

The Rivertown Naturalist

NEWSLETTER OF THE HUDSON RIVER AUDUBON SOCIETY OF WESTCHESTER COUNTY



March / April 2016, Vol. 43, No. 4

The Hudson River Audubon Society of Westchester, Inc., is a non-profit chapter of the National Audubon Society serving the communities of Ardsley, Dobbs Ferry, Hastings-on-Hudson, Irvington and Yonkers.

Our mission is to foster protection and appreciation of birds, wildlife, and habitats, and to be an advocate for a cleaner, healthier environment.

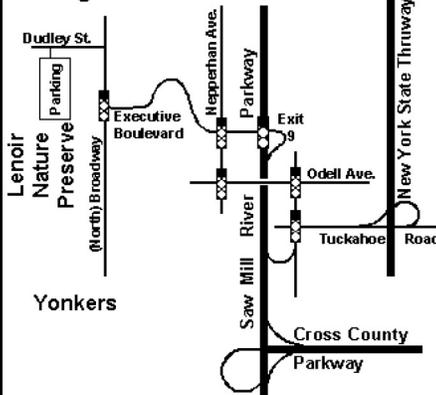
www.hras.org

Directions to Lenoir Preserve

The Hudson River Audubon Society of Westchester meets at Lenoir Nature Preserve on Dudley Street in Yonkers, NY, (914) 968-5851.

By car: Take Saw Mill River Parkway to Exit 9, Executive Blvd. Cross over Nepperhan Ave and continue to follow Executive Blvd to its end at North Broadway and turn right. Dudley Street is the first left. Entrance and parking lot are on the left.

Hastings-on-Hudson



Hudson River Audubon Society Spring Luncheon

Please join us as we celebrate the arrival of spring with a buffet luncheon and a special program

Through the Eyes of an Ecotourist



Costa Rica and Belize

Presenter: Fran Greenberg; HRAS Board Member, Nature Enthusiast, Photographer

Saturday, April 16, 12:30 pm to 3:30 pm

Pas-Tina's, 155 South Central Avenue, Hartsdale

(914-997-7900)

Cost: \$32 per guest

— including raffle ticket for Lunch For Two, courtesy of Tina of Pas-Tina's, as well as a chance to win door prizes.

Please see inside for registration form on page 3

ScienceWatch: Changing Behavior

Social insects like ants are famous for their “castes,” groups that differ both morphologically and behaviorally to perform specialized tasks. For example, workers among the Florida carpenter ants (*Camponotus floridanus*) are divided into “majors”, or soldiers, and “minors”, or foragers. Although all the workers are sisters sharing the same genome, they look and behave in dramatically different ways. Majors have huge heads and jaws that they use to defend the colony. Minors have small jaws, are half as big and relentlessly search for food to feed the colony.

These differences once thought to be innate can be altered “epigenetically.” Epigenetics is the study of stable changes in the gene expression of inherited traits. These changes are caused by external factors that turn genes on or off without changing the DNA sequence in the genes themselves. Epigenetic processes include the modifications of histones — proteins that together with DNA make up the structure of chromosomes. The proteins form a core around which the immensely long DNA molecules are coiled. Enzymes that add chemical groups, like acetyl, to histones allow the DNA to locally uncoil and gain access to other proteins that switch on gene expression. Conversely, removal of acetyl groups from histones causes the DNA to become more tightly compacted and inaccessible, resulting in a shutdown of gene expression.



Such epigenetic processes appear to play key roles in the regulation of caste morphology and behavior. In honeybees, for example, the “royal jelly” fed to some larva to make queens contains a substance that blocks the addition of acetyl groups to histones — turning a sterile worker into a fertile queen. Now a recent study examines how epigenetic modifiers directly affect ant caste behavior.

The research team, headed by Daniel Simola and Shelly Berger, University of Pennsylvania, Philadelphia, Pa., and Danny Reinberg, NYU Langone, New York, NY, has been studying epigenetic changes in *C. floridanus* for over eight years. Several years ago, the research team generated an “epigenetic map,” showing that particular gene sequences were differently expressed in the two castes. Specifically, they found that genes controlling muscle development were expressed at higher levels in majors, while genes involved in brain development and neurotransmission were more active in minors. Their newest finding, appearing in the January 1, 2016 issue of *Science*, shows they can manipulate behavior of ant workers by changing the balance of acetyl groups in their brains, making one caste behave like the other.

In one experiment, the research team fed one-month-old foraging minors valproic acid, a chemical that blocks the

removal of acetyl groups from histones. This resulted in more acetyl groups linked to genes for neuronal activity and greatly increased scouting and foraging activity. The same treatment had little or no effect on the behavior of major workers so the team injected a more potent chemical blocker (trichostatin) directly into the brains of 1-day-old majors. Remarkably, the delivery of a single dose of trichostatin into young majors’ brains caused them to immediately act like minor workers. They began actively scouting and foraging, and continued this behavior for up to two months. The results show that early in adult ant life, there is a period of time, an “epigenetic window of vulnerability,” when epigenetic regulators can modify the balance of acetyl groups in the brain to determine subsequent behavior.

“The study results are exciting because they show that behavior can be manipulated in social animals using compounds that bring about quick changes in the action of genes.”
- D. Reinberg

These results have important implications for humans as well. Another epigenetic regulator of ant behavior (CPB) adds acetyl groups to histones and also facilitates learning and memory in mice. Moreover, a CPB mutation in humans is known to result in a condition with severe learning disabilities known as Rubenstein-Taybi syndrome.

According to Berger, “Because of the remarkable [epigenetic] window [of vulnerability] we have uncovered, ants also provide an extraordinary opportunity to explore and understand the epigenetic processes that come into play to establish behavioral patterns at a young age. This is a topic of increasing research interest in humans, owing to the growing prevalence of behavioral disorders and diseases ...”

The research team is now focusing on the “window” and what controls it. “Understanding the mechanisms of when and how this window is opened and how changes are sustained — and why the window closes as the major ant ages — may have profound implications for explaining human vulnerability to life exposures,” said Berger.

Sociobiologists have often compared the social behaviors of ants and humans. Now molecular biologists are elucidating the determinants of these complex traits.

—SAUL SCHEINBACH

Hudson River Audubon Society Spring Luncheon

Through the Eyes of an Eco-Tourist: Costa Rica and Belize

Presented by Frances Greenberg, HRAS Board Member

Costa Rica may well be considered the originator of ecotourism; Belize is a fast follower.



Both these small countries are geological youngsters, emerging from the ocean a mere 7 million years ago, forming a land bridge that allowed species of North and South America to meet and mingle.

The result is an extraordinary variety of fauna, packed into a small land mass. In New York, we have one hummingbird species; Costa Rica has 37. The human history is equally fascinating. Belize was a center of the mysteriously vanished Mayan civilization. Their first European settlers were English pirates living off the plunder of Spanish galleons. Centuries later, their descendants gave Britain reason to claim Belize as a colony. In Costa Rica, conquistadores, disappointed by the lack of wealth in the form of precious metals, moved on, leaving behind a colony of farmers. Their descendants would create Central America's most peaceful and stable democracy. Both countries share a commitment to preserving nature. The ecotourist is amply rewarded by travel in these unique places.

With photos by Fran Greenberg and Sue O'Rourke.

Hudson River Audubon Spring Luncheon
Saturday, April 16, 12:30 pm to 3:30 pm
Pas-Tina's, 155 South Central Avenue, Hartsdale

Name: _____

*** Phone (Home / Cell): _____**

*** E-mail address:** _____

*** Preferred contact in case of cancellation? Email Phone**

Amount Enclosed: ____ x \$32 / person **Total:** _____

Please cut or tear out this form with payment (by check) and mail to:
Hudson River Audubon Society of Westchester, PO Box 616, Yonkers, NY, 10703

by April 8

Notes from the Road: Panama with “Birder Paul”

In December, Saul and I went on a trip to Panama, the land of the canal and 978 bird species. Paul Oehrlein, a long time Audubon member and friend, retired in the town of El Valle, and he joined us at our resort in Colon. After a week, we went with him to his home, a gorgeous “villa” with exotic backyard birds, views of the mountains and lots of local culture.

Our resort, a Melia hotel, was the site of the American school during the American occupation of the canal. Or maybe the CIA hid there. Lake Gatun, created to supply the water for the operation of the canal, surrounded the property.

We sat each morning “patio birding” with our coffee and binoculars, watching toucans, clay colored thrushes, blue gray tangers, etc. When Paul came, “real” rather than patio birding would begin. Sure, there might be some “bar-stool birding” like when we visited the awesome Gamboa eco-resort, but with Paul, it was to be SERIOUS!



We saw 144 species of birds, about 42 being “lifers”, but the highlights for me were the bat falcon, blue-headed parrot, squirrel cuckoo, violaceous trogon, and my favorite, the crimson-backed tanager. I loved the terrain, the jungle with the monkey and bird sounds, the scampering animals, ferns, flowers, butterflies, and trees dwarfing even the 110 foot tower we climbed in Soberania National Park. Our visit to Barro Colorado Smithsonian Research Center was a highlight. A reservation is a must. Our private guide pointed out fungi, trees, flowers, vines, animals, birds, reptiles, insects, all being studied by various researchers over many years.

We visited the zoos, explored the cities, took in the cultural sights, and relaxed at beaches and hotel pools. One zoo had a program to return the endangered golden frog to its natural habitat; another had a campaign to revive the population of the Harpy Eagle, the national bird of Panama. We went to markets, talked to locals and craftspeople. One night we joined retirees for trivia night in a local bar. Not everyone is a nature lover!

Of course, a highlight was the canal, the strength of the country. We viewed all the locks; a new lock is being built to accommodate the largest modern container ships. There is just too much to say about the Panama Canal, but there is lots of information to be found. It was amazing and efficient and looms large over everything in the country.

We moved from El Valle to The Radisson with its beautiful pool and loud Latin music, all part of Panama, and we added to our bird list. We watched capybaras on the golf course. This hotel was close to a premier location for birders: Pipeline Road, where we were rewarded by trogons, parrots, and too many birds to name.

Our two last nights, Paul-less, were spent on the Amador Causeway, near Panama City and the old city: churches, museums, coffee shops, ever-present policemen, reminding us that we were not in the jungle anymore - or were we? We did not get into the big city this time but we could see it in the distance.

We are home now, the snow has taken over, and Paul is probably on Pipeline Road, seeing antshrikes or antbirds, white-necked jacobins and violet-bellied hummingbirds and maybe the bare-necked umbrella bird. We miss it all. We miss him.

Judi Veder

For information on this trip and more, judisaul@aol.com

Upcoming Programs and Activities

16th Annual "Seasons at Lenoir"

Art and Photography Exhibit

Beginning Saturday, March 5th

The "Seasons at Lenoir" Art and Photography Exhibit is here!

Saturday, March 5th: Opening reception, 11:00 am to 2:00 pm.

- Gallery will be open Tuesdays through Saturdays from 10 AM to 3 PM until Saturday, April 2nd. Closed March 25th-27th for Easter.
- Please pick up your work on Saturday, April 2nd.

Plant It and They Will Come: the Bird-Friendly Landscape

Wednesday, March 23, 2016

Presented by Kim Eierman, Master Horticulturist and Master Gardener, New York Botanical Garden

Refreshments at 7:00 pm • Program at 7:30 pm

Are Cedar Waxwings passing you by? No Eastern Towhees stopping at your yard? The National Audubon Society reports that our 20 most common Bird species have declined by an average of 68% since 1967. You can do a lot in your own landscape to help our many declining species. It takes more than just native plants: it requires an ecosystem approach. Kim Eierman explains how we can attract and support our native birds and neo-tropical migrants with ecological design and proper native plant selection.

Join us and invite others who are interested, not only in helping our bird populations, but in improving our local environment by promoting ecological landscaping and the use of native plants.

March 2016 Field Trip

Project FeederWatch:

The Home Stretch

FeederWatch continues! If you are interested in the email list to receive the times of each count a few days before, please contact **Carol Lange** at (914) 668-5101 or email **CarolLange@aol.com**.

Remaining Schedule for March - April 2016:

Sat. March 5 / Sun. March 6

Sat. March 19 / Sun. March 20

Sat. April 2 / Sun. April 3

All Hudson River Audubon Society field trips are free. Non-members and newcomers are welcomed. Bring binoculars and field guides; some are available for loan. Dress appropriately for the weather. Carpooling may be arranged in advance by calling Ruth DeFord Kotecha at 914-478-3695, or by email at rdeford@post.harvard.edu.

For more information call Michael Bochnik at (914) 237-9331.

Saturday, March 12, 2016

Evening Timberdoodle Walk

6 PM Croton Point Park Ball Field. Look for displaying American Woodcocks. As night begins to fall American Woodcocks come out of the woods to open fields where males conduct their amazing flight display courtship. Bring a flashlight to help find your way back after dark. Conditions can be wet and/or icy.

<http://hras.org/wtobird/croton.html>

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Join the Hudson River Audubon Society of Westchester!

Every membership supports Audubon's vital efforts to protect birds, other wildlife and natural habitats. Membership includes a subscription to Audubon magazine and affiliation with the National Audubon Society. As a member, you will also receive our chapter newsletter, *The Rivertown Naturalist*, and an open invitation to all our guest lectures, field trips and events.

**SIGN ME UP AS A NEW MEMBER
ONE YEAR FOR \$20**

Name _____

Address _____

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State _____ Zip Code _____

Telephone _____

CHAPTER # R20

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