Researcher Identifies Tracks Of Swimming Dinosaur In Wyoming

October 17 2005

The tracks of a previously unknown, two-legged swimming dinosaur have been identified along the shoreline of an ancient inland sea that covered Wyoming 165 million years ago, according to a University of Colorado at Boulder graduate student.

Debra Mickelson of CU-Boulder's geological sciences department said the research team identified the tracks of the six-foot-tall, bipedal dinosaur at a number of sites in northern Wyoming, including the Bighorn Canyon National Recreation Area. "It was about the size of an ostrich, and it was a meat-eater," she said. "The tracks suggest it waded along the shoreline and swam offshore, perhaps to feed on fish or carrion."

Mickelson will present her findings at the Geological Society of America's annual meeting Oct. 16-19 in Salt Lake City. She collaborated on the project with researchers from CU-Boulder, Indiana University, Dartmouth College, Tennessee Technological University and the University of Massachusetts.

Mickelson said scientists have previously reported evidence of swimming dinosaurs in other parts of the world and at other times in the geologic record. But the new findings by the team are the only known evidence of any dinosaurs in the Wyoming region during the middle Jurassic, she said.

The dinosaur does not have a name, although Mickelson is continuing to

look for bones and other remains that could be used to identify and name the new species. "This dinosaur is similar to a Coelosaur," she said. "It is a dinosaur with bird-like characteristics and is a possible ancestor of birds. It lived in a much earlier time period and was very different from larger dinosaurs like T-Rex or Allosaurus."

The tracks are embedded in a layer of rock known as the Middle Jurassic Bajocian Gypsum Spring Formation, a 165- to 167-million-year-old rock formation that contains fossilized remains of a marine shoreline and tidal flats. Geologists believe an inland sea, called the Sundance Sea, covered Wyoming, Colorado and a large area of the western United States during the Jurassic period from about 165 million years ago to 157 million years ago.

Mickelson said the sea might have been warm and relatively shallow, much like the Gulf of Mexico today.

"The swimming dinosaur had four limbs and it walked on its hind legs, which each had three toes," Mickelson said. "The tracks show how it became more buoyant as it waded into deeper water -- the full footprints gradually become half-footprints and then only claw marks."

Mickelson explained the tracks are found among the traces left by many animals, including ancient crocodiles and marine worms. "The tracks of the ancient crocodiles are very different," she said. "They walk on four legs and have five digits."

Since summarizing preliminary findings last spring, Mickelson and the research group have expanded their study area, which she said contains millions of dinosaur tracks in a number of Gypsum Spring Formation rock outcrops in northern Wyoming.

The tracks are of different sizes and were deposited at about the same

time, according to Mickelson, revealing that the dinosaurs likely traveled in packs and exhibited some variation in overall size. "Further research into the geologic record and depositional history of the region supports our conclusion that the dinosaurs were intentionally swimming out to sea, perhaps to feed," she said.

Source: University of Colorado at Boulder