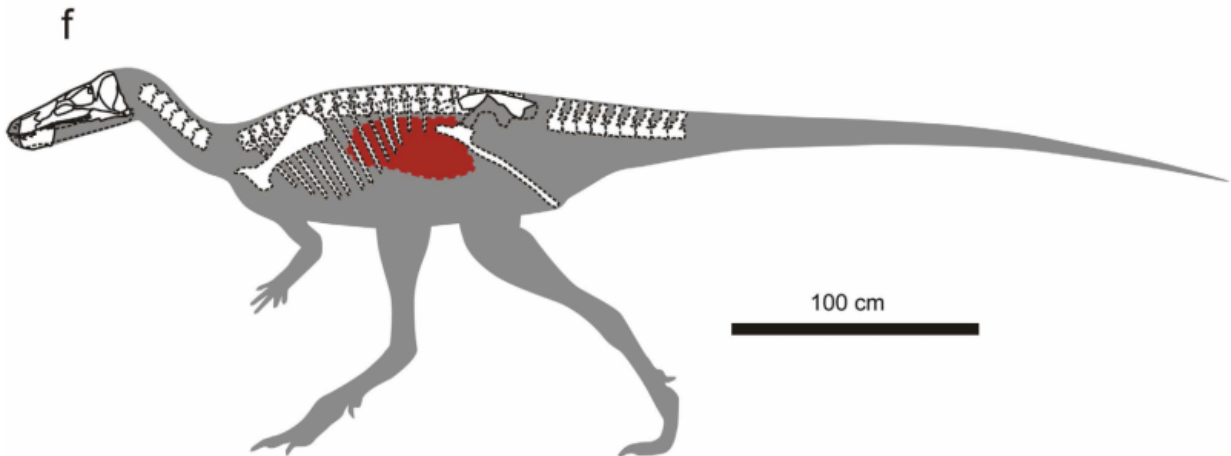
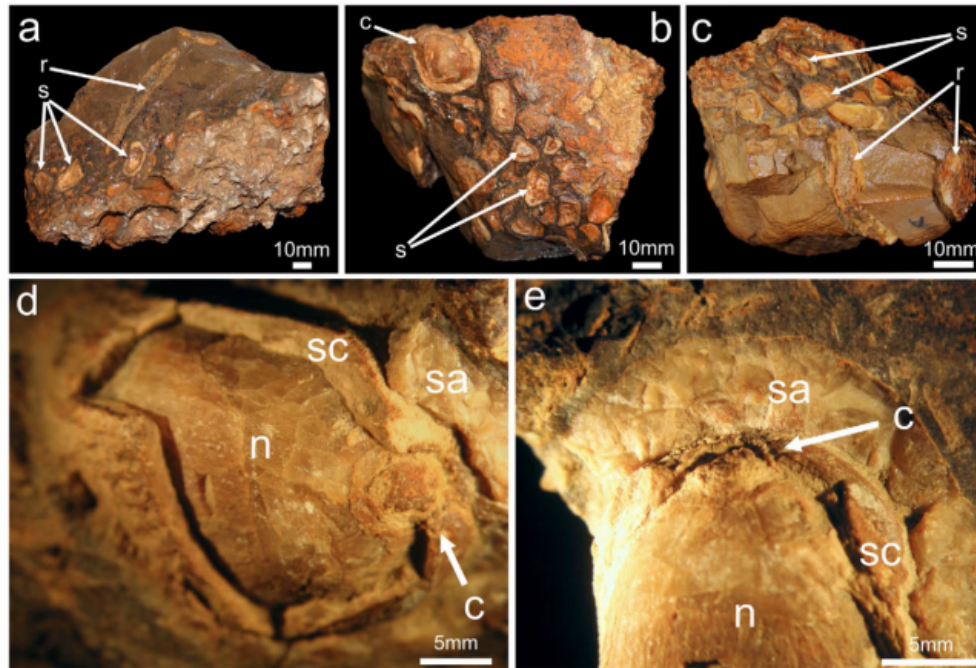


A 180 million year old dinosaur dinner

March 7 2017, by Jon Tennant



Gut content of *Isaberrysaura* (a–c), seeds of cycads (c), and other seeds (s); rib (r). (d,e) Detail of seeds of cycads: sarcotesta (sa), sclerotesta (sc), coronula (c),

nucellus (n). (f) Location of the gut content in the reconstructed skeleton of *Isaberrysaura*. Credit: Salgado et al., 2017

While artistic reconstructions of dinosaurs preying on each other are a fantastic way of illustrating the real-life behaviours of these fantastic creatures, direct evidence of dinosaur-food interactions in the fossil record are surprisingly rare.

In modern ecosystems, it's quite easy to establish ecological interactions between predators, prey, and plants – we simply have to look at who is eating who or what. But in the [fossil record](#), this is quite difficult, as the animals we look at often tend to be dead.

Sometimes, though, we know what a dinosaur ate by looking at the remains in their fossilised poop, and every now and then we even get extraordinary glimpses of direct predation from dinosaurs that died locked in a deathly duel.

Rarely though, the fossil record reveals to us actual digested remains of food, preserved for millions of years in the ghost-guts of dinosaurs. These remains, or trace fossils, are called coprolites, and tell us exactly what the dinosaur was eating at the time of death, providing a tantalising window into their real life behaviours.

A recent [discovery](#) from the Jurassic period of Patagonia now shows us the last meal of a dinosaur, still fossilised in its guts!

The discovery was of a new dinosaur species, called *Isaberrysaura mollensis*, and it comes from one of the major dinosaur groups called Ornithischia – the bird-hipped lizards (ironically, not the dinosaur lineage that led to birds, but that's another story). The 5-6 metre long

herbivore inhabited the deltas of Argentina, now the Neuquén Province, back in the early part of the Jurassic.

The new dinosaur somewhat resembles an early stegosaur, but extensive analysis of its anatomy shows its more closely related to the early ancestors of dinosaurs such as Iguanodon and Hypsilophodon.

The special thing about this discovery though is that some of its last meal are still preserved after 180 million years in the space where its gut used to be, but has long since decayed away. The name *Isaberrysaura* has nothing to do with berries, but is named in honour of Isabel Valdivia Berry who was the first to report the discovery back in 2009.

The [seeds](#) have been permineralised, which means replaced by hard minerals that allowed their preservation over millions of years. Some of the seeds were still largely complete too, which suggests the hungry little dinosaur gobbled them down (is this the first time "gobbled" has ever been used in a dinosaur research paper?), instead of taking the time to chew them. These toughened seeds probably would have passed through the digestive tracts of the dinosaur, to be 'expelled' as seed kernels, meaning they would still have been capable of germination.

The teeth of *Isaberrysaura* seem to have been quite poor at food processing, especially compared to their later hadrosaur cousins and their immense 'dental batteries' for grinding plant matter into oblivion, which helps to explain why the seeds are preserved in such good condition.

Researchers identified these seeds as belonging to an ancient type of cycad, as well as from other plants.

This is interesting, as it shows that some dinosaurs, much like modern mammals, might have been important in helping to disperse the seeds of plants along landscapes through plants' ingenuity of exploiting the fact

that [dinosaurs](#) like to poop from time to time.

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Citation: A 180 million year old dinosaur dinner (2017, March 7) retrieved 26 April 2024 from <https://phys.org/news/2017-03-million-year-dinosaur-dinner.html>

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