

A Prehistoric Duck 30 Feet Long

Twenty-five-Hundred Times as Big as a Modern Water Fowl It Had an Extraordinary Helmet of Bone on Its Head Which Stumps Scientists to Explain

JUST across the American border in Alberta, Canada, 10,000,000 years ago, Nature carefully impressed upon a soft, plastic rock the complete skeleton and bodily outlines of a gigantic creature which was a sort of prehistoric duck, more than thirty feet in length. The remains of that creature have been carefully and painstakingly brought to New York and placed in the American Museum of Natural History. And if the distinguished curator and his assistants from the museum had been present 10,000,000 years ago to superintend that job of preserving the fossil remains of that monster the work could have scarcely been done better than it was performed at that ancient day by the processes of nature.

It was not merely a bundle of bones scattered about. It was, as shown in the photograph above, a wonderfully perfect job, and the geologists were so fortunate as to find not only the outline of the creature's body, but also to be able to study the texture, thickness and quality of its skin, and to see that the skin had tubercles on the sides, back and tail.

The monster duck was a dinosaur. It was an aquatic animal with wonderfully powerful hind legs, web-footed for swimming; but since its body weighed about five tons and was too heavy to lift into the air, it had to dispense with wings, and in the place of flying machinery had developed some small forward swimming legs.

This duck-billed dinosaur lived in what is called the Upper Cretaceous period of the Mesozoic era and has been named the *Corythosaurus Casuarus*. The word *Corythosaurus* means "helmeted," and the word *Casuarus* is the same as cassowary, a modern bird which still exists in Africa and has a bony crest on its head.

Scientists have looked long and wonderingly at this ancient bonehead, and nobody is able to satisfactorily account for such a dome of bone. Neither is the bony helmet of the well-known cassowary understood. The bird has been studied with much interest by ornithologists, but has never shown that it makes use of its heavy skull for any purpose whatever. If it was of any use or special value in ages long gone by it has entirely abandoned using its thick cranium for any such purpose in modern times. Therefore, the modern Cassowary and the bonehead of the ancient gigantic cassowary are a scientific puzzle.

The ancient duck, whose remains are now in New York, formerly lived near the town of Red Deer, in Alberta, Canada. The skeleton was found in an outcropping rock stratum of the Cretaceous period, which the scientists call the "Belly River Formation." The specimen was found by Mr. Barnum Brown, of the American Museum. Nearby was found a less complete but similar skeleton—perhaps the creature's mate. Both fossils were carefully packed and brought to New York.

From the bones of *Corythosaurus Casuarus* and the impression of its body in the rock, the paleontologists of the American Museum are able not only to reconstruct the body of the great duck, but to learn many details of its manner of living and that of the creatures co-existent. The huge duck-bill and the teeth adapted to grinding rather than cutting show that it was herbivorous and did not prey upon its fellow dinosaurs. The feet were webbed for swimming, and the hind feet, in addition, were covered with fleshy pads arranged in lobes, showing that it walked as well as swam. Dinosaurs in general, and *Corythosaurus* in particular, were among the first bipeds, the first creatures to stand upright on two feet and move about.

Impressions of the tendons that moved the tail are clearly visible, and from their position, and other features of its construction, it is plain that the tail was powerful enough to be used for propelling the body in the water, much after the fashion of a single scull worked from the stern of a boat, in addition to serving as a rud-

The Peculiar Dome of Bone on the Duck's Head Which Is Unlike Anything Else Known to Science in Ancient or Modern Times.

der. With tail, front and hind feet all working, the Belly River duck must have moved through the water with considerable speed—though five tons is no mean weight to push about.

In Cretaceous times, of course, there were no ducks as we know them now. The order of reptiles was still dominant; the ancestors of our modern crocodiles, lizards, snakes and turtles peopled the earth. Fishes were small and but slightly developed. Birds had just begun to evolve from flying lizards and still possessed teeth. Animals were just beginning to appear and were all marsupials, carrying their young in pouches after the fashion of opossums. It was millions of years before the earliest man lived.

So *Corythosaurus Casuarus* was the duck in the Cretaceous scheme of things. His front legs, in the patient process of evolution, were beginning to change into wings as the centuries passed. The fingers were lengthening and spreading, while the length of the limb decreased. The heavy covering was changing into membrane, the scales were softening, dropping off. In short, *Corythosaurus* was getting ready to sprout wings.

But the hind legs were changing in a different way. The heavy pads were shrinking from the toes, there was less walking and more swimming as time went on. Every sign pointed to the merging of the walking, swimming lizard into the swimming, waddling, flying bird, the duck. His habits were already those of a duck. He lived in the rivers and the brackish waters of the continent that extended over a great portion of what is now the Pacific Ocean. Glaciers were not to spread over the earth for millions of years and the climate of what is now Canada was tropical in temperature and vegetation. There were gigantic horse-tail rushes, fig trees and a species of the palm, and among these the Belly River duck made its nest. Here he paddled about in the slime of those moist, hot days, eating an occasional frog or turtle, but making his diet otherwise wholly vegetarian, and constantly fleeing from the fellow creatures that preyed upon him.

For the Belly River duck was probably very good hunting, so far as his fellow

dinosaurs were concerned. The Pythonomorph — sea serpent — the Brontosaurus, the Diplodocus, and especially the huge, savage Tyrannosaurus Rex, relished a mess of *Corythosaurus Casuarus* just as we delight in a tender breast of duck. He could not yet fly to escape them, but even if he could there were the Pteranodon and the Pterodactyl, huge flying reptiles, that probably pounced down on *Corythosaurus* from above and made quick work of him.

Then there were the Iguanodonts, bird-footed creatures standing fifteen feet high, with spurlike thumbs sticking out at right angles from the palm. Crocodiles had developed valves at the back of the tongue and could drown their prey without harm to themselves. Mosasaurs—sea lizards—had reached a length of fifty feet, and, no doubt, crept up under many a *Corythosaurus* and snapped him up. Altogether

The Remarkably Well Preserved Fossil Remains of the Ancient Duck That Stood 18 Feet High, Weighed 5 Tons and Lived 10,000,000 Years Ago. From Photograph of Specimen in New York Museum of Natural History.



The Modern Species of Duck Whose Head Slightly Resembles the Ancient Creature of Bygone Days. Photo by Elwin R. Sanborn, New York Zoological Society.

grenade or a whaler's harpoon gun. At any rate, if the modern shotgun shell were to be made in a size proportionate with that of that ancient duck it would resemble a cylindrical hand grenade filled with marbles. The expense of making decoys, one hundred to a set, and each thirty feet long, would take the sport out of the popular class and place it on a par with that of maintaining a wine cellar. And what sort of retriever could be found to swim after five tons of dead duck and bring it safely back to the blind?

So from the point of view of the sportsman, perhaps it is just as well that the modern duck is smaller than the Belly River specimen. But if thirty-foot ducks were as numerous now as are their smaller descendants, the status of our food supply and of the cost of living might well be quite different.

Photograph of a Prehistoric Skeleton Being Uncovered in Its Bed Where It Had Reposed for Millions of Years.

slow in adapting themselves.

The result was inevitable. Of the countless varieties of reptiles that inhabited the earth and dominated it in the Cretaceous period only crocodiles, snakes, lizards and turtles now remain. Many of the ancient reptiles disappeared altogether. Some had already evolved into birds. But *Corythosaurus Casuarus*—harmless, helpless as he was—lived to see almost all of his enemies engulfed in the mists that separate the Mesozoic Age from the Eocene. Then he set about in earnest to become a duck.

Perhaps he survived as long as he did because there were no sportsmen in those times. There was not even a missing link or a cave-man armed with stone club to lie in wait for the Belly River duck and try the weight of his club against the bony crest. A modern shotgun would not have penetrated his thick, tubercle-covered hide.

The duck-hunter would have to change his armament if *Corythosaurus* were alive to-day. Very likely he would use a rifle,

In all probability the flesh of *Corythosaurus Casuarus* was edible, according to Dr. Matthew and Mr. Granger, of the museum, or would have been if any of us had been there to eat it. It fed upon much the same things as does the duck of to-day, and, so far as paleontologists can tell, the flesh was not nearly so coarse as might be expected. It is a curious fact that the grain of flesh does not increase in coarseness with the size of the animal. The biggest thing that ever lived is the sulphur bottom whale, and its flesh is not much coarser than beef. So with the elephant. And a neat little tidbit for the larder it would be. For North American duck of those days weighed five tons or more, or 10,000 pounds. A four-pound tame duck will provide a meal for three people. Therefore, the monster duck was equivalent to 2,500 four-pound ducks and a brigade of 7,500 people could have dined on it to satiety. At the prevailing average price of 55 cents a pound it would have cost merely \$5,500.

And the creature's egg was probably three and one-half or four feet long, the equivalent of 4,750 modern duck eggs. Duck eggs are not as popular as hen's eggs, but still they sell at 80 to 90 cents a dozen. At 85 cents a dozen, each Belly River duck egg, the equivalent of 396 dozen modern eggs, would be worth \$336.60, and a dozen of them would cost \$4,039.20. Rather a dainty omelette, too.

But that was millions of years ago, and neither duck nor egg survives, at least nothing but the fossil skeleton of the duck has been found. In the museum is a huge fossil egg, but it is not big enough to have been laid by that old Alberta duck.

Fossil Egg from the Museum of Natural History. The Monster Duck's Egg Was About 4 Feet Long and Would Compare with the Modern Duck's Egg About as the Little Egg Above Compares with the Big Fossil.

the helmeted duck, the original bonehead, had many enemies.

But if he was preyed upon and bullied by his fellow creatures, he was to have his revenge, for nature was taking her course and mammals were slowly developing to the point where they would gain the ascendancy over reptiles. The twilight of the Mesozoic Age, the day of reptiles, had been reached. The reptile boom was subsiding. The world was changing, and the reptiles were for the most part too