

“The Celestials”

by Peggy S. Lantz

Bartram's ixia, *Sphenostigma coelestinum*, fall-flowering ixia, *Nemastylis floridana*, and herbertia *Herbertia lahue* spp. *caerulea* are members of the iris family. The two ixias are threatened native species. The herbertia may be an introduced species from Texas and Louisiana, or a previously undiscovered native flower, but it, too, is rare. All three have short-lived flowers in varying shades of blue-violet, and a dark brown, underground bulb. All three are pollinated by insects.

Here is a discussion of the three plants.



Bartram's ixia
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Bartram's Ixia. William Bartram, writing in his journal in the mid-1770s, described his discovery of this beautiful native iris in these words: “behold the azure fields of cerulean Ixea!” He was supposedly on the shores of Lake Dexter in Volusia County. The flower was not described again by a field observer until J.K. Small wrote about it in 1931.

It is found in a small area in north-eastern Florida in wet, grassy flatwoods, almost always under scattered slash or longleaf pines. It blooms, as does *Herbertia*, in the spring for only a few hours in the morning. Fire, by keeping down the woody vegetation, encourages the ixia while doing no harm to the deeply buried perennial bulb.

Bartram's ixia has several scientific synonyms: *Salpingostylis coelestina*, *Nemastylis coelestina*, and *Ixia coelestina*.



Fall-flowering ixia

Fall-flowering Ixia. This iris blooms in the fall, in September and October, and in the afternoon from about 4:00 to 6:00 p.m. It is found in a variety of wet habitats — marshlands, low flatwoods, and in the grassy parts of wet hammocks. It was first described by J.K. Small in 1931. It is found on the east coast of central Florida, and has recently been found in Broward County.

Illustrations by Mary Ruth McCracken



Herbertia

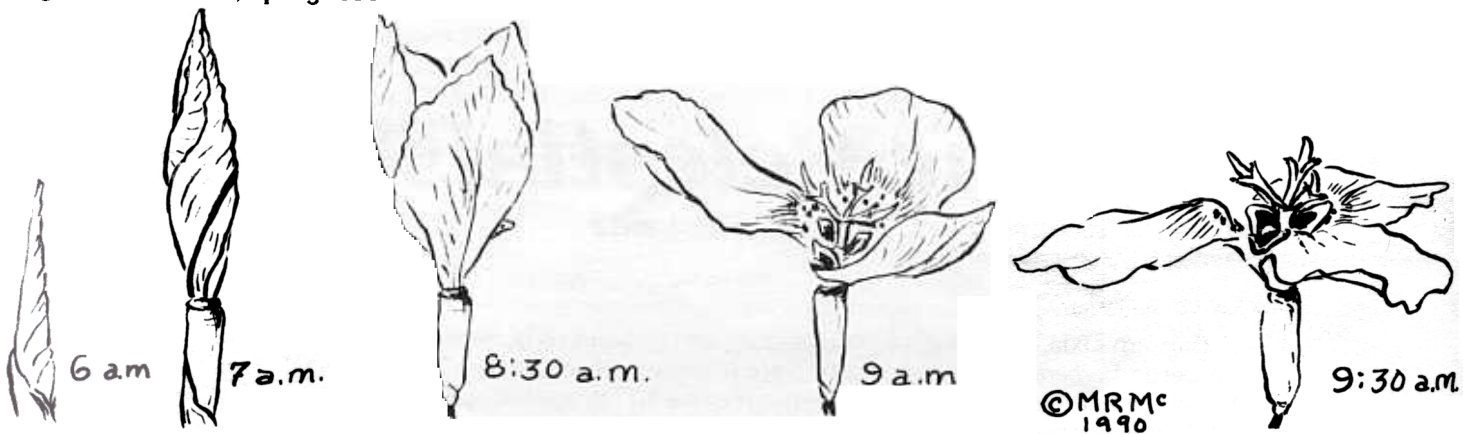
Herbertia. Lyman Goodnight, a professional photographer and an amateur botanist, found this beautiful small lavender flower early one morning along an abandoned railroad right-of-way near Pensacola. His study of the plant included careful note-taking, photographs, and a long search for previously published references to it.

Here is his write-up of his notes:

On April 29, 1970, while making some additions to my collection of photographs of our local wildflowers, I found a bright blue, three-petaled blossom that was new to me. I took a few pictures, made some descriptive notes, and continued on my way. When the morning was gone, about three hours after my earlier find, I went back to look at the new flowers again.

There was no sign of them.

Curiously, but carefully, I searched the area, and found a few stems that I remembered as part of the pictures I had taken earlier. These stems now had widened tops, about $\frac{3}{4}$ of an inch long, covered with a sort of dark blue lump on the top. While I was examining this blue



lump, it came off, leaving the stem with a flattened end, slightly rusty in color.

A few days later, on May 5, I returned to the site, and again found several blossoms in various stages of opening, and made some pictures of these blooms. This time I decided to try to learn more about the flowers.

One nice bloom was located at the outer edge of the group, so I dug around it carefully. It was growing from a single small bulb about three inches below the surface of the soil, and the stem was about six inches above the soil. A few strange leaves grew along the stem — four leaves from six to ten inches long, $\frac{3}{8}$ to $\frac{1}{2}$ an inch wide, tapering to both ends. They were thinner than the other grasses they grew among, and ridged lengthwise into five distinct ribs along their full length. The longest leaf was the first one below the blossom.

The blossom did not seem to be fading, so I took a wad of soil where I had dug out the plant, shaped it around the bulb and lower part of the stem, set it in a tin can, and added some water to keep it wet. Then I set out to show it to the landowners. It was a stranger to them also; they had never noticed it before.

From there I went to the University of West Florida, hoping to show it to Mr. Ron Miller, whom I had met as an amateur botanist. He said he thought the plant was a *Herbertia*, but he was uncertain, and went to the library for some books that described the plant. But neither book was on the shelves, so he wrote their names for me, and wished me well.

I drove downtown to the Pensacola Public Library, found both books, and went back home to do some reading.

By the time I got home, the flower had faded, and had reached the blue button stage. So I filled a flower pot with topsoil from my back yard, set the plant with its lump of soil into the pot, and put it where it would receive about the same shade and sunlight as where it had been growing.

The two books were Dr. Small's *Manual of the Southeastern Flora* and Greene and Blumquist's *Flowers of the South — Native and Exotic*. They both agreed on the size of the bulb; size and color of bloom; approximate time of blooming; that the flowers faded quickly; and that it was to be found on the coastal plains and prairies of Texas and Louisiana.

With the plant identified, it did not occur to me to look further into the life story of the plant. It was just an interesting item in my string of pictures. The following summer, while looking for other plants for pictures, I came again to the site of the *Herbertia*, and wondered if it also might be there again. But the season was long past the stated blooming time for *Herbertia*, and there was no way to be certain of it until next spring.

Suddenly the big question dawned upon me: "Is it just a freak? Or have we found an established new flower for our area?"

With the approval of the landowners, I made plans to be on the site at dawn on the date of my earliest (1970) picture, the 29th of April. When this day dawned, I was on the site at 6:45 a.m. in the early light of the tree-shaded area. For the next three hours I walked up and down the location, looking for the pale blue-violet blossom, but without results. I skipped a day, and tried again . . . and

again . . . and again. Finally on May 9, 1972, a single flower appeared, and I photographed it. Then followed this series of observations:

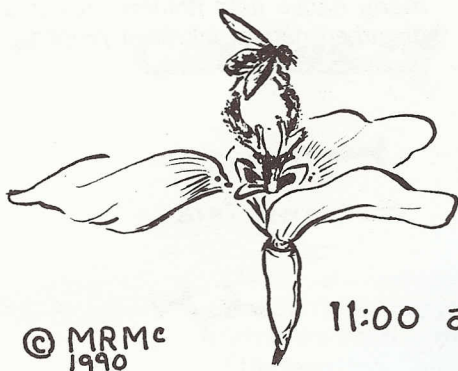
- 10 May: 5 blooms counted.
- 12 May: 8 blooms, and 5 seed pods noticed.
- 14 May: 5 blooms counted; no seed pods noticed.
- 18 May: 8 blooms counted; no seed pods noticed.
- 19 May: 5 blooms counted; 16 seed pods counted.
- 24 May: 3 blooms counted; 24 seed pods counted.
- 28 May: No blooms counted; 25 seed pods counted.
- 2 June: 2 blooms counted; 25 seed pods counted.
- 6 June: No blooms counted; seed pods seen but not counted.

This secretive little plant is hard to find before the flower opens. Each bud I have found has been almost ready to open by the time the daylight has become strong enough to see the ground clearly — about 7 a.m. The sepals are the showy, easily seen part of the flower. The early bud shows as a round-bottomed cone, about $\frac{1}{2}$ inch in diameter, just above the stem it rests upon, and tapers to a point about $1\frac{1}{2}$ inches from the stem. It is greenish-white in color, and the lines of the opening sepals are clearly visible.

As the daylight grows stronger, the lines show more clearly, and by 7:30 a.m., the sepals begin opening at the top. In a few minutes, the light blue-violet color becomes noticeable, and by 8:30 a.m., the sepals will be spread out

"Amateur botanists who are as careful as Lyman Goodnight have added tremendously to our botanical data."

Mary Ruth McCracken



11:00 a.m.



1:30 p.m.



2:30 p.m.

4:30 p.m.



to their full open positions — three equally spaced sepals, $\frac{3}{4}$ of an inch wide by $1\frac{1}{4}$ inches long, bright blue-violet, resting prettily on top of a slender green stem, four to six inches above the ground. The actual petals, small and dark purple, form a cluster below the stamens and pistil in the center, and complete the picture.

An hour later, if you are watching, you will see the sepals begin to curl downward at the outer ends, then along the sides, and by noon they are almost gone. They shrink into a dark blue gummy mass enclosing the true petals, and dry into a solid mass on the end of the seed pod. By this time the seed pod will have grown to about double thickness, $\frac{3}{4}$ of an inch long, with a flattened end that turns brown when the blue gummy mass falls off.

Just how long this seed pod grows, I cannot say yet. On May 5, 1972, I dug up what I thought was a twin plant; at any rate, there were two blooms close together. Subsequent handling showed that they were two separate plants close beside each other. By the time I got them home, both seed pods were covered with the gummy, blue mass from the shriveling of the sepals.

There were four leaves on each stem when I set them in the pot of soil so I could watch their progress more easily. In a few days, all the leaves turned brown and appeared dead, but both stems remained green. The pods grew to almost three times as thick as they were when removed from their growth site.

On June 5, 1972, the stems seemed to be drying in spots and turning brown. The leaves from one stem were gone, but some still clung to the other stem. On June 18, the seed pods appeared to be about to split open, so I took some close-up pictures of the opening one. Then I pulled gently on the stems, and they both came loose from the bulbs, showing that they had stayed in place full time. Then I taped the two stems, with leaves still on one stem, onto a

white cardboard sheet. Three small seeds (?) came out of one pod, and I taped them beside the pod, and lettered the card with the data as I saw it on that date.

These bulbs remained in the flower pot in my back yard until the next spring (1973), but only one started to put up new growth. Since Mary Ruth McCracken had become an interested observer, I transferred this second growth plant to her care, and we joined forces to make the detailed series of close observations described earlier.

She asked me if I had observed any insects at the flowers, and I had not thought to look. Three or four times toward the end of the series, we both looked. We did see two small flies about the size of gnats. But we were unable to catch and isolate them for further study. This will have to be done next year if we are fortunate with them.

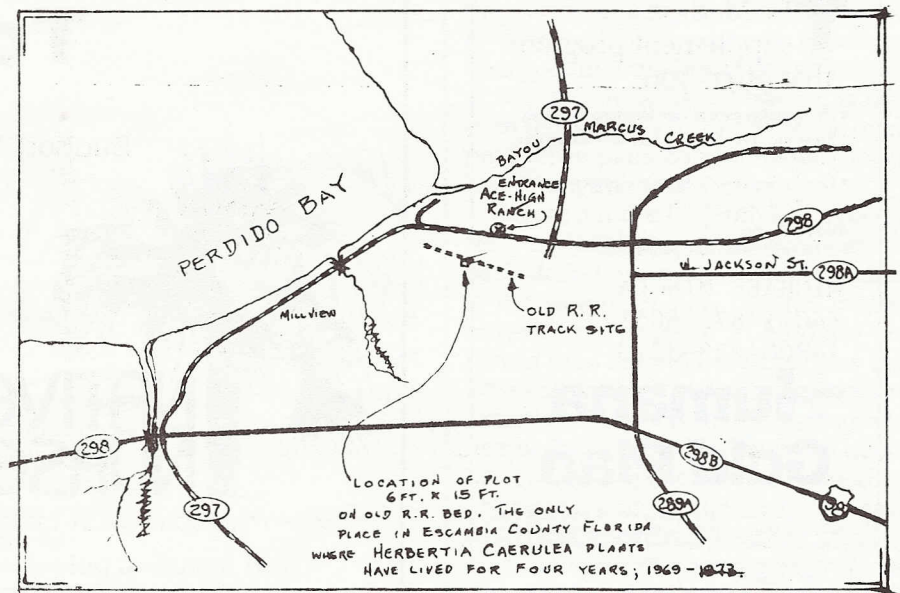
In the meantime, consider the area where during three seasons observations this interesting little plant has appeared: in an area of less than 100 square feet of soil, 6 feet by 15 feet, and at no other place in this West Florida landscape. It is in a pasture area, grazed

every season by cows and horses. No special effort has been made to shelter the plants, and they seem to be able to appear in about the same numbers each season we have been observing them.

How did they become so far separated from their normal location in Texas and Louisiana across two other coastal states into this infinitesimal area of West Florida? What can we do to move them gradually to other similar soil areas and allow them to spread out and give us a better chance of seeing their bright blue sepals each spring?

Lyman Goodnight's report ends here.

No published records have been located that indicate that this beautiful flower had ever been seen east of Louisiana and Texas before Goodnight discovered it in Florida, so no one knows for sure whether or not Goodnight had found a previously undiscovered native plant. Because he found it growing near lumber mills on Perdido Bay, it has been surmised that families of mill workers or owners brought bulbs or seeds to plant, or seeds were carried in on logs being



transported from the west. Subsequent locations in the Perdido Bay area where herbertia was found were all close to mill owners' homes or along the railroads.

After Goodnight's death in 1977, a small group of people continued to search for and study this flower, locating four more sites, detailing its biology and structure, and propagating it in central Florida.



Lyman Evans Goodnight was born in 1896, spent more than 32 years in the U.S. Navy, and died February 23, 1977. He was a professional photographer for the Naval Photography Laboratory, and one of the first instructors of the first U.S. Navy School of Photography at the Pensacola Naval Air Station.

He was a self-taught botanist, and photographed wild flowers of northwest Florida until well into his retirement.

He became acquainted with Mary Ruth McCracken in 1968 because she could identify the plants he was so interested in.



seed pod

Celestial

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Mary McCracken, now 71 years old, is a botanical illustrator who lives on the shores of Lake Dora in Tavares in the house her grandfather built in 1925. She has done work for the U.S. Environmental Protection Agency and the Florida Department of Agriculture. She was working as a free lance science illustrator for the Naval Aerospace Medical Research Laboratory in Pensacola on illustrations for publications on Skylab's medical research when she met Lyman Goodnight.

When she returned to Tavares in 1979, she focused on Florida's native flora, establishing the non-profit education corporation, *Aristos*, that sponsors the Lyman Goodnight Center. The Center's purpose is to disseminate information about native plants through illustration, photography, and writing.

Mary McCracken has also propagated

many native wild flowers on her undisturbed natural lakefront property to facilitate botanical study.



Bartram's ixia



Fall-flowering ixia

Herbertia



This shows a cross-section of the leaves of the celestials. Mary McCracken says, "The leaf structure [of all three] is so distinctive that you can pick it out immediately in a field of grass whether it's blooming or not, as long as it's not completely dormant. If you know the leaf, you can find the plant."

Mary McCracken has produced limited edition, hand painted prints of the herbertia, Bartram's ixia, and the fall-flowering ixia for sale to help support the Lyman Goodnight Center. Write to the Lyman Goodnight Center, 32497 Lakeshore Drive, Tavares, FL 32778, for more information.