

# For "chicken or egg" question, scientist offers a simple solution

By Jason Bittel, Washington Post, adapted by Newsela staff on 04.02.20

Word Count **498**

Level **MAX**



Image 1. Chicks huddle around their mother hen. Photo: Michael Anfang/Unsplash

Which came first, the chicken or the egg?

Believe it or not, this question has its roots in ancient Greece, where philosophers used it as an excuse to argue about cause and effect. What's more, it's what is known as a paradox - a situation or statement that appears to present contradicting facts, both of which can logically be true.

Some might say the chicken came first, since you can't have an egg without a chicken to lay it. But others might argue the egg came first, since all chickens begin life inside of an egg.

A paradox, right? Not if you want to get technical. The question has a rather simple answer if you talk to an ancient egg expert.

"It's pretty straightforward," said Jasmina Wiemann, a molecular paleobiologist at Yale University. (Paleobiology is the science of fossil organisms.) "The egg is much older, evolutionarily, than the chicken."

Chickens, as we know them, probably became domesticated about 10,000 years ago. But the animals that they descend from, known as jungle fowl or Gallus, can be dated back 21 million years.

Now that might sound pretty ancient, but the incredible, edible egg has been around for hundreds of millions of years.

For instance, scientists recently discovered a fossilized bird from northwestern China with an egg stuck inside its body. At 110 million years old, this species, known as *Avimaia schweitzerae*, would have flitted about in a world dominated by dinosaurs. It's the most ancient bird egg ever discovered.

Eggs were around long before this, even. Dinosaurs, birds, reptiles and even mammals are known as amniotes, a branch of the vertebrate family tree that evolved approximately 300 million years ago, Wiemann said.

This pushes the origins of the egg back even further. However, these eggs would have looked quite a bit different from what's in your refrigerator.

The earliest eggs would have been soft, sort of like turtle eggs you might see on the beach, Wiemann said. The crunchy, brittle, protective coating came later.



By the way, if you thought it odd to see the mammals lumped into a group with egg-laying stegosauruses, crocs, ostriches and tortoises, you should know that egg-laying is part of our evolutionary history. In other words, if you go back far enough in time, humans have ancestors that would have laid eggs. And mature female humans today still produce eggs through a process called ovulation. The eggs stay inside of humans - and they're squishy and lack a shell.

Even weirder, some mammals still reproduce by laying eggs that can survive outside the body. They're known as monotremes, which include species such as the duck-billed platypus and echidna (pronounced ih-KID-nuh).

Now, here's a question for you - which came first, the egg or the echidna?

## Quiz

- 1 One conclusion a reader could make after reading this article is that chickens evolved recently compared with other egg-laying animals.
- Which of the following statements accurately paraphrases evidence from the article to support the conclusion?
- (A) Mammals known as monotremes include species such as the duck-billed platypus and echidna that lay eggs.
  - (B) Fossilized chickens were found in China with the eggs of other bird species still stuck inside their bodies.
  - (C) Chickens were domesticated about 10,000 years ago, but animals known as amniotes were laying eggs 300 million years ago.
  - (D) At 110 million years old, this species, known as *Avimaia schweitzerae*, would have flitted about in a world dominated by dinosaurs.
- 2 Read the following statement.
- Most people today would not recognize the first chicken eggs.*
- Which selection from the article provides the BEST support for the statement above?
- (A) But the animals that they descend from, known as jungle fowl or Gallus, can be dated back 21 million years.
  - (B) Now that might sound pretty ancient, but the incredible, edible egg has been around for hundreds of millions of years.
  - (C) This pushes the origins of the egg back even further. However, these eggs would have looked quite a bit different from what's in your refrigerator.
  - (D) The earliest eggs would have been soft, sort of like turtle eggs you might see on the beach, Wiemann said. The crunchy, brittle, protective coating came later.
- 3 What is the MOST likely reason the author included information about paradoxes in Greek philosophy?
- (A) to introduce the importance of ancient Greece in the study of the evolution of chickens and birds
  - (B) to suggest that there has always been only one correct answer to the question of the chicken or the egg
  - (C) to demonstrate the effects of ancient Greek philosophy on the ideas of modern molecular paleobiologists
  - (D) to explain why many people believe the question of the chicken or the egg lacks a true and proven answer
- 4 How does the author build understanding of human egg evolution?
- (A) by noting that humans were once among the mammals that can be grouped with other egg-laying species
  - (B) by comparing the size and shape of human eggs with the eggs of the duck-billed platypus and echidna
  - (C) by highlighting that humans are one part of a branch of the vertebrate family tree
  - (D) by describing the point in time millions of years ago when humans first became amniotes