Virginia Master Naturalist

Southwestern Piedmont Chapter

THE VINE

SUMMER, 2013
VOLUME 4 NUMBER 2

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DON'T FORGET TO LOG YOUR VOLUNTEER HOURS FOR 2013!
https://virginiamn.volunteersystem.org/UniversalLogin.cfm

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PRESIDENT'S MESSAGE

I hope everyone is enjoying the warm weather, getting outside and having some fun with nature. I have been enjoying seeing the butterflies fluttering through the sky and the birds hanging out at my feeders. There is a cute little hummingbird that visits my feeder at my kitchen window every evening.

This spring was been a real treat for the fans of cicadas. 2013 is the year for the Periodical Cicada Brood II, one of the largest. It emerged after 17 years underground to mate and unfortunately die but not before making songs in the trees. Every morning my porch was full of one- to two-inch-long black insects with big red eyes and orange-veined transparent wings.

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SPECIAL NOTICE:
State Conference Photo Contest Rules
http://www.regonline.com/builder/site/tab3.aspx?EventID=1261012
Southwestern Piedmont Chapter membership Dues for FY14 are now due. Dues period runs from July 1, 2013 to June 30, 2014.

Download a Volunteer Project Proposal Form from our Chapter's VMN Volunteer Management System: https://virginiamn.volunteersystem.org/UniversalLogin.cfm?logout=1
The sequence to access the form is-General Information:Newsletter/Documents:Blank Forms:Project Proposal From. Click to open.

PRESIDENT'S MESSAGE (continued)

Photo submitted by
Teresa Prillaman
Photo Source:
http://www.cicadamania.com/

I have to say it was fascinating watching them molt their skin and stay on the wall until they were ready to fly. The trees are not so happy now with their brown limbs but I really enjoyed seeing them every morning.

We have had some fun projects this spring. The year started off with an interesting presentation from Carol Zokaites, National Coordinator of Project Underground. She presented the Project Underground program and a talk about bats and karst science. We also had some great projects this spring with Philpott, presentations from Dr. Noel Boaz and the bioblitz in Franklin County.

The Chapter had a visit from our new state coordinator, Alycia Crall, who we will see again in October when she lectures on Citizen Science for the Basic Training Class. She comes to us from Rutgers University where she was serving as a post-doc on an NSF funded grant to initiate citizen science projects with several of the VMN chapters. She was also instrumental in the development of the website www.CitSci.org , which provides community groups with online resources to collect, analyze, and disseminate data from their citizen science projects.

In the next few months, there are several upcoming fun and exciting programs. I hope all members will join us in learning more about our local moths, wildlife and taking pictures of nature. It's beautiful outside and time to take a walk, a float on the river or a camping trip to enjoy what might be hiding under that rock or in that tree.

Teresa Prillaman

AUSTRALOPITHECINES AND HUMAN HEALTH
Noel T. Boaz, Ph.D., M.D.

Dr. Boaz is a member of the Southwest Piedmont Chapter of the Virginia Master Naturalists.
His article appears below, followed by a report on the exhibit he helped bring to VMNH.

Why are australopithecines - apelike creatures that lived in Africa, so far away from here, and so long ago - important? First of all, they show that we all came ultimately from Africa, and they document that the human species is all one. The Australopithecines were a subfamily of hominids (human-like primates, sometimes also termed hominins) that were bipedal, like humans, but small-brained, like apes. They lived from about 4.5 million years ago to about 1 million years ago. There were two kinds:

"Gracile" – more lightly built and generally earlier in time, and
"Robust" – with massive chewing muscles and molar teeth and generally later in time.

The gracile australopithecines seemingly went extinct by evolving *into* other species, ourselves (the genus *Homo*) as well as the robust australopithecines, whereas the latter seem to have been driven to extinction *by* other hominid species, especially their cousins in the genus *Homo*. Australopithecines have been known since the 1920's and comprise the best known stage of early hominid evolution past the ape-human split, which occurred between 6 and 7 million years ago. Yet most people are unaware of even the term (which means "southern ape"). An exhibit at the Virginia Museum of Natural History which I curated sought to remedy that unfortunate circumstance by presenting the exciting new discovery of a new species of australopithecine in South Africa - *Australopithecus sediba*. A talk I gave at the museum doubled as advanced training in the Virginia Master Naturalist program and considered the topic of what importance the australopithecines might hold for modern human health.

Our health is a state of optimal anatomical integrity and physiological functioning. It is more than just the absence of illness or injury. If doctors could determine what the optimal state of health is, and work in preventive mode to keep their patients there, this would seem to be pretty important. Yet people are quite adaptable, and it is difficult to know exactly what long-term health consequences may result from particular lifestyle choices. A long view requires us to look at the history of health. We are adapted to function within a range of environmental parameters known as an ecological niche; the ideal of medicine is to keep human beings in their zone of "adaptive normality."

Australopithecines represent an evolutionary stage antecedent to modern human health. In many cases when our advanced and specifically human anatomy and physiology fail, we default to the australopithecine condition. A modern human baby, for example, born with an australopithecine-sized brain, is severely mentally retarded. When humans evolved to leave their australopithecine ancestors behind, they jettisoned the most disadvantageous australopithecine traits and evolved new ones. Some of our most troublesome pathologies thus represent an evolutionary backsliding, referred to by Charles Darwin as "atavisms." Obstetrics provides another example. Australopithecines had relatively small brains and narrow birth canals to match. If a modern woman's pelvic structure is atavistically narrow and reverts to the ancestral australopithecine condition, a normal-headed human baby will not fit through the pelvic outlet. In the old days and still in many parts of the world, the mother (and baby) consequently die during childbirth. Modern medicine solves the mismatch of a baby's human-sized head with a mother's australopithecine-sized pelvic outlet with the Caesarean section (C-section). Yet another example of outmoded australopithecine anatomy is a large third molar ("wisdom") tooth. Australopithecines have molars that increase in surface area from first to second to third molar. Humans have evolved a third molar that is reduced in size and sometimes absent altogether. An australopithecine-sized third molar will not have space to erupt in a smaller, human-sized jaw and will become "impacted," leading to one of our most common dental surgeries.

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Australopithecines and Human Health (continued)

But what about the sunnier side of australopithecine medical relevance? What did the australopithecines bequeath to us? There were significant advances that the australopithecines made over their and our ape ancestors, enabling uniquely important behaviors that we engage in today. These advances include walking on two legs, a backbone with two major curves enabling us to stand upright for extended periods of time, a relatively bigger and more complexly organized brain for thinking, loss of "fangs" [smaller, non-projecting canine teeth], and big, thick-enameled grinding molar teeth. Failure of any of these adaptations revert us, in that particular regard, to the ape stage, and that reversion usually has profound medical implications.

Australopithecines had a bony structure of their lower limbs that indicate that they walked on two legs. In other words, they were "bipedal," an adaptation that did not allow our ancestors to run fast but enabled them to run and walk far. Calculations have shown that if a hominid starts running at a jogging pace when it spots a lion on the African savanna, the hominid will be able to outrun the lion, which adapted for short bursts of speed to catch its prey. Bipedalism represented a huge change in our bodies' relationship to gravity because before that point in time, we moved around for the most part with all four limbs in contact with the substrate, whether this was in the trees or on the ground. The australopithecines gave us our modern foot. The new fossils of *Australopithecus sediba*, as well as a remarkable footprint trail of two australopithecines walking across the Serengeti Plains of Tanzania, show that the big toe became aligned with the other toes and pushed off in a powerful, forward-propelling step. Australopithecines had a bigger space between the big toe and the other four toes than we do but the important functional adaptation was there to form a structurally rigid supportive "ball" of the foot. Like many things that we do not normally think about, we are apt to take this gift from the australopithecines for granted. But think for a moment if you will, back to when you had a sore toe. Your toe all of a sudden increased in size to occupy almost your entire consciousness, until it got well and you forget about it again. Think about the ball of your foot in the same way. What would your life be like if you had not inherited this trait from your australopithecine forebears? When you stand up your feet would roll over to the inside, collapsing your longitudinal arches and knocking your knees together. You couldn't walk or even stand very long like this, so you would shift your weight to the outside of your soles and waddle along awkwardly like a chimp trying to walk on two legs. Some people are unfortunately afflicted with this very problem. It is known as *pes planus*, or flat feet, and there are orthopedic and podiatric solutions. But without those, there would be no more walks in the park, ballet, Olympic track and field events, marching bands, or youth soccer leagues. When we think about it, modern life itself would not be possible without the foot's adaptation to bipedalism.

Let's look now at perhaps the number one complaint with which patients around the world traditionally come to their doctors. Vying with "stomach ache," it is back pain. The blocky bones called vertebrae that form our spine are much older in evolutionary terms than the australopithecines, but because of their changed relationship with gravity the australopithecine skull sat atop the pole of the spine stabilized by two forwardly curving sections of vertebrae. Instead of gravity pulling down at a right angle against the bony bridge of the backbone between the two supporting pylons of the fore- and hind-limbs, gravity now pulls straight down the spine balanced in a biped on only the two lower limbs. As more weight pushes on the lower vertebrae the disc-like joints between the vertebrae can bulge out and compress the spinal nerves which emerge from in between the vertebrae. So-called "slipped discs" are something we are prone to due to our descent from the australopithecines. A big part of this problem appearing in modern people is that their body weight has increased so much, putting strain on a still imperfectly evolved upright musculoskeletal system. Other similar common problems that we have when australopithecine adaptations fail are hernia, knee ligament tears, hemorrhoids, and prolapsed of the uterus, to mention a few.

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Australopithecines and Human Health (continued)

All this is very interesting you may say, but you tell me you had a hernia repair last year and you are relatively sure that your doctor, who did a great job, never heard of the australopithecines. At least he never mentioned them to you. Does a doctor really need to clutter up his or her head with all this evolutionary information? I once had a courageous medical student who came up to me after Gross Anatomy class and asked me that question. My reply was something like “well, no, you can probably memorize well enough to pass the exam; it just depends on how good a doctor you want to be and how well you want to serve your future patients.” Twenty-first century medicine now is becoming acutely aware that the human body is not a simple machine, reconstructable and treatable by therapies deduced from biomedical engineering principles alone. That is far too arrogant because humans did not design and build the human body. The human body and its functions have an evolutionary history, and humbly understanding the twists and turns of that history through comparative biological, genomic, anthropological, and paleontological research will continue to inform and improve medical theory and practice in important ways . The new field is called Evolutionary Medicine.

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“AUSTRALOPITHECINE!” - The exhibit opened at the Virginia Museum of Natural History, featuring two cast fossil specimens of Australopithecus sediba, a human-like primate and extinct genus of hominid, which provide significant implications to the study of evolution. “Australopithecine”, which featured an adult and a child specimen that are believed to be among the last of their species, is on display at the museum from February 28 through July 22, 2013.

(Above) Dr. Noel Boaz (right) talks with Simon Barber, U.S. Country Manager with the South African Embassy, about the “Australopithecine!” exhibit Thursday (February 28) at the Virginia Museum of Natural History. The exhibit shows Australopithecus sediba, a species which is believed may show an intermediate link between humans and primates. (Bulletin photos by Mike Wray)
Link : http://www.martinsvillebulletin.com/article.cfm?ID=36778

BIO-BLITZ ON REED CREEK
June 15, 2013 Fork Mountain Area, Franklin County
Submitted by John Prillaman

What's the formula for a Successful BIO-BLITZ?????? Well it takes great folks, great weather, great locations, a little enthusiasm and finding lots of animals. Jason Gibson of Galileo High School and Dr. Paul Sattler of Liberty University, our bio-blitz leaders, took members of our chapter toward the headwaters of Reed Creek, where they poked and prodded logs and rocks along the creek to find the animals listed below.

This was definitely a worthwhile experience for those of us who were newcomers to such events. Leaving no stone unturned throughout the head waters of The Reed Creek, we found many Salamanders such as Seal, Virginia Dusky, Two-lined and the Red Salamander. Other critters found were the American Toad, American Bullfrog, Box Turtle, Five-lined Skink and Fence lizards. These were all animals of great interest to Jason and Paul, and to the Herp Society. Jason has been working for some time logging the findings of each mountain or area of Franklin County, and we enjoyed following him up and down Reed Creek.

The Bio-Blitz sparked another interest. We decided to introduce the group to Wildlife mapping in conjunction with the Bio-Blitz. Other animals were identified during the bio-blitz, ranging from various birds, butterflies, bear, squirrels, and crayfish to name a few. The enthusiasm for this was huge among the group. The findings were great, and the experience was both educational and entertaining. After-all, what better way to spend a gorgeous day than being in nature's hands?

Jason Gibson listed the scientific name, common name the number of animals we found and he catalogued for his survey:

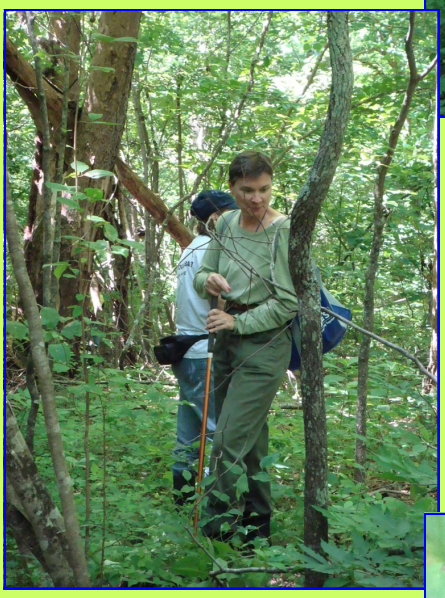
<u>Frogs/Toads</u>
Anaxyrus americanus (American Toad) - 1
Lithobates catesbeianus (American Bullfrog) - 1

<u>Salamanders</u>
Desmognathus monticola (Seal Salamander) - 16
Desmognathus planiceps (Virginia Dusky Salamander) - 6
Eurycea cirrigera (Two-lined Salamander) - 4
Pseudotriton ruber (Red Salamander) - 1

<u>Turtles</u>
Terrapene carolina (Box Turtle) - 3 live, 4 shells

<u>Lizards</u>
Plestiodon fasciatus (Five-lined Skink) - 1
Sceloporus undulatus (Fence Lizard) - 1

BIO-BLITZ ON REED CREEK (continued)



Photos submitted by Kathy Fell.

BIOBLITZ ON REED CREEK (continued)

Above, clockwise, the Bioblitz participants, Jason Gibson holding American Bullfrog, Dr. Paul Sattler of Liberty University, Coltsfoot along the roadway, and an Eastern Box Turtle.

2013 BASIC TRAINING COURSE BEGINS IN AUGUST

The deadline to register for the 2013 Southwestern Piedmont Virginia Master Naturalist Basic Training Class is July 31. The course begins August 13 and ends in early December. Each class meets on Tuesday night from 6-8 PM. Classes are held in the education center at the Virginia Museum of Natural History and in various locations in the field.

Training Syllabus

Date	Topic	Presenter	Location & Time
8/13	Introduction to Program	Christy Deatherage	VMNH 6 to 8 PM
8/20	Geology, Soil Science	Sarah Timms	VMNH 6 to 8 PM
8/24	Geology Field Trip	Sarah Timms	VMNH 9 AM to 1 PM
8/27	Wildflowers	Bob Tuggle	VMNH 6 to 8 PM
9/03	Biogeography	Suzie Gilly	VMNH 6 to 8 PM
9/10	Entomology & Invertebrates	Dr. Joe Keiper	VMNH 6 to 8 PM
9/17	Ichthyology	Dr. Donald Orth	VMNH 6 to 8 PM
9/24	Aquatic Ecosystems	Dr. Carolyn Thomas	VMNH 6 to 8 PM
9/28	SOS Training Field Trip	Wayne Kirkpatrick	Kathy Fell 10AM -2:30PM
10/01	Ornithology	Mary Foster	VMNH 6 to 8 PM
10/08	Weather & Climate	Dr. Denny Casey	VMNH 6 to 8 PM
10/15	Dendrology	Dr. John Seiler	VMNH 6 to 8 PM
10/22	Citizen Science	Dr. Alycia Crall	VMNH 6 to 8 PM
10/26	Woodland Ecosystem Field Trip	TBD	Reynolds Homestead 10AM—2PM
10/29	Mammology	Dr. Nancy Moncrief	VMNH 6 to 8 PM
11/05	Election Day	No Class	
11/12	Herpetology Opportunities	Dr. Todd Frederickson	VMNH 6 to 8 PM
11/19	Interpretation	Danny & Susan Martin	VMNH 6 to 8 PM
11/23	Citizen Science Field Trip	Craig Rockwell	Philpott Lake Park 10AM-2PM
12/03	Class Presentations	Tiffany Haworth, Facilitator	VMNH 6 to 8 PM
12/10	Test Due		

Registration Opens for the 2013 State Conference!

What: **2013 Virginia Master Naturalist Statewide Volunteer Conference and Training**

When: **Friday, October 18, 2013 3:00 PM—Sunday, October 20, 2013 2:00 PM**

Where: **Wyndham Virginia Crossings Hotel & Conf Center**
1000 Virginia Center Parkway
Glen Allen, Virginia 23059

Message from Alycia Crall, State Coordinator:

Registration is now open for our 2013 Virginia Master Naturalist Statewide Conference! We have a great conference planned with a weekend full of exciting field trips, workshops, and outdoor activities.

This year, the conference will be divided between two venues. On Friday evening and all day Saturday (October 18-19), sessions will be at the Wyndham Virginia Crossings Hotel & Conference Center in Glen Allen, Virginia. Sunday (October 20) will include field sessions at Pocahontas State Park, a 45 minute drive from the hotel. Similar to previous years, we will be having our chapter share fair and photo contest on Friday night. Full instructions are provided on the conference registration site. We also have a special evening planned for Saturday with Dr. Caren Cooper from the Cornell Lab of Ornithology as our guest speaker.

For any questions about logistics of the conference or registration, please email Tiffany Brown (tiffany.brown@vt.edu). We look forward to seeing many of you in October!

FOR ADDITIONAL INFORMATION AND TO REGISTER: www.regonline.com/2013_vmn_conference

Registration Deadlines

Early bird registration ends August 15. All registrations close September 15 (one month prior to the conference)! Register as early as possible to get your choice of sessions, all of which have limited availability.

Registration Types and Fees

Registration Type:	Early Bird Price (by August 15th):	Regular Price (after August 15th):
Full Conference	$155	$175
Saturday Training (with Keynote Speaker)	$110	$120
Saturday Training Only	$60	$70

Conference Agenda Overview

Link: http://www.regonline.com/builder/site/tab2.aspx?EventID=1261012

Source of Photo & Information on Dr. Alycia Crall: http://frec.vt.edu/front/crall_mnp.html

Attack by the Mystery Rock Tipper
Submitted by Kathy Fell

My house in Bassett is surrounded by dry stack, natural rock walls. I built them myself, carefully laying and anchoring each rock so it is stable and secure. Some rocks are small, and some are quite large and very heavy. Imagine my surprise this spring, when I looked out the window and saw parts of the rock walls disassembled. Smaller rocks littered the path ways. Large, heavy rocks were sitting on end and not where I had left them! A few concrete blocks from my retaining wall were also tipped on end. What devious rock-tipper had visited me over night and left this mess? For a few weeks, my mornings began with a tour of the gardens and reassembly of the rock walls.

Very early, one morning in June, I looked out the window and there was a young black bear! He ambled over to the crabapple in the middle of the driveway and snuffled at the tiny fruit. He climbed up the tree to get a little closer. He eased out on a branch. The branch bent under his weight and he slid off, tumbling head first to the ground. Undeterred, he approached the rock walls and started tipping rocks. He spent some time with nose under rock, then sampled a few unripe blackberries and wandered off. I went out to rebuild the wall and investigate. Under the rocks were ant nests. The few remaining ants were marshalling their forces to search out a new home. Now, I know who has been tipping my rocks and why.

The mystery rock-tipper.
(Submitted by Kathy Fell)

Black bears (*Ursus americanus*) are omnivores that tend to feed at dawn and dusk. They eat carrion, bugs, fruit, mast, grasses, roots, and bird seed. I have watched a bear take down and empty a bird feeder. Now, I only put out bird seed when the bears are dormant. I have “deer proofed” my garden, but I’m afraid the flimsy cages are no match for a bear. This spring, a bear damaged the fencing around my cherry tree, in an attempt to reach the fruit. Black bears are very shy and non-aggressive. I only need to open the door and shout and they run for the woods.

Here are a few resources:
http://animals.nationalgeographic.com/animals/mammals/black-bear/
http://www.defenders.org/black-bear/basic-facts
http://en.wikipedia.org/wiki/American_black_bear

VOLUNTEER HOURS

2013 CHAPTER GOAL:

1000 VOLUNTEER HOURS

Volunteer hours reported as of June 30, 2013:

Categories -

- Administration - 83.00
- Advanced Training - 122.25
- Citizen Science - 172.75
- Education - 180.00
- Stewardship - 88.00

Reported Total– 646.0 hours or 64% of our Chapter Goal.

Thank you, volunteers!

Report all volunteer hours to:

Christy Deatherage, turkeyball@comcast.net, (276)627-6276, or submit hours to the VMN Volunteer Management System at https://virginiamn.volunteersystem.org/UniversalLogin.cfm , or by Smartphone using the above QR code.

NEXT QUARTER

July 15-19—Junior Naturalist Summer Adventure Camp @ VMNH 9AM-4PM.

July 24-Moth Training & Field Activities & Smith River Sports Complex 7PM-10PM.

August 3—Smith River Cleanup @ 10AM (DRBA event).

August 10—Smith River Fest @ Smith River Sports Complex 9AM-5PM (Chapter Display Table).

August 24—Wildlife Mapping @ VMNH 10AM-2PM.

Sept 26—BATS! @ VMNH 6PM-7PM.

2013 BOARD MEMBERS

From left, Lynn Pritchett, Denny Casey, Dottie Haley, Lynn Regan, Christy Deatherage, Teresa Prillaman and Tiffany Haworth. Photo by Ashby Pritchett

Southwestern Piedmont Chapter Website:
http://www.vmnh.net/virginia-master-naturalist-program .
Click on "Calendar of Events" to see what we are doing!