at Kenyon College

Field Notes

July 2013 No. 3 July, August, September

Plants that Heal

Use of medicinal plants can be traced back to the world's earliest civilizations and laid the foundations of modern medicine. Interest in them waned in the last century but is back on the rise. by Heather Doherty

If you walked into the BFEC office and Many medicinal plants contain powerpulled our medicinal plant field guide off the shelf, you might be surprised, as I was, to see the breadth of common plants it contains. Clover? Dandelion? Cottonwood? You bet.

The volume's weightiness begs the question if every wild plant is medicinal. The answer, of course, is "no", but it does speak to the treasure trove of value present in our local flora.

Interest in medicinal plants, or herbal medicine, is on the rise, a phenomena that fits well in our "Do-It-Yourself" era. The average non-chemically treated lawn contains a surprising plethora of medicinal plants, for free!

Most plants listed in our field guide have been used as traditional remedies for centuries by Native Americans or European settlers. Part of the appeal of medicinal plants is rediscovering these jewels in our backyards. Learning about our own rootedness in the land is compelling, offering an experience that connects us to our landscape.

Some people turn to herbal medicine when modern pharmaceuticals have not provided the solutions they seek, or do provide problematic side-effects. Another persuasive reason to consider herbal medicine is the overuse and decreasing effectiveness of antibiotics.

ful antimicrobial, antiviral, and antifungal properties; it may be worth giving these a try and saving antibiotics for truly severe infections.

HEAVY-HITTING PLANTS

The World Health Organization estimates that in 2008, 80% of the world's population used some form of herbal medicine.¹ In addition to long-standing tradition, the low cost of medicinal plants makes them a necessity for impoverished people around the globe that depend on them. Uninitiated Americans, however, may be more likely to view them as primitive and question their effectiveness.

But "plant-based" is not synonymous

with "light-weight" when it comes to medicine, evident in the many common pharmaceuticals that are derived from plants. Aspirin, for example, is derived from the bark of willow trees, which contains large amounts of salicylic acid and has been used for millennia as a pain reliever and fever reducer.²

Opium poppies are the source of the pain-killer morphine. Digoxin, a drug that is widely used to treat cardiac conditions like atrial fibrillation, is derived from the plant foxglove.

In 2001, researchers identified 122 compounds used in modern medicine which were derived from traditionally used plants,³ which may represent the tip of the iceberg for potential uses of medicinal plants worldwide.4

Considering what plants must contend with to survive, warding off hungry animals, nibbling insects, and encroaching fungi, coupled with the inability to run away, it's not surprising that they have produced their own suite of potent chemical compounds (or "phytochemicals") to defend themselves. When used by people, these compounds function in the body similarly to conventional pharmaceuticals.

Continued on page 4

Purple coneflower, or *Echinacea* purpurea, is a well-known medicinal plant with a long history of use, but studies of its effectiveness have produced conflicting results.

FUN FACT: "Echinacea" is derived from the Greek word for hedgehog, "echinos," which likens the plant's prickly orange center to a hedgehog's spines.





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Medicinal Plants

for the beginner

These plants require little to no preparation and are easily located in lawns or woods.

Plantain Originally from Europe, Native Americans called it "white man's shoe" because it seemed to follow settlers everywhere. Several species grows readily in lawns. Plant is antimicrobial and stems bleeding; treats stings, swelling, cuts, and splinters. Chop or mash the fresh leaves and place directly on affected area. Packed with nutrients, it's also a good "emergency food."

Jewel Weed This plant grows 3-4' tall in damp woods. Related to impatiens, its "jewel" is a small orange flower. A must -know for hikers, since it is the antidote to poison ivy and stinging nettle. Break open its hollow stem and rub the sap (which resembles aloe vera) on stings and rashes. Also reported to prevent poison ivy rash from occurring when used directly after exposure. Add entertainment to your hike: ripe seed pods explode when touched.

Stinging Nettle How can this plant be an irritant in one moment (see above) and medicinal soother the next? It turns out that those stinging spines protect leaves (from the nibbling of hungry wildlife and humans alike) that are packed with vitamins and minerals like iron. Cooking the young leaves like spinach will remove the sting, though wear gloves for the harvest! Leaf teas are used during pregnancy and to treat arthritis. Exposing joints directly to the string is reportedly effective in reducing arthritic pain.

for the more adventurous

If you're interested in growing or purchasing your own medicinal herbs, here are a few starters.

EChinacea Echinacea tops the BFEC list of plants you should know. We stock the BFEC garden and prairie with *Echinacea purpurea*, or purple coneflower, and recommend it to home gardeners for its drought tolerance, beautiful flower and benefits for bees and butterflies. Add its medicinal uses and its hard to beat. As a cold-fighting medicine, leaves, flowers and stems are used to make teas and tinctures. See page 4 for more information.

Lavender The essential oil of lavender is referred to by herbalists as "first aid in a bottle." A confirmed antibacterial, antifungal, and antiseptic, it is used to treat wounds and take the pain out of bee stings and insect bites. It is also used as a mild antidepressant and to treat insomnia and headaches.

Yarrow Yarrow is a "weed" that grows in fields and pastures (look for it on the edge of BFEC prairie). Its fine, feathery foliage is topped with dozens of tiny white blooms. It is used by herbalists as an antiseptic, anti-inflammatory, and astringent. Like lavender, it's a great first-aid herb; yarrow tincture is used to relieve stomach cramps and indigestion, reduce fever, slow bleeding, and heal bruising.

for the curious

An additional sampling of common culinary or wild medicinal plants.

Thyme - this antimicrobial herb is used to treat chest colds and as a disinfectant in cleaning products.

Chickweed - a prolific weed in the garden, it's added to salads for a vitamin kick or used as a poultice on wounds.

Dandelion - entire plant is used as food or medicine. Root reduces cholesterol, and leaf is a diuretic and nutritious.

Hawthorn - small tree or bushy shrub used for lowering cholesterol and blood pressure. **Elderberry** - large shrub with dark berries used to make wine and to treat flu and colds; popular in Europe. Berries may be toxic before fully ripe.

Red clover - excellent source of vitamins & minerals; blossoms are prepared as tea to treat repiratory problems, eczema, menopause, and tumors.

BURDOCK - reviled for its tenacious burs, the roots of this weed are edible (a common vegetable in Japan) and used to treat skin problems and possibly fight cancer.











NOTE: While the plants listed here are generally considered safe, it is best to consult with a health care provider (preferably one knowledgeable about botanical medicine) for guidance. Please keep in mind that "natural" does not equal "safe," and that like conventional medicines, herbal medicines can have side effects and interact with other medications.

Creature Feature: **The thing about Squirrels!**

A lot of the time we aim our creature feature at the unusual, awesome, ferocious or bizarre. Much like reality television: it sells. Sometimes though, I fear we overlook the profound amongst the mundane. So this time around, let's look past the clawed and armored snapping turtle and the toothless moron hollering and leaping onto its back... to the cheers and pistol shots of his entourage... ugh... and focus on something more 'everyday': the noble squirrel. The Eastern Gray Squirrel actually.

The BFEC provides a home for three distinct types of tree squirrel, one type of ground squirrel and one species of flying squirrel: Gray Squirrels, Fox Squirrels and Red Squirrels are the climbers; Thirteen-lined Ground Squirrels annoy gardeners and the seldomseen Flying Squirrel rules the night sky in a series of short, low velocity sorties.

All of these squirrels belong to the family **Sciuridae**, a group of mammals that branched off in the Eocene, between 35 and 40 million years ago when many modern mammals were putting down evolutionary roots. It represented the trend of smaller bodies typical of this relatively warm period of pre-history. This large set of creatures includes tree squirrels, ground squirrels and flying squirrels as well prairie dogs, marmots (think woodchucks...) and chipmunks.

Members of the squirrel family originated in Africa, Eurasia and the Americas and today live on every continent save Antarctica. The adaptability of this family is admirable (unless you're the continent of Australia and sick of un-invited 'visitors') and the 285 distinct species known today live in every type of habitat save the very driest deserts and most extreme Polar Regions.

Back to the squirrels you and I ignore

Eastern Gray Squirrel At a Glance

SIZE Just under to just over 1 lb. Between 9-12 inches from head to rump with another 7-9 inches in that big, bushy tail.

LIFE SPAN Up to 20 years in captivity but far less in the wild depending on habitat; it's possible that a minority of squirrels pass their first birthday in areas of heavy automobile traffic.

DIET Nuts, seeds, fruit, insects, green bark, fungi and shed antlers or bone for minerals.

PREDATORS Humans, coyote, hawks, owls, raccoons, snakes, domestic dogs and cats.

ACTIVITY Crepuscular, they move around mostly in the early and late periods of the day. They do not hibernate.

every day, the Gray Squirrel is the most plentiful- especially on Kenyon's campus and anywhere near a discarded Cheeto.

Eastern Gray Squirrels are Ohio's second largest squirrel and are, not surprisingly... gray. They often have lighter fur on their bellies and around their eyes and can sometimes carry a reddish-brown tint on their back as the predominantly gray hairs there may have reddish ends.

Gray squirrels thrive naturally in large expanses of woodland; the more mature to middle-aged hardwoods the better. Considering Ohio's pre-colonial past as a forest state, it is not surprising that Gray Squirrels were amongst the most abundant creatures encountered by early settlers. At that time, they were a bit harder to ignore. Some accounts refer to Gray Squirrels occurring in "armies" that could take "weeks" to pass through an area.

Like bushy tailed locusts, the Gray Squirrels did not make a lot of bi-pedal friends during the growing season and early attempts at agriculture could be trying for the newcomers. Always thoughtful and measured in their responses to natural phenomena, the settlers sat down and came up with a reasonable plan to live peacefully in their new, squirrel-infested home. After careful discussion, a law was passed in Ohio that mandated a number of Gray Squirrel hides that must be turned in with a person's tax payment. By 1885, laws were passed to protect the few remaining squirrels in the state.

Gray squirrels make their livings in and amongst trees, where they meet, court, raise young, collect food and nest. When you see Gray Squirrels running up and down trees in pairs or threes, it is likely that you're observing a courtship ritual. Once a mate has been selected, the female squirrel will



RANGE All of Ohio, year-round residents

REPRODUCTION Mates December-January or May-June with 2-3 young born in February - March or July -August.

FUN FACT: Gray Squirrels are one of the only mammals that can descend a tree headfirst. To do this, they turn their hind paws almost 180 degrees so the claws can better grip the bark.

ARE MEDICINAL PLANTS EFFECTIVE?

Thought-provoking as this reasoning may be, determining the effectiveness and reliability of herbal medicine can be confusing to the average consumer. The Food & Drug Administration treats herbs as food supplements, and manufactures are not permitted to make statements about their effectiveness. They remain unregulated, which can make them seem suspect.

If you found yourself facing a shelf-full of bottles from various manufacturers of a medicinal herb, it would indeed be hard to compare or verify plant sources and the amount of active compounds they contained.

And in general, far less scientific data exists about the effectiveness of herbal medicines than conventional drugs. Pharmaceutical companies have been less incentivized to study medicinal plants than their own exclusive formularies, since they stand to profit far less. But herbal medicine is getting its due in places like Germany, which is generating research and where herbal medicines are offered along-side con-

Squirrels... continued from page 3

retire to a leaf nest to bare and care for her young. Male squirrels, rodent-like in their attention span, generally scurry away shortly after reproduction. Way to go Y chromosome... Breeding generally occurs twice a year. Gestation lasts about 44 days and litters of 2 -3 (as many as 6) young are born from February to March or July to August.

Arriving blind, deaf, hairless and toothless they are completely dependent on their mothers for at least seven weeks. Young squirrels' eyes begin to open after about five weeks and they begin sampling foods like green bark several weeks after that. Generally, it will be at least ten weeks before they descend to ground level and as many as fifteen before they are truly independent. Even so, it is not uncommon to have a squirrel family stick together for the better part of a year.

Like many rodents, Gray Squirrels reach reproductive maturity quickly. Young males are ready to bump and run at nine to eleven months and feventional medicines.

In 2002, the U.S. National Center for Complementary and Alternative Medicine of the National Institutes of Health began funding clinical trials of the effectiveness of herbal medicines. But like studies conducted by other organizations, its methods have been criticized for reasons like those listed below for one of the most well-known medicinal herbs in the U.S.

A CASE STUDY: ECHINACEA

Echinacea purpurea, or purple coneflower (see photo page 1), is a flowering plant that is native to Midwestern prairies and popular in home gardens. (We proudly feature it in the BFEC prairie and wildlife garden). You have likely passed boxes of tea bearing its name on grocery store shelves. It is reported to contain compounds that are antimicrobial, antifungal and boost the immune system.

Used by Native Americans and European settlers to fight infections, it was included in the U.S. National Formulary from 1916-1950.⁵ Its popularity in

the United States declined after the introduction of antibiotics, though it is currently very popular in Germany.

Echinacea is most commonly used to reduce the severity and duration of the common cold. But studies of its effectiveness have produced conflicting results. Criticism of the studies' nonstandardized preparations help illustrate the complexity of the issue.

For instance, since the flower, stem, and roots contain different compounds, which were used? How was the plant harvested, and did the plant's maturity affect strength of active compounds? Did its freshness (or lack thereof) alter its effectiveness?⁶ Further refinement of studies may lead to more answers.

YOU ARE WHAT YOU EAT

Ok, so you've decided to try Echinacea for yourself, but how? While some herbal medicines are available in pill form, others appear as teas, tinctures (concentrated extracts), or salves.

Another way to think about medicinal plants, however, is as food. Eating plants loaded with antioxidants or

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males' single motherhood can begin as early as six to eight months. That aside, Gray Squirrels are amongst the most social of Ohio's squirrels and several squirrels may share a leaf nest or tree den. These nests, known as 'drevs', are often visible in the fall as leaf and twig balls constructed high in the branches of a hardwood tree. Communication, both vocal and visual, is common amongst Gray Squirrels and can be used for courtship, defense or as a warning to other squirrels. Interestingly, observations suggest that modes of communications between squirrels are impacted by their surroundings with squirrels in noisier, urban and suburban areas preferring visual to vocal communication.

Like other tree squirrels, Gray squirrels are 'scatter-hoarders'. The collect and stash thousands of food caches each year. Depending on available resources, these caches may last a few days or several months. With remarkable spatial sense, squirrels can locate a cache based on landmarks from a distance and smell when within a few inches. That being said, a squirrel never collects each and every cache and those left undiscovered have the chance at germinating and creating the next generation of trees. Squirrels can create 'fake' caches if they believe a rival hoarder is watching them. They will dig and cover a hole while concealing the nuts or fruit in their cheeks.

Gray Squirrels may not be as regal as a Red-Tailed Hawk or as mysterious and rare as the Eastern Hellbender salamander but I hope we can all agree that there's more to these oft-ignored neighbors than meets the eye. Plus their scientific name: Sciurus carolinensis means "Shadow Tail of the Carolinas" which sounds like some kind of ninja mated with a Native American warrior... don't look into it too much... The most likely interpretation from the Greek would be more like "lazy rodent from the Carolinas that basks in the shadow of his massive tail... with a Cheeto...." SQUIRREL!!

of the BROWN

New for Summer: Signage & Student Staff

It wouldn't be summer at the BFEC without the bright colors and buzzing bees of the wildlife garden, nor the Kenyon student staff members who help care for it under the supervision of Facility Assistant and gardener extraordinaire, Jill Kerkhoff.

This summer we're pleased to count (pictured left to right) Edna Kemoi '16, Chris Kwan '16, Kat Goodwin '15, and Abbey Cheney '14 among our ranks. These brave students will also assist Dave Heithuas, Facility Manager, with preserve management projects like unburying 3,000 oak saplings (planted four years ago on the hillside above the prairie) from the multi-flora rose vines. You'll also see them out and about giving a hand with our programs and Nature's Keepers Outdoor Adventure camp.

Students also give BFEC staff a big assist during the school year conducting outreach with other Kenyon students and assisting with public events.

Also new for summer: six educational panels (pictured in part above) have been installed near the resource center to orient visitors and share information about how our landscape has changed (and continues changing) over time. The concrete ring in which they were installed mimics the maximum size of mature sycamore trees (15' in diameter) which once graced Knox County and may again in the future.

Sparing the Tomato Hornworm

Much reviled by gardeners, the tomato hornworm is a caterpillar that loves (you guessed it) tomatoes. In true "very hungry caterpillar" style, the tomato hornworm and its cousin, the tobacco hornworm (right), leave gardeners dumbfounded when they discover yesterday's healthy tomato, potato, or pepper plant stripped of its foliage.

If your first instinct would be to destroy the bug, consider that this mammoth caterpillar turns into a magnificent sphinx moth with a four-inch wingspan (above). It uses its impressively long, straw-like mouth (called a "proboscis") to drink nectar while hovering over night-blooming plants.

The moth lays eggs on plants in the nightshade family, which have round or star-shaped flowers. This *does* include your tomato plants, but also wild species like the jimsonweed above. If you decide to spare a tomato hornworm's life, simply move it to a spot far, far away from your garden, preferably with other nightshade plants available.

FUN FACTS:

to by Betsy Betros, vi

asbutterflyranch.con

The hornworm caterpillar gets its name from the "horn" found on its rear end. Though it looks potentially painful, the horn can not sting curious humans.

The sphinx moth owes its name to the hornworm's defense posture. It raises the upper third of its body and tucks its head in a stately, sphinx-like position. The hornworm pictured here is striking this pose, even while hanging upside down.

Tomato and tobacco hornworms spend the winter underground. Sensitive to the change in daylight that comes with fall, they burrow in loose soil to form a chrysalis, where they will remain until emerging as a moth in late spring.

Hornworms are not without natural enemies. If you find one covered with tiny white sacks, you have discovered the cocoons of parasitic wasp larvae. The larvae will devour the caterpillar as they develop.



quinquemaculata) has V-shaped

sexta) pictured above has diagonal white lines on its side.

marks on each side, while the tobacco hornworm (Manduca



Calendar of Events

All events are free, open to the public, and start from the BFEC Resource Center unless stated otherwise. 9781 Laymon Road | 740-427-5050 | dohertyh@kenyon.edu | http://bfec.kenyon.edu

Family Adventure Days - First Saturdays, 1-5pm. Join us for a different adventure every month! Check out a display, chat with a naturalist, go on a scavenger hunt, or try a craft. Visitors are also free to explore the center, visit our live animals, peruse our library, or borrow nets and binoculars.

Aug. 3 Kokosing Creeking

Meet at the Laymon Road canoe access parking lot. Cool your heals in the Kokosing River! <u>At 2pm</u>, gather for a short guided walk and wade in to discover the diverse life of the state scenic river and how it is used to measure the river's health. All ages welcome. Please wear water shoes or old sneakers for walking in water. *From down town Mt. Vernon, follow Route 229 east four miles. Turn right onto Laymon Road, and immediately right into canoe access parking lot.*



Sept. 7 The Bees Knees

bbbuuuuzzzzzz – the bees are here! Did you know that there are 500 bee species in Ohio? Explore their many shapes and sizes at our bee exhibit with Naturalist & Professor Emeritus of Biology, Ray Heithaus. See then drinking in the food and color of our garden's flowers while they last. Make-n-take a mason bee house.

Oct. 5 Book it! Trees & Leaves

Before the leaves fall, follow a scavenger hunt to find their different shapes and sizes, and take a memory of the forest home by authoring your very own book of leaf rubbings.

In Search of Salamanders - Thursday, July 18, 6:30pm

Meet at the New Gambier Road Trailhead. Explore the BFEC's northern trail system, hiking through field and forest before arriving at Wolf Run. Bring your water shoes for this portion of the program as we hunt for salamanders on the stream's edge. Total hiking distance: 2 miles.

Nature's Keepers Outdoor Adventure Camp - July 31 through August 2

Nature's Keepers is an outdoor day camp that focuses on having fun while connecting with and learning about nature. Activities include creeking, hiking, river tubing, and nature related crafts and games. Open to children who have completed grades 3-5. Registration required, space is limited. Call 740-427-5052 or email dohertyh@kenyon.edu.

Garden Tour - Sunday, September 8, 2pm

While gardens often focus on the hot colors of summer, early fall offers its own brilliant pallet. Tour our garden with Naturalist Ray Heithaus to see late-blooming native plants and the many pollinators that they attract as these insects prepare for winter. Co-sponsored by Owl Creek Conservancy.

Explorer's Guide to the Solar System <u>&</u> Miller Observatory Open House

Friday, September 27th, 8:00pm. Explore the solar system, which stretches our minds and excites our imaginations like nothing else. This slideshow with amazing NASA photography will be presented Richland Astronomical Society member Chad Ruhl, and is best for children ages 8+. Then see parts of our solar system a little closer at the Miller Observatory Open House, starting at 9:00pm with Professor of Physics Paula Turner.

Fall Harvest Festival - Saturday, Oct. 19, 2-5pm

Celebrate the season with this FREE family event. Activities include wagon rides, live music, kids harvest races, farm animals and produce, bonfire, cider press, pumpkin decorating with OSU Extension Master Gardeners, and the Knox County Nature Photography Contest show.

Calling All Photographers!

Knox County Nature Photography Contest

Get your cameras rolling now for this community contest celebrating our local landscape. Prizes awarded in children's (ages 15 and below) and adult divisions. Tentative submission deadline is Oct. 14t^h; contest show will take place during the BFEC Harvest Festival on Oct. 19th. Contest rules will be available in August.

Thank You to...

Our Members April - June

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In the office, classroom, gardens and on the trails: Steph Harman, Kay Hoppe, Sarah Goslee Reed, Kenyon LandLords

Earth Day Festival: Zach Frazee, Steph Harman, Rebecca Metcalf, Noah Phillips, Sarah Goslee Reed, East Knox H.S. Honor Society, Knox Community Hospital volunteers, Medical Reserve Corps, Kenyon College Chapter of Theta Delta Phi

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Field Trip Leaders: Thank you to the 40 Kenyon student and community volunteers who helped us bring over 400 elementary students to the BFEC this spring.

Earth Day Challenge Marathon: Our sincere thanks to the 250+ volunteers whose contributions made the event possible!

Continued from page 4 ...

compounds that reduce cholesterol is one way to maintain good health or address the root of chronic illnesses. Many well-known culinary herbs are on medicinal plant lists, having developed (in theory) into cooking herbs of choice because their antifungal or antibacterial properties helped preserve meat prior to the days of refrigeration.

When exactly do herbs like garlic and basil cross the line from being more of a medicine than food? The answer lies in how often you use them. Either way, you have good reasons to take advantage of summer's tasty treats.

RESOURCES

Below are resources that I discovered while researching this article, though they are not intended to provide the final word on the topic. Please keep in mind that "natural" does not equal "safe," and as with any medication, it is best to consult a health care provider, in this case one that is knowledgeable about herbal medicines.

- For general information, see the University of Maryland Medicine Center's Complementary and Alternative Medicine Guide: umm.edu/altmed
- Well-known herbalist Rosemary Gladstar has recently published "Medicinal Herbs: A Beginner's Guide" for growing and preparing medicinal plants.
- Companies like ConsumerLab.com, which "tests the purity of health and nutritional products," have popped up in the absence of regulation to try to provide quality control information to consumers.

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Now is the time to join!

There are many reasons to become a member of the BFEC, including the satisfaction of knowing you're a part of critical education and conservation programs. Receive preferred access to popular workshops, a hard copy of our newsletters, and 10% discount on bird seed. Thank you for your support!

Membership level: Student \$20 Individual \$35	Name
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Amount enclosed:	State, Zip Code
 My check, payable to Kenyon College, is enclosed Please bill myVisa or MasterCard 	Telephone
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Mail to: BFEC, P.O. Box 508, Gambier, Ohio 43022	Family Environmental Center at Kenyon College is a 501c(3) non- profit organization.

Brown Family Environmental Center at Kenyon College

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Our Mission

The BFEC at Kenyon College exists to engage Central Ohioans of all ages with nature, and to support the goals of Kenyon College by conserving the natural diversity of the Kokosing River valley and providing opportunities for education and research.

Facílíty Manager David Heithaus **Program Manager** Heather Doherty Facility & Program Assistant Jill Kerkhoff

Upcoming Events

Thursday	July 18	In Search of Salamanders
Saturday	Aug. 3	Kokosing Creeking Family Adventure Day
Saturday	Sept. 7	The Bees Knees Family Adventure Day
Sunday	Sept. 8	Wildlife Garden Tour
Friday	Sept. 27	Explorer's Guide to the Solar System <u>&</u> Miller Observatory Open House
Saturday	Oct. 5	Book It! Trees & Leaves Family Adventure Day
Saturday	Oct. 19	Fall Harvest Festival

Nature's Keepers Outdoor Adventure Camp

July 31 - August 2 Space is still available for 3rd through 5th graders to have fun connecting with nature while hiking, creeking, river tubing, creating art and playing naturerelated games. For details, call 740-427-5052 or email dohertyh@kenyon.edu.

Details inside & at http://bfec.kenyon.edu

DATE MAILED: July 2013 CONTAINS DATED MATERIAL

