

... an online resource for the identification and learning of the plants of Arkansas

The Wildflower Lense

*Spread your arms
Hold your breath
And always trust your cape*
Guy Clark.

Always Trust Your Cape

I'm old, married and a little wacked. Beyond that important description, I should also say that I have taken to this pass time of plant photography not because I take beautiful plant pictures for I am a sorry photographer, and not for the purpose of demonstrating the remarkable extent of my botanical knowledge for I know less than a little about the plant sciences.

Let me try to clarify. For the past seventy years or so, the life decisions that I have made and the life pursuits that I have chased have all been consistently unrelated to any significant form of gainful purpose. In my case, the expectations of reasonable gain to cover survival and my actual behavior have never seemed to have much in common. If the endeavor made money, I did not like it. If the activity was guaranteed not to deliver any financial gain I was attracted to it. But to hasten getting to the point of this article, let me just summarize all of this with one simple axiom.

***Since I am no good at photography nor botany,
I am compulsively given to plant photography.***

I do not take well to down time. Every winter I am gripped by an intense longing for spring as I struggled through those long, cold, dark months waiting for the first flowers to begin to push up. In years past during those selfsame months my wife has spent many an unhappy hour crunching our finances attempting to reason out where the dollars might come from to pay for film and film processing. While she did that I spent my winter days lobbying the health industry for an increase in my psychotropics.

Then when God smiles and the flowers come, the air is always cool and the sun bright and comforting. The light is deeply saturating and every new bit of color emerging from the dead brown floor is intense and curative. The tiny, delicate, intricate life springing from the forest floor, the life that broadcasts the coming success of all hopes and dreams, confirms for me the rightness of my decision to carry a camera to this carnival.





Now that I have written more about the motivations teeming within my fried cortex than necessary, let me move the discussion onto that which has real world significance external to the neural activities within my head. Let me begin to discuss the reasons why the work of a poor photographer without botanical knowledge might actually add something of value to the cumulative culture of human understanding even though that contribution will ever be too tiny to bring forward in discussions.

As I began my woods photography, I soon became occupied by the purely human need for names. I bought flower guides – many, many flower guides. After my images were chemically processed and returned to me, I spent hours seeking out a page from one of the many books which matched the plant in my picture. It was foolishly time consuming, but I had no other method. Then the internet came, and with increased band width I moved from the guides to the search engines. The wealth of images in this somewhere, somehow was unbelievable and maddening. When I would find an image that seemed to match my photograph, it was simply one view showing just one part of the plant from just one angle of view. I always needed more, much more to feel sure that I was giving the plant in my picture the right name. To incorrectly name one of these plants seemed at the very least damning. All others would know that I was wrong and brand me pathetic – a fate worse than arrest.

One day I blundered onto a non-commercial site built in a way different than all the other plant sites that I had found before. Dan Tenaglia's Missouri Plants showed me a number of views, and the clarity of each view was just humbling. For the first time a single site offered me what I needed – From six to ten images, each image clearly showing a different part of the plant. The site gave me a truly good chance of correctly applying the right scientific name.

This remarkable site was so different from other plant sites – no matter how lofty the reputation of the originators of the site – that I knew instantly the importance of the design of the presentation of the information there. I knew what I had to do. I had to attempt to emulate the fine, fine work of this mysterious guy – Dan Tenaglia*. I studied the site carefully and began to photograph the plants that I discovered in as much the same way as my photographic skills would allow. My images have never begun to reach the fantastic clarity of Dan's pictures, but from that day on I had a noble standard for which to strive.

In spite of my discovery of Dan Tenaglia's work, I continued to wander the internet looking for plant sites. On one of those trips down Alice's black hole, I made another essentially important discovery -- a paper written by two respected scientists about the collecting of live plant images.

[Baskauf, S.J. and B.K. Kirchoff \(2008\) Digital plant images as specimens: toward standards for photographing living plants. *Vulpina* 7:16-30](#)

I read the article over and over, and I inspected the organization of their example images. Drs. Baskauf and Kirchoff had scientifically organized the thinking of Dan Tenaglia regarding plant photographs. These two gentlemen identified sixteen views that after careful study they believed needed to be included in the presentation of each herbaceous plant: Whole plant – juvenile, Whole Plant – in flower, Whole Plant – in fruit, Stem – general, Leaf – basal, Leaf and Stem, Leaf – margin, Flower of Inflorescence – general, Flower – lateral, Flower – frontal, Flower – ventral, Fruit – orientation, Fruit –

lateral, Fruit – open, Fruit – young, Seed – general.

About that time my wife legislated new law. Paying for film and film processing had to stop. With some trepidation I shifted to digital. Soon I discovered that what I could not do with the mathematics of a real photographer, I could simulate by taking so many images that the odds were good that somewhere in such a gargantuan collection of “shots” an image would appear that was not so dark that a viewer would think it a picture of a black cat in a storm or not so blurry that its only use would be as an abstract.

With the arrival of the digital camera my wife's face took on a near permanent smile – no more film purchases, no more film processing. She quit drinking and signed up for a celebratory cruise far, far from the maddening spring flowers. She sang all the way to the airport.

Equipped with my new digital camera I began to focus myself to be sure that for each new plant I found, I photographed the entire plant, the stem, the leaves, and many different angles of the flower itself. With this change in method I began to feel like my plant photography obsession might actually have some purpose. My psyche did not approve of such a practical shift in my reasons for going to the woods, but hell, I had already survived many years of strange wrinkled brows on the faces of those who asked what I was doing as I hunched low in the deep, tick and chigger infested grass. Ask me sometime about the day that the Harrison city police snuck up on me from three different directions on Baker's Prairie as I huddled unaware behind a translucent windbreak that covered a spring buttercup. And me without a single joint to make their trip worthwhile.

My photography improved after that as the number of my external hard drives increased. In order to have something to do with those images, I uploaded some to CalPhotos, Encyclopedia of Life and Discover Life. Those sites are wonderful. No one would ever dare to deny that. However, those sites did not really match the

home that I wanted for my images. I had been spoiled by Dan's concept of multiple images for each species. I wanted my images to contribute to a great imagined data base of species sets that people like myself could effectively use to find the correct name for plants that they met in the woods.

As I further studied the work of these two men, I discovered that their end goal – going beyond these collections of images – was to organize and store them so methodically that computers unguided by human control could search the data base of images, find the right files and process them for some special purpose defined by their masters. For example they wanted a collection of images that they could query for almost any kind of question about the species sets. “*Show me the leaves of all those plants that occur naturally east of the Mississippi, have alternate leaves and bare, hairless stems.*”

Wow!

That is when hallucinations began to visit – not only in my sleep but also as I blundered about among the concepts that these two scientists wrote about in such great and intricate detail. There was Globally Unique Identifiers (GUID) and Darwin Core and Taxonomic Database Working Group (TDWG) and Multimedia Resources Task Group (MRTG) and Resource Description Framework (RDF) and Standard Property Definitions and a very large bunch of other very complicated stuff from “*Information Technology*”.

Again, WOW!

That smacked of serious science. I could not grasp it all, but I tried. As I struggled with these concepts fatigue began to fog my brain. It was then that I began to make out dark, wispy young people playing across my visual cortex. They moved in and out through trees and vines and grasses of some wild jungle stopping to look at each plant and consulting a little thing that hung from their belts. I could just make out a dim

screen with images and text. It looked like... It looked like... Yes! It looked just like Dan's Missouri Plants site. And these intrepid youngsters were moving their hands about over the device at speeds only the young could imitate as though they were entering questions. Quickly, the device returned images of species sets that they then compared to the real thing in front of them. When their queries returned no species sets these child explorer would call out to the others, and they would all cheer. Then the child explorer would set about pointing the device at various parts of the plant and clicking away. I have never chewed any mescaline before, but I wanted this hallucination to never end. It was Eden before the apple but after the iPad.

There you have it whether you wanted it or not, my dream, the dream of an international collection of high resolution, perfectly exposed and precisely focused plant images that so exactly reveal a plant's unique characteristics that with those pictures alone a botanist can identify the plant with no other information. To finish my dream, let us then use the internet to place those image files in the hands of anyone who might need them, and most especially, let us also put them in the hands of those that just want them in order to quiet a demanding curiosity.

With this quality of species sets even someone with my talents would be able to identify the plants found. Teachers would be able to prepare students to assign correct binomials without the use of arcane dichotomous plant keys. Volunteers could be quickly trained to join in plant surveys.

However, for this dream to become reality there will have to be a collection of species sets broad enough to cover nearly all of the possible species in the target area, those data sets will have to be precisely organized under a system of information technologies' best practices. For example (at the simplest level), every single, solitary image in the collection must have a "*Globally Unique Identifier*" (GUID). In this way, each image can not be confused with any

other plant image no matter where the image might be located, and that "identifier" must last forever or until there is no longer a need for botany. The identifier can not change to something new next week. In addition, the identifier must lead the searcher to the image. Dr. Baskauf says, "[It should be possible to use the Internet to find out about the object that the GUID identifies.](#)"

There is more, so much more to consider here, but when you have finished your dance, get off the stage, and so I will.

But I will be back sometime soon with more details on the Baskauf/Kirchoff standards for photographing live plants.

Until then:

[**Dr. Baskauf gives a nice description of the "Proposed photographic standards: Herbacious angiosperms" with fine example images.**](#)

[**Dr. Baskauf's clear description of "Globally Unique Identifiers" \(GUID\).**](#)

[**The Taxonomic Databases Working Group \(TDWG\). All about systemizing data about biodiversity and biological organisms.**](#)

***Tragically, in February of 2007 Dan Tenaglia died -- hit by a car while riding his bicycle. Death punishes the survivors -- usually family and friends. In the case of Dan Tenaglia, it also has punished everyone else that has an interest in or a passion for plants. As long as the web sites [Missouri Plants](#) and [Alabama Plants](#) are open on the web they will stand as a representation of Dan's persistence, intelligence, knowledge and ability to clearly see what is needed.**