

27 June 2017

New discovery of articulated dinosaur remains near Winton in western Queensland has world significance

The Australian Age of Dinosaurs (AAOD) Museum today announced the discovery of significant dinosaur remains following recent excavations on a property north-east of Winton. The site, which was discovered in 2015 by local grazier Bob Elliott, has produced the fossilised remains of a sub-adult sauropod dinosaur that comprises the most complete fore-section of a sauropod dinosaur yet discovered in Australia. Once excavations are complete it is expected that the new dinosaur, nicknamed Judy, will become the country's most complete sauropod dinosaur skeleton.

After three weeks of digging the AAOD Museum has recovered numerous bones from Judy including several teeth, possible skull fragments and at least ten cervical (neck) vertebrae interconnected in life position. At around four metres long, it was necessary for the articulated neck of the animal to be encased in a two-tonne steel-reinforced plaster jacket so that it could be removed in one piece by Museum staff and volunteers. A large adjoining three-metre-wide section containing rib bones, more vertebrae and limb bones needed to be separated from Judy's neck in order to be jacketed for removal.

Judy's bones were preserved beside a thick mat of plant matter that, due to its shape, position and alignment, is believed to be the fossilised gut contents of the animal. Other clusters of ironstone-covered fossil bones nearby suggest that numerous dorsal vertebrae and forelimb bones are also present. Forelimb bones identified so far include the paired scapulae and coracoids (shoulder bones), a sternal plate, a left humerus (upper arm bone) and a left ulna (forearm bone). The site, which still has fossil bones extending down into the ground, also appears to preserve bones from the pelvis and hind limb.

Dr Stephen Poropat, a research scientist with Swinburne University of Technology in Melbourne and Research Associate of the AAOD Museum, said that the discovery is likely to become the most complete sauropod ever found in Australia. "The previous record holder, the Jurassic-aged *Rhoetosaurus brownei* from Roma, is represented by about 25% of a skeleton," said Dr Poropat. "Even with the site only partially excavated, it is expected that Judy will exceed this!"

Dr Poropat said that at approximately 12 metres long, Judy is one of the smaller sauropod specimens found in the Winton Formation to date. "This animal appears not to have been fully mature when it died, since neither of the shoulder girdles are fused as is common in older animals," he said. Dr Poropat said that Judy is special for a number of reasons: "The neck of this sauropod is at least 65% complete and is in life position. Sauropod cervical vertebrae are relatively rare in Australia and the cervical ribs that attach to them are even rarer". According to Dr Poropat, the next best, a *Diamantinasaurus* nicknamed Alex that was excavated nearby in 2004, includes seven partial vertebrae but no complete cervical ribs. "To have ten cervical vertebrae articulated with cervical ribs preserved on both sides is exceptional, even by world standards." he said.

David Elliott, Executive Chairman and field palaeontologist with the AAOD Museum, said that the discovery of Judy is huge news for the Museum and for Australian palaeontology. "Of the 15 years we have been digging, this is by far the most complex dinosaur skeleton we have uncovered" he said. This dinosaur carcass has been relatively undisturbed since death, despite indirect evidence of scavenging activity by theropods in the form of a megaraptoran tooth recovered with the bones. To find a near-complete neck and preserved remains of a collapsed rib cage beside what appears to be the gut contents of the animal is incredible, and the information that can be gleaned from this site by palaeontologists is extraordinary! It is quite possible that the remaining limb bones and the rest of the vertebrae – right down to the tip of the tail – might be present as well."

Mr Elliott and Dr Poropat are excited that comparing the bones of Judy with those of holotype specimens recovered from the Winton district in recent years, and held at the AAOD Museum, will provide a wealth of information about Australian Cretaceous sauropods. "This specimen can be

compared against all of its contemporaries, enabling us to work out whether Judy represents a new species (or genus) or, more likely, a new specimen of an existing species or genus,” Dr Poropat said. “The discovery gives us all sorts of new information on Australian sauropods – the teeth and the gut contents will shed light on their diet and behaviour while the completeness of the specimen will provide us with further anatomical information allowing it to be placed accurately on the sauropod family tree and in biogeographic context” he said.

The Australian Age of Dinosaurs Museum will resume excavations in mid-August and preparation of the specimen will begin in 2018. According to Mr Elliott plans are underway for a major exhibition of the new dinosaur to be included in the Museum’s third stage of development – the Australian Age of Dinosaurs Museum of Natural History, which is expected to be under construction by 2022.

