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Goodbye, Bug Guy

He's been helping farmers, gardeners, landscapers, science students and pestplagued citizens for decades. We present a fond look at Phil Pellitteri, Wisconsin's rock star entomologist, on the eve of his retirement.*

By Ron Seely



Photo provided by Phil Pellitteri.

FOR 35 YEARS PHIL PELLITTERI BS'75 MS'77, an entomologist with CALS and UW-Extension, has provided patient counsel to a bug-plagued populace on everything from bed bugs to lice and bird mites to fleas. Now 62 and set to retire in March, Pellitteri has this sage bit of advice gleaned from a long and accomplished career as an insect diagnostician: The bugs are going to win. "The insects are in control and we're not," says Pellitteri. "They've been here since before the dinosaurs. They'll be here after we go."

Indeed, the task faced by the affable Pellitteri each day for all these years takes on Sisyphean qualities when the challenge he has faced is fully understood. This is what Pellitteri is up against: According to the Entomological Society of America, there are nearly 10 quintillion insects in the world. That's a 10 followed by 18 zeros. Experts say more than one million different species of insects have been identified. And it is estimated that as many as 30 million insect species in the world have yet to be discovered and named. No less an expert than Edward O. Wilson, the world's foremost source on ants and curator of Harvard University's Museum of Comparative Zoology, points out that the world's other creatures exist in paltry numbers compared to insects. Of the 42,580 vertebrate species that have been scientifically described, Wilson says, 6,300 are reptiles, 9,040 are birds, and 4,000 are mammals. Of the million different species of insects that have been described, 290,000 alone are beetles, Wilson marvels in his book, *In Search of Nature*.

"If humans were not so impressed by size alone," Wilson writes, "they would consider an ant more wonderful than a rhinoceros." Count Pellitteri among those who would side with the ant—that is, when he is not conspiring with a caller on how to get rid of a nest of the pesky insects.

Since May 1978, Pelllitteri has built a statewide reputation as the go-to expert on everything insect. In the summer months he fields an average of more than 30 calls a day that run the gamut from somebody being bitten by a mysterious insect to someone accidentally swallowing one.

Pellitteri's fiefdom is a suite of bug-filled (most of them mounted) rooms in the CALS Department of Entomology on the first floor of Russell Labs. He has worked for years with one foot in academia and the other, through his work with UW-Extension, in the world of gardens, termite-infested homes and insect-riddled farm fields. In the entomology department he is a faculty associate, and he has played an important role over the years as a teacher and an advisor to generations of students. Department chair David Hogg calls Pelliteri "the face of the department." But it is Pellitteri's self-made role with UW-Extension that has allowed him to bring his and the department's expertise to bear on the challenges of keeping the insect horde at bay. Technically he is called a diagnostician.

To the gardeners of the state, he is more fondly known as the "bug guy." Whatever he is called, he is beloved by those who run panicked from their gardens to the telephone or computer with news of the latest insect disaster. Lisa Johnson BS'88 MS'89, a Dane County UW-Extension horticulture educator, works with Pellitteri on the Master Gardener program and knows how much people have grown to rely on him. He is, she says, the embodiment of both Extension's outreach mission and the Wisconsin Idea.

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News from the Insect Diagnostic Lab By P. J. Liesch By now you've probably all heard that longtime WES member Phil Pellitteri retired from the UW-Madison Insect Diagnostic Lab after 36 years of service. This has had a lot of people wondering if they still have a place to go for insect advice, and I'm happy to report that the Insect Diagnostic Lab is still around and taking samples, pictures, and questions. The UW-Madison Entomology Department is currently in the midst of the hiring process and should have a permanent manager in the diagnostic lab sometime later this summer. In the meantime, I've been "Phil-ing" in on an interim basis. I started at the lab in the beginning of March, and I've already handled several hundred cases, ranging from the "usual suspects" to the truly peculiar and the downright bizarre. Rumor has it that Phil is working on a book of his interesting cases over the years, and I can only begin to imagine all the stuff he's seen during his time in the lab.

As an entomologist, it's been great seeing all of the "regulars" that Phil saw year after year (*bed bugs, earwigs, spiders, dermestids* galore, ants, ants, and more ants...). Seeing my first case of the **bat bug** (*Cimex pilosellus*) certainly made my day (*for some reason my wife didn't share the same point* of view). After my first week on the job, I remember thinking that it's almost like Christmas around the diagnostic lab: *people* do the collecting for you and ship the specimens!

While most of the cases have been from within Wisconsin, I've also gotten some interesting submissions from other states and around the globe. There was the soldier stationed in Afghanistan that submitted an image of the oddest grasshopper I'd ever seen (*Acrida sp.*). Then there was the American living overseas that submitted an image of an **Oleander Hawk Moth** caterpillar (*Daphnis nerii*). Just before pupating, these caterpillars resemble a dark night sky complete with constellations of white dots. Being a "beetle guy," my favorite case so far has been a large black buprestid from South Africa covered with patches of spiky orange hairs (*Julodis cirrosa*).

Looking ahead to this summer, things are starting to really pick up around the lab with the warm temperatures. It already looks like we're in for a good tick year with many **wood**, **deer**, and a few **Lone Star tick** cases in the lab. Unfortunately, it seems like just a matter of time before the **mosquito** numbers explode, from all the rain we've been getting.

The Wisconsin Entomological Society Newsletter is published three times per year. The newsletter is provided to encourage and facilitate the exchange of information by the membership, and to keep members informed of the activities of the organization. Members are encouraged to contribute items for inclusion in the newsletter. Please send all news items, notes, new or interesting insect records, seasonal summaries, and research reports or requests to the editor. 2014 dues notices were sent out in January. Please note that the year through which dues are paid appears on the newsletter's mailing label after your name.

Membership Dues: Individual or family: \$10 per year Sustaining: \$15 per year Patron: \$25 per year

Please make checks payable to WES and send to: Les Ferge, Treasurer, 7119 Hubbard Avenue, Middleton, WI 53562-3231. lesferge@gmail.com Please report any address changes to the Treasurer.

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Newsletter Editor: Jordan D. Marché II 5415 Lost Woods Court Oregon, WI 53575 jdmarche@gmail.com Milwaukee Entomological Society: Predecessor of Wisconsin Entomological Society

By Jim Ebner

The origin of the Wisconsin Entomological Society (WES) dates back to 1969. Prior to that, a small but dedicated conglomeration of butterfly enthusiasts banded together from Milwaukee and Madison to form a loosely knit group known as the Milwaukee Entomological Society (MES). This society probably originated in the late 1940s, with a handful of pioneers residing for the most part within the metropolitan Milwaukee area. This elite group may well have laid the groundwork for the eventual formation of the WES.

One of the professional core members of MES was professor Alvin Throne. Unquestionably, he was a kingpin within the Biology Department of the old Milwaukee State Teachers College. He taught classes in entomology, botany, local flora, bacteriology, and other subjects. It was here, during my undergraduate days, that he invited me to become a member of MES. I accepted. Throne's small office displayed butterfly specimens that he had gathered at Pine Bluff near Madison, as well as Milwaukee, during the 1930s.

As I recall, meetings were rotated between the homes of members. There were no dues, but minutes were taken at each session. The Society had no officers, until the group expanded during the 1960s. Active members during the 1950s included Kenneth MacArthur (Figure 1), Arthur Moeck, William Sieker, and Alvin Throne (Figure 3). Guests to these informal meetings included Raymond (Jablonski) Jae, Thomas Koerber, George Schirmer, Howard Was, and myself. Slide presentations or butterfly displays highlighted each session. Meetings were sporadic, and conducted for the most part at the conclusion of the annual butterfly season. During the mid-1960s, meetings were hosted at the University of Wisconsin-Milwaukee (revamped from the former State Teachers College) campus. In 1969, the Wisconsin Entomological Society was founded, headquartering on or near the Madison campus, while the Milwaukee group was either assimilated or disbanded.

Prominent Early Milwaukee Entomological Society Members



Figure 1. Kenneth MacArthur, ca. 1960. Photo provided by Jim Ebner, from *Milwaukee Journal-Sentinel* obituary file.

Kenneth MacArthur (1913-2010). Milwaukee Public Museum, Curator of Lower Invertebrates (1935-1974). Truly an insect ambassador with special emphasis on butterflies and their conservation. Editor: *Butterflies of Wisconsin*, Milwaukee Public Museum's Handbook No. 12 (Ebner, 1970).



Fig. 2. MacArthur photo taken before 1970 in Wisconsin showing Viceroy (top example) and Monarch male and female (bottom examples).

This photo was used for the cover picture of *Wisconsin Butterflies*, published by the Milwaukee Public Museum.

Arthur Moeck. Administrator, Milwaukee Public Schools. Avid collector; assembled a huge collection with the goal of gathering specimens of each genera of worldwide butterflies. There are 28,000 of his specimens housed within the Milwaukee Public Museum.

William E. Sieker (1912-1982). Tax attorney, Madison. Concentrated on Sphingidae (Hawk Moths) with his collection of 27,000 specimens, representing 95% of recognized worldwide species, housed at the Milwaukee Public Museum.



Figure 3. Alvin Throne. Photo provided by Jim Ebner, from 1953 UW-Milwaukee *Yearbook*.

Alvin Throne. Professor, Biology Department, University of Wisconsin-Milwaukee.

Highly respected botanist and entomologist. It was his encouragement as my instructor in the early 1950s that prompted me to write Butterflies of Wisconsin.

Occasional Guests

Thomas W. Koerber. Student at UW-Milwaukee during the early 1950s. Koerber's remarkable discovery of the California Tortoise Shell (*Nymphalis californica*, August 26, 1952, Door County) remains the single state record of this western migrant to date. Became a forest ranger in California.

George Schirmer. Milwaukee resident, insect dealer and collector. His worldwide collection was sold to Charles Kondor of Little Muskego, who then sold it to James Neidhoffer in the early 1980s. A large part of Schirmer's collection is housed in the Milwaukee Public Museum.

Howard Was. Brookfield. Collector, primarily exotic worldwide. Passed away in the mid-1980s. Raymond (Jablonski) Jae. Wauwatosa and West Bend resident, who changed his last name from Jablonski to Jae, ca. 1960. Later relocated to Colorado; collector.

To the best of my knowledge, all of the early MES members have passed away, yet their legacy flourishes. As a survivor of this little known group, it is my considered opinion that it is presently fitting to recall them.

Reference

Ebner, James A. (1970). Butterflies of Wisconsin. Milwaukee: Board of Trustees, Milwaukee Public Museum.

Last Issue's Mystery Insects

WES member Ron Huber, of the University of Minnesota, graciously supplied names for the two unknown moths depicted in the last issue. The "arctiid" (now erebid) was identified as *Lophocampa argentata* (Packard) (formerly placed in *Halysidota*), while the geometrid was recognized as *Eriplatymetra coloradaria* (G. & R.). I thank Ron for taking the time to provide the identifications.

Books and Websites

By Andrew Khitsun

I know it gets old, and I already mentioned a few books on the subject of eating bugs, but unlike others, Edible Insects: Future Prospect for Food and Feed Security by A. van Huis, et al., is less about curiosity and more about awareness of the many valuable roles that insects play in sustaining nature and human life, further stimulating debate on the expansion of the use of insects as food and feed. Bugs Britannica by P. Marren, et al., may not inspire much interest on this side of the pond, but the book is less about what species of insects inhabit the British Isles and more like a richly illustrated cultural guide, where insects are seen through the eyes of writers, musicians, artists, and naturalists, and therefore of interest to any bug lover. At the risk of annoying butterfly lovers (and other admirers of beauty), I want to mention the

book Fearsome Fauna by R. Knutson (author of Furtive Fauna and Flattened Fauna). While creepy-crawlies covered by this book don't qualify as insects (cue: they're lower on the evolutionary ladder), I think they might be of interest to (some) readers of this column.

Bumble Bees of North America: An Identification Guide by Paul H. Williams, et al., is a guide to all 46 species of bumble bees, richly illustrated with photos, diagrams and maps. Dragonflies of North America: The Odonata (Anisoptera) Fauna of Canada, the Continental United States, Northern Mexico and the Greater Antilles (third edition) by J. Needham, et al., is an updated version of the 1955 classic. including all 365 species (15 more than in the previous edition), and one of the most important books on the subject to date. Keep in mind that dragonflies' smaller cousins, the damselflies, are treated in a separate volume, Damselflies of North America by

M. J. Westfall, et al. The colored photos of the damselflies form yet another book:
Color Supplement to the above with the same name and by the same authors. While talking about older books, The Flies of
Western North America by F. Cole is an impressive volume, still looking strong 45 years after publication. The same goes for
The Mayflies of North and Central
America by G. Edmunds, et al.

There is some good news for coleopterists, too. While Beetles of Northeastern North America (two volumes) by N. Downie and R. Arnett is next to impossible to find, and American Beetles (two volumes) by R. Arnett, et al., commands a very high price, there is a 'new kid on the block': Beetles of Eastern North America by A. Evans. It promises nearly 1,500 color photos of American beetles, and at this point can be pre-ordered on Amazon.com. A wonderful publication on buprestid beetles has recently been released by the Canadian Food Inspection Agency: Field Guide to the Jewel Beetles of Northeastern North America by S. Paiero, et al. Information about the book can be found on co-author Morgan Jackson's website, Biodiversity in Focus:

http://www.biodiversityinfocus.com/blog/20 13/09/17/the-books-in-the-mail-seriously/. There is also a phone number there where books could be ordered in the past but a .pdf copy of the book can be downloaded from the same webpage. Also, I just realized I made a typo a couple of newsletters ago while mentioning Coleoptera books from the South Carolina series: I mentioned one of the volumes twice but missed this one:

Jewel Beetles of South Carolina. And I want to add that this and other volumes can be ordered from the Clemson University website:

https://shopping.clemson.edu/index.php?mai n_page=index&cPath=101&zenid=f54tsema 178g3m159dve87shc0.

There is another Jumping Spiders of the World website I came across (different from the one already mentioned here): http://www.jumping-spiders.com/index.php. Other websites dealing with jumping spiders are The Peckham Society: http://www.peckhamia.com/ and Jumping Spiders of North America: http://www.rkwalton.com/jump.php. While on the topic, Aranea: Spiders of Europe: http://www.araneae.unibe.ch/ is a great reference, especially since we share lots of species. Wandering Spiders of the Amazon: http://www.wanderingspiders.net/ is a fine reference to that group. On the plant front, there are a slew of local books that many people don't know about, unless they live in that part of the state. Some of them are: Trillium: A Guide to the Common Wildflowers of Northeastern Wisconsin by M. Good; 101 Wildflowers of the Ridges Sanctuary and Door County's Wildflowers by F. Burton, et al.;

Our Native Plants (Dane County) by V. Nuzzo; Wildflowers of the Great Lakes Region by R. Simonds, et al.; and Great Lakes Coastal Plants by E. Weatherbee.

Dung Beetles and Celestial Navigation

A study published last year documented the first usage within the Insecta (and the animal kingdom!) of the Milky Way for orientation by the nocturnal dung beetle, Scarabaeus satyrus. Experiments performed by Marie Dacke and her colleagues tested the beetles' abilities to roll their dung balls in straight lines under various celestial cues. Some of the experiments were performed in the Johannesburg Planetarium, using both the full starry sky and Milky Way, or only the Milky Way itself. There was no significant difference in the latter case. Both cloudy and starless skies left the beetles disoriented. For their paper, see M. Daeck, et al., "Dung Beetles Use the Milky Way for Orientation." Current Biology 23 (18 Feb. 2013): 298-300.

A Collection of Insects (and Arthropods)

from Bolivia

By Jordan D. Marché II

On a trip back to Wisconsin from the southwest in July 2001, I happened to stop at a store called Hillbilly Antiques in Bust, Colorado (I am not making this up!). Of all things for sale, they had a singular wooden case of mounted insects, in somewhat poor shape, from Bolivia. The shop's owner did not know the original provenance of the collection (or collector), except that he bought it at an auction in Colorado Springs a month or two before.

Most of the specimens that I have cleaned up and in some cases remounted (Fig. 1) have locality and collector tags with them. On one specimen alone, of a leaf-footed plant bug (Hemiptera: Coreidae), is found the date: "5.XI.51" = 5 November 1951. The collector's name was "R. Zischka" (see below). None of the specimens bears an identification, although I have been able to assign tentative family, and in a few cases within the Orthoptera, subfamily names, to the insects. Fortunately, approximate localities within Bolivia are almost always given, as are the elevations in meters. Most were collected near the 400 meters level, in the [Rio (?)] Chaparé region. A few came from places higher up, as much as 2,600 meters, near Cochabamba.



Fig. 1. Collection of Bolivian insects, purchased in Colorado (2001). Photo by J. Marché.

About half of the specimens (16) are Orthopterans, which include some very large grasshoppers (the largest having a wingspan of 17 cm (Acrididae: Cyrtacanthacridinae)), smaller mantises, plus a winged walkingstick of 12-cm. wingspan (Phasmatidae (?)). Curiously, some of the large Orthopterans have a long slit cut into the ventral surface of the thorax and abdomen. Whether this might have been performed to remove the entrails and permit more rapid drying of the specimens, or else to remove egg masses, cannot be determined. I have never encountered that practice before in an insect collection. Also well-represented are Hemipterans (10), along with Homopterans (4, including 3 Cicadidae); Hymenopterans (3), and one extremely large Dipteran. There are also two rather complete scorpions thrown in for good measure. A moderate-sized spider, whose body had been badly attacked by dermestids and half of whose legs had come off, was discarded. All of the extant labels are printed (though the dated specimen is hand-lettered). The 15.75-inch by 19.75inch stained and finished wooden case is

similar to a Cornell drawer, in that the upper half closes around the inner portion of the lower half. The original glass in the top half, which had fractured, has since been replaced.

Because of the very selective nature of the specimens (e.g., not a single Coleopteran is represented), I am inclined to believe that this was only a portion of a larger collection that has since become dispersed, lost, or destroyed. All specimens remaining are quite complete and free of damage. A number of the pins had to be replaced, as they had either rusted out or were bent from being pushed into corrugated cardboard and then the wooden back of the case. The specimens are now mounted on foamcore. Without identifications, however, it is difficult to proceed much farther in this investigation. I have perused Charles L. Hogue's Latin American Insects and Entomology (1993), but specific identifications cannot be made from it.

I initially checked many of the standard histories of American entomology (including works by Cushing, Essig, Henson, Mallis, Osborn, Palladino, Smith, Miller, and Smith, and Sorensen) without finding an entry on "Zischka." I had also researched the name "Zischka" online (chiefly in Biobase) and found one 'match' - a woman named Rosemarie Zischka who was born in Vienna in 1936 and subsequently became a biomedical researcher in the New York City area. But she would have only been 15 years old at the time, which made her a rather far-fetched guess.

I had also written to the American Entomological Society in Philadelphia, and to the Entomology Department of the Museo Nacional de Historia Natural at La Paz, Bolivia (cited in Hogue's text), to see whether either organization had any record or knowledge of such a collector/collection in their files. But I never received as much as an acknowledgment from either inquiry. The latter might have been ignored, however, because my letter was written in English, rather than Spanish. Over this Memorial Day weekend, however, the mystery of the collector was solved. when Dr. Peter Messer discovered two citations by a Rudolf [Rodolfo] Zischka (1895-1980) in Richard E. Blackwelder's reprinted Checklist of the Coleopterous Insects of Mexico, Central America, the West Indies, and South America (originally issued serially between 1944 and 1957). These reveal Zischka to have been a professional entomologist/collector, who published a 1948 Catalogo des los insectos de Bolivia. Among the entries recorded are ones for scarab beetles (Scarabaeoidea). diurnal Lepidoptera (butterflies), longhorned beetles (Cerambycidae), and pleasing fungus beetles (Erotylidae). These citations seem to confirm that yes, this case of insects was only part of a much larger collection of

specimens, including Coleoptera, which was perhaps deposited in a museum in that country. But how this lone (?) insect case happened to wind up in Colorado Springs, USA, has not been answered. I am grateful to Peter for this citation, which may enable further information to be learned about the collector and his collections.



Insects as Inventors of Gears? Nymphs of the planthopper *Issus coleoptratus* have been found to possess hind trochanters whose opposing sides share a series of equally-spaced 'teeth', resembling two intermeshing gears (see above photo, provided by Andrew Khitsun). These enable the insect's hind legs to precisely synchronize their releases upon jumping – something likely impossible without the associated 'hardware' that would otherwise leave the insects spinning out of control. The gear teeth are lost, however, during the final molting into adulthood. For more on this remarkable evolutionary innovation, see Graciela Flores, "Athletic Gear," *Natural History*, Oct. 2013, p. 7.

National Moth Week Outing

National Moth Week:

(http://nationalmothweek.org/) is running from July 19-27, 2014. The first National Moth Week was held in 2012 and has now spread to an international scale, with groups organizing mothing nights around the globe to celebrate biodiversity. Check the Wisconsin Entomological Society website (http://www.wisentsoc.org/) for updates about a potential WES moth week event in late July. Wherever you are this summer, get out and celebrate moths!

The 7th International Symposium on Butterfly & Moth Conservation

By Ann B. Swengel

Intense, sobering, inspiring. That is how Scott and I found the 7th International Symposium on the Ecology & Conservation of Butterflies & Moths (Southampton, England, April 4-6, 2014). It was also the largest of the five symposia we've participated in, and the most international. ranging from Vietnam to Greenland! Reports on climate change included confirmation of expected patterns (southern species advancing northward and uphill; northern species declining and retreating). But we also heard of complex and unpredictable responses by individual species, including resilience of Edith's Checkerspot by shifting to different caterpillar food plants. There was also some heartening news: researchers have demonstrated that protected areas are

serving as conduits to facilitate range shifts of butterflies, and microhabitat variety in both preserves and the surrounding landscape does buffer the impacts of climatic extremes in butterfly fluctuations. Changing land use practices in agricultural sectors continue to be globally critical and daunting problems. This presents a dichotomy: both intensification (more plowed areas, more pesticides) but also abandonment of marginal areas (lightly used for pasturage or having) that are compatible with diverse native flora. This abandonment leads to the development of scrub, which in turn leads to changes in the butterfly and moth fauna, and loss of open-country species. Both sides of this dichotomy are familiar to us in the Midwest.

There is also the ever present challenge of getting preserves to succeed at maintaining secure populations of butterfly species unable to cope with what is happening outside in the 'wider countryside' and

human settlements. We heard many reports on butterfly species around the world that have more limiting requirements of plant growth structure or microclimate, in addition to specific caterpillar food plants and nectar requirements. Deciphering that and figuring out how to get that science to translate into consistently appropriate management techniques in preserves are overwhelming challenges internationally. In that vein, my talk was a bit more technical presentation of my prairie article just published in American Butterflies, covering both the science and the sociology. I've uploaded this talk to ResearchGate.

When good science exists, and it gets put into practice, butterflies do respond rapidly in a positive way, as reported by our British colleagues. You can read more about that in the landscape-scale conservation report at: <u>http://www.butterfly-</u>

conservation.org/landscape.

Most inspiring is the continued increase in butterfly survey and monitoring programs being conducted in more countries. That is the only way to know what is really happening out there: both the problems that need to be fixed and what is working that needs to be expanded. Especially key is the establishment of regular surveys along set routes at the same sites that are surveyed year after year. These can be targeted to the flight period of specific species (like Scott and I have done for over twenty years) or can be walked weekly throughout the butterfly season. Particularly exciting are efforts to bring together these already existing programs into pooled datasets to facilitate analysis at international and even global scales! Plus, efforts are afoot to establish a website to facilitate the establishment of more such programs at the state or chapter level here in the U.S., with flexibility sought in the type of program and ease of online reporting. Please visit: http:// www.nabmn.org.

I hope all of this will be as inspiring to you as it has been to me, both to enjoy our butterflies and moths and find ways to help them even more!



Photo by J. Marché.

Thoughts on Photographic Documentation of Insect Records

By Les Ferge

The amazing advances in digital photography witnessed in recent years are providing a wealth of insect images, many of which have great aesthetic appeal, but also can have scientific value in documenting insect records. Although collected specimens are necessary to make positive identifications of many species, a good photograph in many cases can provide sufficient verifiable evidence of a species' occurrence. Websites such as BugGuide, Wisconsin Butterflies, and Moth Photographer's Group have become great resources for species identification and distributional data.

In order to maximize the scientific value of photos, the associated data needs to be recorded in the same manner as is customary for labels of collected specimens. The minimal information would include: state, county, locality, date and name of observer. Although data is often available with web images, there is a danger that the information could be separated from the image and lost. To avoid this happening, it would be most desirable to insert the data text directly into the image. This can be rather easily accomplished using photoediting software. PhotoPad Image Editor is an easy-to-use program that can be

downloaded for free from:

http://download.cnet.com/PhotoPad-Image-Editor/3000-2192 4-10806811.html. Species names should generally not be inserted in the image, as they are sometimes changed or revised. The exception to this would be in the case of a determination made by an authority or specialist on the group in question. Species names, along with checklist or catalog numbers, can be used to name and organize image files. Another concern is the long-term maintenance and preservation of images and associated information. Unlike museum collections of specimens, which have historically had the greatest permanence, there is no similarly organized system to keep photos. It is easy to take the availability of websites for granted, but if their owners quit maintaining and paying for them, the information is gone. While the simplest and cheapest way to store images is on computer hard drives or CD-ROM's,

consider making hard copies (prints) to have tangible images not requiring a machine to view. The disposition and preservation of images after their owners pass on also need to be given thought. Specimen collections, often representing the life work of their owner, usually end up being donated to a museum or university, where they are preserved for use by future researchers. Similarly, a collection of photos has future value, and institutional collections need to make provisions to maintain this legacy.

Note on Driftless Area Prairies

Marcie O'Connor, of Buffalo County, Wisconsin has recently started a Facebook page for those interested in Driftless Area Prairies. She writes: "Please join us! I'm hopping it will be a place to share ideas and photos about restoration, management, reconstruction, and learning about the plants and animals in the prairies of this area." Look for it under her name or that title.