

Collapse

by Juliana Byers

In 1971, a team of Polish palaeontologists found something extraordinary in the Gobi Desert: two small dinosaurs, almost perfectly preserved, locked forever in mortal combat.¹

One was a Protoceratops, a sheep-sized herbivore with a sharp beak and a small frill over its neck. This frill was initially believed to be defensive, but close analysis revealed that it was flimsy, little more than skin stretched tight over hollow openings in the bone.² It was probably used for display only, leaving the dinosaur with no natural defences except herding, yet this specimen died alone.

The other creature entombed in the Gobi Desert was a Velociraptor; a deadly carnivore that was not yet famous in those pre-*Jurassic Park* days. Contrary to the image most people hold in their minds, this dinosaur was the size of a chicken and covered in feathers.³ What *Jurassic Park* did get right was the deadly claw on the hind legs: six inches long in life! Debate rages about whether this dinosaur was a pack hunter, as often depicted in popular culture, or a solo predator. There is no *direct* fossil evidence that Velociraptor hunted in packs,⁴ although there *is* evidence that other dromaeosaurs (the genus Velociraptor belongs to) may have done so.⁵ However, if this Velociraptor *had* been part of a pack, they weren't on hand to help and this one died - like its prey - alone.

The remains were quickly nicknamed 'Fighting Dinosaurs' and even today we are still asking the question: what happened? Protoceratops had a slight edge on size and bulk, but the Velociraptor should have made short work of it, even if it was hunting alone. A modern comparison would be an unarmed bodybuilder getting into a fight with a scrawny guy carrying an AK-47! The fight was hopelessly one-sided, yet *both* dinosaurs died that day and *neither* killed the other.

While we'll never know *exactly* what happened, the paleontological record tells an incredible story. This was an unforgiving land, inhabited by the original fantastic beasts. And where to find them? They're languishing in the rocks beneath our feet, waiting for another chance in the sun. Their bones might be all that's left, but fossils aren't just bones; for those who know how to read them, they're the most fascinating stories ever told.

¹ T. Jerzykiewicz, *Fighting Dinosaurs in Tugrugeen Shireh (Gobi Desert, 1971)* [photograph], 1971, https://upload.wikimedia.org/wikipedia/commons/a/a6/%27Fighting_dinosaurs%27Tugrugeen_Shireh%2C_Gobi_Desert%2C_1971.jpg, (accessed 29 March 2022)

² G. Paul, *Dinosaurs: A Field Guide*, A&C Black Publishers, London, 2010, p. 254

³ *Ibid.* p. 137

⁴ M. Norell. & P. Makovicky, 'Dromaeosauridae' in B. Dodson, H. Osmólska & D. Weishampel (eds), *The Dinosauria*, 2nd edn., Berkeley, University of California Press, 2007, p. 196–209

⁵ B. Switek, 'Dinosaurs behaving badly: Did velociraptors hunt in packs?', *The Guardian*, 30 March 2011, <https://www.theguardian.com/science/blog/2011/mar/29/dinosaurs-behaviour-raptors-pack-hunters>, (accessed 29 March 2022)

As for *Fighting Dinosaurs*, I think that story went a little something like this ...

Mongolian Desert
Early Cretaceous Period
71 - 75 Million Years Ago

There wasn't enough to eat.

That was a deadly fact in this desert and the little Protoceratops could feel it. The desert was always dry, but the continent had been in a severe drought for over a year now and most of the oases the dinosaur had once visited to drink and feed had dried up. Occasionally there would be dead wood to gnaw on, but starvation was fast closing in.

The herd had long since fractured as competition for food and water became too intense. The weaker animals had quickly died of thirst or were picked off by the predators which stalked this sandy, rocky world. Velociraptor and Tarbosaurus were two, but even they were reaching their limits. While there was still prey the predators would not starve, but they still needed water and there was precious little of that to be had.

The harsh conditions had also forced the Protoceratops to change its ways. Usually, it would move during the day, but the extreme heat and lack of resources had led to it being more active at dawn and dusk. Not only was it cooler, but this was when the insects were out; with starvation looming even an insect was worth eating. The bugs also tended to congregate around water - so where the insects were, there was probably something to drink too.

But this was not without risk. Tarbosaurus hunted only during the day, but Velociraptor was nocturnal and very active at sunrise and sunset. These terrifying killers had once hunted in packs, but the packs - like the herds - had come apart as the drought wore on. The big prey had started to disappear, so pack hunting had become unnecessary; a single Velociraptor was perfectly capable of killing what remained. The dinosaurs here had hard heads, but they lacked any type of defensive biology that would make a carnivore think twice before attacking them: no horns, no teeth, no claws.

The Protoceratops had been up before dawn, searching fruitlessly for food, water or insects. As the sun began to rise, the little dinosaur found a place to wait out the heat of the day; it was not hot yet, but the dawn coolness would burn off soon and the small herbivore settled beneath an extensive overhang. There might not be food, but at least there was shade. It would make a small nest here, more of an indentation than anything, and rest until the evening came and it could move once more.

As it settled in, a thin trickle of sand fell from above.

The Protoceratops had just started to dig when it stopped, nostrils flaring as it caught a horrible scent in the air. It looked up and drew back against the cliff it was sheltering beneath, watching as a terrifying vision approached through a shimmering haze. Smaller than the Protoceratops, the Velociraptor didn't bother to try and hide itself as it came near. It ran steadily, its feathered arms drawn close to its sides and the long tail held rigidly behind it for balance. The Protoceratops planted its feet and crouched low, defending its underbelly, and with nowhere to run and no place to hide, it faced the predator and bellowed a desperate challenge. It lowered its head and waved the flimsy frill that was its only, inadequate protection against its oncoming death; somewhere in its primitive brain it was determined to go down fighting.

The trickle of sand from above was slowly becoming a stream.

As it moved closer, the Velociraptor considered its options. It had the advantage of momentum and could have easily leapt onto the back of the helpless Protoceratops; but a leap had risks and, in this unforgiving environment, risks were best avoided. If it misjudged the distance, or the prey stepped out of the way, that was valuable energy expended unnecessarily, but even a successful leap could be dangerous. It could easily catch the flank with its vicious hind claws and would be able to grasp the ridiculous little frill with its fingers, forcing the head down and biting into the back of the neck, but if the Protoceratops rolled, the predator would not be able to disengage itself in time. That the little dinosaur would bleed to death in a matter of minutes after such an attack would be no comfort to the Velociraptor if it too was dead. No, a leap was far too risky; it would be better to get close, to intimidate the creature and force it into a position where the Velociraptor could attack the soft underbelly.

It slowed, spreading its arms and flexing its claws, leaning forward and opening its mouth wide to rasp a promise of imminent death. The Protoceratops bellowed a second challenge and snapped its beak. It was not much of a weapon, but if it could break twigs it could break bones and the Velociraptor was delicately built.

Pebbles were clattering down the cliff face now, the sand flowing like a river, and the overhang gave a soft but ominous crack.

The predator charged. It was a feint, a rush to try and move the Protoceratops away from the protection of the cliff, but it startled the little dinosaur into an instinctive charge of its own. It hit the Velociraptor full in the chest and the predator shrieked in surprise before it saw the situation was to its advantage. It stretched out its long fingers and dug the claws of one hand into the skin of the frill around the prey's neck, while simultaneously kicking out with its foot.⁶ The lethal claw made contact with the underbelly of the Protoceratops as it tried to shake its killer loose, and the Velociraptor felt the hot gush of blood and the wet slither of intestines over its leg as it tore through the skin and into the belly of its victim.

⁶ R. Barsbold, 'The Fighting Dinosaurs: The position of their bodies before and after death', *Paleontological Journal*, vol. 50, 2016, p. 1412-1417.

The Protoceratops roared.

The overhang above began to rumble and split. The pebbles became stones and the sand cascaded down the sides of the cliff in a gritty torrent of imminent doom.

Dragged down by the predator still clinging to its body, the Protoceratops tried to crouch again, but far from protecting it from attack, this only served to drive the claws in deeper. The Velicoraptor gave a rasp of triumph as its foot cut further into the animal's soft underside, but it turned into a shriek of pain as the Protoceratops snapped desperately and caught the beast's free hand. Bone crunched in the herbivore's beak and the Velicoraptor opened its mouth wide, lunging for the throat, determined to finish the plucky little creature before the sound and smell of its impending demise attracted anything bigger.

And from its position beneath its prey, looking up as it aimed for the jugular, it watched as the overhang above finally came loose.

There was a second, a moment where it tried to disengage, to pull its claw out of the Protoceratops and run, but what happened next happened too fast. An avalanche of sand swallowed the fighting dinosaurs whole, burying them instantly in a hot, suffocating deluge, followed seconds later by the devastating impact of a thousand tons of broken rock.⁷

Then the rumbling stopped and there was nothing.

Just the endless, heartless desert.

Some hours later, a lucky Tarbosaurus would come across the pile of rubble and discover the leg of the dead Protoceratops sticking out of it. It knew there was more but it had no way to dig it out and so settled for what it could easily reach. Then it walked off towards the horizon, the sweet taste of blood lingering in its jaws and before long, it disappeared.

⁷ D. Lomax, *Locked in Time: Animal Behavior Unearthed in 50 Extraordinary Fossils*, New York, Columbia University Press, 2021, p. 167

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