America. In the present state of business it will be difficult to make a remittance in suitable currency. Some one of your publishers probably has a correspondent in New Orleans, to whom the numbers of the work might be sent, and payment made shorter, [if] this plan suits your view, please advise me to whom the work will be sent.

I hope you found the specimens of plants I sent of sufficient interest to induce you to go through with your examinations and that you will give me the results as early as convenient. I will this winter

or fall put up and send you another parcel in which I will include a list of those you wish to have again, as I have taken specimens of. At the same time while selecting the parcel, I will make out such as far as my specimens and notes will enable me, such a list as you describe it will be necessarily very incomplete owing to my having neglected my herborizations for want of time of the last spring seasons. this, too, will acct for my specimens of the Cyperaceae and other vernal plants being so incomplete.

I hope next spring to be able to give particular attention to the Cyperaceae. You would do me a favour by having made up, with the *Flora*, a copy of your work on the Carices or if published in the *Annals of the Lyceum*, the volume containing it.

Please let me hear from you as soon as convenient, I wait anxiously to learn the result of your further examination of the parcel,

Yours truly

Josiah Hale

P.S. If your Colleague in the Scientific Survey of the State of New York, Mr. T. A. Conrad, should be in your neighbourhood, be so good as to say to him, that according to promise, I sent a collection a parcel of the Shells of Red River, and shipped the box on board the Packet Ship *Sofia* [?] which sailed from N. Orleans for Philadelphia on the 15th of February last – consigned to J. Dobson – and that I have written him twice but received no answer

J. H.

Torrey received Hale's letter of October 4th on November 3rd. Six days later Asa Gray sailed for Europe. Torrey's only son, Herbert Gray, had been born on October 12th. Part one of the first volume of the *Flora* appeared in July 1838 and part two in October. It had been a very full year for John Torrey and also for Hale.

In 1838 Hale married Mrs. Martha Crain, of Lake Cotaille, widow of a communicant of the Trinity Church of Natchitoches. Virginia and Elizabeth were born to them, Elizabeth becoming a student of Latin and music.¹⁸ During the same summer of 1838 he sent shells to Timothy A. Conrad.¹⁹ Perhaps Rafinesque, whose publications in conchology "rank as fundamental," introduced his pupil to the subject. Riddell was actively seeking botanical correspondents who might exchange herbarium specimens. On November 20th 1838, Riddell wrote to Hale and to six others (Asahel Clapp, William Darlington, Amos Eaton, C. W. Short, Rafinesque, and Benedict Jaeger the last then teaching at Princeton). Though Daniel Steinhauer of Philadelphia and Louisville had moved to Cheneyville, Louisiana, a town in Hale's own parish, had botanized in that vicinity, and had sent specimens to Dr. Short, there evidently is no record of contact between them.²⁰

About 1845 Dr. Hale lost about \$100,000 in a financial crash. To recoup some of his losses he took the position of clerk of the District Court in Alexandria, and held that position until 1849. He returned to medicine and that same year was elected the first president of the Louisiana State Medical Society. In January, 1850, he moved to New Orleans and set up practice. Cohen's *New Orleans & Lafayette Directory* for 1851 lists Dr. Josiah Hale as a resident of 139 St. Charles. The *Directory* for 1853, issued in 1852, gave "Girod, between St Charles and Carondelet," and the year 1854, lists him as being associated with the firm of J.G. Potter & Co., Girod, between St Charles and Carondelet. J.G. Potter & Co. were "apothecaries and chemists, wholesale and retail dealers in drugs, medicines, French and English chemicals, patent medicines, surgical instruments, etc."

After Hale's move to New Orleans he shared his botanical interests with Riddell who published *Catalogus florum ludoviciana* in 1852, which included Hale's records. During 1852 Hale published a "Report on the Medical Botany of State of Louisiana" in volume nine of the *New Orleans Medical & Surgical Journal*. Professor R. S. Cocks, one of the few to cite Hale's account, commented on *Frasera carolinensis* as a relict *Feliciana* species.²¹ Hale's

1852 "Report" contains other notable records and deserves study. Incidentally, the same species, e.g. *Spigelia marilandica*, may appear twice in his account. Hale records the former abundance of presently endangered species. Due in large part to Hale and Riddell the New Orleans Academy of Sciences was organized on April 1, 1853, "to advance science in all its departments." Among 27 founding members, of which thirteen were M.D.'s and three ministers, Hale was elected the Academy's first president.

At the same time Hale was publishing on the medicinal plants of Louisiana, the position of surgeon at the local United States Marine Hospital fell open, and Riddell wrote to the genial Spencer Fullerton Baird on his friend's behalf:²²

Univ. La. New Orleans March 19. 1853.

Prof. Baird, Smithsonian Institution.

Dear Sir,

I write to you in regard to our friend Dr. Josiah Hale of this city. — a most worthy and accomplished man, and a zealous botanist. The Doct. has been well recommended to the Navy Department, as having all the requisites, professional, moral and political, for the appointment of surgeon to the U.S. Marine Hospital, at New Orleans. — a place worth \$1200, a year only. He desires it and he is worthy of it. Presuming upon a sort of free-masonry among the cultivators of Natural science, I invoke your active aid to forward his views, in any way which may seem to you proper and efficient.

Please apprise me of the conclusion respecting the plan and time of the next meeting of the Am. Assoc.

Yours truly, J. L. Riddell.

Planter-naturalist Benjamin Leonard Covington Wailes of Natchez collected for the Smithsonian Institution and published on the molluscs of Mississippi in 1854. On October 23, 1850, Wailes wrote to Hale but in his delayed reply of March 19, 1853, Hale explained that the waters of the Red River "for two or three years" past had been too high to collect fluviatile shells and that he had too few duplicates to make up a parcel for Wailes.²³ After a detailed two-page conchological letter he added a postscript: "The town of Natchitoches is the most favorable on the Red river for the collection of shells. The river having left the old channel presents at a low stage of the water, little more than a series of shallow ponds, the bottoms of which are paved with shells, many of which are of the largest size. Never having visited Natchitoches when the water was very low I am not able to say whether the shells are all identical with those down river. I have a beautiful specimen of the *U[nio] ohioensis* from there, a species rare at Alexandria."

Benjamin Wailes answered Hale on April 14th regarding his shell collections but Hale did not reply until December 12th when he mentioned collecting in the vicinity of Opelousas. "I am about to commence the formation of a cabinet in earnest," wrote Hale, "and shall be greatly obliged for any and everything you can conveniently spare . . . I have no specimens from Mississippi, and only a few fossils from Alabama. You will further oblige me by labeling the specimens. I know of no individual in this city who gives any attention to conchology. Mr. Beadle had a magnificent collection a large portion of which was lost at sea on the way to the north."

Hale left New Orleans sometime before November 7th, 1855, for Canton, Mississippi, north of Jackson, in present Madison Co. He wrote to Dr. Engelmann at St Louis, that "some week ago I had put on board the Steamer *Woodruff*, at New-Orleans, for St Louis, a small box of specimens of Plants for Dr. Mead of Augusta, Ill. directed to your care by his instructions."²⁴ As Asa Gray served as dispatcher for collectors in New England, so Engelmann often performed the same role at the gateway to the West and South. Hale

added, "the box contains but little that will interest Dr. Mead, he having received many specimens of the same plants on former occasions." The following January 18th, 1856, Hale again wrote to Wailes from Canton, "I have moved to this place for the purpose of practicing my profession, and should like to have the means of informing myself in regards to such natural objects as may fall in my way," adding, "Will the scientific survey go on, and are you still conducting it?" The "scientific survey" Hale referred to was the ambitious plan of S. F. Baird, to serve as a clearing house, with the collaboration of Joseph Leidy and Louis Agassiz, to have Wailes collect fossil shells, and living reptiles and fish in Mississippi, a region "entirely unrepresented" in the Smithsonian said Baird.²⁵

Dr. Hale fell a victim of heart disease in January after moving to Canton, then returned to New Orleans for treatment, but died there on July 21st, 1856.

Hale's botanical books were dispersed and I have seen only volume one of Elliott's *Sketch*. It is now in the Tulane Library. Riddell's herbarium was acquired by Dr. Charles Mohr, pharmacist of Mobile, in 1886, and included were "extensive collections" of Hale.²⁶ Mohr's herbarium is now incorporated in the United States National Herbarium. Those plant collections of Hale belonging to the New Orleans Academy of Sciences, about a hundred sheets, came to Tulane.

Hale was twice commemorated for two different species of *Carex*, first by Chester Dewey in 1846, which proved to be a synonym, and then by John Carey in 1860, which inevitably was a homonym.²⁷ Torrey wrote "*Cyperus halei*" on a specimen in his herbarium and later N. L. Britton validated the name in 1886. *Dicliptera halei* Riddell is based on an unlocated collection and so the binomial must for the present rest among the *incertae sedis*.

Problems persist in fixing collecting localities encountered on Hale's labels. For example, *Balduina uniflora* is labelled in his hand "wet pine woods, Louisburgh, Sept" but is this present Lewisburg, St. Landry Parish, south of Opelousas? Hale's handwriting has been illustrated and may be distinguished readily from his contemporaries, Carpenter and Riddell.²⁸

ACKNOWLEDGEMENTS

To Professor Karlem Riess of Tulane's Physics Department, for his material assistance in my pursuit of Josiah Hale, to Professor Ronald Stuckey, of the Department of Botany, Ohio State University, Columbus, who has remembered my interests on many occasions as he sifted archives for our early botanical history, and to librarians, James Reed and Carla Lange, Missouri Botanical Garden, Diane Schwartz, New York Botanical Garden, and Lenore Dickinson, Harvard University Herbaria, I am indebted and grateful. Nor would I overlook those forebearing folk at our Howard Tilton Memorial Library. In their perennial flowering, my wife, Nesta, has improved the manuscript, and our secretary, Katherine LeBlanc, readied it for the printer.

NOTES AND REFERENCES

In October 1948 when Professor M. L. Fernald was tidying up the manuscript for his *Gray's Manual of Botany* he asked what I knew about Josiah Hale. I provided him with a working chronology that has served as the scaffold for this essay. The introductory quotation is from Geiser, *Naturalists of the Frontier* (Dallas, 1937): 308.

- ¹ Minute Book of the New Orleans Academy of Sciences, deposited in the Archives, Howard Tilton Memorial Library (cf. Karlem Riess, *Sci. Mo.* 77: 259. 1953).
- ² Letter, Miss Roemol Henry, Librarian, Transylvania College to Dr. King Rand, 26 July 1949; copy furnished me by Professor Riess. Hale may have gone to Monticello, Miss., unaccompanied (cf. W. B. McEllhiney and E. W. Thomas, *1820 Census of Mississippi* (Pass Christian, Miss., 1964): 100).
- ³ S. E. Perkins, III, Letters by Rafinesque to Dr. Short in the Filson Club archives, *Filson Club Hist. Quart.* 12: 200–239. 1938. See pp. 226–228. This paper is studded with botanical errors of transcription.
- ⁴ Robert Peter, History of Medical Department of Transylvania University (*Filson Club Publ.* 20, 1905): 37. James F. Hopkins, *University of Kentucky, origins and early years* (Univ. Kentucky Press, Lexington, 1951) chap. 2.
- ⁵ F. W. Pennell, Life and work of Rafinesque, *Transylvania College Bull.* 15(7): 10–70, 1942. The latest sketch of Rafinesque in the *Dictionary of scientific biography* (Scribners, 1975) summarizes the literature.
- ⁶ *Florula Ludoviciana* (N.Y., 1817, reprinted with introduction by J. Ewan, in Hafner's *Classica Botanica Americana*, 1967): 158.
- ⁷ *Teste*, Minute Book, New Orleans Academy of Sciences.
- ⁸ John Francis McDermott, Western journals of Dr. George Hunter, 1796–1805, *Trans. Am. phil. Soc.* 53(4): 1–133. 1963. p. 12 for description of lower Red River.
- ⁹ Letter, L. de Schweinitz, Bethlehem, Sept. 6, 1830, to Z. Collins (Collins papers, Hist. Soc. Pennsylvania). Frederic Foltz has not been encountered in letters examined at the Academy of Natural Sciences, Philadelphia.
- ¹⁰ John Duffy, *Rudolph Matas History of Medicine in Louisiana* (Louisiana State Univ. Press, 1962) vol. 2, p. 9, and *passim*.
- ¹¹ C. W. Short in *Transylvania J. Med. & Assoc. Sci.* 9: 349. 1836. Regarding the place of Clarendon Peck, M.D., of Sicily Island, Catahoula Parish, La., in this relation see J. Ewan, Growth of learned and scientific societies in the Southeastern United States, in Alexandra Oleson and Sanborn C. Brown, eds., *Pursuit of Knowledge in the Early American Republic* (Johns Hopkins Univ. Press, 1976): 213.
- ¹² Thomas Russell Ingalls (1798–1864), barely mentioned by Duffy, *op. cit.*, was associated with Amos Eaton before coming to New Orleans.
- ¹³ Josiah Hale, Alexandria, La., May 10, 1839, to Elias Durand, "Druggist, corner of Sixth and Chesnut St., Philadelphia," Jane Loring Gray Autographs, vol. 3, p. 14, Gray Herbarium, Harvard Univ.
- ¹⁴ Durand took selected Hale specimens to Paris as part of his gift to the Muséum National d'Histoire Naturelle (cf. *Bartonia* 17: 42. 1936). *Schizandra*, *Brasenia*, *Marshallia*, *Cocculus carolinus*, and presumably others, will be found therein.
- ¹⁵ Rogers McVaugh, *Fld & Lab* 15: 57–70. 1947.
- ¹⁶ Though Hale wrote "Casson" perhaps "Carson" was intended since that name appears in Hale's "Report on the Medical Flora," p. 154.
- ¹⁷ This is evidently the unidentified person of that name, credited as providing "Texas" specimens to Torrey and Gray (cf. my introduction, p. xi, Hafner reprint of Torrey & Gray, *Flora North America*, 1969.)
- ¹⁸ *Daily Picayune* for July 22, 1856, and *Daily True Delta*, for July 22, 1856.
- ¹⁹ Timothy Abbott Conrad (1803–1877), author of many papers on paleontology and conchology was a prolific correspondent. There are eighteen letters to Samuel George Morton at the Amer. Philos. Soc., a 2-page detailed letter, Feb. 22, 1839, to J. E. Gray, f. 287, J. E. Gray corresp., Zoology Dept., British Museum (Natural History), twenty items in the Manuscript Colls. of the Academy of Natural Sciences, Philadelphia (cf. Venia T. Phillips, *Guide*, Phila., 1963, 174), and one or more letters in the Gratz Coll., Historical Soc. of Pennsylvania. Conrad's father, Solomon White Conrad, is noticed in *Bartonia* 21: 46. 1942.
- ²⁰ Daniel Steinhauer (1785–1852) collected *Sabatia gentianoides*, in vicinity of Cheneyville, "pine woods, July 1839." (cf. *Bartonia* 16: 34. 1934 also Ronald L. Stuckey in *Bartonia* 36: 2. 1967)
- ²¹ *Pl. Wld.* 17: 189. 1914.
- ²² Baird Correspondence, f. 265, Smithsonian Inst. archives.
- ²³ Wailes papers, Duke University archives. For description see *Guide to the manuscript collections*,

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1947, 241. Sydnor sketches the background in his chapter "Wailes as a naturalist," but does not mention Hale. Wailes' provided T. A. Conrad with shells. "Mr. Beadle" mentioned in Hale's letter was presumably Elias R. Beadle (1812-1879) of Philadelphia. Beadle's shell collection numbered 10,000 species acc. to R. Tucker Abbot, *American Malacologists* (Falls Church, Va., 1973): 67.

²⁴ Engelmann correspondence, Missouri Botanical Garden, and the only letter from Hale. Riddell and Carpenter were in Engelmann's coterie but from Engelmann's letter to Asa Gray, May 28, 1850, Hale was not included.

²⁵ Charles S. Sydnor, *A Gentleman of the old Natchez region, Benjamin L. C. Wailes* (Duke Univ. Press, 1938): 193.

²⁶ F. Lamson-Scribner, "Southern botanists." *Bull. Torrey bot. Club* 20: 315-334. 1893. See p. 328.

²⁷ *Carex haleana* Olney commemorated the Wisconsin collector Thomas J. Hale. It is tempting to speculate, as Edward G. Voss suggests in correspondence, that Thomas J. Hale was a relative. His middle name *could* have been Josiah as in a father/son relationship and Thomas J. Hale had some of the same correspondents (see L. J. Musselman in *Michigan Botanist* 8: 181-185. 1969).

²⁸ See figs. 1-3 in *Taxon* 18: 200-201. 1969.