Nature Trails

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This month's speaker: Dr. Nathan Tublitz interviewed by Melody

Anyone who has known Dr. Nathan Tublitz knows that March is the perfect month to showcase his talk on "How Brain Chemicals Alter Behavior." The month of March often gives us the promise of warmer days then follows with the reminder that it's not yet even spring. Like brain chemicals, March too alters our behavior, perhaps even affects our brain chemicals.

Nathan's talk will not offer definitive answers to the numerous questions that one might have regarding the affect of brain chemicals on human behavior, but his talk will bring us up to date with where the scientific community is in understanding "the neural mechanisms underlying behavior." On the University of Oregon website, Nathan states, "The long term goal of my research is to elucidate the neural mechanisms underlying behavior. My specific focus has been on illuminating the role of neuropeptides in mediating behavioral plasticity, which in this context is defined as the ability of the nervous system to vary the performance of a specific behavior to meet changing internal or external conditions." Nathan has primarily used the moth, *Manduca sexta*, the fly *Drosophila melanogaster*, and the cuttlefish *Sepia officinalis* for this research, research that perhaps finds its progenitor in a slightly altered form in Nathan's chldhood.

Nathan, were you interested in nature as child?

"You betcha. Ever since I was knee high to a grasshopper and chasing them around the summertime fields. Tried to catch them with net-like apparatus shot from a BB gun. All I ever caught were my brother's head and hell from my parents (I really WAS aiming at a grasshopper)."

Your parents probably had more to say, Nathan?

" . . . go to medical school my son."

Often one's parents can't influence their progeny, we know that Nathan, so tell us about your teacher influences?

"You kidding?"

However subtle, Nathan did experience certain influences that would foment a direction for his mind.

One was his **"Unsuccessful attempt to capture a snapping turtle in the Great Swamps of NJ,"** and a second was **". . . nearly dying from inhaling toxic wastes."**

The snapping turtle experience actually prevented Nathan from having any nature hobbies according to Nathan.

Well, travel then Nathan, any epiphanies there, or at least memorable experiences?

"Many. One of the most memorable was a drive across Canada in the summer during which I ran into a several-mile, long cloud of lacewings (flying insects) coming off a lake in western Ontario. The cloud was pea soup thick, which reduced visibility to zero and

made driving very hazardous. I learned that windshield wipers have little effectiveness on 1000s of lacewings. Another memorable travel experience happened when I was 16, sitting with my girlfriend in Times Square in NYC. A pigeon defecated on my t-shirt just as I was trying to put my arm around this beautiful girl. Needless to say, this relationship did not last much longer."

Well, then, if you didn't appreciate the world of biology, as you knew it growing up, did someone encourage you to study biology?

"All my undergraduate professors, each of whom strongly encouraged me to study anything except their fields. And since I failed in my quest to be an astronaut, instead of exploring outer space, I study inner space."

Nathan selected Eugene to pursue his developing interest because the University of Oregon offered **" . . . my first and only paying job."**

As you can tell from this interview, Nathan Tublitz' talk will be both **"illuminating"** and infectious; one can't help but get caught up in his insight and his humor, and . . . perhaps debate:

Dr. Tublitz, tell us about your current project and job?

"Encouraging everyone, including children and pets, to vote against Bush.

Job: None, because according to most surveys, the general public are convinced University Professors do not work."

We've had some outstanding talks this year, and Dr. Tublitz will only enhance that list. He currently teaches and does research at The University of Oregon in the Department of Biology.

He studied at Reed College, Princeton, Univ. Washington and Cambridge Univ, in England.

PRESIDENT'S MESSAGE

Why conifers dominate our forests--part 2

Last month I wrote about how the difference in tree structure helped explain why the forests of the mountains around Eugene are dominated by conifers. The tall cylinders of the conifers (softwoods) shed snow much better than the spreading crowns of the hardwoods.
The second reason for conifer dominance has to seasonal physiology. All the conifers around here are evergreen. There are evergreen hardwoods, too, but they are not common in this area. Our infrequent but regularly occurring snowfalls put them at too great a disadvantage. Having the wrong shape for show is bad enough. If they had leaves on the branches at the time of a snowfall, the load would be unbearable with less now than if they were bare. Where the snow is less common, broadleaf evergreen trees are more common. The mixed forests of SW Oregon are enriched by broadleaf evergreens such as madrone, live oak, tanoak, chinkapin, and Oregon myrtle (=California bay).
The physiology part that's important to conifer dominance has to do with adaptation to our Mediterranean climate. Evergreen trees are favored where winters are mild and moist while summers are hot and dry. The best time to do growing is in the wet season. Around here, winter is replaced by a rainy season that stitches together fall and spring. Our conifers are making food--doing photosynthesis--whenever temperatures are above freezing (or only a few degrees below). This is true most of the time for us. If the temperatures fall below freezing at night, it doesn't matter. There's no sunlight for photosynthesis at night anyway. Water is the main thing that limits plants' ability to grow. In this region water is scarce only in the late summer. During the typical annual drought period, all the conifers just shut down and wait for the fall rains.
The broad leafed hardwoods, being winter deciduous, depend on summer sunshine for growth. They really can't afford to shut down. That is when they have their leaves for photosynthesis. This puts them at a distinct disadvantage on the dry mountainsides and ridgetops. Instead, they are largely confined to valley bottoms where their roots can reach a water table maintained by streams and rivers. Only here does their ability to grow faster than conifers give them the advantage. Conifers rule the mountains around Eugene!

Dave Wagner

LANE COUNTY AUDUBON SOCIETY PROGRAM: MARCH 23, TUESDAY, 7:30 PM

Mike Running, Managing Director of the McKenzie River Trust, will speak about land conservation by private, non profit land conservancies. He will focus on the Trust's recent activities in Lane and Douglas Counties. The McKenzie River Trust works with willing landowners to protect key habitats and open spaces using voluntary land conservation tools such as land acquisition and conservation easements. Meetings are free and open to the public.
Contact: Herb Wisner 344-3634

FROM THE NATIVE PLANT SOCIETY OF OREGON LISTSERVE

Matthew,

I have a question about Mason Bee kits, and I'm posting to everyone in case others are interested.

Are there any issues with bee nativity and using Mason kits, either with purchasing or attracting certain species?

Thanks, - -Rick

Hi Rick,

I'm not totally sure what you mean by bee nativity. Is it the geographic origin of the bees (i.e., where they were born/shipped from) or whether the nests work as somewhere to rear bees?

If it's the origin, I haven't heard of any particular problems. There are two subspecies of the orchard mason bee (more correctly called the blue orchard bee, or BOB for short), Osmia lignaria lignaria and O. l. propinqua. O. l. l. is the eastern subspecies and O. l. p. the western, although some people reckon their distributions are more related to humidity, with O. l. p. preferring drier regions. BOB growers and suppliers usually grow their local ssp and ship them within the area of their distribution. The better growers will only supply disease- and parasite-free pupae. Again, I haven't heard of any disease or parasite problems caused by shipping. Where large concentrations of BOB have been reared for orchard pollination, there are some problems with naturally occurring parasites, such as hairy footed mites, but this is what you would expect given any abundance of food supply.

As for using the blocks, they do work very well. Hygiene is always an issue whether you have hundreds of nesting tubes or only a handful. There are management techniques to check and clean nests to minimize disease/parasite/fungi build up and maintain a healthy population.

You don't need to buy bees to go with the block, as you recognize in your email. Once in place, various bees will use the nest tunnels, including BOB early in the year and leafcutters (Megachile sp.) and other Osmia sp. later in the summer. A number of solitary wasps also like the blocks. Since all of these are solitary species, they don't mind if their immediate neighbors are not the same species.

Of course, BOB and the few others that occupy 5/16" diameter holes are just a relatively small part of the bee diversity. There are other megachilids, yellow-faced bees, and wasps that will nest in smaller or larger holes (anything between 3/32" and 3/8" diameter), so a block -- or blocks -- with a selection of hole diameters will benefit more species.

Matthew Shepherd, Pollinator Conservation Program Director, The Xerces Society

For information and membership details, see their website at www.xerces.org

FROG SEASON

We've been seeing grouse flowers since late January and the spring beauties [Cardamine nuttallii] have been in full flower for a week, but long before sunny shirt sleeve weather, you can tell it's really spring by looking down at the ground in the wet woods or by streams. The amphibians are on the move again and the frogs are calling. Two weeks ago, while piling brush brought down by the New Year's Day storm, I found a beautiful, chocolate colored Ambystoma gracile, under my feet. She was not squashed, as we were both in several inches of water, leaf mold and mud, but she was definitely in danger from the chain saw and wood piling activities of my companions. The "Northwest salamander" was most certainly making its way from the woods behind our property to our pond, and this first sighting was a signal that I should be careful everywhere, as these lovely critters appear in the most unlikely places in the spring while they are migrating to water to breed. The egg clusters of Northwest salamanders are very beautiful when I find them attached to the stems of the red osier dogwood and Nootka rose which have collapsed into the pond. The eggs, 30-60 in a cluster, are in a thick mass of very clear jelly. Each egg, if it hasn't developed too far, shows a dark animal pole and a much paler vegetal pole. Later, the masses will become bright green with alga, but I believe this doesn't signal disease. Robert C. Stebbins in Amphibians of North America, describes the alga in the egg cluster as quite normal. I like to think the alga performs a role in protecting the embryos from too much ultra violet radiation.

Two days ago I nearly stepped on a female newt in the woods. Though not the first of her kind I had seen this year, she was the first female, as the males of the species Taricha granulosa emerge from their winter retreats under rocks and litter on the forest floor as much as a month before the females. As the weather warms, I will delight in seeing many newts swimming slowly at the shallow inlet end of the pond and know by the ripples they make on the water's surface, that they are swimming in the deep water too. I am embarrassed to say that I have never seen a newt egg, but others who have found the eggs have told me that they are smallish, laid singly and attached to vegetation in the pond.

Today I was standing on the hill with my sheep staring down at the pond, which is very full. It has been raining softly but steadily all day and the water is a little turbid. The great blue heron has already flown. He disapproves of my pushing carts around, or of my being anywhere near the pond, for that matter. The resident mallards are far more tolerant. I worry about them. Where are they going to nest safely this year? Their secluded home in the cattail swamp has been completely flattened by the winter's snow. Will the new cattail shoots be tall enough to hide the nest when the eggs are laid? Another cloud of gloom presents itself. The elodea, which was accidentally introduced with some pickerel weed [that long gone, prey to a horse's illicit and nocturnal foraging] is a dark cloud beneath the surface of about three quarters of the pond. With the sun and warmth of spring, it will cover almost all the water that is not covered with water lilies or cattails. Last year we decided that we were too old and too worried about harming the larval amphibians to spend another Labor Day weekend manually removing literally tons of elodea. Now our pond will be fast on its way to evolving into a swamp, and we will lose our lovely summer view of trees reflected in the water. But wait! For the time being there is cause for rejoicing! There are many, so many, more than ten, masses of frog eggs along the banks and even in the open waters of the pond. I do not know what sort of eggs, whether they were laid by red legged frogs, Rana aurora, or tree frogs, Hyla regilla. Both species live at our pond, and from a distance it is hard to tell the difference between the two types of egg masses. Red legged frogs spend all year in or around the pond and breed as early as January. The tree frogs start when the nights become warmer, about a month later. The nights have been lovely with tree frogs calling for over a week now, but I remember seeing four egg masses in the pond more than two weeks ago. Perhaps I am seeing egg masses of both species now.

Hyla's common name "tree frog" is odd. The small, 1 1/2 to 2 inch frogs, which can be bright green or dull brown or shades in between, live not in trees but in the grasses brush and bushes around ponds and even in vernal pools and roadside ditches. They are widespread all over the West from British Columbia to Baja California and west to Montana. For years we have had a frog living under our deck finding its water from the slight leak in the hose at the faucet. As you might remember, three years ago one decided to become a house frog and lived in the plants in our living room window. It was quite vocal, but that was not why it suffered repeated evictions. We were afraid it would become dehydrated or be eaten by the cat, but in the end it died of determination. Last summer, attempting entry yet again, it was squashed and mummified in the door jam. Everyone was very sad. We miss our frog. This summer I shall leave geraniums close to the door and leave it open in the mornings. Perhaps we'll get lucky, or more likely, the house will fill with flies, but around here wonderful things can happen.

Reida Kimmel

ACTIVITY OF THE BOARD

The Eugene Natural History Society Board of Directors has taken several actions of interest to the general membership. In February and March, we drained our annual accounts of all but that barely necessary to get us through the fiscal year. (Remember: dues are due again in September). We made contributions of $50 each to the following organizations: The Mount Pisgah Arboretum, Cascades Raptor Center, UO Museum of Natural History, Nearby Nature, Rachel Carson Center, National Coalition Against Pesticides, Pacific Rivers Council, Native Forest Council, Friends of Pine Mountain Observatory, Oregon Natural Resources Council, Friends of Buford Park/Mt. Pisgah, and The Science Factory. These contributions would not be possible without Eugene Natural History Society members having given just a bit more than the basic membership. Thank you to the generous!!

The board voted to spend some money on tables to use at our booth at the arboretum's spring and fall shows. Dave Wagner was able to get three 4' tables for $25 each. A good bargain!

Finally, we voted to support the Oregon Natural Resources Council initiative to protect the Upper Willamette Wilderness. The project is designed to promote the protection of the remaining roadless areas in the Willamette National Forest. This has long been a goal of the Eugene Natural History Society. May we prevail in the end!

Please note that we are open to a few new board members. Please contact the president, Dave Wagner (344-3327, davidwagner@mac.com) if you are interested. We'll vote in our board at the annual meeting in May. The annual meeting takes place at the beginning of our regular May program meeting.

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