

Riddell, Sullivant, and the early botanical exploration of Franklin County, Ohio, U.S.A. (1832-1840)

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Summary

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Two frontier botanists, John Leonard Riddell and William Starling Sullivant, treated the vascular flora of Franklin County, Ohio, U.S.A., creditably despite the scarcity of proper books and the lack of opportunity to consult herbaria. Their vascular plant catalogues document the first species (and their habitats) discovered in this central Ohio county, now the site of the state capital. A list is presented of 24 vascular plant taxa first named and described from Franklin County.

Introduction

The settlement of Franklin County, Ohio, U.S.A., organized in 1803, took place during the late 18th and early 19th centuries. Where once stood thick forests in a formerly glaciated area, frontier inhabitants developed the communities of Franklinton, Worthington, Dublin, and Columbus. Attracted by rich soils, the settlers grew exuberant amounts of corn and wheat on the fertile bottomlands, especially in the vicinity of Franklinton. The writings of Joel Buttle (1835; manuscript diary at the Ohio Historical Society Library, Columbus), the county's first postmaster, are of interest since he witnessed the initial changes in population, farming improvements, canal construction, and road building in the county from 1804 to 1835. Concerned about the changes of the time, Buttle predicted: "Long after this, there will be nothing to show what now is or what once was the original state of the country ... having no hills or mountains or lakes to retain their native form, in despite of the efforts of man ... at that time it will be difficult to realize its having been such a wilderness as I have seen it, and perhaps even such as it now is". Enduring great hardships, the members of this prosperous agricultural community worked diligently to clear the land in order to reap its benefits and satisfy their needs of food and shelter. The exact floristic composition of this unbroken wilderness and its rich vegetation cover has been left to the conjecture of those whose leisure permitted such activities.

John Leonard Riddell

John Leonard Riddell (1807-1865; Fig. 1) came from Marietta, Ohio, in the fall of 1832 to Worthington in Franklin County, where he accepted a position as Lecturer on Chemistry at the Reformed Medical College (Worthington Medical College). He remained at Worthington until April 1834, at which time he moved to Cincinnati to take a similar position in the Medical College under the direction of Dr Daniel Drake (1785-1852), the pioneer physician and educator of the West (Stuckey, 1978b).

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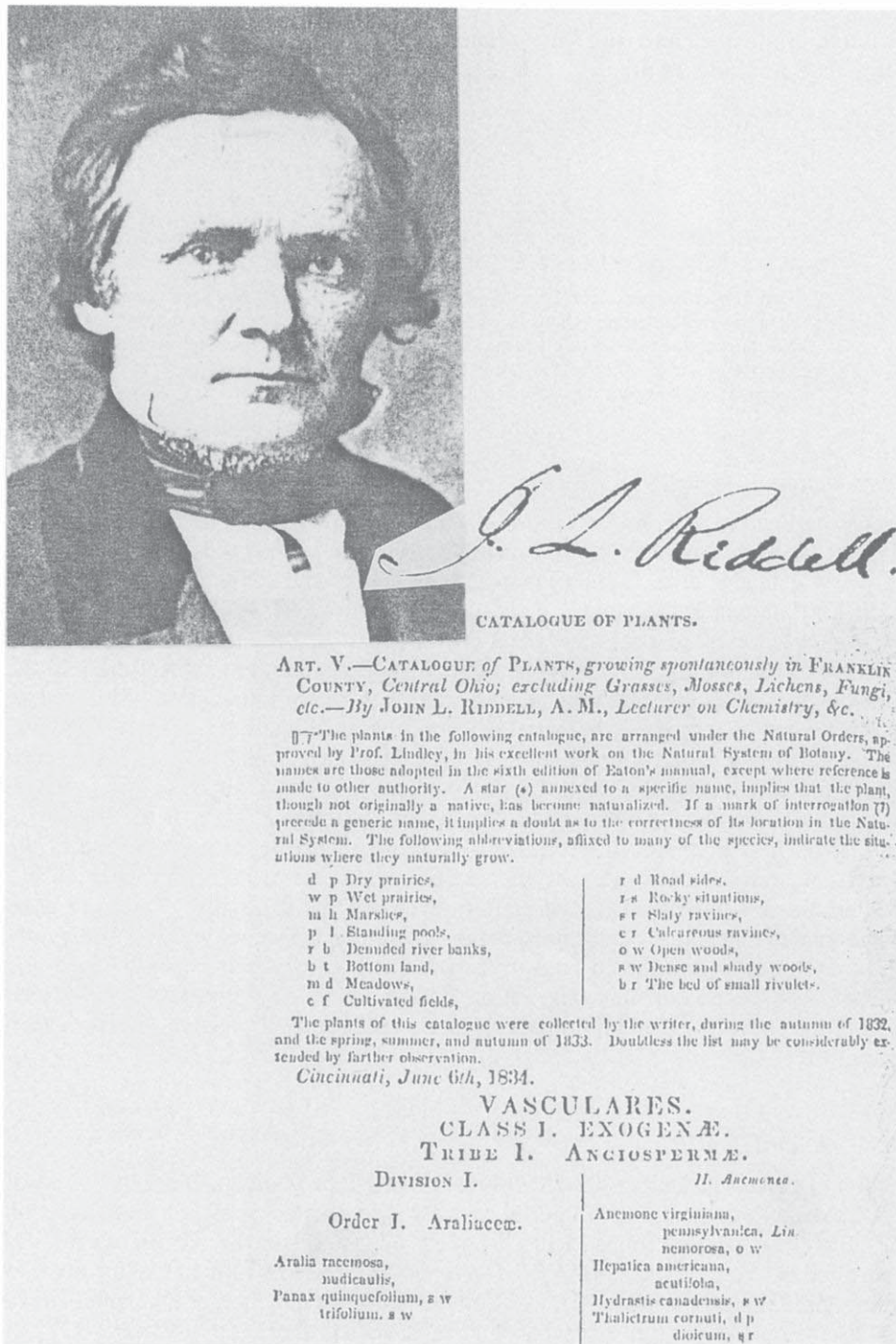


Fig. 1. John Leonard Riddell (1807-1865), portrait (from Stuckey, 1978b), signature, and the upper portion of the title page to his *Catalogue* (Riddell, 1834).

While residing in Franklin County, Riddell collected vascular plants during the autumn of 1832 and spring, summer, and autumn of 1833. The results of his collecting endeavours in the county were initially published in a *Catalogue* (Riddell, 1834) which contained entries for 699 named plants, and some undetermined species. Riddell finished it in Cincinnati, where he resided until leaving Ohio in 1836. Native plants were listed, as well as those considered to be naturalized in the county. Habitat data indicating the natural environments where these plants grew were given in an abbreviated form for most plants (e.g., dry and wet prairies, marshes, standing pools, denuded river banks, bottomland, cultivated fields, roadsides, rocky situations, slaty ravines, open woods, etc.). Sedges as well as grasses, two major families in the county's vascular flora, were excluded. No localities or persons were mentioned in this treatment. Riddell was in communication with Drake concerning the preparation and publication of this *Catalogue*, published in two instalments, as the first county flora west of the Alleghany Mountains.

Riddell's *Catalogue* was quickly overshadowed by a more comprehensive floristic contribution to the Ohio Flora, his *Synopsis* (Riddell, 1835a, b). The region to which this *Synopsis* or catalogue was intended to apply was described as "extending from the Alleghany mountains in West Virginia, to the Platte river in Missouri Territory; and from the southern boundary line of Tennessee, to the latitude of Detroit". For a frontier region, the *Synopsis* not only intended to cover in a knowledgeable way the flora of Ohio and Kentucky, but it also included entries from Indiana, Illinois, West Tennessee, and Missouri, as well as a small part of Virginia and Pennsylvania, and of the Michigan, Northwest, and Missouri Territories. Unless otherwise credited, Ohio plants were personally observed and collected by Riddell. His objective for preparing this *Synopsis* was to solicit through correspondence sufficient botanical specimens in order to publish a complete Flora of the western states. Riddell thought his *Synopsis* was "necessarily incomplete", but it would serve the objective to catalogue the present flora of the assumed territory so observers in the different states could make more easily additions to it. In like manner, habitats were abbreviated as in his *Catalogue*, and numerous medicinal properties were included for most plants.

In the *Synopsis* 1,774 vascular plants were entered, of which 71 (numbers 5, 22, 53, 58, 59, 102, 164, 172, 183, 197, 299 [209], 223, 233, 256, 258, 260, 268, 269, 275, 294, 338, 344, 432, 489, 532, 581, 590, 638, 641, 651, 673, 718, 732, 736, 779, 796, 799, **803**, **804**, 855, 860, 870, 890, **892**, **893**, 919, **920**, **921**, 950, 952, 1077, 1089, 1093, 1105, 1115, 1133, 1146, 1176, 1273, 1378 [1278], 1305, 1314, 1326, 1444, 1455, 1460, 1471, 1474, 1480, **1500**, 1743) specifically refer to Riddell's collecting localities in Franklin County. Worthington by itself was mentioned 42 times, "near Worthington" (twice), "cliffs two miles north of Worthington" (once), "forests on the Olentangy River near Worthington" (once), "slaty ravines Worthington" (once), and "hillsides & ravines Worthington" (once). Prairie areas included "Scott's Plains 12 miles east from Worthington" (3 times) and "Duncan's Plains near Columbus" (10 times). Other localities were "near Dublin" (once), "east bank of the Scioto River near Dublin" (once), "Columbus" (3 times), "near Columbus" (once), "two miles south of Columbus" (twice), and "Lockbourne" (twice). The seven entries describing new taxa (**bold-face** numbers) from the County are treated in the accompanying list of taxa described from Franklin County, Ohio. As was the case in his *Catalogue*, Riddell did not include in the *Synopsis* any mention of grasses and sedges from Franklin County among the 127 *Gramineae* and 64 *Cyperaceae* that

were listed. This omission is somewhat puzzling, since locations for less prominent vascular plant families in Franklin County were recorded for the 71 other plant entries previously referred.

Among the respectable scientific gentlemen residing in Ohio to whom the student in botany could refer with advantage, Riddell had mentioned Dr Jonathan Roberts Paddock (1803-1878) of Worthington and Dr Joseph C. Frank (1782-1835) of Cincinnati. Both were never cited specifically for Franklin County in his *Synopsis*. Paddock was cited 18 times, twice as "Ohio", the others as "Morgantown", West Virginia, where he had lived prior to his stay at Worthington. None of the plants mentioned for Paddock were grasses and sedges, whereas Frank was cited 20 times for grasses, 4 times for sedges, and 8 times for other plants including a special entry for his Latin description of *Solidago riddellii*, one of two species that Riddell had alluded to as "species undescribed" in his *Catalogue*. In Franklin County, Riddell's goldenrod was first collected by Riddell on Scott's Plains, 2 miles east of Worthington; he later collected it on Hoffman's Prairie, 8 miles east of Dayton in south-western Ohio. In this same region, Riddell cited Frank for "Germantown" (Dayton), "Miami country", "Miami canal", and "Cincinnati". It was Riddell who was responsible for introducing, through correspondence, Frank to Dr Charles Wilkins Short (1794-1863) of Louisville and Dr John Torrey (1796-1873) of New York (vol. 12 of Riddell's manuscript diary at Tulane University, New Orleans; 2 Jan 1835). Riddell wrote both Short and Torrey that Frank was "intimately acquainted with European Botany" and commissioned by the grand Duke of Baden (Germany) to collect plants. He also informed them that Frank would perhaps soon devote his whole time to collecting and investigating the plants of the western and southern states (Stuckey, 1974). In this same communication Riddell informed Torrey that he was preparing a catalogue of western plants for publication and he would be glad to have some guide for the nomenclature. In addition to Paddock and Frank, Dr Ichabod Gibson Jones (1807-1857) was casually mentioned three times by Riddell in the *Synopsis*; however, no specific localities were given for Jones, who was a resident of Franklin County and a former associate of Riddell at the Worthington Medical College (Stuckey, 1988; Stuckey & Roberts, 1991).

The last contribution to the Ohio flora written by Riddell before leaving Ohio was his *Supplementary catalogue* (Riddell, 1836a). Even though it was stated that plants treated in this supplement were mostly collected during the summer of 1835, at least the source of Franklin County plants resulted from Riddell's correspondence and contacts with Paddock at Worthington and with Mr Increase A. Lapham (1811-1875) at Columbus during that summer (Stuckey, 1984). In response to a letter from Paddock (vol. 13 of Riddell's diary; 24 Jul 1835) offering some additions to his *Synopsis*, Riddell (vol. 14 of Riddell's diary; 15 Nov 1835) sent Paddock a copy of the *Synopsis* in which he had marked those Worthington plants that he wished to receive from him. In July 1835, Riddell (vol. 13 of Riddell's diary; 3 Jul 1835) had passed through Columbus on his north-eastern excursion to Cleveland and Buffalo. He called on Lapham and looked through his herbarium. Lapham was curator of collections and serving as secretary of the Historical & Philosophical Society of Ohio, then located at Columbus. Upon returning to Cincinnati, Riddell received a package of plants from Lapham in November (letter of Riddell to Lapham at the Ohio Historical Society Library; 13 Nov 1835). At least some of Lapham's specimens from Columbus are today in the herbarium at the University of Cincinnati (CINN).

The Franklin County localities credited to Riddell in the *Supplementary catalogue* were most likely those collected when he was a resident of Worthington. 25 entries are to Franklin County plants. Localities attributed to Riddell included "Worthington" (5 times), "slaty ravine 2 miles north of Worthington" (once), "Scott's Plains" (once), and "prairie two miles south of Columbus" (twice). "Paddock" was specifically recognized in 7 entries, for plants from "Worthington" (4 times), "near Worthington" (once), "Alum Creek" (once), and "Franklin County" (once). Moreover, 9 entries pertain to Lapham, 7 given as "Columbus", and 2 as "Franklin County". The only grass or sedge ever cited by Riddell from Franklin County was *Carex rosea* Schkuhr, collected at Columbus by Lapham.

Just as he did earlier in the *Synopsis*, Riddell referred again to Frank in his supplement. Here he considered Frank "a most zealous and accomplished botanist" who "gave special attention to our grasses and carices". Frank was living in Cincinnati at the time. He left with Riddell specimens of those plants that were presented on his behalf in the *Supplementary catalogue* before leaving Cincinnati in 1835 for New Orleans, where he was stricken by yellow fever and died that fall. His collections were sent to Germany for distribution by the *Unio itineraria*, of Esslingen, Germany (Stuckey, 1974).

A closer examination of Riddell's treatments of grasses and sedges in Ohio reveals that he dealt with them in somewhat of an evasive way at first, but later he was able to handle them with greater confidence thanks to the contributions of his correspondents. Taxonomic preference, the time actually spent making adequate collections, and the level of expertise needed to make determinations are all factors that probably influenced the way Riddell made decisions on how to treat the grasses and sedges. During the summer of 1832, when Riddell was at Marietta, he reported on his botanical research of that vicinity in village newspapers (Walp, 1951). Here again he made no mention of the grasses and sedges. Notes from his diary stated he was omitting them for the present (vol. 4 of Riddell's diary; 8 Aug 1832). "With respect to grasses [& sedges], I will say there are among the indigenous species, many that are interesting, but as far as my observation extends, there does not seem to be so great a variety as in the state of New York" [where Riddell had travelled and studied prior to arriving at Marietta] (vol. 5 of Riddell's diary; 20 Aug 1832). He continued to elaborate in a comparative sense that "in alluding to ferns I can use more beautiful language". Since only a few months were spent at Marietta, it is believed the lack of time, and an overall dismay as to how to treat the grasses and sedges, necessitated that these two groups be set aside, and perhaps at most only casually collected. In a similar manner, Riddell excluded grasses and sedges from his *Catalogue*. One would think that after a year and a half in Franklin County, Riddell should have considered some of them worthy of mention in his *Catalogue*. Certainly, he was at a great disadvantage, since the taxonomic literature dealing with the identification of these groups at that time was limited. By the time he published his *Synopsis*, Riddell had resolved, in part, the determination of the grasses and sedges through the extensive exchange of botanical specimens and catalogues received through his solicitudes to fellow correspondents. Even though Riddell rarely if at all mentioned specific names of grasses and sedges in his communications with others, he did receive from his correspondents sufficient taxonomic expertise concerning these groups to permit him to assimilate these major groups for the first time in his *Synopsis*, where 25 of the 127 grass entries (19.69 %) and 21 of the 64 sedge entries (32.81 %) can be credited

to Riddell's own taxonomic determinations. Remembering that none of these grass and sedge reports were from Franklin County, and not overlooking that the *Synopsis* would have been the opportune place to report on their existence, we can probably rightfully conclude that Riddell never collected grasses and sedges, per se, in Franklin County. On the other hand, just the fact that he included these two major plant groups in the *Synopsis* added to its completeness, thus enhancing his taxonomic credibility and the overall acceptance of his treatment by correspondents. In the *Supplementary catalogue* Riddell gave due credit to Frank, who was at that moment the recognized grass and sedge specialist on the Ohio frontier.

It is hardly exaggerating to say Riddell's accomplishments were numerous; however, much remains to be appreciated and understood about his resourceful nature. At age 25 he came to Ohio as an outgoing young man, full of energy, imagination, and above all eager to succeed. Nobody of any scientific importance escaped his attention in the settlements of Marietta, Worthington, and Cincinnati, where he took advantage of what was available. He was in constant conflict with the traditional and reformed medical schools of thought, in particular, how they relate to his professional desire, and long sought for medical degree (Stuckey, 1978b). Riddell corresponded with the leading botanists of his time, not only those from the traditional eastern schools, but those who actually resided on the Western frontier, where he was so eager to make a living through botanical exploration. As such, he was able to sustain himself by soliciting subscribers to his collections, which only temporarily improved his financial status.

Riddell was truly a leader in Ohio floristics, and his labour as a botanical explorer materialized rapidly. "No time to be lost" – that was Riddell's motto. During his four years in Ohio, among other studies of equal merit, Riddell had produced his *Catalogue*, *Synopsis*, and *Supplementary catalogue*, all of which gave a good floristic record of the landscape at that time and now provide a good foundation for present and future comparative studies. His methods, where observation and collecting played an important role, are still used today in the preparation of floras. In Riddell's treatments he recognized the habitats of native and naturalized plants, and he wrote on the geological substrates that sustained them (Riddell, 1833, 1836b, 1836c, 1837).

The circulation of Riddell's *Catalogue* was restricted, in part because of its publication in an all too obscure western medical journal where it received little if any attention. This was not the case for the *Synopsis* and *Supplementary catalogue* which were noticed by the botanical community. The *Synopsis* had a more regional focus as a western flora, included medicinal properties for many plants, and it reported on plants new to science. This publication was enough to call attention in the eastern traditional schools to the fact that botany along the western frontier was producing new and original findings. The moment was exciting, since the western frontier was opening. For Riddell the time had come to move on, in search of new botanical horizons. Having realized the way to improve his monetary input, Riddell left Ohio for Louisiana in the autumn of 1836, with his medical degree from the Cincinnati Medical College.

The whereabouts of Riddell's Franklin County plant collections remains unknown, with the exception of some of his specimens used to describe new species. At present, the earliest vascular plant collection known from Franklin County is that of Paddock, a physician and one of the founders and professors of the Worthington Medical College from 1831 to 1839. Among other worthy pursuits, Paddock was an

accomplished plant collector, possessing a keen sense of observation and a respect for botany as it relates to life (Stuckey, 1988; Stuckey & Roberts, 1991). As referred to earlier, Paddock was highly esteemed by Riddell, with whom he shared like interests, and his collections of Franklin County plants were cited in Riddell's *Supplementary catalogue*. His herbarium, which was purchased by the University of Illinois in 1919, included some 104 specimens collected from the Worthington vicinity during the period 1833-1840. The other Franklin County plants were collected at "Scott's Plains" (1833-1834, 1837), "big Darby Creek" (1833), "Duncan Plains" (1834, 1839), the "banks of the Olentangy and Scioto Rivers" (1838-1840), and the "highlands between the Olentangy and Alum Creek" (1838-1839). Today, in Paddock's collections at the University of Illinois (ILL), specimens that once were his were obtained by Lapham (1834-1836) and Jones (1837) at Columbus, and William S. Sullivan (1839) at a cat-tail swamp 3 miles west of Columbus. All these specimens demonstrate that Paddock shared a common interest with contemporary collectors of his time.

William Starling Sullivan

At about the same time that Riddell was finishing his catalogue of the plants in Franklin County, collections for another catalogue were being made by William Starling Sullivan (1803-1873, Fig. 2), a successful businessman and resident of Columbus. His principal objective in making this *Catalogue* (Sullivan, 1840), with its 853 or more plant entries, was to assist him "in an interchange of botanical specimens" with his correspondents. Sullivan personally collected and examined the vascular plants presented in his *Catalogue*; for plant determinations he was aided by Torrey to whom he was forever grateful for his kind and encouraging assistance. Common names were provided for many species, naturalized plants were indicated, and attention was called to 90 plants from adjacent counties, many of which Sullivan considered would ultimately be located within the limits of Franklin County. The only specific sites given were the rocky banks of the Scioto River, above Columbus; cat-tail swamp, 3 miles west of Columbus; wet prairie, 2 miles south of Columbus; borders of prairie, 3 miles south of Columbus; meadows immediately west of Franklinton; and hillside, three miles west of Columbus, north of the National Road. Sullivan's specimens totalling 305, all labelled "Columbus", are in The Ohio State University Herbarium (OS).

Exactly when and how Sullivan became interested in studying vascular plants can be ascertained thanks to a story told in later life by Dr Asa Horr (1817-1896) to Crosby (1915) relating his initial encounter with Sullivan. Horr, born at Worthington in 1817, was a young man of 19 when he became acquainted with Sullivan in a Columbus bookstore where he wanted to purchase a textbook on botany for beginners. At this moment, Sullivan invited Horr to his home to see his collection of plants. Horr had commented that "the plants in quantity and variety were larger and finer than ever had seen, and his [Sullivan's] explanations and descriptions gave me an increased interest in botany". Thus by 1836 Sullivan, who was 33 years of age, had already formed a large collection of vascular plants and was well versed on the topic of botany, which in itself made a lasting impression on the young Horr. The story goes that several weeks later Sullivan, while collecting with Horr in a boat on a

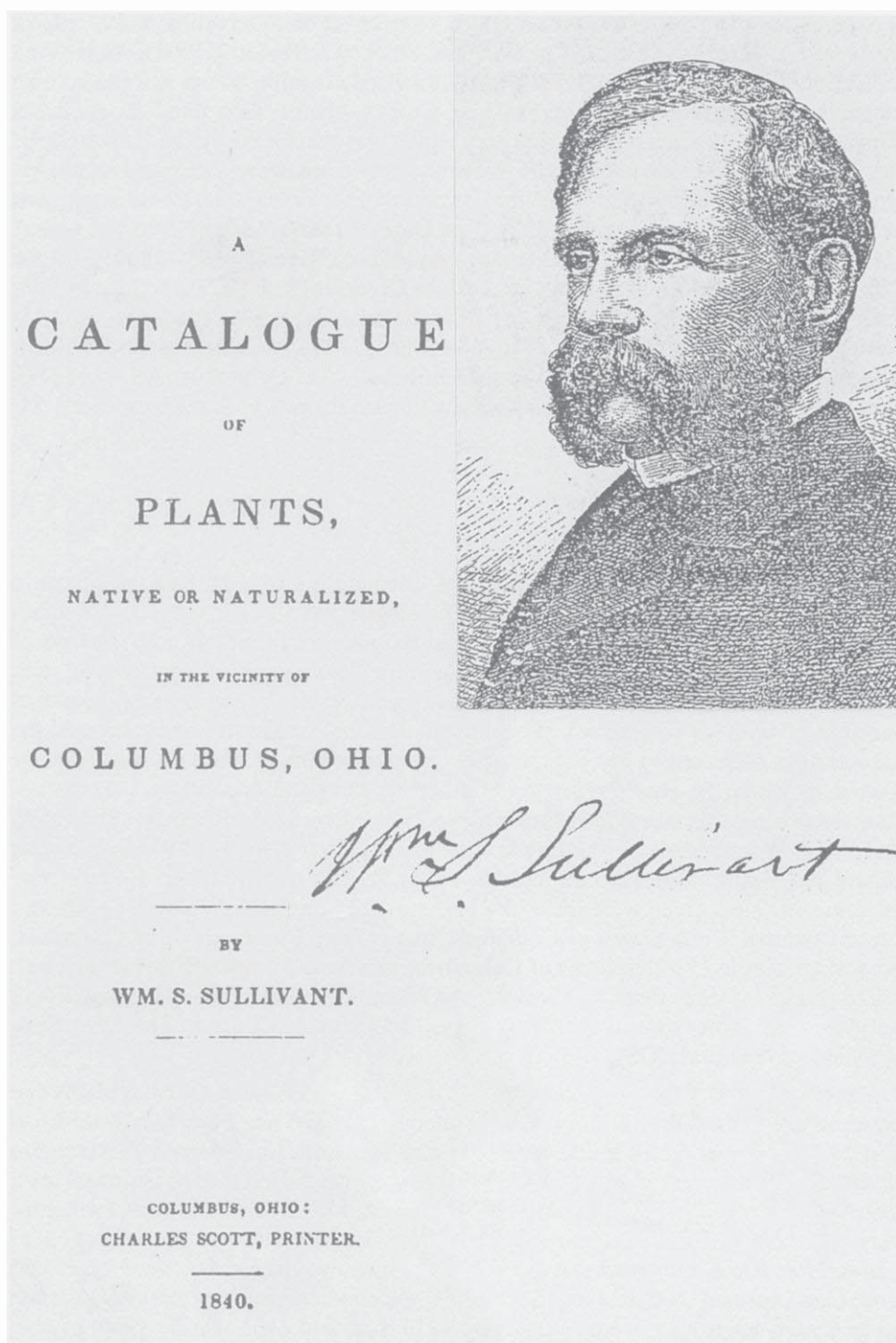


Fig. 2. William Starling Sullivant (1803-1873), portrait (from Müller, 1875), signature, and title page to his *Catalogue* (Sullivant, 1840).

lily pond, told him about a man “somewhat advanced in years” who had appeared one day in his pasture near the vicinity of his mansion house on “Sullivant Hill”, three miles west of Columbus and immediately north of the National Road. To his amazement, Sullivant discovered the man was collecting plants and putting them in a vasculum. With great curiosity Sullivant followed him in the pasture as the man explained he “was studying the flora of the state, and had already found ... some new plants not yet described, that he would add to the list”. Sullivant told Horr it was this man with “his dignified bearing and intelligent conversation” that had opened a whole new world to him and led him to become a student of botany (Stuckey, 1988; Stuckey & Roberts, 1991).

The name of the man in the pasture was never disclosed and probably never was an issue, perhaps not even known or remembered by Sullivant for that incident. What mattered was the man told Sullivant something that changed his whole direction of life. The man in the pasture was not only a field botanist but a plant specialist. He knew what plants he wanted to find. And what kinds of plants would a botanist be looking for in a pasture? Grasses and sedges were the most likely. Perhaps one can rightfully imagine that the man had a good knowledge of those plant groups and was responsible for conveying to Sullivant that someone should attend to the identification of these poorly collected and relatively unknown plants.

The man in Sullivant’s pasture probably was Frank, although no real evidence exists to substantiate this presumption. The incident would have taken place prior to 1836, which coincides with Frank’s Ohio explorations 1833-1835 while in search of new plants. In 1833 Frank was 51, somewhat advanced in age as described in the story, whereas Sullivant was 30, which coincides with Gray’s (1874) statement that “Mr. Sullivant must have reached the age of nearly thirty years ... before his taste for natural history was at all developed ... and when in some way his own interest in the subject was at length excited, he took it up with characteristic determination to know well whatever he undertook to know at all”. Thus, Sullivant was determined from the start to give special attention to the grasses and sedges of Franklin County. His real knowledge of Frank’s explorations could have come later through the *Synopsis* and *Supplementary catalogue* of Riddell, and it was perhaps only then that Sullivant associated the conversation of the man in the pasture with the name of Frank. Sullivant wrote twice “Dr. Frank” in his annotations on sedges, on pages 405 and 422 of his personal copy of Torrey’s (1836) *Monograph*. Perhaps, with the belated knowledge of Frank’s death, Sullivant no longer had a need to relate to anyone else this story about “a man” in his pasture. In his usual quiet way he just kept it to himself. Joseph Sullivant (1874) expressed in his older brother’s obituary that William “finally settled upon botany, influenced in part, perhaps” by himself. Even Joseph had doubts that he could take full credit for William’s interest in botany, especially his initial decision to study the grasses and sedges. Obviously neither Joseph nor Gray, two of William Sullivant’s closest associates, were aware of the story he told Horr. Joseph knew and described so well his brother’s nature when he referred to William’s life as “quiet and unostentatious”.

The earliest known herbarium specimen made by Sullivant dates from 1834, when he collected bluejoint, *Calamagrostis canadensis* (Michx.) P. Beauv., in a cat-tail swamp [3 miles west of Columbus]. Four years later in a letter to Torrey (26 Nov 1838; NY) Sullivant stated: “Dr. Gray wrote to me in consequence of an application I made to him for his setts [sets] of *Gramineae* & *Cyperaceae* of which he had none

on hand complete. He very kindly mentioned that it had been his intention to send me specimens of those orders, but that his time having been so much preoccupied he could not do it until his return. At the same time he expressed a hope that you would find leisure to prepare a parcel for me. I fear this is making an unsurmountable request of you ... but my only apology is a strong desire to study those orders which I find exceedingly difficult and unsatisfactory in the absence of proper books and facility of consulting herbaria. Authentic specimens of those orders would be highly prized by myself and several of my friends who are now zealously attending to the botany of this section of the country. Of the above orders I have collected only about 100 species and named them according to the best lights I could get ... of some of them I feel doubtful ... nearly all the other flowering plants in this vicinity I have collected ... and as Dr. Gray mentions that specimens of the more rare and difficult plants would be acceptable I will with pleasure forward to you any thing of the kind we come across..." Most likely, the botanical friends referred to were Paddock and Jones. At least Jones is supposed to have written "several papers descriptive of indigenous plants..., of which the most notable, perhaps, is a description of the grasses of this region" (Loving, 1912). Neither the writings nor herbarium of Jones have been located (Stuckey, 1988; Stuckey & Roberts, 1991). The following spring Sullivant reminded Torrey again (letter of 25 April 1839; NY): "To *Cyperaceae* & *Gramineae* I shall give special attention, they are favorite orders with me ... and if you have had time to lay them aside, some *Cyperaceae* & *Gramineae* from yourself would be gladly received on any terms. These plants are difficult to be procured, many who attend to Botany do not collect them."

Torrey responded to Sullivant's predetermined wishes by sending him specimens of grasses and sedges. These orders required closer inspection, and both Torrey and Gray were most willing to assist Sullivant in his acquisition of botanical specimens, books, and a microscope. With sufficient collections at hand for making critical determinations and having acquired Kunth's (1833-1837) *Agrostographia* and *Cyperographia*, Sullivant was prepared to treat these orders. Having the resources and time available for making extensive collections and determinations of the county's flowering plants, Sullivant was able to communicate to Torrey (letter of 7 Nov 1839; NY) that he would soon have printed a list of all the plants (1,000) he had collected within Columbus and Franklin County, in order to assist him with an interchange of botanical specimens. In a follow-up letter (12 Dec 1839; NY) Sullivant informed Torrey that his study "will represent a pretty fair representation of the flora of the central part of this state, a number of them are not catalogued in Riddell's Synopsis". Two months later Sullivant wrote Torrey (24 Feb 1840; NY) informing him and Gray that he had sent them copies of his *Catalogue*, which was published by the printer Charles Scott in Columbus.

An examination of the authors of plant names and special notes in Sullivant's *Catalogue* reveals that Sullivant knew of Riddell's *Synopsis* and *Supplementary catalogue*, but not necessarily of Riddell's (1834) *Catalogue*. At present, no records are known demonstrating a relationship between Sullivant and Riddell regarding their catalogues of Franklin County plants, nor is there reason to expect that such relationship existed, since Sullivant was just beginning in botany with his study of flowering plants when Riddell was finishing his work in the county and was on his way to Cincinnati. The fact that Riddell's *Catalogue* had been published in an obscure western medical journal explains why it might have escaped Sullivant's notice.

Sullivant relied on Torrey and Gray to inform him “of anything new, strange or interesting”, and as far as botanical matters were concerned, all he ever heard was through them. Torrey was among those to whom Riddell (vol. 12 of Riddell’s diary; 19 Oct 1834) sent copies of his *Catalogue*. However, since Sullivant was financially independent he could publish his *Catalogue* in his own unpretentious way, without reviewing its contents before publication with Torrey or Gray. Therefore, Torrey would have had no need to call Sullivant’s attention to Riddell’s *Catalogue*. The contents of both catalogues probably received little if any attention from fellow botanists. They were too restrictive in their geographical coverage, and none of the plants treated were new to science. Surely, Sullivant would have been one of a few people who could possibly have had a taxonomic interest in Riddell’s *Catalogue*. But even if he had known it, he would hardly have been impressed with its contents, since the two orders that he had chosen to give special attention had been omitted. The inclusion of the grasses and sedges in Sullivant’s *Catalogue* made his treatment of the county’s vascular flora taxonomically more complete than Riddell’s.

Riddell, Paddock, and Sullivant all communicated and exchanged plant specimens from Franklin County with Torrey and Gray. These collections undoubtedly contributed to the treatment of western species published from 1841 to 1842 in their *Flora of North America* (1838-1843). Moreover, Torrey and Gray had aided Sullivant (1842) in the publication of three undescribed plants, his last published contribution to phanerogamic botany resulting from his own field observations. Sullivant (letter to Gray, 22 Apr 1868; GH) finally sent Gray his phanerogamic herbarium, which was to be disposed of as Gray saw the situation. Sullivant himself had already distributed many of his specimens, which may be located today at the New York Botanical Garden (NY), Gray Herbarium (GH), Missouri Botanical Garden (MO), and the Academy of Natural Sciences of Philadelphia (PH). Stuckey & Roberts (1991) should be consulted for further details concerning the fate of Sullivant’s flowering plant collections, as well as how the Sullivant specimens were acquired that are today at the Ohio State University Herbarium (OS).

Conclusions

Certain species of plants remained, in part, unidentified in these earlier catalogues of Franklin County plants. Riddell listed undetermined species of *Botrychium*, *Rosa*, and *Salix*; in the *Asteraceae* undefined species of *Aster*, *Helianthus*, *Prenanthes*, *Solidago*, and several of the tribe *Lactuceae* (*Cichorieae*). In like manner, Sullivant noted undetermined species of *Equisetum*, *Bromus*, *Vaccinium*, and in the *Asteraceae*, *Aster*, *Carduus*, *Helianthus*, *Lactuca*, *Liatris*, *Solidago*, and *Sonchus*. Sullivant believed future investigations would make considerable additions to the flora of Franklin County; as such his *Catalogue* did not pretend to give a complete enumeration of its plants. On the other hand, he considered it was a fair representation of the flora of the central Ohio area.

Together, both catalogues have enriched the overall understanding of Franklin County’s floristic composition at a time when major changes were taking place in the county’s surface features. As far as field work is concerned, Riddell spent a year and a half botanizing mainly in the vicinity of Worthington in the northern portion of the county, whereas Sullivant collected vascular plants for at least seven years mostly in the southern portion of the county, where his estate comprised some of the richest

fields that served as his botanical laboratory. If one assumes that Frank was the man in Sullivant's pasture, then he should be recognized as being responsible for giving direction not only to Riddell, but also to Sullivant in his botanical pursuits. However this may be, the actual inclusion of the grasses and sedges in Riddell's *Synopsis* and Sullivant's *Catalogue* gave a sense of taxonomic completion to Riddell's *Catalogue*. The present understanding of the County's vascular plants confirms that Riddell's *Synopsis* and *Supplementary catalogue* were major contributions to this early period of botanical exploration in Ohio floristics. Certainly, Franklin County has been honoured by having two of the most eminent frontier botanists, Riddell and Sullivant, treat its flora in such scholarly but independent ways.

Vascular plants first described from Franklin County, Ohio

What follows is a complete enumeration made from plant lists, herbarium locations, and associated data, all taken from Stuckey (1978a, 1994) and Stuckey & Roberts (1991), of vascular plants first described from Franklin County. Accepted names given in bold type are used by most current taxonomists in Ohio, and were cited as such in my unpublished elaboration of *A central Ohio flora: manual of the vascular plants of Franklin County* (Jan 1997; deposited at the Ohio Biological Survey, The Ohio State University, Columbus).

Arabis patens Sull. in Amer. J. Sci. Arts 42: 49. 1842. – Type locality: "rocky banks of the Scioto River, near Columbus"; lectotype (Hopkins, 1937): PH; isotypes: GH, NY, OS!.

Asclepias sullivantii Engelm. in Gray, Manual: 366. 1848. – Type locality: "near Columbus"; specimens: *Sullivant* (MO, PH).

Aster carneus var. *ambiguus* Torr. & A. Gray, Fl. N. Amer. 2: 133-134. 1841 [= *A. lanceolatus* var. *interior* (Wiegand) Semple & Chmielewski]. – Type locality: [Worthington]; type: "Dr. Paddock" (location unknown).

Aster laxiflorus var. *laetiflorus* Torr. & A. Gray, Fl. N. Amer. 2: 138. 1841 [= *A. borealis* (Torr. & A. Gray) Prov.]. – Type locality: "Columbus"; specimens: *Sullivant* (GH, NY).

Aster oolentangiensis Riddell, in W. J. Med. Phys. Sci. 8: 495. 1835; Syn. Fl. West. States: 55. 1835. – Type locality: "forests on the Olentangy River, near Worthington"; no specimen known.

Aster shortii Riddell in W. J. Med. Phys. Sci. 8: 495. 1835; Syn. Fl. West. States: 55. 1835. – Type locality: "on hillsides and in ravines, Worthington"; specimen: "Ex Herbar. Riddell", ex Herb. Charles Mohr (US No. 783845).

Carex conjuncta Boott, Ill. Carex: 122, t. 392. 1862. – Type locality: Columbus; type: *Sullivant* (location unknown).

*Carex x**sullivantii* Boott in Amer. J. Sci. Arts 42: 29. 1842 [= *C. hirtifolia* Mack.]. – Type locality: "in sylvaticis prope Columbium"; specimens: *Sullivant* (GH, MO, NY, PH).

Coreopsis discoidea Torr. & A. Gray, Fl. N. Amer. 2: 339. 1842 ≡ *Bidens discoidea* (Torr. & A. Gray) Britton. – Type locality: "wet places and swamps, Columbus"; specimens: *Sullivant* (NY, PH).

- Crataegus franklinensis* Sarg. in J. Arnold Arbor. 4: 100. 1923 [= *C. pruinosa* (H. L. Wendl.) K. Koch]. – Type locality: “north of Columbus between Flint and Glenmary”; syntypes: 18 May & 22 Sep 1914, 23 Oct 1912, *Horsey* 236 (A).
- Crataegus ohioensis* Sarg. in J. Arnold Arbor. 3: 183. 1922 [= *C. crus-galli* L.]. – Type locality: “roadsides near Columbus”; type: 14 May 1915, *Horsey* 233 (A).
- Fedia patellaria* Sull. in Gray, Manual: 183. 1848 ≡ *Valerianella umbilicata* f. *patellaria* (Sull.) Egg. Ware. – Type locality: “low ground, Columbus”; lectotype (designated here): *Sullivant* (GH); isotypes: NY, PH.
- Fedia umbilicata* Sull. in Amer. J. Sci. Arts 42: 50. 1842 ≡ *Valerianella umbilicata* (Sull.) A. W. Wood. – Type locality: [moist grounds] “around Columbus”; lectotype (designated here): [*Sullivant*] (GH); isotypes: MO, NY, PH.
- Helianthus ×kellermanii* Britton, Man. Fl. N. States: 994. 1901 [and additional note in Ohio Naturalist 2: 179-180. 1902] [*H. grosseserratus* M. Martens × *H. salicifolius* A. Dietr., according to Heiser, 1969: 208]. – Type locality: Columbus; specimen: 5 Oct 1898, *W. Kellerman*; topotype: OS!
- Helianthus occidentalis* Riddell in W. J. Med. Phys. Sci. 9: 577. 1836; Suppl. Cat. Ohio Pl.: 13. 1836. – Neotype locality: Georgesville; neotype (Heiser, 1969: 104-106): 29 Aug 1892, *Werner* (OS!); isoneotypes: IND, NY.
- Lonicera glaucescens* var. *dasygyna* Rehder in Rep. (Annual) Missouri Bot. Gard. 14: 181. 1903 [= *L. prolifera* (Kirchn.) Rehder]. – Type locality: rocky limestone banks of the Scioto River, Columbus; no specimen known.
- Prenanthes parviflora* Riddell in W. J. Med. Phys. Sci. 8: 490. 1835; Syn. Fl. West. States: 50. 1835 [= *P. altissima* L.]. – Type locality: “slaty ravines, Worthington”; no specimen known.
- Prenanthes proteophylla* Riddell in W. J. Med. Phys. Sci. 8: 490. 1835; Syn. Fl. West. States: 50. 1835 [= *P. alba* L. subsp. *alba*]. – Type locality: “calcareous ravine on the Scioto [River], near Dublin”; no specimen known.
- Rudbeckia sullivantii* C. L. Boynton & Beadle in Biltmore Bot. Stud. 1: 15. 1901 ≡ *R. fulgida* var. *sullivantii* (C. L. Boynton & Beadle) Cronquist. – Type locality: “Columbus”; holotype: 1840, *Sullivant* (GH); isotypes: NY, OS!
- Solidago ohioensis* Riddell in W. J. Med. Phys. Sci. 8: 497. 1835; Syn. Fl. West. States: 57. 1835. – Type locality: “two miles south from Columbus”; specimens: NO; “*Solidago*, an undescribed species. Prairies”, ex Herb. Daniel Gano (LLO); “[*Solidago*] (920) *Ohioensis* mihi”, ex Herb. Charles Mohr (US No. 784117).
- Solidago riddellii* Frank in W. J. Med. Phys. Sci. 8: 497. 1835; & in Riddell, Syn. Fl. West. States: 57. 1835. – Type locality: “Scott’s Plains, 12 miles east from Worthington”; specimens: PH, US.
- Stachys glabra* Riddell in W. J. Med. Phys. Sci. 9: 580. 1836; Suppl. Cat. Ohio Pl.: 16. 1836 [= *S. tenuifolia* Willd.]. – Type locality: “banks of streams, and in low woods, Worthington”; specimen: “*Stachys glabra*, mihi Low woods – Worth[ington] O[hio] Aug. 18”, ex Herb. Charles Mohr (US No. 772118).
- Trillium nivale* Riddell in W. J. Med. Phys. Sci. 8: 525. 1835; Syn. Fl. West. States: 93. 1835. – Type locality: “on the east bank of the Scioto River, near Dublin, inhabiting a steep declivity, among comminuted fragments of limestone”; specimens: “*Trillium nivale* (Vide my Synopsis) Scioto River, Ohio March & Ap[ril]”

J. L. Riddell", ex Herb. William Darlington (DWC); "*Trillium nivale* Ohio J. L. R.", ex Herb. C. W. Short (PH); "*Trillium nivale*, mihi. Flower in March. I have met with this interesting plant only on the east bank of the Scioto river near Dublin, on a steep declivity, among comminuted fragments of limestone. It is one of the earliest flowering plants of that region", ex Herb. Charles Mohr (US No. 784828).

Triphora trianthophora var. *schaffneri* Camp in *Rhodora* 42: 55. 1940. – Type locality: "Bexley, near Columbus"; holotype: 20 Oct 1934, *Gordon & Schaffner* (NY); isotype: OS!

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