

Science Finds The Fabled Unicorn?

The Discovery of a Remarkable One-Horned Fossil Monster Which May Be the Actual Ancestor of the Strange Beast of Legend

By Dr. W. H. Ballou.

THROUGH the discovery of the complete skeleton of a most extraordinary single-horned dinosaur of comparatively recent date, science has come seriously to consider that there is after all truth in the widespread legend of the unicorn. The monster just found, it thinks, may be the beast which gave rise to the story, or if not the actual unicorn itself, at least its ancestor.

No supposedly fabled animal had so widespread a popularity as the unicorn. We find legends of it in almost every country of the world. And curiously enough not even the pictures the Chinese have drawn of their peculiar species vary very much from those which the ancient chroniclers and medieval artists set down as portraits of the beast. The only real differences are seen in its legs—one school making them very heavy, the other slender and horse-like.

The outstanding feature of the unicorn upon which all agree was a long horn rising from the top of its nose. In a Bestiary written by a Norman scholar in the thirteenth century the following interesting descriptions are found:

"The unicorn has but one horn in the middle of its forehead. It is the only animal that ventures to attack the elephant; and so sharp is the nail of its foot that with one blow it rips up the belly of that most terrible of all beasts. The hunters can catch the unicorn only by placing a young virgin in the forest which it haunts. No sooner does this marvelous animal deprecate the damsel than it runs toward her. It lies down at her feet and so suffers itself to be taken by the hunters."

Pliny, the Roman naturalist, out of whose account of the unicorn most of the modern unicorns have been described and figured, records it as "a very ferocious beast, similar in the rest of its body to a horse, with the head of a deer, the feet of an elephant, the tail of a boar, a deep bellowing voice and a single black horn, two cubits in length, standing out in the middle of its forehead." He adds that "it cannot be taken alive"; and some such excuse may have been necessary in those days for not producing the living animal upon the arena of the amphitheatre.

The Bible mentions the unicorn no less than eight times, all in the Old Testament. The mentions are as follows: "God brought them out of Egypt: He hath as it were a strength of an unicorn." (Numbers, Chapter 24, Verse 22.)

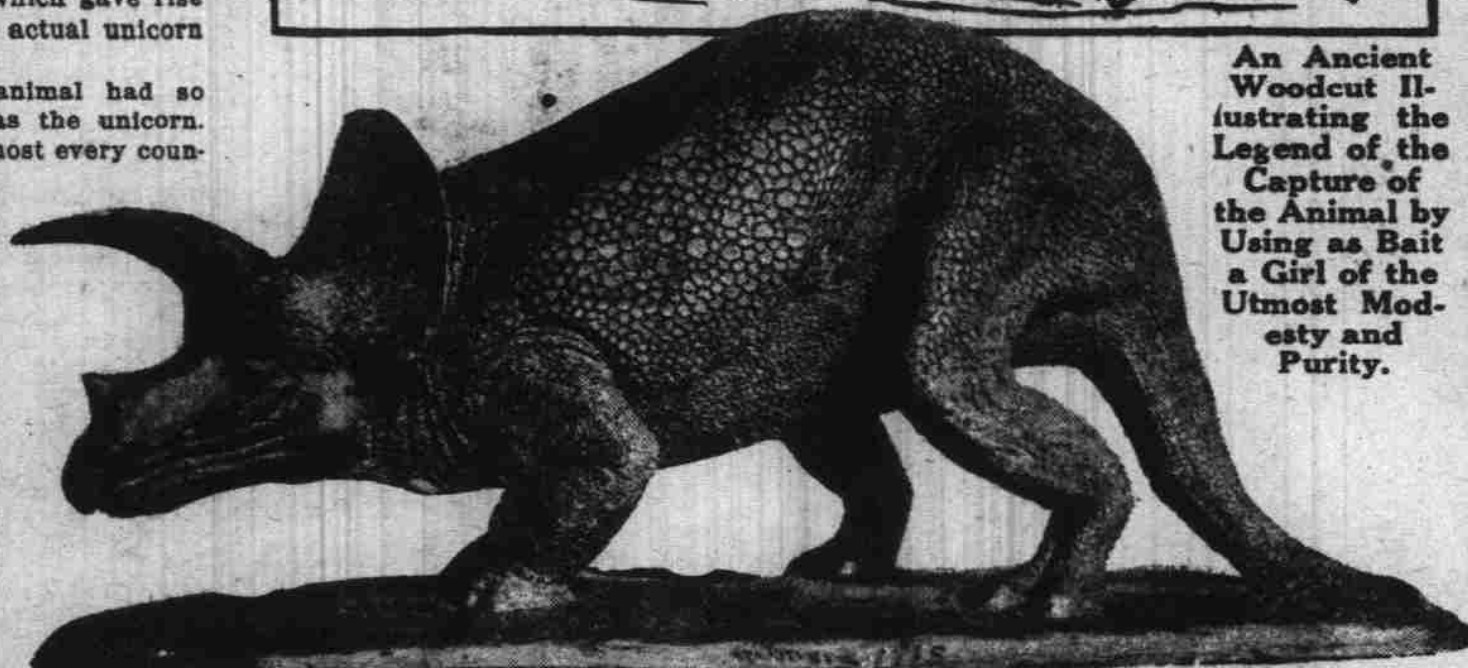
"His glory is like the fringing of the bullock and his horns are like the horns of unicorns." (Deuteronomy, Chapter 33, Verse 17.)

"Will the unicorn be willing to serve thee or abide by thy crib?" (Job, Chapter 39, Verse 9.)

"Canst thou bind the unicorn with his band in the furrow? Or will he harrow



An Ancient Woodcut Illustrating the Legend of the Capture of the Animal by Using as Bait a Girl of the Utmost Modesty and Purity.



A Crested Dinosaur of the Same Type as the Fossil Found and Which Was Perhaps the Ancestor of That Fossil and Also of the Unicorn.

the valleys after thee?" (Job, Chapter 39, Verse 10.)

"Save me from the lion's mouth, for thou hast heard me from the horns of the unicorns." (Psalms, Chapter 22, Verse 21.)

"He maketh them also to skip like a calf; Lebanon and Sirion like a young unicorn." (Psalms, Chapter 29, Verse 6.)

"But my horn shalt thou exalt like the horn of an unicorn: I shall be anointed with fresh oil." (Psalms, Chapter 92, Verse 10.)

"And the unicorns shall come down with him, and the bullocks with the bulls; and their land shall be soaked with blood and their dust made fat with fatness." (Isaiah, Chapter 34, Verse 7.)

Aelian, another ancient writer on natural history, describes the unicorn as about the size of a horse, reddish-yellow in color, excelling in swiftness "through the excellence of its feet and of its whole body."

"Like the elephant," says Aelian, "it has inarticulate feet and it has a boar's tail. One black horn projects between the eyebrows, not inwardly, but with a certain natural twist, and terminating in a sharp point. It has, of all animals, the harshest and the most contented voice. It is said to be gentle to other beasts approaching it, but to fight with its fellows."

Professor Charles Gould, an eminent English scientist, believes that "a creature whose existence has been affirmed by so many authors, at so many different dates, and from so many different countries, cannot be, as mythologists demand, merely the symbol of a myth. There is a possible solution which does not appear to have struck previous writers on the subject, namely, that the unicorn may be merely a hybrid produced occasionally and at more or less rare intervals. By accepting this view we could explain the extraordinary combinations of character assigned to it, and the discrepancies that exist between

the qualities of courage and gentleness ascribed to it by western and Chinese authors. A cross between some equine and cervine species might readily result in a unicorn offspring, and either the courageous qualities of the sire or the gentleness of the dam might preponderate, according to the relations of the species in each of the instances."

The use of the unicorn in heraldry has been made by the oldest royal families, some of the most famous crests bearing it.

The dinosaur which has aroused the interest of science in the unicorn legend was found in northwestern Montana. As many of the fossils discovered in this same region have their counterparts both in Europe and Asia, the location of the find is significant. As may be seen by the photograph of the skeleton, the legs of this monster are unusually massive. Their size conforms to Pliny's description of "the feet of an elephant" and, also, to Aelian's remark that "like the elephant it has inarticulate feet."

There is no doubt about its horn. And now we come to a very curious fact. This creature, despite its ferocious aspect, was herbivorous—that is, it was not a flesh eater, but a grazer like the horse and the cow. This being so, it follows that the monster lacked the ferocious qualities of the carnivore or flesh eater.

Do we find in this the basis of fact which Spencer said lay at the bottom of all legends—that is, the reason for the very extraordinary statement that the unicorn was a gentle beast, irresistibly drawn to maidenhood, which, of course, is presumably a gentle state?

In the fact that this horned dinosaur was herbivorous lies a very real scientific mystery, indeed. How and why did the horn evolve on certain types of animals and not on others? What started the first horn and how was it developed and handed down to posterity?

The Fossil Remains of a Horned Dinosaur, Whose Remarkable Similarity to the Description of the Unicorn, and Other Interesting Things About It, Have Made Science Believe That It or a Descendant May Actually Have Been the Fabled Animal.

Men of science, noting the presence of horns on herbivorous animals, only, have assumed that they were evolved for defense. But not all hay eaters are provided with horns. The cow has them, but the horse has not. Hence men of science deduced that speed was given the horse to replace the necessity of horns for defense. Other men of science have not taken much stock in these or any other theories. Why? Because with a number of types of mammals, only the males have horns. Another anomaly is scored with the antelope. Here we have the greatest speeder, also with horns. Andrews drove an automobile sixty miles an hour, but the antelopes kept well in front of him. So speed did not, at least in some instances, replace horns. In fact, there are an enormous number of species of herbivorous mammals which have both horns and terrific speed.

Following the discovery of the remains of this one-horned animal—unicorn, or as it has been scientifically named Brachyceratops—there has been an intensive investigation to trace the origin of horns still further back. This has had peculiar results. Dr. W. D. Matthew, at the American Museum of Natural History, New York, found among the fossil remains collected by an expedition in Texas a skull with two pairs of rugosities for horns, over the prefrontals and nasals.

He named this pre-reptile Tetraaceratops, meaning four-limbed horned reptile. This creature existed in the Permian-Carboniferous Age, some 30,000,000 years ago. So far as there are fossils to check up, horns appeared with him before true reptiles were evolved and disappeared with him. No fossils show horns again in earth's history until the remains of an Upper Jurassic carnivorous dinosaur, Ceratosaurus nasicornis, were unearthed in Colorado, 15,000,000 years later. Again horns disappeared, to be revived again in the Lower Cretaceous times, several millions of years later, on the nose of Brachyceratops.

In the above we have the anomaly, the mystery. Both Tetraaceratops, the pre-reptile and Ceratosaurus, the dinosaur, were carnivores—that is, ate flesh—while the later Brachyceratops and still later descendants of his, and the still later mammals, were all herbivores or vegetarians!

Naturalists say, "Well, carnivores had powerful cutting teeth and didn't need horns for defense since they had offensive weapons." Even so, the contention is not a scientific reason for the change from carnivores to herbivores, for the origin of the horn or for its remarkable appearances and disappearances. What these investigators have concluded, however, is a matter of much interest.

Osborn remarks: "The herbivorous types of dinosaurs appear in Upper Cretaceous times, and are the aggressively and defensively horned Ceratopsia, in which two or three front horns evolved step by step, with a great bony frill pro-

tecting the neck. Such evolution took place stage by stage with the evolution of the predatory mechanism of carnivorous dinosaurs, so that the climax of ceratopsian defense of Triceratops was reached simultaneously with the climax of offense in Tyrannosaurus. This is an example of counteracting evolution of offensive and defensive adaptations, analogous to that we observe to-day in the evolution of lions, tigers and leopards, which counteracts horned cattle, and the antelopes of Africa; and again in the wolves simultaneously with horned bison and deer in our northern hemisphere. It is a case where the struggle for existence is very severe at every stage of development and where advantageous or disadvantageous chromatin predispositions in evolution come constantly under the law of selection."

And there is no reason why modified descendants should not have existed in Pleistocene times with early man. Brachyceratops is regarded as the founder of bony horns as distinguished from sheath horn, which is chemically an extension of the skin in hardened form. This honor is due him, notwithstanding the prior attempts at horn building by the small pelycosaur before the age of true reptiles and the odd appearance of a horned carnivorous dinosaur in the forepart of dinosaurian evolution. Brachyceratops had a real bony horn on his snout—a stout, though divided, horn with which he made it lively for such carnivorous dinosaurs as attacked him. He also had the beginnings of a pair of horns over the eyes. So far as the fossil goes, his ancestors are unknown, but his known descendants were comprised in seven genera, all of which improved their horns and frills for defense. He was about eighteen feet long and ten feet high. The discovery of the animal which had



Boecklin's Famous Picture of "The Unicorn and the Maiden," Illustrating One Idea of What the Unicorn Looked Like. Below Are Two Crests of Noble English Families Showing the Utilization of the Unicorn in Heraldry.



the honor of bearing the first true horn falls to Dr. Charles W. Gilmore of the U. S. Geological Survey. He has superintended the construction of a lifelike model of the reptile, now on exhibition in the National Museum, which better illustrates its characteristics than any other pose could do. You know the habit of carnivores: they always spring at the neck of the animal marked for a meal ticket. A glance at Gilmore's model of this brachyceratops, or unicorn's grandfather, shows it crouched in such an attitude that the large, bony frills, or "Elizabethan ruffs," completely shield the necks by lying flat on them.

It may well be that the legend of the unicorn is a prehistoric memory of one of the descendants of this strange dinosaur. It may have had certain peculiarities which struck the imagination of very primitive man who encountered it. The evolution of the unicorn from this ruffed monster to the fleet and graceful horned beast of legend is not more remarkable than the evolution of the modern horse of to-day from the little, almost rat-like creature which was its forefather ages ago. Nor is it more remarkable than the shrinking of the iguanodon lizard or the armadillo from their colossal ancestors. Just as the legend of the dragon is without doubt a memory of man of the gigantic flying lizard, so the unicorn may be a form of life which overlapped the period of man's consciousness and has since been wiped out of the page of earth, except for its fossils in the rock.

More and more science is leaning toward the dictum of Spencer that no myth can exist without a basis of fact—and science is beginning to see that its real duty is not to scoff at the myth, but find out what that basis of fact is which gave birth to it.