NEWS
LETTER

Utah Friends of Paleontology

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Castle Valley "Raptor" Chapter Newsletter

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Utah Friends of Paleontology "Raptor Chapter"
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Newspaper Article

The following article appeared in the Deseret News on August 27, 1998:

Science and art come together in splendid book

By Joe Bauman
Deseret News staff writer

IMAGINE MATING season among the parasaurolophus, duck-billed dinosaurs that tromped through Utah in herds 75 million years ago. These herbivores reached 35 feet long and sported a long snorkel-like crest that arced from their noses to far behind their skulls.

"There would have been some showy displays" in the competition for partners, says professor Frank DeCourten.. Besides the way the crests looked - they might have been as colorful as birds' plumage the sounds would have been "interesting to hear."

The males might have made loud bellows to scare away competitors as well as "more gentle sounds to woo the ladies of the herd," he said.

Scientists constructed a model of one of the snorkels to check out its acoustic qualities. The crest was connected to the dinosaur's nasal passages, he said, and the researchers found that it might have worked as a sounding device - a late Cretaceous trombone.

"They might actually have been used to control the volume and tone," he said in a Deseret News telephone interview Friday. "In other words, an animal with a crest like that could have produced deep bellows or shrill chirps and calls, if it had such an elaborate nasal tract"

DeCourten describes the crests and their possible function in "Dinosaurs of Utah," a 300-page hard-cover book that was just published by the University of Utah Press.

Rarely have science and art come together so splendidly as in this book, with its finely crafted text, dinosaur paintings by Carel Brest van Kempen, photos by DeCourten and John Telford, and numerous scientific drawings and maps.

DeCourten said the book was a labor of love for a long time: a decade of compiling information, then at least three years of intense work.

The author now lives in Lincoln, Calif., and teaches geology and paleontology at Sierra College, Sierra, Calif But he still gets back to Utah several times a year for dinosaur excavations and other field work.

This region is among four or five that are the worlds best for understanding dinosaurs, because of two sets of vastly different conditions separated by many millions of years. They are the Mesozoic era, when the dinosaurs thrived, and today.

During much of the Mesozoic 245 million to 65 million years ago, Utah

was prime dino habitat. It was a heavily forested, low-lying basin with rivers and. few barriers to dispersion and migration. Home to many herbivores, it naturally attracted interesting predators.
"It would have been like the Amazon basin today," he said "It was just full of living things of all types.

Today most of the state is desert. The low precipitation keeps plants from growing densely across the landscape. "We get grand exposures of bedrock across most of the state of Utah," he said.

With few towns and roads and a great deal of open countryside, "there's very little to conceal dinosaur bones."

That's not to say everything is known about dinosaurs. Whole chapters are missing in the prehistory book, gaps called unconformities" where soil and rock strata are missing.

One unconformity is in the middle Triassic, when dinosaurs showed up in Utah. Scientists know they first appeared in the state at that time because dinosaur fossils are not found before the unconformity but are there afterward.

Around then, the super continent called Pangea broke up. The movement of the Earth's plates caused stresses that triggered an uplifting throughout the Colorado Plateau. The lifting in turn caused erosion. Instead of nature laying down deposits of sediments, soil was swept away. As a result, no layers of soil, bone and rocks are known from the period in this area.

That's unfortunate, because scientists have no record about the origin of dinosaurs in this area.

What happened to the dinosaurs is also mysterious. In spite of endless discussions of a meteorite or an asteroid impact that supposedly killed them off 65 million years ago, DeCourten thinks the real cause could be more complex.

Some have argued that certain evidence throughout the world proves an enormous explosive event happened when the dinosaurs died out. Something happened to the atmosphere, filling it with dust. DeCourten says some of this material might have come from the ferocious volcanism known from that period. He agrees that the other evidence supports a strike from space.

"Whether that event caused event caused the extinction is a whole different issue," he said. Altogether, about 350 different types, or genera, of dinosaurs existed throughout their time on Earth.
But for the last 5 million or 6 million years of the Cretaceous, only about a dozen are known. By 65 million years ago, "the vast majority of dinosaurs that ever existed had already become extinct."
It is hard to attribute the extinction to one blow, like the asteroid. "There are Long lists of organisms that not only survived the extinction event but flourished in the midst of it."

Some plants survived the period without harm. Crocodiles, which lived in the same habitat as dinosaurs, became more abundant and diverse. "Many types of fish flourished," he said.

Disease might have helped kill off the dinos, according to DeCourten. Geographic changes brought together populations of dinosaurs that had been separated.

Maybe each carried a disease to which it had become immune but to which the other type had not developed defenses.

Also, climate changes and a drastically dropping sea level could have contributed - as well as whatever happened to the atmosphere.

"It's probably some combination of all of those things," he said.

Also, it wasn't 'he first time a huge disaster happened to the dinosaurs. "There were several extinctions of dinosaurs," he said. In others, a dying off was followed by a recovery. But the last time, there was no recovery - "unless, of course, we include the birds."

By that, DeCourten was referring to a controversy over the origin of birds.

One fact that is not disputable is that dinosaurs and birds are closely linked. According to DeCourten, the nearest living relatives to the fascinating creatures that ruled Earth so long ago aren't lizards or crocodiles, but birds.

They either derived from a common ancestor to the dinosaurs or from the dinosaurs themselves. The answer to that one isn't certain.

"We need more fossils," he said. "As is so often the case in paleontologists' controversies, more data is needed."

September Chapter Meeting Sept 8

Clark Warren will present the second video tape in the series entitled: "The Dinosaurs ~ Flesh on the Bones." This video explores some of the mysteries about the dinosaurs, their appearance and disappearance.

Our meeting will be at 7:30 in the classroom at the CEU Museum.

SVP Meetings

A reminder of the Society of Vertebrate Paleontology 58th annual meeting which is being held at Snowbird on September 30 ~ October 3, 1998.

For further information, call Clark Warren who is a member of the host committee at 435-637-0312. Byron Ray also has information at 435-637-6414.

Of particular interest for many might be the Saturday Teachers Workshop. The registration fee is $25 .00 for the morning session which will focus on paleontology in the classroom and how it can be used to also teach other science concepts. The registration fee for this workshop also permits you to attend the Saturday afternoon technical sessions. Please note that this session would also be well suited to museum volunteers and others who have an interest in paleontology and education.

Collecting No Nos

UFOP President elect, Duane Taylor reminds all of us that: "We have a recurring problem at our quarry sites. Some of our members are in the habit of collecting lithic artifacts and either keeping them or turning them over to the museum. Either way, it is a violation of the law. Artifacts must be left where they are found.

Any major archeological resources disturbed by our quarry operations must be reported to the BLM as soon as possible. All excavation work shall cease until permission from the Field Office Manager is given to resume.

Also, any bones or fragments of vertebrate fossils are the property of the United States government. It is illegal to collect them except under the strict limitations of our permit.

All UFOP members are encouraged to observe these laws regarding the collection of artifacts, and, to be especially aware during museum sponsored activities."

State Newsletter

Each of you should periodically receive a UFOP newsletter from the state organization (3 - 4 times per year). We recently sent the state a revised membership list. If you don't receive a newsletter from them in the next month or two, let us know and we will contact them to make sure you are on the mailing list. If you want to contact the state organization directly, you can contact Robin Wignall, at:
10595 North 5600 West
Highland, Utah 84003

She will be happy to see that you get a copy.

Feedback please !

As always, we hope you enjoy the newsletter. Please feel free to give us any feedback on what we are doing that you enjoy or what you would like to see improved.

The digging continues

Digging continues on a regular basis. Contact John Bird for current schedules. All members are encouraged to join in the digs as their time permits. We hope to see you in the field.