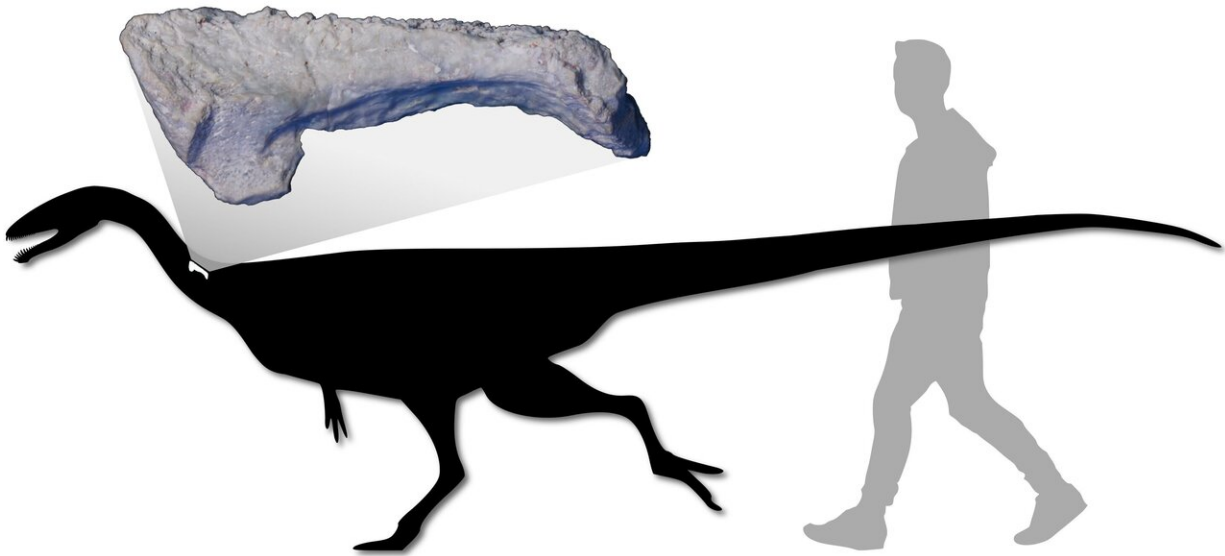


New predatory dinosaur added to Australia's prehistory

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The Lightning Ridge noosaurid bone in approximate life position, with a human for scale. Credit: Tom Brougham

Evidence of agile, carnivorous two-legged dinosaurs known as noosaurids have been found across the now dispersed land masses that once formed the ancient southern supercontinent of Gondwana, but never in Australia—until now.

Researchers identified a single neck bone found in an opal mine near the outback town of Lightning Ridge, New South Wales, as belonging to a

noosaurid, and then realised that another fossil discovered in 2012 along the south coast of Victoria was from the same group.

Noosaurid are a rare group of theropod [dinosaurs](#)—two legged carnivores—that lived in the middle to late Cretaceous Period, between about 120 and 66 million years ago. Noosaurids were small-bodied dinosaurs, many with peculiar facial features, typically less than two metres long and weighing about 20 kilograms.

The recognition of this new group of dinosaurs in Australia by palaeontologists from the Palaeoscience Research Centre at the University of New England and the Australian Opal Centre in Lightning Ridge adds a missing piece to a puzzle.

"It was assumed that noosaurids must have lived in Australia because their fossils have been found on other southern continents that, like Australia, were once part of the Gondwanan supercontinent," said lead scientist, Dr. Tom Brougham of the Palaeoscience Research Centre. "These recent fossil finds demonstrate for the first time that noosaurids once roamed across Australia. Discoveries of theropods are rare in Australia, so every little find we make reveals important details about our unique dinosaur fauna."

The researchers compared the 100 million-year-old Lightning Ridge neck bone with those from other [carnivorous dinosaurs](#) and quickly realised it was different from anything that had been found in Australia to date. "When we looked at what features this bone has compared to those of other theropods, we found that it matched closely with this strange group of dinosaurs called noosaurids," Dr. Brougham said.

"This prompted us to re-examine an ankle bone of a dinosaur that was discovered in Victoria in 2012, about 20 million years older than the Lightning Ridge bone, and using the same methods we concluded that

this also belonged to a noosaurid. In addition, this ankle [bone](#) is approximately the same age, or perhaps even older, than the oldest known noosaurids, which come from South America."

Noosaurids were similar in size to, and lived at the same time as, a more well-known group of carnivorous dinosaurs called dromaeosaurids or 'raptors'—infamously represented by Velociraptor in Jurassic Park—and were probably also active predators. However, while Velociraptor and kin have representatives from all over the world, noosaurids were known only from several of the southern continents (South America, Africa, Madagascar and India), which formed the supercontinent of Gondwana before it started breaking apart in the Cretaceous.

The study was published today in the journal *Scientific Reports*.

More information: *Scientific Reports* (2020).
[nature.com/articles/s41598-020-57667-7](https://www.nature.com/articles/s41598-020-57667-7)

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