

New study finds dinosaur fossils did not inspire the mythological griffin

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Painting of a griffin, a lion-raptor chimera, alongside the fossils of Protoceratops, a horned dinosaur. The latter are said to have informed the lore and appearance of the former, but our study suggests that there is no compelling connection between dinosaurs and griffins. Credit: Dr. Mark Witton

A popular and widely-promoted claim that dinosaur fossils inspired the

legend of the griffin, the mythological creature with a raptorial bird head and wings on a lion body, has been challenged in a new study [published](#) in *Interdisciplinary Science Reviews*.

The specific link between [dinosaur fossils](#) and [griffin](#) mythology was proposed over 30 years ago in a series of papers and books written by folklorist Adrienne Mayor. These started with the 1989 *Cryptozoology* paper titled "Paleocryptozoology: a call for collaboration between classicists and cryptozoologists," and was cemented in the seminal 2000 book "The First Fossil Hunters." The idea became a staple of books, documentaries and museum exhibits.

It suggests that an early horned dinosaur of Mongolia and China, Protoceratops, was discovered by ancient nomads prospecting for gold in Central Asia. Tales of Protoceratops bones then traveled southwest on [trade routes](#) to inspire, or at least influence, stories and art of the griffin.

Griffins are some of the oldest mythological creatures, first appearing in Egyptian and Middle Eastern art during the 4th millennium BC, before becoming popular in ancient Greece during the 8th century BC.

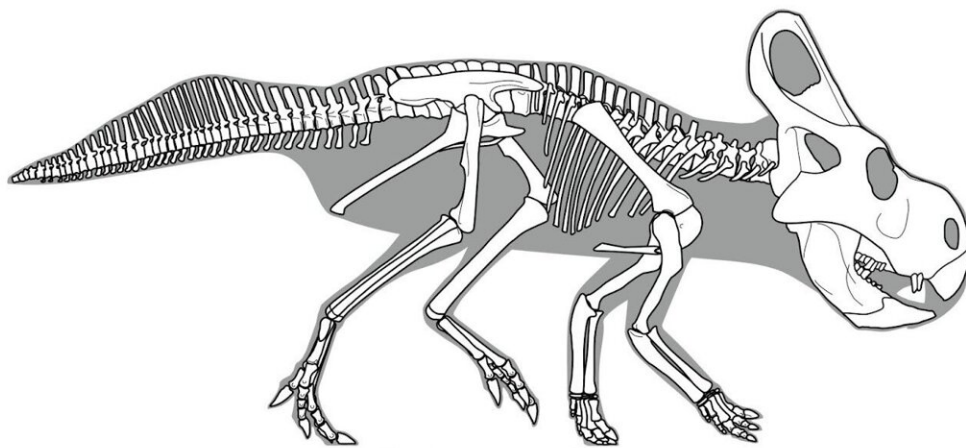
Protoceratops was a small (around 2 meters long) dinosaur that lived in Mongolia and northern China during the Cretaceous period (75–71 million years ago). They belong to the horned dinosaur group, making it a relative of Triceratops, although they actually lack facial horns. Like griffins, Protoceratops stood on four legs, had beaks, and had frill-like extensions of their skulls that, it's been argued, could be interpreted as wings.

In the first detailed assessment of the claims, study authors Dr. Mark Witton and Richard Hing, paleontologists at the University of Portsmouth, re-evaluated historical fossil records, the distribution and nature of Protoceratops fossils, and classical sources linking the griffin

with the Protoceratops, consulting with historians and archaeologists to fully understand the conventional, non-fossil based view of griffin origins. Ultimately, they found that none of the arguments withstood scrutiny.

Ideas that Protoceratops would be discovered by nomads prospecting for gold, for instance, are unlikely when Protoceratops fossils occur hundreds of kilometers away from ancient gold sites.

In the century since Protoceratops was discovered, no gold has been reported alongside them. It also seems doubtful that nomads would have seen much of Protoceratops skeletons, even if they prospected for gold where their fossils occur.



Protoceratops skeleton



Early griffin art,
4th century BCE Mesopotamia



Greek vase griffins, 7th (left) and
5th (right) century BCE

Comparisons between the skeleton of Protoceratops and ancient griffin art. The griffins are all very obviously based on big cats, from their musculature and long, flexible tails to the manes (indicated by coiled "hair" on the neck), and birds, and differ from Protoceratops in virtually all measures of proportion and form. Image compiled from illustrations in Witton and Hing (2024). Credit: Dr. Mark Witton

"There is an assumption that dinosaur skeletons are discovered half-exposed, lying around almost like the remains of recently-deceased animals," said Dr. Witton. "But generally speaking, just a fraction of an eroding dinosaur skeleton will be visible to the naked eye, unnoticed to all except for sharp-eyed fossil hunters.

"That's almost certainly how [ancient peoples](#) wandering around Mongolia encountered Protoceratops. If they wanted to see more, as they'd need to if they were forming myths about these animals, they'd have to extract the fossil from the surrounding rock. That is no small task, even with modern tools, glues, protective wrapping and preparatory techniques.

"It seems more probable that Protoceratops remains, by and large, went unnoticed—if the gold prospectors were even there to see them."

Similarly, the geographic spread of griffin art through history does not align with the scenario of griffin lore beginning with Central Asian fossils and then spreading west. There are also no unambiguous references to Protoceratops fossils in ancient literature.

Protoceratops is only griffin-like in being a four-limbed animal with a beak. There are no details in griffin art suggesting that their fossils were referenced but, conversely, many griffins were clearly composed from

features of living cats and birds.

Dr. Witton added, "Everything about griffin origins is consistent with their traditional interpretation as imaginary beasts, just as their appearance is entirely explained by them being chimaras of big cats and raptorial birds. Invoking a role for dinosaurs in griffin lore, especially species from distant lands like Protoceratops, not only introduces unnecessary complexity and inconsistencies to their origins, but also relies on interpretations and proposals that don't withstand scrutiny."

The authors are keen to stress that there is excellent evidence of fossils being culturally important throughout human history, and innumerable instances of fossils inspiring folklore around the world, referred to as "geomyths."

Richard Hing said, "It is important to distinguish between fossil folklore with a factual basis—that is, connections between fossils and myth evidenced by archaeological discoveries or compelling references in literature and artwork—and speculated connections based on intuition.

"There is nothing inherently wrong with the idea that ancient peoples found dinosaur bones and incorporated them into their mythology, but we need to root such proposals in realities of history, geography and paleontology. Otherwise, they are just speculation."

Dr. Witton added, "Not all mythological creatures demand explanations through fossils. Some of the most popular geomyths—Protoceratops and griffins, fossil elephants and cyclopes, and dragons and dinosaurs—have no evidential basis and are entirely speculative.

"We promote these stories because they're exciting and seem intuitively plausible, but doing so ignores our growing knowledge of fossil geomyths grounded in fact and evidence. These are just as interesting as

their conjectural counterparts, and probably deserve more attention than entirely speculated geomythological scenarios."

More information: Mark P. Witton et al, Did the horned dinosaur Protoceratops inspire the griffin?, *Interdisciplinary Science Reviews* (2024). [DOI: 10.1177/03080188241255543](https://doi.org/10.1177/03080188241255543)

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