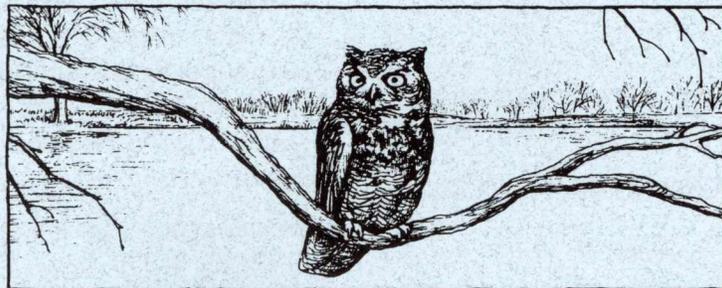


# STILLMAN NEWSLETTER



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## TWO CENTURIES WITH DARWIN

-- Mark Spreyer

**Editor's Note:** *I was going to start this piece by saying that matters of faith and matters of science belong in different file drawers. When hearing this, one colleague commented, "Different drawers? How about different file cabinets!" Fair enough. So, please keep in mind that this article originates in the biology drawer of the science file cabinet.*

The 2009 New Year's Eve baby is about to be delivered. One can only hope that this year produces as many talented individuals as were delivered 200 years ago. The following luminaries were born in 1809: Oliver Wendell Holmes, Alfred Lord Tennyson, Felix Mendelssohn, Edgar Allan Poe, Charles Darwin, and Abraham Lincoln. The latter two were born on the same day!

Having spent most of my life in the "Land of Lincoln," it is tempting to write about our sixteenth President. But that would require going over to the history file cabinet, so I'll stick with Darwin.

### Natural Selection

Simply put, Darwin offers the only scientific explanation for the diversity of life.

I'm not talking so much about evolution, a term Darwin rarely used, but rather, natural selection. When first published, the complete title of his famous book began, "*On the Origin of Species By Means of Natural Selection...*"

Here is a natural selection primer.

1) *All offspring cannot live...* if the planet is not to be overrun. For example, if all the eggs (120) laid by one female house fly survived and all of their offspring survived and

this continued for one year (seven generations), 5.6 trillion house flies would be buzzing around!

2) *Organisms are variable.* Some house flies are bigger and some are slower. Some are darker while others are noisier and so on.

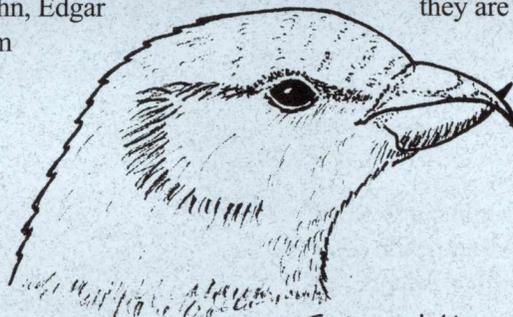
3) *Individual variations are, to some degree, hereditary.* Faster and quieter flies can pass those traits on to the next generation.

Now, let's put these tenets together. Faster and quieter house flies are better able to avoid getting eaten. Therefore, they are more likely to successfully breed than their slower and noisier counterparts.

Over time, all individuals in this population of flies will be faster and quieter.

### Specialization at Cross Purposes

Eventually, natural selection can cause isolated populations to become separate species. This seems to be happening right now in the American West. The species in question is the red crossbill (*Loxia curvirostra*).



Red Crossbill  
(*Loxia curvirostra*)

**Renewal Reminder.** If you see an 8 or smaller number after your name, this will be your last newsletter until you renew. If you didn't receive our annual membership letter, just use the form on the back of this newsletter. Please remember, in order to keep Stillman a viable and diverse natural area, we need your support. Thank you.

# STILLMAN NATURE CENTER

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Crossbills, as the name suggests, have beaks that overlap at the tip. These are used to pry apart evergreen cones to get at the hidden seeds.

Of course, not all conifers have similar cones. Pines, for instance, have larger and harder cones than hemlocks do. Not surprisingly, crossbills that live in pines have stouter bills than those living in a hemlock forest.

Quick, let's go through the three natural selection points.

- 1) All crossbills cannot survive.
- 2) The size of crossbill beaks is variable.
- 3) The best beak design for the local food source is passed on from one generation to the next.

Interestingly, each type of red crossbill has a different call and refrains from breeding with the other types. Some ornithologists argue that there are actually nine species of red crossbills. Time will tell.

## A Purple Generalization

With the crossbills, natural selection is leading to cone-opening specialists. In other situations, opportunistic adaptations are the result.

I was reminded of this by the recent and unfortunate discovery of purple loosestrife (*Lythrum salicaria*) growing at Stillman. This native of Eurasia can be trouble, particularly in American wetlands. There are, by the way, native species of loostrife as well.

Given that natural selection results in species that are well-suited to survive in a particular location, it is unusual to find one that successfully takes root after (thanks to humans) crossing an ocean. Natural selection, though, offers an explanation.

Loosestrife likes to grow in open wet areas. As any gardener knows, there are many plants that thrive with sun and water. So, any trait that allows a plant to quickly and thoroughly colonize such an area would be advantageous to that plant. Believe you me, purple loosestrife has a full arsenal of successful adaptations.

Loosestrife generates vast numbers of seeds that can be distributed by either wind or water. Over ninety percent of the seeds germinate resulting in a density of up to 20,000 seedlings per square meter.

If you decide to mow them down, loosestrife will come back. Cut pieces of the stem can sprout roots while roots can send up secondary shoots.

Should there be a summer drought, purple loosestrife will persist. As a New England beekeeper observed, "Loose-

strife is one of the few plants that blooms in midsummer, when everything else is dying back from the heat."

## Darwin's Fascination

Bees bring to mind yet another amazing adaptation that insures healthy loosestrife offspring. Loosestrife flowers come in three forms, each with different-sized pollen on different-sized reproductive organs. All three types of flowers can be found on one plant.

Without going into a lengthy botanical digression, this trimorphic design insures that bees move from flower to flower accurately delivering the various types of loosestrife pollen. This, in turn, guarantees that inbreeding, which is detrimental to any species' future, cannot occur.

Darwin was indeed fascinated by loosestrife's amazing trimorphism. He wrote American botanist Asa Gray, "I am almost stark raving mad over *Lythrum*... For the love of Heaven, have a look at some of your species, and if you can get me some seeds, do!"

Darwin knew a successful reproductive strategy when he saw one.

## Ready Imagination

Had Lincoln not been assassinated, I can't help but think he would have appreciated the process of natural selection.

In my imagination, I picture the retired rail-splitter visiting with Darwin or reading *Origin of the Species*.

Keep in mind that Lincoln once wrote to Governor Curtin of Pennsylvania, "I think the necessity of being *ready* increases. Look to it."

Now, imagine the President reading the following passage from Darwin's book, "I have called this principle, by which each slight variation, if useful, is preserved, by the term Natural Selection."

Might not Lincoln, who was raised in the country, have interpreted this as nature's way of insuring a species readiness? If so, he could be assured that Darwin had looked to it.

## END TRAILS by Mark Spreyer



## PROGRAMS

Program Basics: PLEASE CALL OR FAX US AT 428-OWLS(6957), OR EMAIL STILLMAN AT: stillnc@wildblue.net TO MAKE RESERVATIONS for programs. Remember to include your name, phone number, and the number of people that will be attending.



If less than 5 - 10 people (varying with the activity) have called two days prior to a program, the program could well be cancelled. So, don't forget to call the nature center in advance. If you discover that you are unable to attend, please call to cancel your reservations. This courtesy will be greatly appreciated.

### NEW YEAR'S DAY WALK

Join us for the annual New Year's Day walk along Stillman's trails. Over the years, we've seen everything from bluebirds and shrikes to the remains of multiple coyote kills. If you like winter, don't like football, or need to sober up; this is the walk for you.

Date: Thursday, Jan. 1  
Time: 10:00AM  
Age: 10 years and up

### OWL MOON WALK

After an indoor program on owls, we will walk the trails in search of Stillman's great horned owls. Assuming we have a clear sky, we'll be able to enjoy the winter landscape by the light of the full moon. Space is limited so call (847) 428-OWLS to make reservations. Don't forget to dress warmly.

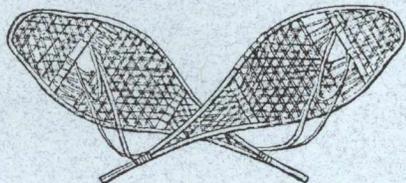
Date: Saturday, Jan. 10  
Time: 6:00PM  
Age: 10 years and up  
Member's Fee: Free  
Non-member's Fee: \$5.00



### SNOWSHOE SUNDAYS

To help you sample the winter scenery in a novel way, we have 20 pairs of snowshoes. So, bring your own snowshoes or use ours and join us on a winter walk. Please, don't forget to call (847)428-OWLS to make reservations. If there isn't a thick layer of snow, the activity will be cancelled. If you do have your own equipment, cross-country skiers and snowshoers are welcome on any snow-covered Sunday.

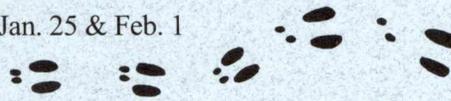
Date: Sundays; Jan. 18 & Feb. 8  
Time: 2:00PM  
Fee: None



### MAKING TRACKS

Join Susan Allman as she shows you how to recognize the different types of tracks made by winter's active animals. After an indoor introduction, explore Stillman's trails for signs of rabbit, squirrel, deer and fox. If there is no snow on the 25th, we'll try again on Feb 1. Snowshoes are also an option on these days. Remember to call (847) 428-OWLS to make reservations.

Date: Sundays Jan. 25 & Feb. 1  
Time: 2:00PM  
Fee: None



### TREE IDENTIFICATION or Barking Up the RIGHT Tree

Learn how to identify common trees such as cherry, maple, spruce and, of course, dogwood. Easy to remember tips and simple hand-outs will help you bore into tree I.D. Come prepared for the weather and bring your questions.

Date: Sunday, Feb. 15  
Time: 2:00PM  
Age: 10 years and up  
Fee: None



### KUDOS & THANK YOU

Soon-to-be Palatine Eagle Scout **Claude Radovanovitch**, with helpers from **Troop 69**, built five benches for our campfire circle. He used a variety of materials including seats made from recycled lumber. Kudos to the **Palatine Menards** who provided these supplies to Claude at a discounted price.

It was good to see Claude again. Over the years, he has come to Stillman to hike the trails and learn about owls. Currently, Claude is on the honor roll at Palatine High School.

His benches inspired us to put a bird feeder nearby. So, visitors can have a seat and get an unobstructed view of our avian neighbors.

Helping with the bird feeder as well as with burning brush piles and spreading chips are our new crew of busy volunteers. They include: **Sue Kowall, Barb Horler, Nat Bilsky, Bridget Murdoch, Gail Bedessem, Ann Penstone, Larry Lesparence, and Diane Nosek.**

Of course, I can't forget our regular list of loyal Stillman volunteers including **Daria Sapp, Gillian Kohler, Jim Kaltsas, Susan Allman, Kurt Wilkinson, and Roger Laegeler.**

Kudos also to raptor handlers **Karen Lund, Wendy Treptow, plus Bill and Rita Mueller.** Finally, I tip my hat to **Angela Carlson** who regularly cleans the raptor cages with a smile on her face.

Thank you everybody, Stillman is here thanks to you.

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*If you aren't already a member, please consider joining us.*

- Yes, I'd like to become or continue as a member of the Stillman Nature Center.  
I enclose my tax deductible contribution of \$\_\_\_\_\_.
- I'd like to help as a volunteer with programs or land management at the Stillman Nature Center, please call me.
- Please send a gift membership from \_\_\_\_\_ to the name and address listed below.

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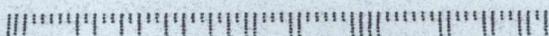
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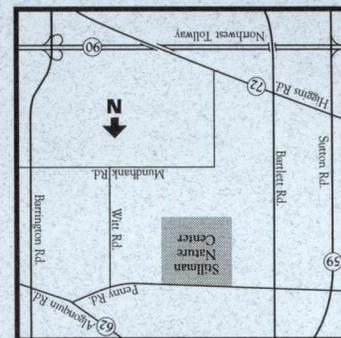
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