Above Right: Benjamin Waterhouse Hawkins. Photograph, 1870. Princeton University awarded Hawkins an honorary doctorate and employed him as a lecturer.
hen people think about dinosaurs, they typically bring to mind *Jurassic Park* and the American West. But few people know that an artist working in New Jersey played a seminal role in establishing the conventions that define this genre.

No artist was more influential in visual images of dinosaurs than Benjamin Waterhouse Hawkins (1807 – 1894), who spectacularly launched the first waves of dinosaur mania on both sides of the Atlantic. All modern images of pre-human time ultimately derive from this endlessly creative and theatrical conjurer of ancient time.

Hawkins was born in London and studied at St. Aloysius College, a preparatory school for boys. He pursued sculpture under the tutelage of William Behnes and began his career in natural history illustration, creating detailed sketches and lithographs for influential books such as Charles Darwin’s *The Zoology of the Voyage of the HMS Beagle* and the scientific works of John Edward Gray and John Gould. He received recognition of his artistic skill with a membership in the exclusive Royal Academy of Arts. Though he had lit-
tle academic training, he gained a reputation as a scientist as well, writing several books on comparative anatomy and receiving an invitation to join the prestigious Linnean Society.

The growth of Hawkins’ reputation coincided with the expansion of the emerging field of paleontology, the study of fossils. New discoveries led a vanguard of scientists to propose the revolutionary idea of extinction, countering widely-held religious beliefs in the infallibility of God. In 1842 the British scientist Richard Owen was the first to name some prehistoric animals *Dinosauria*, from the Greek words meaning “terrible lizards.” At this point, the bones of only a few species were known.

Twelve years later British officials commissioned Hawkins to create the world’s first life-sized sculptures of dinosaurs to grace the grounds of the Sydenham Crystal Palace, a world-renowned exhibition about the progress of civilization. Hawkins’ massive sculptures used up to 30 tons of clay each, the largest measuring nearly 30 feet long and supported only by iron and bricks in its legs. They were immensely popular with the public, igniting for the first time a wide-spread interest in dinosaurs. Hawkins also created small-scale versions of his sculptures which were the first dinosaur models offered for sale, reaching the public through mail-order catalogues. The sculptures and models introduced to the public the idea that the age of the earth was much older than previously believed, preparing the way for Charles Darwin to debut his theory of evolution in 1859.

At a lecture for the London Society of Arts, Hawkins proposed that art provided the best method for teaching the public about paleontology in light of the scant fossil record. He also proclaimed his own anti-evolutionist beliefs when he stated his goal was to “for the first time illustrate and realize—the revivifying of the ancient world—to call up from the abyss of time and from the depths of the earth, those vast forms and gigantic beasts which the Almighty Creator designed with fitness to

Hawkin’s sculptures were recently conserved and can be seen in the Crystal Palace Park in London today.


inhabit and precede us in possession of this part of the earth.”

In 1868 Hawkins received a commission to create a Paleozoic Museum in New York City. Hawkins worked closely with scholars at the Academy of Natural Sciences in Philadelphia until the project was stopped prematurely by the corrupt “Boss Tweed.” The shells of Hawkins’ giant creatures, smashed by William M. Tweed’s agents, were likely buried in Central Park.

In the 1870s the renowned professor Arnold Guyot of Princeton University (then the College of New Jersey) invited Hawkins to lecture at the college, leading to an honorary degree from the college in 1874. The following year Princeton commissioned Hawkins to create a series of seventeen massive panoramic paintings depicting the geological eras of the earth, to hang in the college’s new Elizabeth Marsh Museum of Geology and Archaeology in Nassau Hall. The paintings were intended to use the most current scientific evidence in order to educate the students. Fifteen of the paintings survive today, many of which were recently conserved by Morven Museum & Garden and Princeton University Art Museum.

The paintings began with a view of the earth at the dawn of life, referencing the Biblical creation story. Though a few books since the 1840s had included engravings depicting the ages of the earth, Hawkins’ murals are the first paintings illustrating this theme, setting a precedent for natural history museums in the decades to come.

For the second painting (Devonian...), Hawkins shows a variety of fish seemingly awaiting fossilization upon the ground. This beach-scene convention was common in geological prints of the 1800s as artists struggled to depict underwater life from a lands-eye view. However, Hawkins setting was unique; as he wrote “I have fixed upon Niagara Falls for the foundation of my next picture Age of Fishes for the Geological Museum at Princeton.” Like many people of the time, he was captivated by the natural wonder and felt it suggested the massive elemental forces present in early geological time.

Hawkins populates his atmospheric Triassic Life of Germany with labyrinthodonts, a long-necked Notosaurus next to a Mastodonsaurus, and a Dyoplax. The painting seems to suggest an evolutionary
narrative of adaptation to life on land. But the motif of labyrinthodonts crawling onto the beach was common in engravings in Victorian natural history books, and is a simple reference to the animals' amphibious nature. This painting shows other conventions of landscape paintings such as vegetation and clouds framing the scene, but the leeringly cheerful expressions of the labyrinthodonts are Hawkins' own inventions.

Hawkins crowded his Jurassic scene with animals, reflecting the abundant vertebrate fossil record. Dinosaurs had first appeared in the Triassic period and dominated the fauna of the Jurassic period. He built a triangular composition but awkwardly broke its balance with a left-to-right progression towards night, betraying his lack of training. As always, the deeply creative Hawkins theatrically imbued the animals with great character as he sought to engage his audience with the fantastical scene. In this painting an Iguanodon herd on the left run from three Megalosaurus bucklandi, one of which stands over its fallen prey. Three crocodilian Teleosaurs (later renamed Pelagosaurus typus) ascend the island from the left, while four Hylaeosaurus approach from the right. Six Pterodactylylus wade and sun themselves. The Megalosaurus (or “giant lizard”) held special importance to the Victorians, because its fossil was the first known to be found, discovered in England in the 1600s. Originally believed to belong to a human giant, in 1824 Baron Georges Cuvier identified it as a dinosaur, and for many decades the Megalosaurus was the largest known carnivore of the ancient world.

Hawkins' painting Cretaceous Life of New Jersey (cover image) included several recently discovered species. Entering from the left of the painting, three large carnivorous Dryptosaurus attack a retreating herd of Hadrosaurus foulkei, many of which swim away. Two large Mosasaurus maximus and four Elasmosaurus swim in the foreground, and a Pterosaur perches on a rock at the right edge. In an attempt to
heighten the sense of drama, Hawkins departed from a strictly correct anatomical representation by showing the grappling animals writhing in impossible contortions. As in other paintings, Hawkins picturesquely signs the painting as if his name is a bit of graffiti.

The centerpiece of Princeton’s museum was a replica of the *Hadrosaurus foulkii*, discovered in Haddonfield, New Jersey in 1858. It was the most complete dinosaur skeleton of its time and it proved the new theory that some dinosaurs stood on two legs. (While Hawkins acknowledged this fact in a letter in 1868, strangely he presents the animals in the painting on four legs, as he had earlier for the Crystal Palace sculptures. This may result from his own anti-evolutionary views or because he could not admit that his Crystal Palace masterpieces were deeply flawed.) Though it was the most complete dinosaur skeleton of its time, the *Hadrosaurus* received only scientific interest until Hawkins mounted it in a lifelike position a decade later. The sensational result created America’s first phase of “dinosaurmania,” with hundreds of thousands of visitors visiting the skeleton at the Academy of Natural
Sciences. The episode further fueled Hawkin’s reputation as the pre-eminent illustrator of dinosaurs.

The herbivore *Hadrosaurus foulkii* was not named for the town of its location—Haddonfield, New Jersey—but rather for a combination of its appearance (*adros* means “bulky” in Greek) and a man involved in its discovery, William Foulke. It remains the most complete skeleton ever found in the state and is New Jersey’s state dinosaur. Together with the *Dryptosaurus* discovered in 1866, these discoveries made New Jersey the forefront of fossil hunting in America until bigger fossils were discovered out west.

Hawkins’ lack of formal training in painting is again apparent in his captivatingly naïve landscape *The Glacial Epoch in Europe*. The glacial epoch is an informal term for any of the several ice ages in the Quaternary period, debatably our present period. The perspective, as for all the paintings, is intended to be viewed from several feet below. The initials *E. M.* by Hawkins’ signature, written as if it is graffiti on the rocks, refer to the museum’s name.

Hawkins gives greater emphasis to geology in this painting, with careful depictions of silt and ice flows. He was guided by Arnold Henri Guyot (1807—1884), a professor at Princeton University who determined key laws of glacial motion. The beaver-like animals on the left are *Trogontherium cuvieri*, which at over 400 pounds were the largest rodents of their age. The herd of reindeer is a species which still exists today. Mammoths, seen on the right, became extinct approximately 10,000 years ago.

The pose of the fighting animals in *Attack in Pleistocene England* was taken directly from influential posters that Hawkins made many years earlier. The Pleistocene is one of two divisions of the Quaternary period. In this painting, four saber-toothed *Smilodons* attack three mammoths while a pack of hyena assault from the rear. One hyena is hastily sketched, suggesting that the painting was never fully finished. The composition of

*The Glacial Epoch in Europe* by Benjamin Waterhouse Hawkins. Oil on canvas, 1877. Princeton University Department of Geosciences, Guyot Hall.
the animals in this painting is the most fully integrated, with each group directly interacting with the others.

Hawkins' paintings for Princeton University were the culmination of his career and his final commission. They presented views into the timeline of the earth’s past, richly evoking animals and scenes that the public had hardly known existed. In the generations that followed, artists such as Charles Knight would create massive murals at the American Museum of Natural History and other museums. But until then, Hawkins brought the first vision of the dinosaurs to the public.

A little over a year after completing the paintings, Hawkins retired, returning to his family in London. The paintings remained in Nassau Hall until 1909, when they were moved to Guyot Hall for nearly a century. They were recently exhibited at Morven Museum & Garden and are currently protected in storage at Princeton University Art Museum.


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