The Red Deer River Naturalist
Established 1906
EDITORS: MYRNA PEARMAN, JUDY BOYD, SUSAN VAN DER HOEK
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Philip J. Currie, PhD

New information about the quintessential 'raptor' of Alberta, *Saurornitholestes langstoni*

March 29, 2018
7:30pm
Margaret Parsons Theatre
Red Deer College

TICKETS REQUIRED:
Seating Limited - obtain at Kerry Wood Nature Centre (Free of Charge)

Saurornitholestes langstoni, about the size of a German Shepherd dog, made big waves as a small dinosaur when it was discovered in 2014 at Alberta's Dinosaur Provincial Park. Excavated by University of Alberta Palaeontologists, the 75-million-year-old skeleton is the most intact version of a small meat-eating dino ever found in Canada and the only complete specimen of *Saurornitholestes* known in the world. The dino, part of the Laboratory for Vertebrate Palaeontology, is on loan to Japan's National Museum of Science and Technology where U of A Scientists will continue to unearth its secrets.


Richard Siemens


James St. John


Roland Tanglao

Dr Philip J. Currie:

- Professor and Canada Research Chair at the U of A in the Dept of Biological Sciences. He is the former Curator of Dinosaurs at the Royal Tyrrell Museum of Palaeontology.
- PhD from McGill in 1988; honorary degrees from the Universities of Calgary (2008) and British Columbia (2015).
- Published more than 225 scientific articles in peer-reviewed journals, another 50 scientific papers in conference volumes & books, 158 popular articles & 20 books focusing on the growth and variation of extinct reptiles, anatomy & relationships of carnivorous dinosaurs & the origin of birds.
- Given hundreds of popular and scientific lectures on dinosaurs all over the world.
- Involved in the development of University of Alberta's first Massive Open Online Course (MOOC) called DINO 101 which premiered Sept 2013 & now more than 100,000 students worldwide have taken. A new mini-course (MOOC), Palaeontology: Theropod Dinosaurs and the Origin of Birds, was released in 2016.

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Seasonal Sights and Sounds of Alberta: Olfactory and Auditory Communication in the Red Fox

Dr. Sally Stuart

Despite living on our acreage for the past 20 years, we have seldom encountered a red fox (*Vulpes vulpes*). It was the somewhat hoarse, raspy bark in the early hours of a winter morning in late February that alerted us to the presence of a local fox. I tried recording their calls, an endeavour which proved difficult because the fox remained elusive and was impossible to approach.

The barking calls of this fox were very brief (about 0.65 seconds) and tended to start abruptly. Fox barking calls contain important information about each individual and typically have three frequency bands ranging from a minimum frequency of 0.6 kHz and maximum of 5 kHz. Low frequency calls will travel long distances, enabling calls to be used as a warning call within a group. Between groups, these calls may serve a territorial function. Studies show that red foxes produce at least 20 different calls, eight of which are attributed to cubs. Other types of call include the more aggressive screams (considered to be a defensive sound but carry little other information) and coughs by vixens, which warn her kits of potential danger.

The reason our neighbourhood fox was difficult to record was almost certainly due to its excellent olfactory "smelling" abilities. Like all canines, foxes have a highly developed sense of smell. Since foxes are fairly solitary creatures, olfaction is one of the primary ways they communicate with each other.

Millions of different odorant chemicals are found in the environment and canines are far more discriminating than humans when it comes to detecting these odours. Apparently they can detect some odorants at less than 1 part per million trillion parts of air.

The elongated nasal area of the fox, combined with turbinates (delicate scroll-shaped bones contained within this area), increase the surface area which is in contact with air. The nasal cavity is lined with tissues containing special olfactory receptors. Olfactory receptor cells are covered with cilia (small hairs) upon which the protein receptors are located.

Dogs have far more cilia per cell (up to 20) than humans (about seven). Fox cilia are likely as dense as those in dogs.

Interestingly, olfactory receptor cells have the ability to regenerate. A layer of mucous insures that the volatile odours will dissolve in the fluid to stimulate the receptors, which are so sensitive that a single molecule of odorant can trigger a response. The receptors, once activated, create messages in the olfactory nerve which then communicate with the brain.

A specialised olfactory membrane, the vomeronasal organ, is located on the anterior roof of a canine mouth. This membrane responds to inhaled molecules of pheromones, which are chemicals produced by either male or female animals to influence social and reproductive behaviours.

Foxes must be able to both detect and produce odours. Odours are produced through numerous scent glands (which are modified sweat glands. Scent glads are associated with the skin including paired glands around the anus, the anal sacs, a gland on the dorsal surface of the tail, the supracaudal gland, and glands between their foot pads.

Urine is also used for sensory communication. Some of the chemicals found in fox urine are similar to those produced by mink or skunks, but others are unique to foxes. Chemicals found in urine and glandular secretions change as the breeding season approaches, allowing foxes to determine reproductive status and to attract members of the opposite sex. These chemical secretions enable individuals to be recognized and specific territories marked.

Foxes also use their keen sense of smell to locate their prey.

While reading a natural history book published in 1869, I came across a fascinating description of a tame fox that developed a passion for fresh milk. Passing by the dairymaid with her pails of milk, he would rub against the pail. With the milk thus tainted, the dairymaid gave it to the fox. Later, the spoiled milk was given to the pigs, after which the fox gave up the practice.

Evolution has endowed the fox with a remarkably acute sense of smell. These amazing animals perceive a world that we humans are excluded from and can only imagine.

Benefits of Being a Member of RDRN!

There are many benefits to being a member of the Red Deer River Naturalists (RDRN). As a member, you receive our excellent monthly newsletter (either via email or Canada Post) and you have the right to vote on motions put forward at the Annual General Meeting. RDRN is a local voice for the environment and has representatives on many other committees and boards. RDRN has also been involved with many publications, including *Naturescape Alberta: Creating and Caring for Wildlife Habitat at Home, Mountain Bluebird Trail Monitoring Guide, Central Alberta Bird Checklist* ,and *Red Deer Birding Trail Guide* and *Central Alberta Birding Trails Guide.*

Membership fees and donations are two of only a few sources of revenue for RDRN so your membership fees enable the organization to operate. Membership fees make it possible for RDRN to bring in excellent speakers for our monthly meetings (seven meetings per year) and allow us to run Flower Focus, Insect Focus, Bird Focus, the May Species Count, the Christmas Bird Count and field trips. Being a member of RDRN (and better yet being an active member!) is a fun, educational and inspiring way for you, your friends and family to make a difference. Thanks so much for your on-going support.

Chestnut-backed Chickadee Delight

Story by Stan and Keltie Masters; Photo by Stan Masters

As a self-taught wildlife photographer, I often photograph the various birds that frequent the feeders at our *Back to Nature Retreat.* On January 7, while out capturing the flurry of birds around our feeders, I noticed a chickadee that at first glance looked a lot like the Boreal Chickadee but seemed to be a bit smaller in size. Upon looking closer at my images later that day and consulting Chris Fisher's *Birds of Alberta* book, I realized that this was a Chestnut-backed Chickadee, a species that is rarely seen in Alberta.

From then on, we have seen up to three of these little guys at our feeders daily and have enjoyed the opportunity to have such rare visitors to our B&B!

Some observations about our Chestnut-backed Chickadees:

- They start feeding usually around 10am and continue until about 4 pm.
- They are very timid and don't like to feed amongst other birds, especially anything much larger than themselves.
- As ground feeders, they like to sit lower in the bushes then quickly dart in to grab a seed and take it to a nearby branch or deeper into the forest
- The trees they're in is a mixture of evergreens and deciduous trees and shrubs.
- We haven't yet been able to decipher their song from the other chickadees nearby
- They are smaller than the other three species we have at our feeders: Black-capped, Boreal and Mountain. However, their legs seem to be slightly longer than the other species.
- We have been feeding them black oil sunflower seeds but will soon be offering them sunflower chips as well.

Daytime temperatures have been averaging -10 C with nighttime lows as cold as -25 C during their time here, with a mixture of sun and cloud. We have had 35 cm of new snow since we first saw them.

Description: Chestnut-backed Chickadees have a dark brown cap, a black band at eye level and white cheeks. They have a black to dark-brown bib with a chestnut back and flanks. Their wings and tail feathers are black and white, and their tail feathers are slightly longer than the other species of chickadees. Their underparts are grayish-white and they sport a short black beak and dark brown eyes. They are about 12 cm in length.

As B&B owners of *Back to Nature Retreat*, located near Water Valley, AB we love sharing the beauty of nature with our guests, and in doing so our bird feeders are often the subject of conversation with all the various species we have come visit us daily.

We would love to share these little Chestnut-backed Chickadees, as well as the multitude of other beautiful winter birds with our guests, so we currently are offering two Bird Lover's packages at our *Back to Nature Retreat.* For more info feel free to check them out at http://backtonatureretreat.com/bird-lovers-specials/

Bird Focus

Keith Kline will resume his weekly bird walks in April. The trips will be posted on the website and will be listed in the April newsletter. The image below shows trip participants enjoying a wind up with cake and coffee in December. *Photo by Keith Kline.*

Long Distance Migrant!

The Beaverhill Bird Observatory (BBO), located near Tofield, Alberta, just received news of their longest distance recovery and first recovery from South America!

This Baltimore Oriole was banded at BBO by Sara Pearce Meijerink on May 26th, 2017 and recovered in Sevillano, Colombia on October 22nd, 2017, a distance of over 5,800 km!

Check out the entire story on their website: http://beaverhillbirds.com/updates/band-recoveries/

Insect Focus: Don Wales

Wednesday March 21 • KWNC

10:00 AM — 12:00 PM

Introduction to Insects and Primitive Insect Orders

After at least ten years of Flower Focus—thank you Eileen Ford—we are making a temporary shift to Insect Focus, beginning on March 21 through to the end of 2018, and maybe beyond, depending on the response.

I have wanted to do something like this since I retired in 2018. I still retain extensive resources from my days of teaching Entomology in the Biological Technology Program at the Red Deer College (RDC). I am hopeful that I still have access to the insect collections and related resources at the RDC. I graduated with a BSc in Entomology in 1967 and have forgotten more than I ever knew, since then. But, not to worry, the focus is less on the highly specialized area of insect taxonomy and more on the natural history of the insects and, in many cases, their relationship with wildflowers.

All this will be sprinkled with pointless stories about experiences I have had in the field of Entomology. So, if you share my fascination with the world of insects join us for Insect Focus!

The Red Deer River Naturalists, the first natural history organization to be established in Alberta, was incorporated as a society in 1906. The objectives of the society are to foster an increased knowledge, understanding and appreciation of natural history, and to support conservation measures dealing with our environment, wildlife and natural resources.

Annual membership is $15.00 for individuals and $20.00 for families.

Regular meetings are held at 7:30 p.m. on the fourth Thursday of most months at the Kerry Wood Nature Centre, 6300-45 Ave., Red Deer, AB. Non-members are welcome. Members are encouraged to contribute to this newsletter. The deadline is the last Friday of the month.

rdrn.nature@gmail.com www.rdrn.ca
http://wearenaturalwise.blogspot.com

Box 785 Red Deer, AB T4N 5H2
Phone/Fax: 403.347.8200

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Photos, unless noted otherwise, by Myrna Pearman