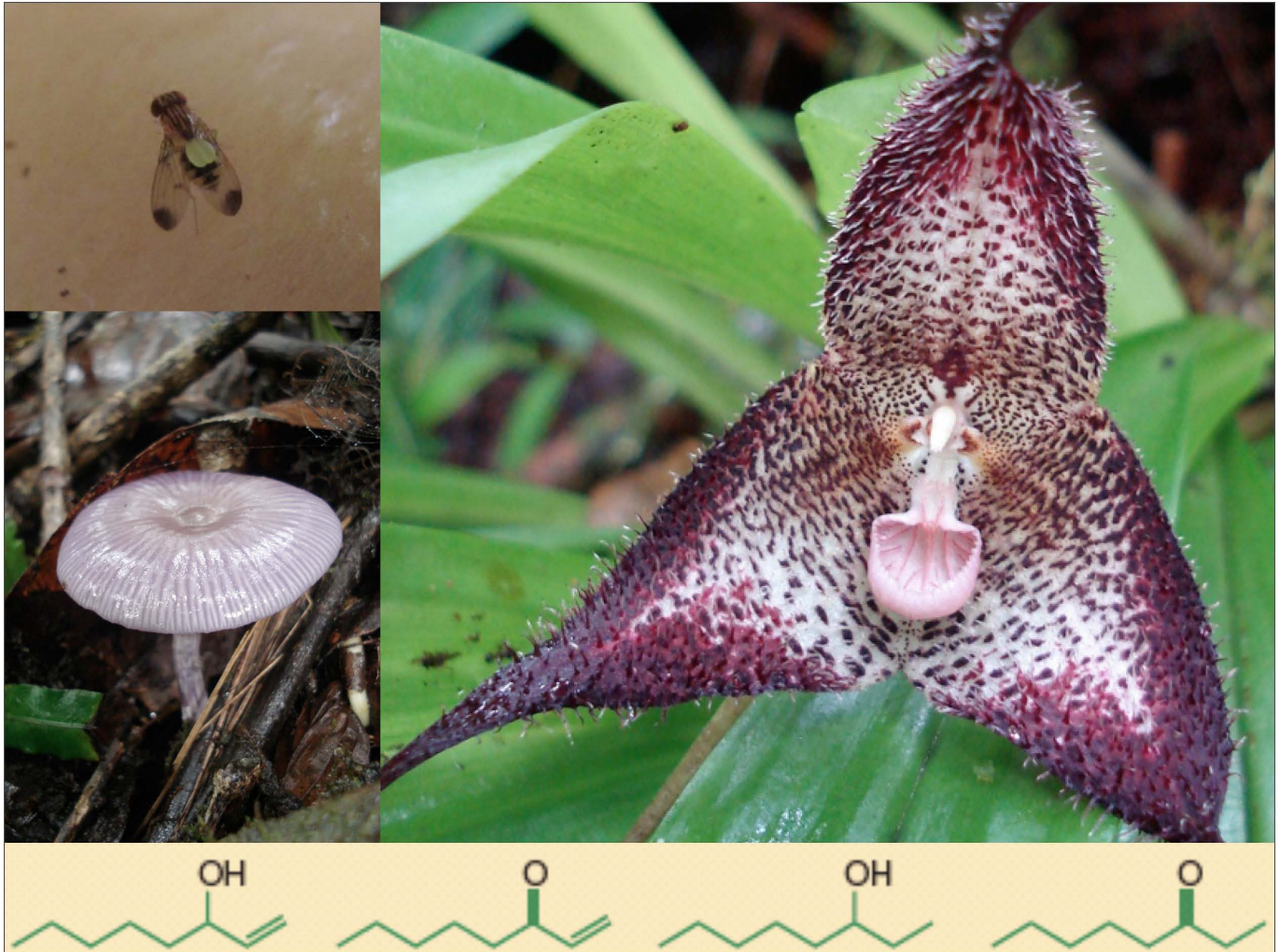


Nature Trails

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The fly, the mushroom, the orchid, and the fragrances.

***Draculas* in the Mist: Fungal Mimicry in Orchid Pollination**

Tobias Policha

Ph.D. Candidate in the Institute of Ecology and Evolution

**Friday, 21 October 2011, 7:30pm, Room 100
Willamette Hall, UO Campus**

Tobias Policha, our speaker this month, has crammed a lot of experiences into his life already, even though he's still a graduate student. A list of places where he has been involved in things botanical, either as student, laborer, or instructor, includes Oregon, California, New York, Washington, Pennsylvania, New Jersey, Maine, Michigan, Mexico, Germany, Canada, and now Ecuador.

Currently, Policha is working on his Ph.D. in the Institute of Ecology and Evolution, here at the University of Oregon. His thesis advisor is Professor Bitty Roy, who, as many ENHS members will recall, has also spoken to us. Policha's thesis research project will be the subject of his presentation. It involves a fascinating case of botanical deceit: the orchid genus *Dracula* has several species that mimic mushrooms so that the same flies that feed on the mushrooms will pollinate the orchids.

But before going into more detail about what he'll be telling us, here is a little more of Policha's history and how he came to reside in Eugene.

He was born in Edmonton Alberta, and learned to love gardening at an early age. He said "There are pictures of me in a garden when I was this high", holding his hand about three feet above the floor. His mother loved to garden, and passed that love to her son (would that trait be dominant or recessive?). When he was 13 they moved to a large farm in southeastern Pennsylvania, where he worked part-time, first in an orchard and later in the dairy. After his junior year Policha, on his own, moved to Toronto, where he finished high school and got involved in poverty-related activist activities. He worked on a vegetable farm in upstate New York for a short while, and then spent time in Baja California, Mexico, working in an exotic garden.



From Mexico Policha hitchhiked up the coast, arriving in Eugene in February 1999. He hadn't planned to stay, but fate ruled otherwise. He saw a flier about a work party and decided to go. He was the only one who showed up, and somehow out of that encounter came the Food not Lawns program, in which he was active for some time. His own yard is a demonstration of how to do it.

His wanderlust satiated for a while at least, Policha stuck around. One common thread among the several things he has done in Eugene is growing plants for food. He managed a city garden, and got involved in

seed saving and composting. Another thread is sharing his love of and knowledge about plants with others. He has led educational walks in the Mt. Pisgah Arboretum, on the Ridgeline trail, in Hendricks Park, and in the Cascade Mountains.

All this work with plants got him interested in more classical botany. He entered Lane Community College in 2001 to study with Gail Baker, and also to learn Spanish (he is now bilingual). Thus came about the beginning of his formal education. After his stint at LCC Policha enrolled at the University of Oregon, where he was awarded his B.S., with honors, in biology with a biochemistry minor, in 2007. He received his MS, also from the U of O, this past spring.

Now back to *Dracula*. These orchids can be found from southern Mexico to northern Peru, but their center of diversity is in the Cloud Forest of the Ecuadorean Andes. Policha had the great good fortune to be able to spend 5 months back in 2010 in a privately owned section of this region, gathering data. (Getting to his research site involved a five-hour mule ride.) He observed flies visiting both orchids and mushrooms, counting their visits. He collected flies and mushrooms, and extracted samples from both mushrooms and orchids.

The flies are relatives of the fruit fly, and are about that size, so they're hard to identify on sight. He's been working with an entomologist at the American Museum of Natural History on the fly specimens he brought back; there are about 30 different species, the majority of which have never been described.

These orchids not only look like the mushrooms the flies like, they smell like them. So Policha wants to learn about the fragrance components contained in the samples he collected. In the first part of this September he spent two weeks at Cornell University, collaborating with someone expert in gas-chromatography/mass spectrometry, analyzing his samples both from mushrooms and orchids. His results are tantalizing, and I'll not give any of his story away. You'll have to come and listen.

Policha already has a book to his credit: *Plants of Mindo: A Guide to the Cloud Forest of the Andean Choco*. He is responsible for not only the text – in English and Spanish – but also the photographs. There are many of these, and they are excellent. This talent, coupled with his many years of teaching experience and his fascinating research project, promises us a good story, well illustrated, and well told. Please join us on Friday, 21 October 2011, at 7:30 pm in room 100 Willamette Hall, on the University of Oregon Campus to hear Tobias

Policha's talk, *Draculas in the Mist: Fungal Mimicry in Orchid Pollination.* John Carter

Treasures Ignored, Forgotten, or Worse by **Reida Kimmel**

The newts are on the move. The very day the rains began, just a little drizzle really, I found several trudging to winter quarters in the woods above the pond. They're such small creatures. Their yearly migrations from the pond in summer or fall and to the pond in spring must be the equivalent of me walking to Salem twice a year. The terrain's a bit rougher too. Newts are great fun to watch. They have such a prehistoric look to them. They walk with the basic primitive gait of the earliest land-living vertebrates, and when they swim along the pond's shore, moving in graceful s-shaped curves, they resemble those even-more-ancient limbed vertebrates who had yet to emerge to forage on dry land. But I haven't always been interested in, or even aware of, newts or any other amphibians except maybe 'spring peepers'. I have to confess that though I grew up in a fairly nature-conscious home, with a father who knew a lot about the woods, and a mother who was a lover of wetlands and a low-key bird watcher, I never saw a newt until I was on my honeymoon, taking my first hike ever, when we encountered such a lovely animal, a 'red eft' [*Notophthalmus viridescens*], on the trail at our feet.

It was Jim Kezer, UO professor, passionate teacher and staunch supporter of the ENHS, who taught us about Oregon's salamanders. In October after the rains started, we would go with him to search under rocks and logs for all the wonderful species. In those days there were beautiful old forests along Wolf Creek Road, Siuslaw River Road, and all the way to the Coast, now lost, victims over the past thirty years of the timber beast's greed. It was easy to find salamanders. I hated the collecting, the fact that our finds would die. If I found a salamander, I did not mention it. Now, like their habitat, salamanders are much scarcer, but Chuck still looks every time we go walking in the fall. We never collect.

One of the most charismatic of all our native amphibians is the Pacific giant salamander [*Dicamptodon ensatus*]. Its dark body is irregularly spotted with black, good camouflage for an animal that grows to be six to twelve inches long. Those *Dicamptodons* that metamorphose live in damp woods near lakes and streams, often hunting out in the open on the forest floor. Unlike any other salamanders they vocalize. I've never heard the sound, but it is said to be a short sharp bark. Their appetites match their size. Large insects, other

salamanders, garter snakes, and even mice fall victim to this voracious hunter. Interestingly, many *Dicamptodons* do not metamorphose, but remain in the streams all their lives. These neotenuous giant salamanders grow much bigger than their land dwelling brothers, and feed on all sorts of aquatic life. It's fun to attract these salamanders to the streamside with bits of meat or fish innards and watch them feed.

This summer when Chuck and I were out looking for the larvae of a freshwater sculpin [*Cottus perplexus*], the very friendly 'host' of the campground offered to show us a trail along the rocky creek where we could wade with our nets in undisturbed water. He chatted on and on. Then he said something so awful that it has haunted me for months. He asked if we knew about 'that big thing with the gills' that lived in the creeks. Then he told us that 'it' ate trout and that back in the days when he fished, he smashed every one that he could find. He was pretty vivid about the executions. We tried to tell him how wonderful Pacific giant salamanders are, about what they eat, and how little of it is baby trout, but convincing him was obviously hopeless. I kept brooding about the old man and his opinions. Was he teaching others to kill *Dicamptodons*?

How can we spread the word that however lowly and slippery our forest- and water-dwelling creatures are, their lives are precious, and nature's balance, though often seeming cruel, is not to be tinkered with. Of course the answer is education. Scientists are much more restrained in their collecting practices than they were even a few decades ago, and they teach this respect to their students. But education about nature cannot begin too early. If there is to be any hope for our planet, we have to raise a generation that approaches the natural world, not with fear and antagonism, but with excitement and curiosity. We are fortunate in Eugene to have many programs for children in our schools and our parks. Think of Nearby Nature, the Cascade Raptor Center, the school tours and events at the Arboretum. These great organizations can really use your donations or your help as volunteers. You might not know about the Audubon Society's program called Audubon Adventures, a science-based environmental education curriculum that classroom teachers can use to get kids excited about the natural world. [Contact jtrawle@comcast.net or call 541-515-6244 if you would like to sponsor a classroom.].

If you want to get acquainted with some native denizens of Oregon's woodlands, stop by the ENHS booth at the mushroom show. Andrew Sermak will have several species of lovely, engaging, salamanders

in aquaria where they will be very easy to see. And bring along your friends and family.

President's Corner

Ethical Connections By Tom A. Titus

The first soaking rains of autumn have come, washing over yellowing hardwoods, dripping from green tips of conifer needles, carrying away the dust kicked up in the exuberance of summer, carrying away the birdsong. The forest is silent—mostly. But if you are very still, if you quiet your mind and listen carefully in the spaces between heartbeats, listen with your entire body, you can feel the faint rustle of fungi pushing upward through damp duff, feel the swish of a salmon's tail and the rush of air over goose pinions, feel the swell of desiccated moss cells plumping with water. In the quiet instant between breaths you can feel the new moisture opening the pores of your skin, drinking in October until you are no longer just you.

When we breach the boundaries of self, experience this level of personal dissolution and know the connectedness among all things, our view begins to change. The partitions in our lives—economy, environment, religion, politics, nature, nurture, state, country, minute, hour, mine, yours, us, them—can be seen for what they really are; arbitrary constructs that help us to make sense of, talk about, and divide up our anthropocentric world. These human ideas of how the world works do not necessarily translate into reality. In the *real* world, the one with chanterelles emerging through living soil dampened by rain that rose from a tropical ocean thousands of miles away to fall on a forest of needles green with chlorophyll using light energy from a star 93,000,000 miles distant to make the oxygen that we breathe while walking about the forest in search of chanterelles, those divisions are meaningless.

This connectedness is the fertile ground in which the seeds of Aldo Leopold's Land Ethic were germinated, the capstone essay of *A Sand County Almanac*, published in 1949, the year after his death. Leopold saw the world as it really is—people connected to one another in human communities that are supported by healthy ecological communities. He understood that economics and all other human-derived activities are derived from and must be subservient to the needs of the Earth. But Leopold's genius was in taking this biological reality one giant step forward, arguing that the choices we make with regard to our physical and biological place fall within the purview of ethics. Morality. Perhaps Leopold's most famous sentence:

"That land is a community is the basic concept of ecology, but that land is to be loved and respected is an extension of ethics."

We can function as moral humans only when we act upon our connectedness to one another. Leopold challenges us to extend this concept of morality to become a moral species making moral choices with respect to both our fellow humans *and* our place in the community of the Earth. Thus, to act as moral citizens of the biosphere we must become fundamentally connected to our ecological community as well as to our fellow humans. This is a tall order in a world that emphasizes the rights of individuals and extends those rights to corporations.

Perhaps things really do come in their own time; this might be especially true of ideas. I was first introduced to *A Sand County Almanac* in my early twenties, and while one could say then that I *knew of* Aldo Leopold, it would also be fair to say that I was too young to really *know* Aldo Leopold. My youthful detachment from Leopold's famous treatise had little to do with chronological age. I was simply too unsettled, too immature for his wisdom to penetrate deeply. But the seed was planted, and when I reread the *Almanac* decades later, Leopold's words formed deep roots.

If there is a time really to know Aldo Leopold, this implies that there is also a time when we are less receptive. We cannot help but be influenced by the dominant culture of our time, and there is little about our current paradigm of exploitation and economic growth in the name of material comfort that is congruent with Leopold's Land Ethic. While our separation from the land may have begun with the advent of agriculture and civilization, this was recent when viewed from a vantage point that encompasses all of human history. So I choose to *believe*, and I use that word advisedly because it really may be an article of faith, that millions of years of evolution have etched into our genes a need for people and the land as deep and immutable as the rocks that have become our bones that carry us about in this green world. By extension I also believe that bringing Leopold's Land Ethic back into the broader public consciousness is a process of rediscovering the knowledge that we already carry in the coiled memory of our chromosomes. Perhaps our conscience, that ineluctable "something" that causes us to act, the ecological moral imperative of which Kathleen Dean Moore writes and speaks, will turn out to be a product of our long evolutionary history in the biosphere that we now must be compelled to save.

Yet the pressing question is, are we ready? Has the time now come for a broader appreciation of Leopold's Land Ethic? Have we now grown beyond our self-centered, childlike irresponsibility? Have we reached a level of maturity that will allow us to deconstruct the walls that we have placed around ourselves, remove that bubble of entitlement within which we exploit the biosphere? Can we drop the shield we have raised that separates us from true ecological awareness? Are we capable of unclenching our small hands?

I am not sure. In darker moments I wonder if we have gone too far down the wrong road, not in the sense that our degraded ecosystems are now in terminal decline. The earth has a tremendous capacity for repair. Rather I wonder if the majority of humans have become terminally separated from the ecosystem that sustains us, to the extent that we have overridden our evolutionary capacity for regaining a true Land Ethic.

Of this I am certain: we will regain the capacity for ethical action only to the extent that we follow Aldo Leopold's lead and become our place, physically and

spiritually. This will require that we become a community of people, connected to our past, responsible to present and future generations; that we become our land by eating our own food, grown on this ground by people who live here; that we become our weather by being outside in real sunlight and real rain; that we become our forests by knowing that every breath of October air pungent with fungi is laced with oxygen made from the trees under which we stand. Surely this is the path forward. It *feels* right.

Further reading:

A Sand County Almanac, Aldo Leopold, Oxford University Press, 1949.

Moral Ground: Ethical Action for a Planet in Peril, edited by Kathleen Dean Moore and Michael P. Nelson, Trinity University Press. 2010.

Green Fire, a documentary film on the life of Aldo Leopold, will be shown 11 November, 7:30 pm in 150 Columbia Hall on the University of Oregon campus. Admission is free.

Out and About

"Out & about" is a periodical encouragement to Eugene Natural History Society members to get out and experience our magnificent Oregon.



Delicate mushrooms somewhere in Cascades

Don't ask where! Serious "shroomers" never reveal their best secret spots. But here's a hint - closed canopies in the old-growth forest are a good place to start. And don't curse that first soaking rain in the fall; head for the hills and enjoy the bounty of the forest. But if you're picking for the table, make absolutely sure you know what species you're about to eat! There are too many look-alikes that can kill you or at least make you wish they had.

David Stone

Events of Interest in the Community

Lane County Audubon Society

Tuesday, 25 October, 7:30 pm. Birding in Colombia, by Jim Regali. On October 25, Jim will show slides of his latest adventure. In March 2011, Jim, along with Dennis Arendt, Kit Larsen, and Roger Robb, enjoyed a birding adventure to northern Colombia. The variety of habitat, including the Caribbean Coast, the Guajira Desert scrub, and especially the Santa Marta massif, enabled the group to record many of the bird endemics known from this area. Join in experiencing this beautiful, bird-rich area of Colombia. Eugene Garden Club, 1645 High St.

Mount Pisgah Arboretum

34901 Frank Parrish Rd., Eugene, 97405. Located off I-5 Exit 189, 15 minutes southeast of Eugene. Call Peg Douthit-Jackson at 541-747-1504, email mtpisgjp@efn.org, or look at <http://mountpisgaharboretum.org/> to find out about current Arboretum activities.

Sunday, 30 October. 10 am – 5 pm. 30th Annual Mushroom Festival. The Mushroom Festival is co-sponsored by the Cascade Mycological Society and Lane Community College. The festival features several hundred species of local fungi, collected throughout western Oregon. Experts are on hand during the show to help with mushroom identification. This event is the largest mushroom display on the West Coast, and it includes a huge plant sale, a scarecrow contest, children's activities, hayrides, craft vendors, incredible mushroom-inspired food, fresh cider, music, wine, and more! Suggested donation \$5/person. Children under 12 free. Free shuttle service every hour on the hour from Civic Stadium.

Nearby Nature

For details call 541-687-9699 or email info@nearbynature.org.

Thursday, 20 October, 3-5 pm Nearby Nature Pumpkin Carving:

Help Nearby Nature carve 70-90 pumpkins for the Haunted Hike! We'll meet outside the Park Host Residence. Bring carving tools if you have them...we'll also share what we have. Call 541-687-9699 or email info@nearbynature.org to let us know you're coming to help.

Saturday, 22 October, 5:30-9 pm. 15th Annual HAUNTED HIKE. Join us for an evening of night creature fun and discovery. Go on a pumpkin-lit hike through Alton Baker Park and meet our costumed night critters—Bat, Owl, Raccoon, Frog, Moth, Beaver, and Spider! Back at the picnic shelter, enjoy creepy crafts, munch on tricky treats, and check out our amazing raffle. Pre-registration required: 541-687-9699. Event happens rain or moonshine. Cost: members FREE, non-members \$5 per person. Raffle items welcome—call 541-687-9699 to make a donation. Pre-Registration Require

Wednesday, 26 October. Track Town Pizza Pie Benefit Day Join us at Track Town Pizza at 1809 Franklin Blvd. on Wednesday, October 26 for a Nearby Nature PIE DAY in support of Nearby Nature's educational programs!

Important: Pizza coupons will not be available at the restaurant—you must bring your coupon with you to get a copy from our website. Make copies and share with friends!

Friday, 11 November, 8:30 am-3 pm. Nearby Nature No School Day Program: Time Travelers. Unravel the mysteries of Alton Baker Park! Discover 20-million-year-old fossils, create your own fossil imprint, and explode a volcano. Dig for dinosaur bones at the Science Factory's dinosaur exhibit and learn tales of the Kalapuya people. \$30 members/\$35 non-members, ages 6-9, maximum 12 kids. Register at 541-687-9699, ext. 2 or <http://www.nearbynature.org/programs/no-school-day-programs>.

Play in the Rain Day.

Saturday, 12 November, 10 am-3 pm at Mount Pisgah Arboretum. Come to Mount Pisgah Arboretum's White Oak Pavilion to join the fun at Play in the Rain Day! Local outdoor recreation and education organizations will come together to provide fun activities for you and your family. The day's activities will include tree-climbing, horses, nature crafts, hikes, hay rides, campfire cookery, a visit from Smokey Bear, native plants and more! Parking and all activities, including campfire food, are FREE! This event is sponsored by the Youth in Nature Partnership, a collaboration of non-profit and governmental organizations committed to increasing opportunities for youth to spend time in nature, including the Bureau of Land Management, the City of Eugene, Friends of Buford Park & Mt. Pisgah, Nearby Nature, Northwest Youth Corps, Mount Pisgah Arboretum, Willamalane Park and Recreation District, the United States Forest Service, and Willamette Resources & Educational Network (WREN).

Museum of Natural and Cultural History

Friday, 21 October, 5:30-6:30 pm. Oregon's Paisley Caves: Uncovering 14,500 Years of Habitation. Brian Hockett.

Friday, 4 November, 5:30-6:30 pm. Lost and Found: The Search for a Rogue Valley Indian War Battle Site. Drs. Brian O'Neill and Paul Baxter.

Native Plant Society of Oregon, Emerald Chapter

For information on current activities contact ngap@emeraldnpsoregon.org or look at <http://emerald.npsoregon.org/>
Monday, 17 October, 7:30 pm. Melanie Gisler of the Institute of Applied Ecology presents "A Tale of Two Sidalceas." You may ask, "What are Sidalceas?" Melanie talks about two rare and strikingly beautiful plant species of the mallow family: one native to tidal flats along the northwest coast and the other found only in the Willamette watershed. Location: EWEB Training Room, 500 E. 4th Avenue, Eugene.

WREN

For information about upcoming events call 541-338-7047 or email info@wewetlands.org. You can also go to their website: <http://www.wewetlands.org/>

Emerald Chapter of the North American Rock Garden Society

See <http://nargsemerald.org/> for information on upcoming events.

Beginning this year you can get an online full-color version of NT rather than the traditional paper copy. There is a place on the membership form for you to indicate your preference. If you leave

We welcome new members! To join ENHS, fill out the form below. You will receive *Nature Trails* through December of next year. Membership payments allow us to give modest honoraria to our speakers, as well as to pay for the publication and mailing of *Nature Trails*. Our web address: <http://biology.uoregon.edu/enhs/>

MEMBERSHIP FORM

Name _____
Address _____
City _____ State & Zip _____ Phone _____
E-mail (if you want to receive announcements) _____
I (we) prefer electronic copies of NT rather than paper copies. ___ Yes ___ No
If yes, email address (if different from the one above): _____

ANNUAL DUES: Contributing 20.00
 Family 15.00
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Annual dues for renewing members are payable in September. Memberships run from September to September. Generosity is encouraged and appreciated.

The following information is voluntary, but appreciated:

Would you like to: ___ lead field trips ___ teach informal classes ___ work on committees?

What would you like to hear a talk on? _____

Do you have special experience in natural history: _____

INTERESTS: ___ Archaeology ___ Astronomy ___ Bird Study ___ Botany ___ Conservation ___ Geology ___ History of Science ___ Herpetology ___ Meteorology ___ Mosses & Lichens ___ Mushrooms ___ Nature Walks ___ Wildflowers ___ Zoology ___ Other _____

Eugene Natural History Society
P.O. Box 5494
Eugene, Oregon 97405

ENHS Schedule of Speakers and Topics for 2011-2012

21 Oct. 2011 – Tobias Policha – *Draculas* in the Mist: Fungal Mimicry in Orchid Pollination
18 Nov. 2011 – Larry Deckman – A Story of Constellations
9 Dec. 2011 – Jan Hodder – Sea Birds
20 Jan. 2012 – Pat O'Grady – Sheep Mountain Clovis site archeology
17 Feb. 2012 – Greta Binford – Evolution of Spider Venom
16 Mar. 2012 – Gordon Grant – Willamette River hydrology
20 Apr. 2012 – Deanna Kingston – Traditional Ecological Knowledge of Inupiat
18 May 2012 – Bob Pyle (tentative) – Butterflies

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