

PALAEOLOGY

Living it large

Brian Switek swoons over a New York exhibition that brings giant sauropods back to life.

Dinosaur halls are the petrified trophy rooms of natural-history museums. But *The World's Largest Dinosaurs* — an exhibition curated by Mark Norell of the American Museum of Natural History and Martin Sander of Germany's University of Bonn — is not a classic gallery of old bones.

The exhibition reconstructs the lives of *Apatosaurus*, *Brachiosaurus* and other sauropods by showcasing recent research into their biology. Instead of ranks of enormous skeletons, visitors are greeted with the restored head and neck of *Argentinosaurus* (the full 30-metre body would be too big) and an 18-metre *Mamenchisaurus* mock-up, which stands in a pathway of interactive displays.

Walk along the left flank of the *Mamenchisaurus* and you will see its ribs expand and contract as it breathes. Linger a little longer and its flesh peels back to reveal and explain the creature's internal anatomy.

Casts and fragments

➔ NATURE.COM

For more on large vertebrate fossils:

go.nature.com/q49vxo

of other sauropods illustrate how these dinosaurs coped with being so large. How could giants such as *Diplodocus*, for example, eat enough food given their tiny skulls and small, peg-like teeth? The displays show that, in fact, their heads were well-suited to living large. Sauropods bolted down vast quantities of food without chewing, and their long necks allowed them to sample wide swathes of greenery while standing still.

For how long their meals would have filled them up is another matter. An interactive display invites visitors to select a warm-blooded (endothermic) or cold-blooded (ectothermic) sauropod and choose a diet of either high- or low-quality plants — such as cycads or horsetails, respectively. As you 'feed' the sauropod, the dinosaur's virtual stomach fills up at different rates and for varying amounts of time, illustrating how diet and physiology interact.

Just one part of the exhibit feels out of

The World's Largest Dinosaurs
American Museum of Natural History,
New York
Until 2 January 2012.

place. Following on from kiosks about blood pressure, growth rates and lung anatomy, the final room houses a trough filled with artificial dinosaur bones for children to excavate. Although it reminds visitors that fieldwork is the first step in understanding prehistoric life, it jars with the exhibition's focus.

Naturally, reverse-engineering the anatomy and physiology of animals from prehistoric bones involves speculation and informed guesswork. What sauropod hearts looked like must be inferred from those of birds and crocodiles, and the physiological functions of the air sacs in sauropod bones are still debated. Yet this exhibit is a fitting tribute to how palaeontology has matured.

A century ago, when institutions such as the American Museum of Natural History were new, palaeontologists competed to find the biggest and most complete sauropod skeletons to display. *The World's Largest Dinosaurs* shows how the study of these animals has become an interdisciplinary science that is beginning to answer long-standing questions about dinosaur biology. It is a wonderful celebration of the efforts of palaeontologists to put flesh on ancient bones. ■ [SEE NEWS FEATURE P.159](#)

Brian Switek is a freelance science writer and author of *Written in Stone: Evolution, the Fossil Record, and Our Place in Nature*. e-mail: evogeek@gmail.com



M. GRAFF/UPI/NEWS.COM

The muscles and internal organs of an 18-metre *Mamenchisaurus* are on show at the American Museum of Natural History in New York.