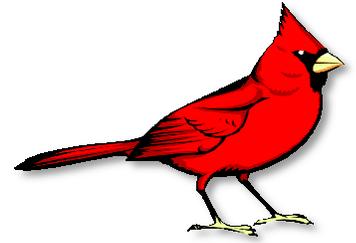


THE OBSERVER

www.whittieraudubon.org



Calendar

June 11. Beginner bird walk at Sycamore Canyon. Meet at the Sycamore Canyon trailhead at **7:00 AM**. The trail is located adjacent to Rose Hills Cemetery gate 17, but note that the trail is not in the cemetery! The entrance to Sycamore Canyon is a driveway just southwest of the entrance to the cemetery. Steve Huber leads. Rain or recent rain cancels.

June 16. Monthly meeting and program. We'll have our annual potluck and photo sharing, starting at 6:00 PM. See page 3 for details.

June 18. Field trip to the San Bernardino Mountains. Meet at the Whittier Community Center at 6:30 AM for carpooling. See page 2 for details.



Modern-day Dinosaurs

The discovery that birds evolved from small carnivorous dinosaurs of the Late Jurassic was made possible by recently discovered fossils from China, South America, and other countries, as well as by looking at old museum specimens from new perspectives and with new methods. The hunt for the ancestors of living birds began with a specimen of Archaeopteryx, the first known bird, discovered in the early 1860s. Like birds, it had feathers along its arms and tail, but unlike living birds, it also had teeth

and a long bony tail. Furthermore, many of the bones in Archaeopteryx's hands, shoulder girdles, pelvis, and feet were distinct, not fused and reduced as they are in living birds. Based on these characteristics, Archaeopteryx was recognized as an intermediate between birds and reptiles; but which reptiles?

In the 1970s, paleontologists noticed that Archaeopteryx shared unique features with small carnivorous dinosaurs called theropods. Based on their shared features, scientists reasoned that perhaps

the theropods were the ancestors of birds. When paleontologists built evolutionary trees to study the question, they were even more convinced. The birds are simply a twig on the dinosaurs' branch of the tree of life.

As birds evolved from these theropod dinosaurs, many of their features were modified. However, it's important to remember that the animals were not "trying" to be birds in any sense. In fact, the more closely we look, the more obvious it is that the suite of features that charac-



The newly described dinosaur *Zhenyuanlong suni* measured 5 feet in length and was a relative of the velociraptor.

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"Small theropods related to Compsognathus probably evolved the first feathers."

terize birds evolved through a complex series of steps and served different functions along the way.

Take feathers, for example. Small theropods related to Compsognathus (e.g., Sino-sauropteryx) probably evolved the first feathers. These short, hair-like feathers grew on their heads, necks, and bodies and provided insulation. The feathers seem to have had different color patterns as well, although whether these were for display, camouflage, species recognition, or another function is difficult to tell.

In theropods even more closely related to birds, like the oviraptorosaurs, we find several new types of feathers. One is branched and downy. Others have evolved a central stalk, with

unstructured branches coming off it and its base. Still others (like the dromaeosaurids and Archaeopteryx) have a vane-like structure in which the barbs are well-organized and locked together by barbules. This is identical to the feather structure of living birds.

Another line of evidence comes from changes in the digits of the dinosaurs leading to birds. The first theropod dinosaurs had hands with small fifth and fourth digits and a long second digit. In the theropod lineage that would eventually lead to birds, the fifth digit (e.g., as seen in Coelophysoids) and then the fourth (e.g., as seen in Allosaurids) were completely lost. The wrist bones underlying the first and second digits consolidated and took on a

semicircular form that allowed the hand to rotate sideways against the forearm. This eventually allowed birds' wing joints to move in a way that creates thrust for flight.

The ancestor of all living birds lived sometime in the Late Cretaceous, and in the 65 million years since the extinction of the rest of the dinosaurs, this ancestral lineage diversified into the major groups of birds alive today.



June Field Trip to San Bernardino National Forest, San Bernardino Mountains

JUNE 18, 2016 FIELD TRIP.

This month's field trip will be to the San Bernardino Mountains, an area of Southern California we have not visited in quite awhile.

We will go up the back way on Highway 38 to Angeles Oaks, stopping at Barton Flats, the Jenk's Lake area, headwaters of the Santa Ana River, Hart Bar Campground, Onyx Summit and then work our way

around to Big Bear lake, taking a side trip to Baldwin Lake.

This will be an all-day trip. Please bring a lunch and water. Carpooling is requested. I will not be taking my Sprinter Van.

Please meet at the Community Center, ready to go at 6:30 AM.

Steve Huber and Larry Schmahl (562-714-1843 cell) lead.



Where: San Bernardino Mountains
When: June 18, 6:30 AM
Leaders: Larry Schmahl, Steve Huber

Observer Schedule and Sign Off

As always, the Observer will take a couple months off for the summer. Publication will resume with the September issue.

This issue marks my last as editor of our chapter newsletter. I started the job back in March of 2000 when I foolishly told Jay Oberholtzer that I had a computer and could probably navigate Microsoft Publisher.

He immediately handed the editor reigns over to me.

I want to thank all the people who have told me that they enjoyed reading the newsletter and all of you who put up with my learning on the job over the years. It's been a privilege to do my little bit for our chapter.

Sixteen years is a long time to do anything, and I defi-

nately think that it's time for a change in the editor's spot. I don't know who will be taking over, but I'm sure they will bring a new and fresh perspective to the newsletter. I will still be around, and as my boys get older I hope to get back into a more active role in Audubon activities. Hopefully I'll see you all out there birding.

— Jeff Allison

Enjoy your summer!



Annual Potluck & Picture Sharing

We invite you to our digital photography sharing night and potluck on Thursday, June 16th at 6:00 p.m. at the Whittier Community Center, 7630 Washington Ave. Whittier, Ca. The Community Center is located at the corner of Mar Vista St. and Washington Ave., across the

street from the Whittier Public Library and next to a softball field.

Please note that the time is earlier — 6:00 p.m. for the potluck. The photo sharing will begin around 7:00 p.m. Bring a main dish, side dish, salad or dessert to share.

Bring your own drinks and plate, utensils, etc.

The meeting is open to the public and free.

Please bring your photos on a flash drive or CD in jpeg format.

Where: Whittier Community Center

When: June 16, 6:00 PM

What: Potluck and Picture Sharing

Whittier Area Audubon

Whittier Area Audubon
PO Box 548
Whittier, CA 90608-0548

Whittier Area Audubon's web site is located at <http://www.whittieraudubon.org>. Our Yahoo group is called whittieraudubon. And we're on Facebook...search for Whittier Area Audubon!



YAHOO!

Bring Your Cans!

Reminder: Bring your aluminum cans to our monthly meetings. We can raise funds by recycling your cans.

Join Whittier Area Audubon Society!

Every membership supports Audubon's vital efforts to protect birds, wildlife, and natural habitats. For \$30 per year you can support Whittier Area Audubon and our local projects and events.

To join our local chapter, make your check payable to Whittier Area Audubon and send it to Whittier Area Audubon, P.O. Box 548, Whittier, CA 90608-0548.

To join National Audubon, make your check payable to Audubon and send to National Audubon Society, PO Box 42250, Palm Coast, FL 32142-2250. Please include a letter with your name, mailing address, and any other personal contact information you wish to share (e.g., email address, phone number) along with Whittier Area Audubon Society's code, C4ZC170Z. As a member of National Audubon, you will receive Audubon's bimonthly magazine.

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