

# Fossils Behind Fossil Pokémon

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You've seen it in on the television, online, in the news – with the global phenomenon of Pokémon Go! and the recent additions of Sun and Moon, Pokémon games have been around for an astounding 21 years. What started in 1996 has spawned numerous games, trading cards, collectible figures, spin-offs, stuffed animals, and more. At current date, there are over 100 Pokémon games known! These games are spread across various gaming consoles and handheld devices, including the recent Pokémon Go! which is playable on your phone or other mobile device. For those not familiar with a Pokémon game, to sum up: you play as a trainer, and your job is to go out in to the world, catch pocket monsters called Pokémon, learn about them, battle with other trainers, hone your skills, and, as with any good game, save the world in the process.

The games are filled with all types of characters: teachers, students, athletes, children, TV reporters, moms, dads, grandparents . . . and scientists. This last group is devoted to understanding Pokémon, and in some cases, even reviving them from fossils. That's right – fossils! Through June 2017, there are 11 Pokémon fossils: Dome, Helix, Old Amber, Claw, Root, Skull, Armor, Cover, Plume, Jaw, and Sail. The most recent Sun and Moon are using fossil creatures from the fourth and fifth generation of Pokémon, while the rest of the Pokédex (listing of Pokémon) is sitting at generation seven. Similar to the first games, a scientist is needed to bring a fossil back to life. A residual effect is the fossil animals all retain "Rock" in their elemental makeup. Depending on the animal, it may add on an element of Water, Flying, Bug, Grass, Dragon, Ice, or one of the many others available. Pokémon Go! uses fossil Pokémon from the first generation of animals, which will be described next.

The Dome Fossil (which a Pokémon scientist revives into a living Kabuto) may at first be mistaken for a trilobite. Its hard domed head, beady eyes, and many legs look the spitting image of a little trilobite. "Kabuto" is a Japanese word referring to a type of helmet worn by the samurai class and other warriors in a traditional armor kit (fig. 1). In 1666, author Tekisai Nakamura published an illustrated encyclopedia that included a creature called a "kabuto-gani," or helmet crab. Much like the horseshoe crab, its name does the animal injustice, as it is not closely related to crabs at

all, but to arachnids such as sea spiders and scorpions. The solid-looking shell covering the head and part of the body translate well to form the many-legged cartoon version of kabuto seen in Pokémon. As the creatures level up in the game, it evolves into a secondary form – Kabutops. This secondary form has taken features from other horseshoe crab relatives called eurypterids, or sea scorpions.



Figure 1. Iron and leather Kabuto, Japanese helmet, from between 1400-1575 AD.

The fossil behind the Helix Fossil (which revives into Omanite) is a little easier to ascertain. It comes straight from fossil ammonites (fig. 2), exhibiting the coiled shell and many arms that would have been visible in the living animal, albeit with an upside-down shell. Omanite later evolves into Omastar, adding a few more tentacle

arms to the body, and spikes to the shell. Ammonites are part of the Class Cephalopoda (meaning “head foot”) which includes squid, octopus, and cuttlefish. Instead of having a stiff internal support system such as a cuttlebone, found today in squid and octopus, ammonites grow their support around them in the form of a shell. Their closest living relatives are the chambered and paper nautilus.



Figure 2. Ammonite shell.

The last fossil, Old Amber, revives into the ever sought-after Aero-dactyl (fig. 3). This winged reptile is easily seen as a pterosaur, but with its teeth and long tail it is more specifically a rhamphorhynchoid – one of the earlier forms of flying reptiles. The later pterosaurs, which we could potentially find in North Dakota, include creatures like toothless *Pteranodon*. Although no *Pteranodon* fossils have been recovered in North Dakota, it is likely that they were soaring over the heads of dinosaurs during the Cretaceous Period 67 million years ago.

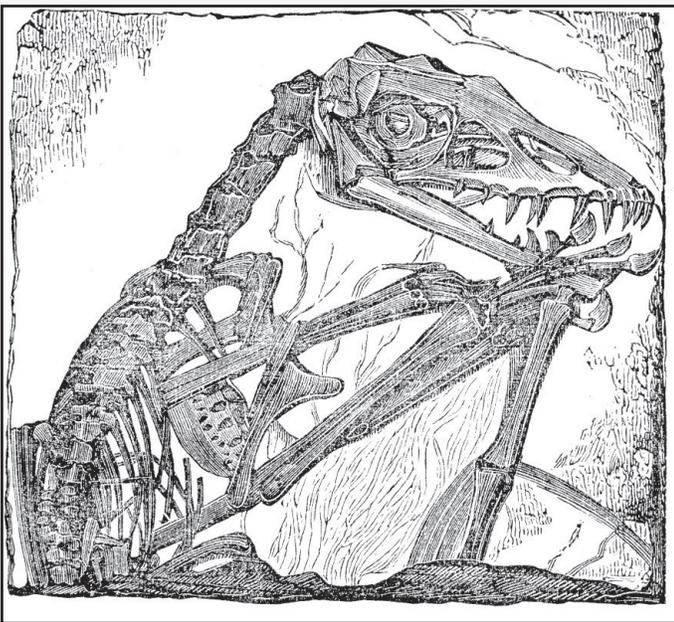


Figure 3. 1831 illustration of *Pterodactylus crassirostris* by August Goldfuss, now recognized as *Scaphognathus*, a rhamphorhynchoid.

Last July the North Dakota Geological Survey and the North Dakota State Historical Society banded together to host an event on these fossil Pokémon. The event was held in the gallery of Geologic Time at the Heritage Center in Bismarck, surrounded by fossil animals. The staff dressed up in lab coats, each now transformed into a Pokémon scientist. The public was encouraged to bring in their Pokémon games, and show off their highest level fossil creatures for a chance to win a prize. A presentation was put on describing the fossils behind the cartoon forms, with real fossils and horseshoe crabs available for people to see and touch. If you were artistically inclined, another activity that was quite popular was a chance to design your own fossil creature (fig. 4), based on the fossils available in the gallery. If you just wanted to color, but not necessarily draw, coloring sheets with a sample creation (the Garganta, based off of a gar fish) were also on hand. Adults and kids showed up for the event, and stayed to wander the galleries.

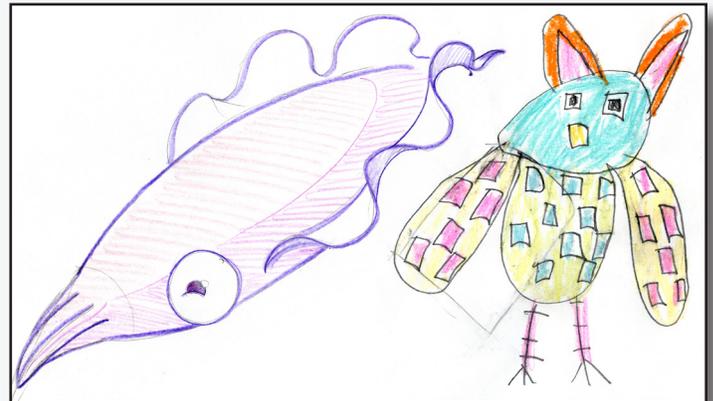


Figure 4. New Pokémon created by event attendees.

During the summer of 2016 people were ringing the capitol grounds in their hunt for digital monsters. When winter descended upon North Dakota, there was a significant drop in Pokémon Go! activity around the Heritage Center and Bismarck-Mandan. As summer returns it will be interesting to see if there is an uptick in players again. We’ll see if the future holds more types of fossil Pokémon. After all you “Gotta Catch ‘Em All!”

**References**

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