



The Gilded Dinosaur: The Fossil War Between E.D. Cope and O.C. Marsh and the Rise of American Science

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It was an age of counterfeit giants, avaricious robber barons, corrupt politicians, intrepid pioneers, fierce Indian chiefs, and dinosaurs. The second half of the nineteenth century -- the so-called Gilded Age -- was a time when Americans were exploring the West and building a nation that would stretch from coast to coast.

It was also a time of scientific ferment. Charles Darwin had shaken the very foundations of Victorian society with his theory of evolution by natural selection, and scientists across the civilized world were locked in a great battle over Darwin's idea. While the debate raged in Europe, the hunt for hard evidence increasingly focused on the American West, with its grand mesas, buttes, and badlands. "We must turn to the New World if we wish to see in perfection the oldest monuments of earth's history," advised Sir Charles Lyell, the father of modern geology, after a visit to America. "Certainly in no other country are these ancient strata developed on a grander scale or more plentifully charged with fossils."

Could the answer to the history of life and the proof of evolution be found in those fossils? That was the question that two young American paleontologists--Edward Drinker Cope and Othniel Charles Marsh--set out to answer. But what began as a friendly contest quickly turned into bitter rivalry that would spill over into American science and politics and rage relentlessly for nearly three decades.

Cope and Marsh would battle on the prairies, in the halls of Congress, in science journals, and in the popular press. Both wealthy men, they launched lavish, western expeditions and raced across the plains and mountains searching for the remains of the magnificent beasts that once inhabited the continent. Along the way they would encounter George Custer, Sitting Bull, Buffalo Bill, and Red Cloud.

Among the most remarkable fossil discoveries of Cope and Marsh are a bevy of dinosaurs, including some of the best known beasts -- the Triceratops, the Stegosaurus, the Camarasaurus, and the Brontosaurus. Even today, Marsh holds the record for dinosaur discoveries.

Just as valuable, however, were some of Marsh's discoveries of ancient mammals and birds that provided the first real proof of Darwin's theory--"The best support for the theory in twenty years," the great Darwin himself proclaimed.

The tale of Cope and Marsh is also the story of the rise of American science. When their story begins just after the Civil War, America was an intellectual backwater, with eminent scientists snookered by the great, fake stone statue The Cardiff Giant--a hoax unmasked by Marsh.

But even as Cope and Marsh waged war, they both fought to build up American science and its scientific institutions. Yet despite their discoveries and their Gilded Age celebrity, the names of Cope and Marsh have faded into the recesses of the library and archive. In **The Gilded Dinosaur** Mark Jaffe exhumes from those archives the notes, journals, and letters of Cope and Marsh to reanimate and retell one of the keenest rivalries in the history of science.

The Gilded Dinosaur: The Fossil War Between E.D. Cope and O.C. Marsh and the Rise of American Science Details

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From Reader Review *The Gilded Dinosaur: The Fossil War Between E.D. Cope and O.C. Marsh and the Rise of American Science* for online ebook

Lou Yuhasz says

Exhaustive. No Really. It tells you everything you would want to know about the development of Paleontology and Science in mid to late 19th century America. It's a facinating account of the rivalry between Marsh and Cope, But seems to be a day by day account of thirty years worth of infighting.

Richard Derus says

This review has been revised and can now be found at [Expendable Mudge Muses Aloud!](#) It's an excellent drama of hatred, rivalry and old bones.

Thomas Holbrook says

When it was first suggested that I read this volume I was resistant, as I had already read Lanham's *The Bone Hunters* and felt I had been sufficiently schooled in the Cope/Marsh dinosaur fossils "war". While Lanham's book did a good job of introducing the battle, it was a mere shadow of what, according to this volume, actually occurred and what were the ramifications of those actions. As is true with all books dealing with history or historical events, there are many names, dates, events that are mentioned in both books and such information can be tedious and cause the book to get "bogged down." When, however, they are mentioned in a context of clear timeline, the breadth and significance of those names/dates/events connect "then" with "now" in a manner that is surprising and enlightening. Mr. Jaffe is to be commended for doing such in as concise manner.

Edward Drinker Cope was reared in a prosperous shipping family near Philadelphia. His Quaker parents instilled in him an ethic of hard work, intelligence, piety and devotion to task that was to serve him well in his life. Othniel Charles Marsh was born into modest means in the Northwest New York town of Lockport. Because of his innate curiosity, superior intellect and the generosity of his uncle, financier George Peabody, he was able to study at Yale and THE centers of learning in Europe. Both men were of vast intelligence, strong wills and egos that seem to be connected to such traits. Initially, they were collegial if not colleagues in their interest in the budding field of Paleontology. As their careers began to bloom, the desire to be recognized for their contributions likewise grew. What began, on both their parts, as a desire to learn and expand a new field grew to be one of the most famous, vicious and, in terms of present day science, beneficial feuds in history.

Both men began gathering dinosaur bones when doing so meant risking: being starved in the wilderness of the Western U.S., die from heat stroke, killed by Indians or lost in a land that was in charted and unfriendly. What they discovered, between the efforts of both, were some of the richest fossil beds in the world. Because they were the first to discover said bones, they earned the right to name the animal to which the bones belonged and there was the battle line of their war. So many bones, from so many prehistoric animals were being found in various locations in such a relative short time that they were soon at odds over "who found what, when." As a result of their challenging each other, and the science they were helping to expand, their scientific papers became the standard of the field. The preciseness and definitive nature of their work continues to influence the fields of paleontology, geology, botany and ornithology to this day.

Had either Dr. Marsh or Dr. Cope allowed themselves to step outside of their egos long enough to catch a glimpse of what they could do had they worked together, their discoveries would have multiplied exponentially. Cope was a visionary who possessed a gift for writing exact papers detailing what he has found. Marsh was a gifted administrator whose drive and determination played a large part in bringing a mysterious science into the popular mainstream. Both were gifted in their ability to discover bones that had been hidden for so long that time had yet to be invented when first they were laid down. Their bravery and determination were shown to be needed in making America a world leader in Science and scientific research. Perhaps their decade's long feud was needed to bring about such sweeping advancements in science. Had not each goaded the other to expand their reach in order to "win" an undeclared war, they would not have demanded so much of themselves and of their discipline. Whatever the case, the benefits brought about by these two academic giants can still be felt in every natural history display or dinosaur movie/book present today. Their discoveries brought light areas of evolution, physiology, philosophy and theology that are the basis of much of our present day knowledge. Such are the gifts of their war.

Ben Stutzman says

A good history for paleontology nerds. Dry, but what an interesting story.

Kaelin says

This is not a good history. It's full of colorful anecdotes about Cope, Marsh, and their historical context, but it's horribly organized, both from chapter to chapter and paragraph to paragraph.

The author is uncritical and unreflective, which makes for a book that's rich in chaotic detail, but impoverished for analysis. I got so tired of the meandering, oblivious style that I stopped reading a quarter of the way through.

This is such an important chapter in the history of science that it's a shame it isn't handled more deftly.

Rebecca Dockum says

A little known fossil war between Cope and Marsh over who would make the greatest discovery of ancient bones is the theme of *The Gilded Dinosaur*. This non-fiction is a good read which reviles facts of how prehistoric bones came to be displayed in our nations prominent museums.

I hadn't a clue what a controversial period this was for scientific exploration. Mark Jaffe does a good job keeping the material in layman's terms yet he is thorough in his research and explaining the dynamics that went into gathering dinosaur bones.

I recommend this book to anyone who loved dinosaurs as a child and has kept an interest in them.

Ben Brackett says

What I enjoyed is the author made this a very interesting read by speaking about not just dinosaurs, but the impact of the men on science as a field, their involvement with politics and Indian relations, and a myriad of other issues of the day. What I didn't enjoy is the author wrote at times like it was intended to be read by a 5 year old - lines like "And just who do you think was upset about this? Marsh!" Detracted from the overall thoroughly researched and laid out novel.

Cherie says

It was interesting and full of information but I'm just glad its done. I am not unhappy that I read it but it was not quite what I was looking for.

I think I wanted a story about what it was like out on a field site in the early days of digging up dinosaur bones in America. This book was that in a small way but much, much more! More than I wanted to know. A great history lesson, just very very dry.

Rudolph Pascucci says

A great overall view of the early history of paleontology in the United States...BUT the WORST editing I have ever encountered in any book I have ever read!

Rachel Rogers says

Also an analysis of American policy toward Native Americans in the 19th Century. Cope and Marsh were 2 American dinosaur enthusiasts who turned it into a huge battle for supremacy in the field of paleontology and American science. The book is fascinating in the number of dinosaurs that each discovered bones for and how prolific the west was for finding them. However, both Cope and Marsh were rude, obnoxious "SOBs" who cared more about naming rights and their alliances than the science. The tales of what their finds did for science (like the proof of evolution in Marsh's horse fossils) were amazing. Some of this story would be great to be told at the Peabody museum in New Haven (maybe it is. I haven't had a chance to read everything since I've only toured it with a small child dragging me around).

Melissa McCauley says

Disappointing

My paleontology professor (a great raconteur) used to tell Cope/Marsh stories – which is why I bought this book in the first place (and a geeky love of fossils). Uncle... I give up. The thought of reading any more of this was making me grind my teeth.

A juicy story about scientific backstabbing, skullduggery, theft, slander, and venomous, snarky epistles ... is

surprisingly boring in Jaffe's hands. The narrative quickly becomes bogged down in all the socio-economic and political background. The cast of famous characters is legion (I ordered a book about P.T. Barnum), but it only serves to further cloud the meat of the story. I'm going to try *The Bonehunters Revenge* by David Wallace.

Cindy says

The story of the rivalry between Cope and Marsh is fascinating. However, the way this author tells the story is simply frustrating. There are countless typos and grammatical errors. Remember those college research papers you waited til the last minute to start on? This reads like one of those. The first hundred pages or so of the book are painful to get through. Nearly every sentence is made up more of quotes from letters Cope or Marsh or their contemporaries wrote than the author's own words. Fortunately it gets better later on. There are far less quotes and it becomes easier to ignore all the errors that would have been caught by any editor worth his or her salt (did the editor even READ the book???). All that aside, it is a good story. I wouldn't have finished it if it hadn't been recommended to me as a good account of the Cope-Marsh rivalry. As far as I can tell, the errors are stylistic rather than factual. But I found myself wishing that for all the quoting going on, the author had instead published the annotated letters of Cope and Marsh. Don't bother with this one. Try *The Bonehunters' Revenge* instead. It can't possibly be worse than *The Gilded Dinosaur*.

RebeccaReads says

Very thorough and well-written, if not entertaining. Somewhere between narrative and expository writing that attempts to garner excitement and adventure only to lose the feeling in pushing political figures around the board.

Alexa Billow says

(also posted to fredscience.tumblr.com)

An account not only of perhaps the most infamous rivalry in the history of science, but of how the word "science" came into use in the United States and the birth of the academy. If you are looking for a book strictly about paleontology, this is not it: it deals heavily in politics, from the Grant administration's Indian policy to the assassination of President Garfield and how these things affected science policy and funding. If you like that sort of thing, this is the book for you.

It doesn't miss out on the juicy Marsh/Cope details, though. These guys bought fossils off each other's men, hired each other's men outright, and sabotaged each other's dig sites, simply because they couldn't stand each other and wanted to find more dinosaurs and ancient mammals than the other guy. It all started when Cope mounted the head of the reptile *Elasmosaurus* on its tail. Marsh was maybe a complete jerk about this, and a beautiful hatred was born. My favorite anecdote is about how viciously they fought to name a particular species of mammal. Marsh had described it as either *Dinoceras* or *Tinoceras*. Cope had described it, on separate occasions, as both *Loxolophodon* and *Eobasileus*. They fought bitterly and for months over who had gotten to it first. It was another paleontologist, Leidy, who had named it *Uintatherium* two weeks before either of them.

In their rush to outdo each other, they frequently made mistakes in describing new genera, often naming a dinosaur the other had already discovered. (Marsh described Stegosaurus; Cope tried to name it Hypsirhopus.) At one point Marsh found a magnificent sauropod skeleton, but its head was missing. In his rush he found a head in a quarry four miles away, chucked it on, and gave it a name. The skeleton belonged to an Apatosaurus, the skull to a Camarasaurus. The academy pointed out his error, so he found another head in a quarry four hundred miles away and called the thing Brontosaurus. ("Nailed it" -O.C. Marsh at some point probably.)

The book doesn't set out to be an indictment of American imperialism in the war against the Indians, but neither does it shy away from the details of the relationship between fossil collecting and conflict with various Indian peoples, particularly the Sioux. Marsh and Cope weren't interested in territory or gold. They only wanted bones. At the same time, they never would have gotten at the bones without railroads and soldiers and the various machinery used in the conquest of the West. It's a complicated picture and reminder that even science can benefit from imperialism.

I found the book terribly interesting. Various well known 19th century characters, such as Buffalo Bill and P.T. Barnum, make an appearance, as well as Gilded Age captains of industry like Carnegie (who very badly wanted a Brontosaurus.) I recommend it, although I must emphasize that there's more history here than science--it's almost about paleontology only incidentally.

Beau Smith says

Great book and very interesting. Opens up a world unknown to most.

Beau Smith
The Flying Fist Ranch
