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President's Corner

Richard Thoma

In November, WGNSS welcomed back **Dr. Paul McKenzie**, endangered species coordinator with the U.S. Fish and Wildlife Service (USFWS). Paul came to speak about white-nose syndrome (WNS), a fungal disease (*Geomyces destructans*) that has infected seven species of bat, including the endangered Indiana Bat (*Myotis sodalist*) and the Gray Bat (*Myotis grisescens*) in the eastern United States. WNS first appeared in a single cave in upstate New York in the winter of 2004–2005. From there the disease has spread to 19 states, including Missouri, and has been estimated to have killed over 5.5 million bats. No other wildlife disease has spread in such a short period of time (5–7 years) over so large an area (half the United States) and affected so many species. In some caves, mortality rates exceed 90% of all bats. Symptoms described by Paul include finding a white snout on infected bats and unusual winter activity. Infected bats have been seen flying in search of food in the middle of winter. It is believed bats do not survive the winter because they use up their energy reserves attempting to fight off the disease. Paul's responsibility is to coordinate the efforts to understand how the disease works and to implement methods to impede the spread of WNS. Paul has assisted with several bat population surveys including acoustic monitoring of bat activity, fall bat swarm surveys and banding studies. Each of these surveys has shown that bat populations have plummeted in recent years. Sadly, Paul pointed out that we are not likely to ever stop the spread of WNS. In the next few years, he sees WNS spreading across the rest of the United States and infecting many more species of bat. He feels the best we are going to be able to do is slow the spread of the disease. To slow the spread, caves have been closed. People studying bats must now use strict decontamination protocols to prevent the spread of spores from one cave to the next. In addition, information gained from research efforts are disseminated by Paul and the USFWS. Through these efforts it is hoped that the spread of WNS will be slowed and possibly reversed.

Have you ever wondered what the future will look like? In particular, have you ever thought about what will happen to natural communities as global warming continues? Did you know that there are people that think about this very issue and are making predictions about what the world will look like right now? These people are known as modelers. Using computers, they build an electronic picture of the world as it is and add input climatic variables to model what the world will look like in the future. At the Missouri Botanical garden, **Adam Smith** is one such modeler. Adam will be speaking at the WGNSS December General Meeting about modeling "Plant Distributions in the Future". At the Botanical Gardens, Adam works in the Center for

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Conservation and Sustainable Development. In particular Adam studies plant distributions as they are impacted by climate change. If you want to know what the future holds, especially when it comes to the distribution of plants and animals, this meeting is for you.

The members of WGNSS Board wish you and your family a happy and safe holiday season. Remember that there are WGNSS activities throughout this time of year. If you are looking for something to do, why not go on a botany field trip (yes they go out all year long) or join in one of the many Christmas Bird counts. Plants and wildlife don't go away just because it's cold out. If the cold weather prevents you from going outside, why not go to one of the Natural History Book Club or Entomology meetings. Both groups are having great programs in December and January.

December General Meeting

George Yatskievych

Our last General Meeting of the year is coming up soon! Most WGNSS members already have a strong sense that our local climate is in a relatively unstable period resulting from the worldwide patterns of climate change. How will this phenomenon affect the region's plant life in the future? Join us on Wednesday evening, 5 December, for a program by Adam Smith entitled: "Rowing with the tide? Species responses to climate change." Dr. Smith is a postdoctoral researcher at the Missouri Botanical Garden's Center for Conservation and Sustainable Development. Part of his research involves collecting life-history information on various plant species and plugging this, along with various models of climate change in the U.S., into a computer program that predicts how successful species will be in responding to rapid climate change. The results may surprise you. The meeting will start at 7:30 p.m. at our usual meeting place at the Grand Glaize Branch of the St. Louis County Library, 1010 Meramec Station Road (just north of Big Bend Road and east of Hwy 141). The library is really easy to get to from anywhere in the region. As in other recent months, anyone who would like to join the speaker for a pre-meeting dinner should meet us at the library parking lot at 5:30 p.m. Attendance has been down at our last few meetings—support your Society and let's finish 2012 with a big showing!

September Bird Report

David Becher

After the long hot dry summer, the weather in September was much more normal. The dry conditions caused by the summer drought persisted, however, and wetland habitat was less than normal. Overall the fall migration was perhaps a bit better than average, but it seemed outstanding compared to the very slow spring. The return of more normal numbers suggest that the slow spring was simply a result of unfavorable weather conditions rather than reflective of more general phenomenon.

On the second Chrissy McClarren found a dark Ibis species at Heron Pond. The viewing conditions and plumage did not allow a definite determination to species.

An Osprey was seen repeatedly at Riverlands during the month, which helped to make up for

the species rarity this spring. Flocks of Mississippi Kites were reported migrating south by several observers. This species is still apparently increasing northward, which increases the number of migrants. Brian Prather reported a group of nine at Little Creve Coeur on the seventh.

There were scattered Merlin reports including one seen by the SLAS group at Carlyle Lake on the 15th.

Shorebird numbers were good at Heron Pond during the month with five hundred or more birds of various species being reported. On Thursday the sixth, there were five Avocets at Teal Pond reported by Dick Palmer and the Thursday birding group. On Saturday the eighth only one remained.

Al Smith reported three Hudsonian and one Marbled Godwit at Heron Pond at RMBS on the 14th. The next day the Saturday group found the Marbled Godwit, but the others were gone when they arrived and it was still present several days later.

There were few Sanderling reports, but Charlene Malone found one at Teal Pond at Riverlands on the 1st. Western Sandpiper reports were fairly numerous including birds reported at Heron Pond by Dick Palmer on the 6th and David Becher on the 8th. Buff-breasted Sandpipers were not wide spread this fall, but a small flock was found at the sod farms on Bluff Road in Monroe County, Illinois by Richard Coles on the 8th. They were still present on the 13th along with some Golden Plovers and lots of Killdeer. Charlene Malone reported a Red-necked Phalarope on Carlyle Lake on the 8th. Al Smith reported two Black-bellied Plovers at Heron Pond on the 14th along with Killdeer and Semipalmated Plovers.

Overall gull and tern numbers at Riverlands seemed low during the month although there were a few notable sightings. In contrast, the south end of Carlyle Lake had large numbers of the common gull and tern species throughout the fall. It is possible that the low level of the rivers reduced the feeding opportunities. Dan Kassebaum found a young Greater Black-backed Gull at Carlyle Lake, which was present for a few weeks. This is unusually early for a species more usual in mid-winter. There were a number of Laughing Gull reports during the month. Charlene Malone found a juvenile at RMBS on the 1st. Also at RMBS on

Juvenile Laughing Gull, Carlyle Lake. Photo by D. Becher.

Forster's Terns, Carlyle Lake. Photo by D. Becher.

the 1st, a Lesser Black-backed Gull was found by Chrissy McClarren. Another was found at Carlyle Lake around the middle of the month which stayed for some time. Dan Kassebaum reported a California Gull among the Ring-bills at Carlyle Lake on the 29th. There were good numbers of both Forster's and Black Terns at RMBS on the 1st as well. On the 13th, there were four species of tern at Riverlands on the 13th, Forster's and Black in Ellis Bay and Caspian and Common at Teal Pond. The only Jaeger report was a bird, possibly a Parasitic, seen at Carlyle Lake by Dan Kassebaum on the 8th. The view was not sufficiently good to be certain and the bird was not seen again.

Charlene Malone reported that a juvenile Black-billed Cuckoo was seen at the Orton Road end of Heron Pond by many observers on the 1st. This is always a difficult species to find and more so in the fall.

Like warblers, Vireos were found migrating in good numbers this fall. Blue-headed Vireos did not appear until about the middle of the month when Chrissy reported one at Tower Grove Park, but they were common there in the following days. On the fifteenth there were four species found in one flock in Tower Grove Park; Red-eyed, Yellow-throated, Blue-headed, and Philadelphia. Philadelphia Vireos seemed more common than usual this fall.

The first Brown Creeper reports of the fall were two seen by Frank Holmes near Horseshoe Lake in Illinois on the 29th and one seen by Clark Creighton in his backyard on the 30th.

Charlene reported a Red-breasted Nuthatch at Hazlet State Park near Carlyle Lake on the 8th. It was the first one of many, although she could not know that. This was very different from last year. Mike Thelan reported another from Tower Grove Park the next day.

Andrew Reago reported the first Winter Wren of the season in a feeding flock at Tower Grove Park on the 20th near the stables. This is as somewhat unusual location for a species that is normally associated with the denser cover in the Gaddy Garden. Sedge Wrens were present at RMBS throughout the month and were joined by numbers of Marsh Wrens at the end of the month.

Thrush numbers were not particularly outstanding in Tower Grove Park this fall, possibly because of a poor food crop from the drought. There was at least one Veery still present on the 15th reported by Pat Leuders. The first Hermit Thrush was reported by Andrew Reago on the 9th. Two Wood Thrushes were reported in the Gaddy Garden at TGP on the 18th by David Becher.

American Pipit reports were limited. Al Smith reported two at Heron Pond on the 14th and the Saturday group refound one the next day.

Bill Rudden photographed a Cedar Waxwing feeding nestlings at Jefferson Barracks Park on September 19th. Apparently late nesting of this type is a known if somewhat rare behavior in the species.

Most of the usual warbler species were common this month. Good numbers of migrants were reported from many locations all through the month. Golden-winged Warblers always seem to be more common in the fall in Saint Louis, but they appeared to be particularly numerous this year. Species such as Blackburnian and Bay Breasted Warblers, which were scare this spring also appeared in good numbers. Ovenbirds also seemed to be in good numbers and David Becher reported seeing three in one binocular view on the 8th. Charlene Malone reported an early first Yellow-rumped Warbler on the 8th. The migration peaked around the middle of the month with flocks of 50+ birds or 10 or more species being reported in Tower Grove Park. The SLAS group had a male Black-throated Blue Warbler at Hazlett SP on their annual Carlyle Lake outing. Closer to home a female was reported by Andrew Reago in the Gaddy Garden at TGP on the 26th and another or the same was refound on the 28th. Pine Warblers were not reported frequently this fall, but Mary Ann Auer had one singing at the Fallen Oak Nature Trail at Busch Wildlife on the 30th.

Pat Leuders reported a very early White-crowned Sparrow at Columbia Bottom CA on the 29th. Rad Widmar reported the first Nelson's Sparrow at Heron Pond on the 30th. The first Vesper Sparrow report of the fall was by Frank Holmes from the Horseshoe Lake area on the 30th.

July Botany Report

Compiled by George Van Brunt

July 2, 2012—A heat wave with temperatures exceeding 100ºF caused the botantists to cancel the field trip and stay home in air conditioning.

July 9, 2012—Missouri Botanical Garden, St. Louis, MO (contributed by George Van Brunt).

Time: 9:00–11:00 a.m.
Conditions: Sunny, 81–87 ºF.
Participants: Fr. Sullivan, George Van Brunt, Jack Harris, Pat Harris, Wayne Clark, Nancy Clark, Larry Morrison, Jeannie Moe, Jim Moe, Jane Deschu, Jerry Castillon, Richard Abbott, Burt Noll, Michele "Lasthenia" Lee.

We met at the Ridgway Center of the Missouri Botanical Garden on the tail end of a record setting heat wave. Our main mission was to visit

***Fockea comaru*, family Apocynaceae, southern Africa. The swollen light-colored part of the plant below the leaves and branches is the caudex. Photo by George Van Brunt.**

Jiang Tai Gong Fishing in the Chinese Garden. Photo by George Van Brunt.

the Henry Shaw Cactus and Succulent Society show, an annual event that we have attended the last 2 years. First, while it was still relatively cool, we strolled through various parts of the garden admiring the silk sculptures of the Chinese lantern festival and, of course, the plants.

***Cibirhiza albersiana*, family Apocynaceae, eastern Africa. This species, first described in 1994, has a swollen water storing trunk. Photo by George Van Brunt.**

***Trichodiadema stellatum*, family Aizoaceae, southern Africa. This species has swollen water storing leaves with small bristles at each leaf apex. Plant grown by Pam Schnebelen. Photo by George Van Brunt.**

After a little more than an hour outdoors, we assembled in the Orthwein Floral Display Hall of the Ridgway Center. Pam Schnebelen, Henry Shaw Cactus and Succulent Society education director

Lobivia densispina **cv. 'cristata', family Cactaceae, high Andes of Bolivia. Plant grown by Pam Schnebelen. Photo by George Van Brunt.**

Mammillaria bocasana **cv. 'Fred', family Cactaceae, Mexico. Plant grown by Pam Schnebelen. Photo by George Van Brunt.**

Mammillaria parkinsonii**, family Cactaceae, Mexico. Plant grown by Tom Degnan. Photo by George Van Brunt.**

and WGNSS member, gave us a brief introduction to the show and to succulent plants. The show, as Pam explained, is a combination scientific and artistic display. Although each plant is identified with its scientific name including its cultivar name,

Melocactus concinnus**, family Cactaceae, endemic to Brazil, rare in the wild. Plant grown by Pam Schnebelen. Photo by George Van Brunt.**

Agave parryi **var.** ***truncata*****, family Asparagaceae, Mexico. Plant grown by Ralph Spradon. Photo by George Van Brunt.**

if appropriate, many plants have been altered from their natural growth habit (habit, not habitat) to produce unusual and stunning forms. An example of this is seen in the photo of *Fockea comaru*. This southern African species stores water in a swollen stem called a caudex. Normally the caudex would be underground; the soil level is the point where the branches and leaves begin. The gardener of this plant re-pots it every year, each year exposing more of the caudex. The result is a view of the plant unknown in nature, revealing both its above and below ground growth habit.

In her talk, Pam told us that there are 3 ways to define a succulent plant. According to the most scientific definition, a succulent is a plant that has the ability to perform crassulacean acid metabolism (CAM). All photosynthetic plants capture the energy of light with chlorophyll and store that energy in the form of organic molecules. Plants have tiny pores in the epidermis of their

leaves and stems called stomata (singular, stoma). The stomata can be opened and closed by guard cells; carbon dioxide diffuses into the plant and water molecules diffuse out of the plant through the stomata when they are open. In most photosynthetic plants, the stomata are open during daylight hours while photosynthesis is taking place. In daylight, however, the temperature is generally higher and the relative humidity lower than at night. The result is that more water vapor diffuses out of the plant when the stomata are open in daylight than if they are open only at night. In CAM plants, the carbon dioxide is collected from the atmosphere through the stomatal openings at

night. The CO_2 is stored in vacuoles in the form of a four carbon compound, malic acid. During daylight hours, sunlight energy is captured, the malic acid is converted to CO_2 and energy rich organic molecules are produced. The stomata do not have to be open during photosynthesis thus

The third way to define a succulent is not a scientific definition but rather an "I know it when I see it" situation. That phrase was used by Supreme Court Justice Potter Stewart in 1964 to describe what he considered as obscenity. With

this "definition", what one sees in a succulent includes growth habit and surface covering. In additon to swollen, water-storing leaves, stems, and/or roots, the growth habit of a succulent is often very compact, in the form of a sphere or a column. Succulents often have very small leaves, leaves in the form of spines, or no leaves at all; often the photosynthetic organ of a succulent is the stem. Succulents often produce an outer surface covered with waxy material to retard evaporation and/or dense hairs or spines to reduce air movement at the plant's surface. Succulents also tend to have extensive root systems near the soil surface so they can quickly soak up any moisture that contacts the soil.

Following are a few of the many wondrous forms that we enjoyed at the show. We thank Pam for sharing her knowledge of these interesting plants.

When I got home after the show, I looked "on-line" for the various plants that I photographed. I thought that I had the wrong identification for

Oreocereus trolli **(woolly old man of the Andes cactus), family Cactaceae, Bolivia, Peru, and northern Argentina. There is a plant in there somewhere. Plant grown by Mike Cushner. Photo by George Van Brunt.**

Echinopsis cristata **f.** ***minor*** **(hedgehog cactus), family Cactaceae, South America. Plant grown by Glenda Beckerman. Photo by George Van Brunt.**

Mammillaria bocasana cv. 'Fred" because the "on-line" photos of *Mammillaria bocasana* looked nothing like my photo of *Mammillaria bocasana* cv. 'Fred". I wrote to Pam Schnebelen about the

identification and she replied that "There are many versions of 'Fred' in captivity. All are monstrose cultivars/selections of *Mammillaria bocasana* – though they look nothing like *M. bocasana*." I followed up on a website that Pam gave me and found that 'Fred' is a natural mutation that formed on a normal *M. bocasana*. Fred, the name of the person who discovered and first cultivated it, cut off the mutant part of the plant and started growing it. According to Pam, 'Fred' is a popular (and very, very strange) plant with cactus collectors. Normal *Mammillaria bocasana* looks like a cactus but 'Fred' looks more like a non-cactus succulent. 'Fred" rarely has a hair or a spine and the plant is soft and rubbery.

July 16, 2012—A temperature forecast in the upper 90s ºF caused the botantists to cancel the field trip and stay home in air conditioning.

July 23, 2012—St. Louis Zoo, Forest Park, St. Louis (Contributed by George Van Brunt).

Time: 8:00 a.m.–12:00 p.m.
Conditions: Sunny, 84º F to 98º F.
Participants: Fr. Sullivan, Richard Abbott, Steve Turner, Jack Harris, Jeannie Moe, John Oliver, Wayne Clark, Nancy Clark, George Van Brunt.

The heat wave and drought were still with us; the high for this Monday was 106 ºF. Even native plants in the area were showing signs of the stressful conditions. The botanists decided to visit the St. Louis Zoo where plants are cultivated and watered and indoor exhibits are available for intermittent cooling off. We visited the Children's Zoo, Insectarium including the domed Mary Ann Lee Butterfly Wing, The River's Edge, the Peabody Hall, and the Ape House. We did quite a bit of botanizing thanks to Richard Abbott who has considerable expertise in identifying temperate and tropical plants. In addition to identifying plants and discussing their characteristics, we did view some of the animals. We also spent some time admiring an art exhibit in Peabody Hall called *Inspired by Nature*, a collection of nature paintings by internationally acclaimed wildlife artist and conservationist Robert Bateman.

WGNSS botanizing at the zoo. L>R: Richard Abbott, John Oliver (orange and blue shirt), Jack Harris (straw hat), Fr. Sullivan, Jeannie Moe, George Van Brunt. Photo by Steve Turner.

***Caesalpina pulcherrima* (red bird of paradise), a widely planted tropical and subtropical member of the bean family (Fabaceae). Photo by Steve Turner.**

July 30, 2012—First Watch Restaurant, Chesterfield, MO (Contributed by George Van Brunt).

The drought and heat wave were still with us. Jack Harris, Pat Harris, John Oliver, Wayne Clark, Nancy Clark, Paul Corley, Jeannie Moe, Jim Moe, Louise Langbein, and Steve Turner joined Fr. Sullivan for lunch and socializing.

Entomology October Meeting: Insect Humor and Camaraderie

Jane Walker

The Entomology Group met at the Butterfly House on 15 October to share a wealth insect

humor. Rich Thoma and Ryan Fairbanks shared their favorite Gary Larson insect cartoons. Jane Walker shared examples of the newer insect humorists Adrian Raeside of "Other Coast," Dave Coverly of "Speed Bump," Scott Hilburn of "Argyle Sweater," Patrick McDonnell of "Mutts," and Hilary Price of "Rhymes with Orange."

John Christensen brought in his box of insect toys that he has collected through the years. Some were just plastic insect models, but he also had wind up toys, and computer operated toys he operated from his cell phone. He also brought in a model of the multifaceted insect eye that allows one to view the world from an insect perspective. Tad Yankowski, the new Entomologist on staff at the Butterfly House, entertained us with several insect jokes.

Potential new member Eric Van Fleet treated members to a funny but amazing story. Eric obtained his M.S. in Entomology from Cornell University and has recently joined Monsanto as a Research Entomologist. The gist of his story was that while he is an entomologist, he has a Lepidoptera (butterfly and moth) phobia. Yes, he is terrified of butterflies and moths. As a young boy scout, he was assigned a tent on a camping trip. When he opened the tent flap, hundreds of large moths flew out of the tent, getting in his eyes, in his mouth, and terrifying him. Ever since this event, he breaks out into a cold sweat when encountering a butterfly or moth, barely containing his fear. He told this story with grace and great humor.

After sharing our "insect funnies," members gathered together to share continuing interests with food and drink.

Ghosts in the Night

Ted C. MacRae[1]

This summer I've spent quite a few nights hanging out along the Mississippi River—lamp on my head, vials in my pocket, and an ultraviolet (UV)

Arctosa littoralis **(beach wolf spider) | Lewis Co., Missouri.**

The mottled, white coloration is conspicuous on wet sand…

…but provides perfect camouflage on the dry sand further away from the water's edge.

light setup on the sandy banks. UV light collecting for insects (also called "blacklighting") is a popular method among us beetlers, but for a number of reasons it's been a while since I've done a lot of heavy blacklighting myself. That all changed this year when I decided I needed to get a better handle on the Missouri distribution of two species of tiger beetles, *Ellipsoptera cuprascens* and *E. macra*, found only in sandy habitats along the shores of

[1] Originally posted August 29, 2012 at *Beetles in the Bush* http://beetlesinthebush.wordpress.com. All photos by the author.

While they can be found in their sandy, littoral habitats during the day under pieces of driftwood or other debris, the easiest way to find them is when they are active at night and their eyes glow blue-green when hit by the light from a flashlight.

the state's two big rivers—the Missouri and Mississippi—and, fortuitously, attracted to blacklights at night. Blacklighting alongside these big rivers is a relatively new experience for me, as my previous experiences have been mostly in forests—either here in the Midwest or out in the desert southwest. Along the big rivers, as soon as the sun dips below the horizon hordes of hungry mosquitos descend upon me and choking swarms of caddisflies quickly envelop the blacklight. Liberal application of Deet keeps the mosquitoes at bay, but checking the sheet behind the blacklight to see if anything of interest has landed requires a bit of a mad dash and a quick retreat, all the while holding my breath and clamping the shirt cuff around my neck to prevent the swarming bugs from flying into spaces where I don't want them.

Wandering away from the blacklight and exploring along the beach in the black of night is also a relatively new experience. While I've done a fair bit of night collecting away from the light, again this has tended to be in forests and woodlands with a beating sheet in hand looking for jewel beetles, which still hang out on the same host plants they can be found on during the day but are far less inclined to zip away as soon as they hit the sheet like they do when the sun is high overhead. I haven't spent much time shining a lamp on the sand of a big river beach, so I wasn't quite sure what to expect (other than hopefully a tiger beetle!). As I walked along the beach, I occasionally saw blue-green glowing dots on the sand—I recognized these fairly quickly as the eyes of spiders reflecting the light from my headlamp. However, at first when looked closer at the spot where I thought a spider should be sitting I didn't see anything. It took a few tries before finally I saw ghost-like movement on the sand, and when I moved cautiously and got down close to the sand I finally saw a magnificent, white wolf spider sitting motionless—perfectly colored to blend into the sand on which it was sitting.

I quickly hurried back to the car and got my camera, set it up with a 100mm macro lens and extension tubes (hoping I could get real close), and went back to the spot where I'd seen the spider to see if I could find it again. I didn't, but not too much searching was required before I found another one. Unfortunately, I didn't succeed in photographing that one either. It was apparent to me that I was going to have to use the same ultra-cautious and slow movements that I use with tiger beetles if I was going to succeed in photographing one or more of these spiders. I quickly figured out that they were easier to see if I looked right along the water's edge, as in that situation the white coloration of the spider actually stood out against the darkened, wet sand. (Of course, photographing them on the wet sand was a tad dirtier for me, but I'm not afraid to get filthy dirty when it comes to photographing arthropods.) I also figured out that I could more easily find the spiders on the wet sand and then follow them up to the drier sand for photos that better showed just how marvelously cryptic their coloration was.

Those of you familiar with my work know that I love frontal portraits, but I found this to be almost impossible during my first attempts. It was hard enough approaching the spider from the front without it bolting before I could get set behind the camera, but in the few cases where I did actually

manage this then it would bolt as soon as I made any microadjustment in the position of the camera to compose the shot. It occurred to me that the spider was sensing vibration from moving the camera on the ground (ground-resting the camera is a technique that I use commonly to get the lowest possible angle on my subjects)—makes sense, as spiders are intensely tuned into vibrations for prey capture. Once I began keeping my hand flat under the camera as sort of a makeshift "beanbag" I was able to make the final adjustments necessary to get shots like the one shown below and in ID Challenge #20.

According to Dondale & Redner (1983) this should be *Arctosa littoralis*—widespread in littoral habitats across North America but, at least at the time of their revision, not recorded from Missouri [in fact, it seems no species of *Arctosa* was known from Missouri until *A. virgo* was recorded from oak-hickory forests in the southern part of the state by Bultman (1992)]. I'll leave it to the spiderphiles to determine if this actually represents a new state record or (more likely) if I just haven't dug deep enough into the literature.

REFERENCES:

Bultman, T. L. 1992. Abundance and association of cursorial spiders from calcareous fens in southern Missouri. *Journal of Arachnology* 20:165–172.

Dondale, C. D. & J. H. Redner. 1983. Revision of the wolf spiders of the genus *Arctosa* C . L. Koch in North and Central America (Araneae: Lycosidae). *Journal of Arachnology* 11:1–30.

Seminars at St. Louis Zoo

Sandra Faneuff

The Academy of Science-St. Louis, in partnership with the Saint Louis Zoo, presents the 2012-2013 Science Seminar Series with Science Seminars and Conservation Conversations, underwritten by Cooper Bussmann. Adults, teachers, middle and high school students, and the general public are invited to attend these no-cost lectures on topical issues in science. Presentations are 7:30–9 p.m., The Zoo Living World Auditorium. No reservations required. For information on this event and other programs at the Academy of Science- St. Louis check their website: www.academyofsciencestl.org or call 314-533-8586.

SCIENCE SEMINAR

Wednesday, December 12. CyberForensics: From Data to Digital Evidence (lecture and booksigning), by **Albert J. Marcella Jr.,** Ph.D., CISA, CISM, Professor, George Herbert Walker School of Business and Technology, Webster University

Very organized criminals, terrorists, information thieves, nation states, interlopers, and even disgruntled employees are using today's technologies and looking to the evolving technologies of tomorrow, to successfully circumvent controls, commit fraud, steal data, launder money, gain imbalanced market advantages, compromise strategic resources, disrupt workflows, engage in cyber bullying and stalking activities, all leading to an erosion of our national and personal sense of security.

These individuals utilize the ever increasing power and breadth of technology, to carry out their objectives, undermining, attacking and using these same technologies, which governments, businesses, and individuals depend upon for a daily existence.

Traditional criminal forensics analysts use among other tools…fingerprint, blood splatter and ballistic analysis, DNA typing, and forensic pathology to gather and present evidence, which may be used to establish guilt or innocence.

Cyber forensic investigators dissect the repository of a computer's memory using HEX editors and write blockers, examining volumes, partitions, boot records and FAT Tables; to identify, collect, preserve, examine and evaluate data, data representing potential electronic evidence. Evidence, which is used, in part, to determine intent, culpability, motive, means, methods and loss, resulting from the use and involvement of information technologies in perpetrating a crime.

Dr. Marcella examines the origins of digital data, the role of binary and hexadecimal numbers in identifying potential evidence, how digital data become electronic evidence, and the overall process of cyber forensics investigations.

Group Activity/Walk Schedules

BOTANY GROUP
Chair—George Van Brunt

- **Monday Botany Walks**, Leader—Fr. James Sullivan; now in his **45th year**! The WGNSS Botany Group visits many of the same locations as the Bird group: Busch Conservation Area, Shaw Nature Preserve, the Missouri Botanical Garden, Babler State Park and Cuivre River State Park. Learning plants will help you learn butterfly host plants. Sign up for WGNSS Botany Group emails from Jack Harris by contacting him at jahar@mac.com or (314) 368-0655 and receive an email no later than Sunday about the following Monday's trip.

ENTOMOLOGY GROUP
Co-Chairs—Phil Koenig and Jane Walker

Monthly meetings are held September through May on the third Monday of the month. Programs are held at the Butterfly House (Faust Park), 15193 Olive Blvd., Chesterfield unless noted otherwise.

- **December 17, 7:00 p.m**. Speaker still TBD—look for an announcement by email soon.

NATURE BOOK CLUB
Chair—Lisa Nansteel

The Nature Book Club is a group of naturalists who meet once a month to discuss a book chosen for its general interest from botany to zoology. The group meets at the Peace United Church of Christ in Webster Groves on the second Tuesday of the month from 1:30-3:00 p.m. For more information and directions contact Lisa Nansteel at (636) 391-4898. All are welcome—especially newcomers!! Upcoming books:

- **December 11**—*The Longest Winter* by Meredith Hooper (chapters 1–10)
- **January 8**—*The Longest Winter* by Meredith Hooper (chapters 11–20)

ORNITHOLOGY GROUP
Chair—David Becher

- **Saturday Bird Walks**, Leader—David Becher. Trips begin at 8:00 a.m. at Des Peres City Park parking lot (Ballas Road just north of Manchester Rd. and east of West County Mall) and continue through lunch. Everyone is welcome. The leader reserves the right to change the schedule if necessary. Contact David at (314) 576-1146 or DavidBecher@msn.com if you have questions.
  - December trips: 1st, 8th and 15th
  - January trips 5th and 19th
- **Thursday Bird Walks**, Leader—Jackie Chain. All trips begin at 8:30 a.m. at Des Peres City Park. Contact Jackie at (314) 644-5998 or chainjac@sbcglobal.net if you have questions. If there is a change in meeting time or place, we will advise by posting on MOBIRDS.

For general information about WGNSS activities, contact Membership Chairman Joe Whittington at whittex@aol.com or (314) 645-3272.

Editor's Corner

Ted C. MacRae

➢➢➢NEW!!! CONTENTS FOR VOLUME 84
Be sure to check out this new feature on pp. 15–16 of this issue, which lists articles, reports and meeting presentation summaries that appeared in the 2012 issues and includes for each the title/author, volume/issue, and start page number. I hope that readers will find these contents helpful for more quickly locating the valuable information published each month in *Nature Notes* and welcome your feedback regarding its usefulness and/or suggestions for improvement.

***NATURE NOTES* BY EMAIL**
Nature Notes is available by regular post or email; however, there are significant advantages to receiving it by the latter method. These include elimination of printing and mailing costs (reducing not only the cost of your subscription, but also decreasing its environmental impact) and the ability to view *Nature Notes* **in full color**. Embedded hyperlinks allow instant navigation to email addresses and websites. Of course, you can always print your electronic copy of *Nature Notes* if you wish (please use recycled paper and print on both sides). *Nature Notes* by email is sent as a PDF,

which can be opened using Adobe Reader (download free at http://get.adobe.com/reader/). Contact Joe Whittington, Assistant Treasurer, at whittex@aol.com to convert your subscription.

CALL FOR SUBMISSIONS

We welcome announcements of nature related events in the St. Louis area, notices of publications, and original nature oriented articles. Suggested topics include field trip accounts, information about local natural areas, interesting nature sightings, or reviews of nature related books. Articles reprinted from other sources must obtain permission from copyright holders.

Send submissions to ted.c.macrae@monsanto.com. Limit text formatting to bold for emphasis and italics for scientific names. Avoid tabs, extra spaces, multiple hard returns, underlining, etc. (these will be removed during final formatting). Photographs will be included on a space-available basis. Contributions are welcome from all—remember, this is your newsletter!

WGNSS 2013 Photo Contest

The Webster Groves Nature Study Society will be holding a **Photo Contest** at the April 2013 General Meeting. Entries will be accepted from November 1, 2012 to March 2, 2013 and is open to all WGNSS members at no cost. Members may enter 2 photos each in a maximum of 3 of the following 5 categories (maximum 6 photos):

a. Botany
b. Ornithology
c. Entomology
d. Natural History Book Club
e. Landscapes and scenery

Photos will be judged on quality, natural history uniqueness and overall naturalist appeal.

Prizes to be awarded are as follows: One Grand Prize ($300) will be awarded. In each category a 1st ($200), 2nd ($100) and 3rd ($50) place will also be awarded. All winning photos will be matted, framed and displayed at Powder Valley Nature Center during June 2013.

For more details on contest rules, photo requirements, and judging, go to the WGNSS website (www.wgnss.org).

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