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Penn Researchers Describe Newly Found Dinosaur

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by Gregory Lester

Through the cycads and ginkgoes of the floodplains, not far from the Sundance Sea, strode the 50-foot-long *Suuwassea*, a plant-eating dinosaur with a whip-like tail and an anomalous second hole in its skull destined to puzzle paleontologists 150 million years later. According to researchers at Penn, *Suuwassea emilieae* (pronounced SOO-oo-WAH-see-uh eh-MEE-LEE-aye) is a smaller relative of *Diplodocus* and *Apatosaurus* and is the first named sauropod dinosaur from the Jurassic of southern Montana. Their findings appeared in the journal *Acta Paleontologica Polonica*.

Suuwassea is the first unequivocal new sauropod from the Morrison Formation, a 150-million-year-old geological formation extending from New Mexico to Montana, in more than a century. It has a number of distinguishing features, but the most striking is a second hole in its skull, a feature we have never seen before in a North American dinosaur, according to **Peter Dodson**, senior author and professor of anatomy

at Penn's School of Veterinary Medicine and professor in the Department of Earth and Environmental Sciences. While its *Diplodocus* relatives have a single hole on the top of the skull related to the nasal cavity, paleontologists have yet to come up with a plausible use for this second hole.

The name *Suuwassea* comes from the Native American Crow word meaning "ancient thunder" is and also a nod to thunder lizard, the original nickname of the dinosaur now known as *Apatosaurus*. *Emilieae* is a reference to the late Emilie deHellebranth, whose financial support funded the dinosaur's excavation.

The dinosaur's skeleton was initially found by **William Donawick**, an emeritus professor of surgery at Penn's School of Veterinary Medicine, while horseback riding with his son-in-law Will Tillett near the family ranch in Wyoming, close to the southern border of Montana.

At the time *Suuwassea* was alive, this part of

the Morrison Formation was near the shoreline of a long but shallow arm of ocean water called the Sundance Sea. The coastal ecosystem has not been the typical environment for Morrison Formation dinosaurs, which have mostly been found in a more arid region farther south.

The discovery of this new species could suggest that the fauna of this area differed from the rest of the Morrison Formation or that this region was something of a lush Jurassic "vacation spot."

Nowadays, the region is much more arid, and much of *Suuwassea*'s partial skeleton was found exposed on the surface, from years of wind and rain erosion. The partial skeleton, which was deposited randomly by river flooding before fossilization, held enough distinguishing characteristics that Dodson and his colleagues could easily classify it as a new species.

Suuwassea's tail vertebrae are shorter and flatter at the ends than those of its relatives, and the proportions of some of the other vertebrae and leg bones are also different, says **Jerry Harris**, coauthor and graduate student researcher in Penn's Department of Earth and Environmental Science. The extra hole in the skull is still a mystery; it has only been seen before in two dinosaurs from Africa and one from South America. It is interesting that the two African dinosaurs are exactly the same age as *Suuwassea*, and all three are also related to the much larger *Diplodocus* and *Apatosaurus*.

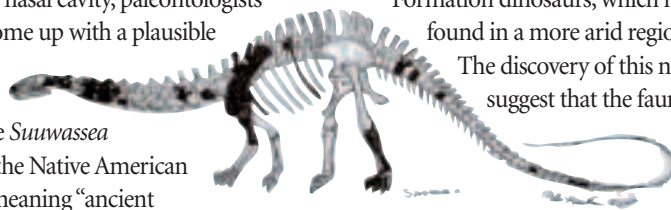
Since the skulls of sauropod dinosaurs are largely made of thin, fragile bones, the researchers were fortunate to recover any of the skull at all.

For sauropods, only the bigger, heavier, and denser bones, like the limbs, are usually preserved, Harris notes.

Luck seems to be with the Penn researchers. Near the excavation site of the *Suuwassea* remains, members of the expedition chanced upon the partial skeleton of a new dinosaur predator, currently under study by Penn researchers.

Funding for this research was supported by Emilie deHellebranth; Penn's Research Foundation, School of Veterinary Medicine, and Department of Animal Biology; and the Penn Paleobiology Fund.

Suuwassea emilieae is currently in the collection of the Academy of Natural Sciences in Philadelphia, where Dodson is a research associate.



Widener Hospital Closed for a Number of Weeks; Reproduction Service Reopens

On May 10, 2004, the George D. Widener Hospital for Large Animals at New Bolton Center, Penn's large animal facility, was closed to new patients for six to eight weeks, for decontamination of barn and clinic buildings. Earlier this year, multidrug-resistant *Salmonella* infections occurred in the patient population. The administration opted for hospital closure to not expose patients to the organism and to allow for faster, more efficient decontamination of the buildings. The hospital will re-open after appropriate bio-security measures have been instituted to protect patients and staff.

On May 27 it was announced that the Section of Reproduction at New Bolton Center accepts patients again. The service is located in the Georgia and Phillip Hofmann Research Center for Animal Reproduction, on Bartram Road, about two miles away from the Widener Hospital.

"The Hofmann Center was closed as a precaution until the facility could be screened for contamination," says **Dr. Patricia Sertich**. "Repeated screenings of the environment and resident animals showed that the Hofmann Center was free of any *Salmonella* contamination,

allowing us to safely open our doors to accept patients again. As an added precaution, clients will observe that we have implemented additional bio-security measures to continue to ensure the health of our patients."

The Section of Reproduction provides comprehensive reproductive care for horses, cattle, sheep, swine, goats, and llamas. Services include: breeding soundness evaluations, transported semen program, embryo transfer program, an equine embryo recipient mare herd, reproductive behavior consultations

Appointments can be made by calling 610.925.6220. Clients should drive directly to the Hofmann Center without stopping at the Widener Hospital.

The Center's Field Service has relocated to a different part of the campus and continues to make farm calls. The diagnostic laboratories are open and accept samples from practitioners.

Penn's School of Veterinary Medicine anticipates that its Widener Hospital for Large Animals will re-open the end of July after appropriate bio-security measures have been instituted to protect patients and staff.