

# THE FOSSIL RECORD

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## *Field Trips:*

THE HISTORY OF THE NORTHWEST

### **Vernonia Geology & Paleontology**

#### **Natural History of Cenozoic Oregon**

Date: Saturday, December 12, 2009

Cost: \$15 for non-members, free for members.

Call: (503) 358-9030 for arrangements.

This day trip just 45 miles northwest of Portland previews marine rocks underlying the Coast Range in this region. This part of Oregon was an ocean basin between about 45 and 25 million years ago. As oceanic and continental plates converged, these rocks were uplifted and then exposed through erosion. Present day road cuts and stream banks expose the siltstones in which the fossils occur. We will visit a few of these exposures to search for the ancient clams, snails and rare vertebrates entombed in the stone.

## **Newport**

### **Marine Fossils of the Oregon Coast**

Date: Saturday, February 20, 2010.

Cost: \$15 for non-members, free for members.

Call: (503) 358-9030 for arrangements.

Believe it or not, the middle of the winter is the perfect time to search for fossils of clams, snails, and even ancient dolphins, whales, and sea lions on the Central Oregon Coast. By mid-February the storms and rough surf will have pounded the seashore and washed away several feet of sand which normally blankets the mid-summer beaches. This is the time when the sandstone and siltstone of the Nye and Astoria Formations, about 20 – 28 million years old, are best exposed. This is our opportunity to search for the fossils so well preserved in these formations.

## **In the Laboratory & the Field:**

MUSEUM NEWS

### **Museum Scientists**

The paleontology lab at OMSI was closed during the first half of this year as space was made available for the Leonardo da Vinci Exhibit. With the lab now open, the preparation of our fossil collections is again available for viewing.

As we prepare a 30 million year old whale from the Straight of Juan de Fuca, we are finding interesting new evidence about that part of Washington when the animal died. A very shallow water setting close to shore is attested by the many barnacles clustered on the upper surface of the whale's bony snout. And, a carbonized pinecone preserved in the rock at the back end of the skull provides a clue for a possible nearby landmass. This whale most likely is a new genus. As evidence of this, the blowhole in this animal is located toward the front of the head. Modern whales, in contrast, have their blowholes toward the back on the head. Also, an upturned bony extension at the blowhole is a feature not found in its relatives, that lived at the same time.

We continue our work on ancient methane seep deposits. We will see such a deposit on our Vernonia field trip. The 35 million year old limestone we will examine has a modern counterpart near the Galapagos Islands where methane and other gasses make their way through the Earth's crust to the sea floor. The gasses provide nutrients for animals uniquely adapted to that harsh environment.

Last summer we gathered new evidence for the collision of a part of Eastern Oregon now known as the Ochoco Mountains onto North America some 180 million years ago. Nearly all of Oregon prior to that time was oceanic. New fossil collections from the Ochocos for the first time are giving us precise dates for the youngest rocks contorted by the collision, and the overlying less contorted rocks following the collision.