

Baltimorean Debunks Dinosaur Finds

Specialist's Comparison of Bones Shows 'New' Species Long Known

By Boyce Rensberger
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It is time to rewrite the record book for dinosaurs, according to a leading expert on the extinct giants.

Contrary to a series of allegedly record-breaking discoveries that began in 1972, the largest known dinosaur really is a species known since the early 1900s, the familiar *Brachiosaurus*.

The newest finding by Gregory S. Paul, a self-taught dinosaur specialist from Baltimore, debunks "discovery" of *Supersaurus* in 1972, the even bigger *Ultrasaurus* in 1979 and the ground-shaking "Seismosaurus" seven years later.

Paul's anatomical analyses and reconstructions of dinosaur skeletons in meticulously scaled drawings are becoming the accepted standard in the field.

"There have been a lot of big claims in recent years, but they don't hold up very well," said Michael Brett-Surman, a dinosaur specialist at the Smithsonian Institution's Museum of Natural History. "Greg's reconstructions have been independently verified, and just about everybody's using them now."

Paul's revision of the record books is based on a detailed comparison of the newly discovered fossils with comparable bones in mu-

seum collections. He has also discovered several errors in previous reconstructions of the *Brachiosaurus* skeleton and corrected them in his illustrations to reveal the animals as having a shorter trunk and taller forelimbs, which give it a more giraffe-like image than previous experts have suggested.

Brachiosaurus "is the only quadrupedal dinosaur which one would have to reach up to slap the belly as one walked under it," Paul said. "Most unusual for a tetrapod [four-legged animal], much less a dinosaur, it is an exceptionally elegant and majestic design."

Supersaurus and *Ultrasaurus* belong to the group popularly called brontosaurus or brachiosaurs. They are four-legged plant eaters with long tails and long necks.

Their existence was inferred from the discovery in Colorado of a few isolated bones, chiefly shoulder blades, that resembled those of *Brachiosaurus* but appeared larger than previously known examples. They were found to be larger than the world's only fully mounted *Brachiosaurus* on display, a specimen at the Humboldt Museum of Natural History in East Berlin.

Paul, who has examined the dinosaur collection in East Berlin, traced some errors in older views of *Brachiosaurus* to the fact that the German mount is a composite of

several partial skeletons of different sizes.

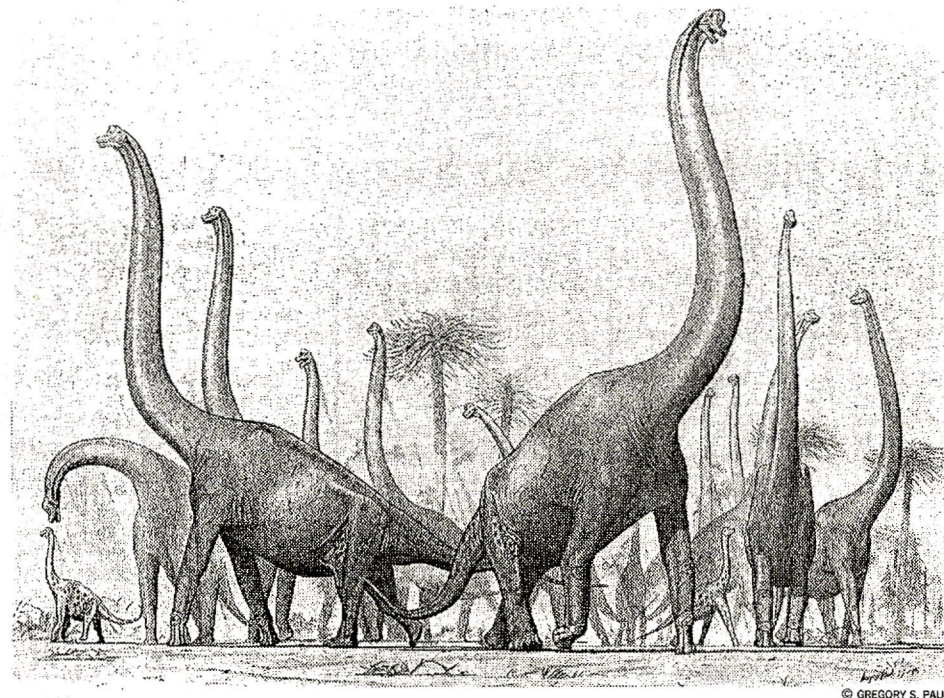
Paul found that, while the *Ultrasaurus* bone is bigger than the comparable bone displayed in East Berlin, it is about the same size as a *Brachiosaurus* shoulder bone not on display.

In fact, Paul concluded, the bones are so similar that *Supersaurus* and *Ultrasaurus* are "almost certainly" not separate species but simply additional examples of *Brachiosaurus*.

Paul's reconstruction of the skeleton also scales back estimates of the beasts' weight. *Ultrasaurus* had been thought to weigh as much as 190 tons, but Paul said a more accurate estimate of adult weight is between 45 and 50 tons at the leanest time of the year, with the weight growing by perhaps one-third in "prime fat-bearing condition."

Both of the challenged record-breakers were discovered by Jim Jensen, then of Brigham Young University. Jensen, whose luck and skill at discovering fossils are legendary, is not known within the field as a leading authority on interpreting his finds. Now retired, he could not be reached for comment.

"Seismosaurus," a name that has not been granted formal scientific status, is not a brontosaurus or brachiosaurus but belongs to a related group called the diplodocids whose



best known member is *Diplodocus*. Brachiosaurs and diplodocids are members of the sauropod family of dinosaurs.

Although "Seismosaurus" was said to be the largest known dinosaur when discovered in 1986, topping both of Jensen's finds, Paul's analysis of the fossils suggests that it may have weighed less than *Supersaurus*, although longer from

head to tail tip. "Seismosaurus" is estimated at between 100 and 120 feet in length and *Brachiosaurus* at 72 feet.

Paul's reconstruction agrees with the widely shared opinion that dinosaurs were not the sluggish brutes suggested by their reptilian ancestry but faster-moving creatures whose behavior is more like that of birds, the living descendants

of dinosaurs, and mammals. Contrary to more dated artists' impressions, Paul's reconstructions show that brachiosaur tails did not drag on the ground but stuck out behind as counterweights to the long necks.

The architecture of their legs and musculature suggests that they moved with "an elephant-like amble," he said.