

Poster Session B**A NEW REPTILIAN FAUNA FROM THE LATE JURASSIC OF WESTERN EUROPE (KIMMERIDGIAN, SWITZERLAND)**MARTY, Daniel, BILLON-BRUYAT, Jean-Paul, *Section de paléontologie, Porrentruy, Switzerland*

Since 2000, a Swiss paleontological team (the "Section de paléontologie") has carried out systematic excavations along the future course of the "Transjurane" highway (Jura, northwestern Switzerland). Numerous fossiliferous beds have been excavated and studied at several localities, all in the vicinity of the town of Porrentruy. These beds are precisely dated by ammonites to the early Late Kimmeridgian. They correspond to coastal deposits of a shallow carbonate platform, at the threshold between the boreal and the tethyan realms. So far, the excavations have yielded a rich and diverse fauna of invertebrates and vertebrates (fish and reptiles), notably lots of dinosaur ichnites.

We report here the first synthetic overview of the "Transjurane" reptilian fauna and a comparison with other Late Jurassic Lagerstätten of Western Europe, which have been deposited in similar paleoenvironments (Canjuers, Cerin, Crayssac, Solnhofen, Solothurn). The reptilian fauna includes skeletal remains of chelonians (Plesiochelyidae, "Talasemydidae"), crocodylians (Teleosauridae, Metriorhynchidae) and of a pterosaur. Moreover, the presence of sauropod and theropod dinosaurs is attested by tracks. The composition of the reptilian fauna is consistent with that of the other sites, but three major groups are still missing (lepidosaurs, ichthyopterygians, sauropterygians). The sauropod ichnites are abundant and occur on several levels, with a large range of footprint size and trackway pattern. This supports the hypothesis that some of these large-bodied terrestrial herbivores could habitually enter coastal marine environments.

Wednesday, 9:00**CARVING MISSING BONES IN RIGID URETHANE FOAM**MASEK, Robert, *Univ. of Chicago, Chicago, IL*

Reconstructing missing bones, or parts of bones, is the most time consuming and expensive operation when mounting or restoring fossil vertebrate skeletons. Most skeletons are only partially preserved or are composed of individuals of various sizes. A wood carving machine designed for reproducing or reversing sculpting or plaques in non-castable material such as wood, can be used to quickly reproduce or reverse bones in rigid urethane foam. If your sculpting skills are less than desirable, this machine might be what you are looking for. The wood carving machine was used with excellent results to reproduce the missing wing bones of an African pterosaur.

Poster Session A**NEW DATA ON SOME ELOPOMORPH FISHES FROM THE EARLY CRETACEOUS, NORTHEASTERN BRAZIL**MASSA, Renato, GALLO, Valeria, FIGUEIREDO, Francisco, *Univ. do Estado do Rio de Janeiro, Rio de Janeiro, Brazil*

The osteology of *Brannerion latum* and *Paraelops cearensis*, two elopomorph fishes found exclusively in the Lower Cretaceous strata of the Araripe (*B. latum* and *P. cearensis*) and Parnaíba (only *B. latum*) basins, is reviewed here. This study revealed some new information concerning the neurocranium and the vertebral column and associated bones of both taxa. The skull roof of *B. latum* is described here for the first time and it shows shape and arrangement similar to verified in the extant elopomorph *Albula vulpes*, in addition to new data on the neurocranium of *P. cearensis* (for instance, the presence of a prootic-intercalar bridge). Aspects of the occipital (arrangement pattern of the foramina), supraneural and intermuscular bones (number and extension) of *B. latum* are also discussed. A preliminary phylogenetic analysis comprising both fossil and recent taxa of Elopomorpha was accomplished, revealing *P. cearensis* as part of a monophyletic group, the Aululiformes, with *B. latum* appearing as a basal taxon of this clade.

Poster Session B**ICHTHYOSAUR DIVERSITY IN THE UPPER SUNDANCE FORMATION (JURASSIC: OXFORDIAN), WYOMING**MASSARE, Judy, *SUNY Brockport, Brockport, NY*

Ichthyosaurs were first collected from the Sundance Formation in the late 1800's and early 1900's, and assigned to a new genus, *Baptanodon*. Five species from Wyoming were described: *B. natans*, *B. discus*, *B. marshi*, *B. reedi*, and *B. robustus*. The genus has been synonymized with *Ophthalmosaurus*, known from the slightly older Oxford Clay of England. Some of the species described from the Sundance Formation were based on very incomplete specimens and unreliable or minor morphological differences. Consequently, three of the species names were not recognized in later literature. Only *O. discus* and *O. natans* are represented in museum collections by more than an incomplete type specimen. Early workers speculated that these two species could represent a single growth series, as what was called *O. discus* is larger than *O. natans*. Recent compilations of ichthyosaurian taxa recognize only one species, and retain the oldest name, *O. natans* for the Wyoming ichthyosaurs.

Over the last decade, ichthyosaurs have been collected from several horizons in the Redwater Shale of the upper Sundance Formation in northwestern Natrona County. This is the same unit from which the older material was excavated, although most of those specimens are

from Albany and Carbon counties to the south. A preliminary assessment of the new specimens suggests that two species are present in the Redwater Shale. Their assignment to the previously described species will be presented and discussed.

Poster Session B**A DWARF BETWEEN GIANTS? A NEW LATE JURASSIC SAUROPOD FROM GERMANY**MATEUS, Octavio, *Universidade Nova de Lisboa & Museu da Lourinha, Lourinha, Portugal*; LAVEN, Thomas, *KNOTSCHKE, Nils, Dinosaurier-Freilichtmuseum Munchehagen, Rehburg-Loccum, Munchehagen, Germany*

Remains of several Late Jurassic sauropod dinosaurs were found in Oker, near Goslar (Lower Saxony, Germany). Only one single layer, datable to Middle Kimmeridgian, provided sauropod bones in Oker quarry, however, more than about 650 remarkably well preserved cranial and postcranial bones were collected. The first sauropod bone from Oker was found by Holger Ludtke in 1998. Most notably these remains include the first sauropod skull known from Europe. It belongs to a new macronarian sauropod close to brachiosaurids. At least, 10 individuals were present, with body-lengths varying between 1.8 and 6.2 m long, when extrapolated from *Camarasaurus grandis*. One of the smallest specimens has a 119 mm tibia. The body length distribution is symmetrically unimodal with the mean around 3.5-4.5 meters long. Contrary to this, the normal age frequency graphic of wild animal populations is positively asymmetric (more juveniles and fewer adults). The presence of so many bones from one single species corroborates with the monospecific gregariousness implied for other species. Possibly, such species lived in herds. If we presume that the death and body accumulation resulted from a single event isolated in time, this proposes that sauropods formed multi-aged gregarious groups. The premaxilla has a short muzzle, the nares are large and the jugal has an important role in the lower rim of the skull. Histological studies show adult development of the bones, deduced by the sampling of seven long bones show that we are dealing with dwarf forms.

Saturday, 9:00**A QUEST FOR CONTROL; INVESTIGATING TECHNIQUES FOR COLLECTING 3-D DATA ON DINOSAUR TRACKS AND BONES**MATTHEWS, Neffra, NOBLE, Tommy, *USDOI Bureau of Land Management, Denver, CO*; BREITHAUPT, Brent, *Univ. of Wyoming, Laramie, WY*

Geographic Information Systems allow for the integration, visualization, management, analysis, interpretation, and presentation of a variety of paleontological data. All types of observations collected about a specimen, a locality, a rock unit, a state, or any other type of geographic container can be integrated using GIS. Complex relationships such as the concentration, orientation, and location of bones in a quarry or the tracks of dinosaurs can be documented and evaluated as never before. The use of GIS is strengthened as the tools used to locate ourselves on the earth's surface evolve, making our maps easier to produce and update.

Yet a GIS is only as accurate as the x, y, z coordinate points (which represent each piece of data) it is built upon. There are a variety of excellent techniques for establishing coordinate data for a project. These techniques range from the use of high-tech equipment such as Global Positioning Systems, and Light Detection and Ranging (LIDAR) to more traditional methods, such as compass and string-line grid, total station, and traditional aerial photogrammetry. Each of these methods presents the user with a variety of challenges and benefits based on site location, extent, accessibility, expense, and operation time. Research conducted over the past six years at Late Jurassic bonebeds in Wyoming and Utah, as well as Middle Jurassic and Late Cretaceous dinosaur tracksites in Wyoming, Colorado, and Utah have utilized a variety of these techniques. However, the challenge remained to establish a control network (accurate to the millimeter level) over small areas quickly, easily, and affordably. Fortunately, with the recent development of relatively inexpensive, high quality digital cameras and a suite of software that calculates measurements and constructs 3-D models from photographs, this challenge has been met. Highly accurate 3-D coordinates can be extracted from photographs when a few basic guidelines are observed. These photographs not only support precise measurements in a digital setting, but also preserve a visual record of the in-situ relationships for future study and analysis.

Poster, Preparator's Session**NOVEL USE FOR CYCLODODECANE IN ACID PREPARATION OF RECENTLY RECOVERED PALEOCENE LIMESTONES FROM THE WESTERN CRAZY MOUNTAINS BASIN, MONTANA**MAWYIN, Cristina, GROENKE, Joe, BOYER, Doug, *Stony Brook University, Stony Brook, NY*; BLOCH, Jonathan, *University of Florida, Gainesville, FL*

In 2003, field expeditions to south-central Montana recovered fossiliferous Paleocene limestones from several localities. Intensive processing of these deposits at Stony Brook University's fossil preparation lab is beginning to reveal a diverse microfauna including reptiles and mammals. Further, elements recovered from these limestones frequently represent parts of associated or articulated skeletons, giving these deposits the potential to contribute data on composition of Paleocene faunas and skeletal structure of preserved taxa.

Here we report on a novel utilization of cyclododecane in the formic acid preparation of these discrete limestone blocks. Surface cracks in bone and matrix can be treated with plastic,