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Meet your earliest known ancestor: Saccorhytus

30th January 2017 by [Katherine Lindemann](#)

Newly discovered fossils of a tiny sea creature are the earliest known step in humans' evolutionary history.

Time to update your family tree. Scientists have found a 535-million-year-old fossil belonging to a group from which all vertebrates—including humans—descended. Named Saccorhytus, the animal was about a millimeter in size and bilaterally symmetrical, a trait shared by many vertebrates today. The discovery marks the earliest known step in the evolution of humans. We speak with two of the study's authors, [Jian Han](#) of Northwest University in Xi'an, China and [Simon Conway Morris](#), a palaeobiologist at the University of Cambridge, to learn more.



Photograph of the Saccorhytus fossil and an artists' impression of the creature as it would have looked when it was alive. Credit: Jian Han (Northwest University, China)

ResearchGate: Where and how did you discover this fossil?

Jian Han: The specimen, which lived about 535 million years ago in the Early Cambrian Period, was found in China, in Shaanxi Province. The rocks around it were dissolved by acetic acid, and the surviving fossils were manually picked up under a microscope.

RG: What did it look like?

Simon Conway Morris: More or less globular to hemispherical. It had a prominent mouth and a series of openings on either side of the body. These are marked externally by so-called body cones. Additional structures include sets of pores, some of which are possibly sensory. There's no evidence for eyes.

RG: What do you know about what its life was like

Conway Morris: It would have lived in marine sediments, in the equivalent of a carbonate sand. The location where the fossil was found would have been tropical, shallow water in the in the Early Cambrian Period. The animal would have wriggled between the sediment grains, although short-term attachment to them was also likely. We also suggest that the mouth could expand quite significantly and potentially ingest relatively large prey for its size.

RG: How is Saccorhytus related to humans?

Conway Morris: Humans are vertebrates and so are one of the major groups that collectively define

SCIENCE | FIRST LOOK

This tiny 'wrinkled bag' might be humans' earliest known ancestor

A tiny marine creature that lived about 540 million years ago in the seabed mud was found in China and may be the earliest-known animal in the evolutionary path that led to humans.



Jian Han | Caption

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A huge mouth and no anus – this could be our earliest known ancestor

Thought to have lived 540 million years ago, the discovery of *Saccorhynchus coronarius* fossils sheds light on the early stages of evolution



An artist's reconstruction of *Saccorhynchus coronarius*, based on the original fossil finds. The actual creature was probably no more than a millimetre in size. Illustration: S Conway Morris / Jian Han

Nicola Davis

Monday 30 January 2017 16.00 GMT

You won't find it in your family album, but a tiny prehistoric creature with a bag-like body, a huge mouth and no anus has become the best candidate yet for our earliest known ancestor.

Thought to have lived as long as 540 million years ago, the creature is the oldest known member of a large group of animals known as deuterostomes, which includes vertebrates – such as humans – as well as starfish, sea urchins and a host of other fauna.

While it is highly unlikely the new species is our direct ancestor, scientists say the creature could be very similar to it. As a result, the discovery of the fossils sheds light on the early stages of our evolution.

PUBLIC RELEASE: 30-JAN-2017

Bag-like sea creature was humans' oldest known ancestor

A tiny sea creature identified from fossils found in China may be the earliest known step on an evolutionary path that eventually led to the emergence of humans

ST JOHN'S COLLEGE, UNIVERSITY OF CAMBRIDGE



IMAGE: ARTIST'S RECONSTRUCTION OF *SACCORHYTUS CORONARIUS*, BASED ON THE ORIGINAL FOSSIL FINDS. THE ACTUAL CREATURE WAS PROBABLY NO MORE THAN A MILLIMETER IN SIZE [view more](#) >

CREDIT: S CONWAY MORRIS / JIAN HAN

Researchers have identified traces of what they believe is the earliest known prehistoric ancestor of humans -- a microscopic, bag-like sea creature, which lived about 540 million years ago.

Named *Saccorhytus*, after the sack-like features created by its elliptical body and large mouth, the species is new to science and was identified from microfossils found in China. It is thought to be the most primitive example of a so-called "deuterostome" -- a broad biological category that encompasses a number of sub-groups, including the vertebrates.

If the conclusions of the study, published in the journal *Nature*, are correct, then *Saccorhytus* was the common ancestor of a huge range of species, and the earliest step yet discovered on the evolutionary path that eventually led to humans, hundreds of millions of years later.

Modern humans are, however, unlikely to perceive much by way of a family resemblance. *Saccorhytus* was about a millimetre in size, and probably lived between grains of sand on the seabed. Its features were spectacularly preserved in the fossil record -- and intriguingly, the researchers were unable to find

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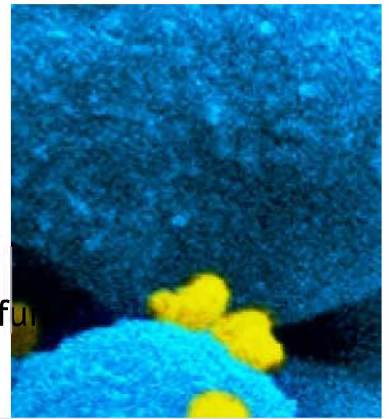


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Humans Descended From This Horrifying Bag With Teeth

[Sarah Sloat \(/user/45-sarah-sloat\)](#) [Evolution \(/topic/evolution\)](#) | 3h ago

When Carl Sagan said that we are all “[made of star-stuff \(/article/26008-astronomers-mapped-the-elements-of-life-in-the-milky-way\)](#),” he was being extremely generous about our genesis. According to new research, we also come from a bag-like sea creature that puked out its own poop. It’s a less flattering origin story, but it’s equally true.

Scientists claim that this microscopic critter, technically known as a *Saccorhytus coronarius*, is the [oldest known ancestor \(http://www.nature.com/nature/journal/vaop/ncurrent/full/nature21072.html\)](http://www.nature.com/nature/journal/vaop/ncurrent/full/nature21072.html) of humans.

In a study published Monday in *Nature*, researchers write that it existed during the early Cambrian period, nearly 540 million years ago. It’s



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Saccorhytus, el primer abuelo del ser humano

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Un equipo de investigadores identificó restos microfósiles de lo que sería el primer ancestro prehistórico de los humanos, una criatura nueva para la ciencia.

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El Saccorhytus probablemente vivía entre los granos de arena del lecho marino, era un organismo microscópico, aproximadamente de un milímetro.

RFE 30/01/2017 03:29 PM

Madrid El Saccorhytus, una criatura marina de no más de un milímetro de tamaño y que vivió hace unos 540 millones de años, puede ser el primer paso conocido en la senda evolutiva que acabó llevando al surgimiento de los humanos, según un estudio de fósiles encontrados en China y que hoy publica Nature.

Un equipo de investigadores británicos y chinos identificó restos microfósiles de lo que sería el primer ancestro prehistórico de los humanos, una criatura nueva para la ciencia y que se cree que es "el ejemplo más primitivo" de los deuterostomados, un amplia categoría biológica que abarca, entre otros subgrupos, a los vertebrados.

El estudio señala que "esta criatura sería el ancestro común de una gran variedad de especies y el primer paso descubierto, hasta ahora, en el camino de la evolución que cientos de millones de años más tarde llevó hasta los humanos", según un comunicado de la Universidad de Cambridge.



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Meet Saccorhytus coronarius, Humans' Earliest-Known Ancestor

Jan 31, 2017 by News Staff / Source

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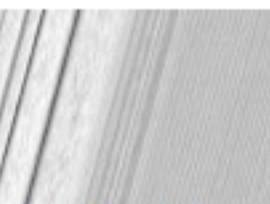
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A microscopic, bag-like marine creature that lived approximately 540 million years ago (Fortunian stage of the Cambrian period) has been identified from microfossils found in Shaanxi Province, China.



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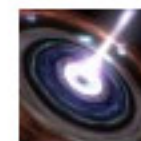
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Scientists find 'oldest human ancestor'

By Pallab Ghosh

Science correspondent, BBC News

7 hours ago | [Science & Environment](#)



Researchers have discovered the earliest known ancestor of humans - along with a vast range of other species.

They say that fossilised traces of the 540-million-year-old creature are "exquisitely well preserved".

The microscopic sea animal is the earliest known step on the evolutionary path that led to fish and - eventually - to humans.

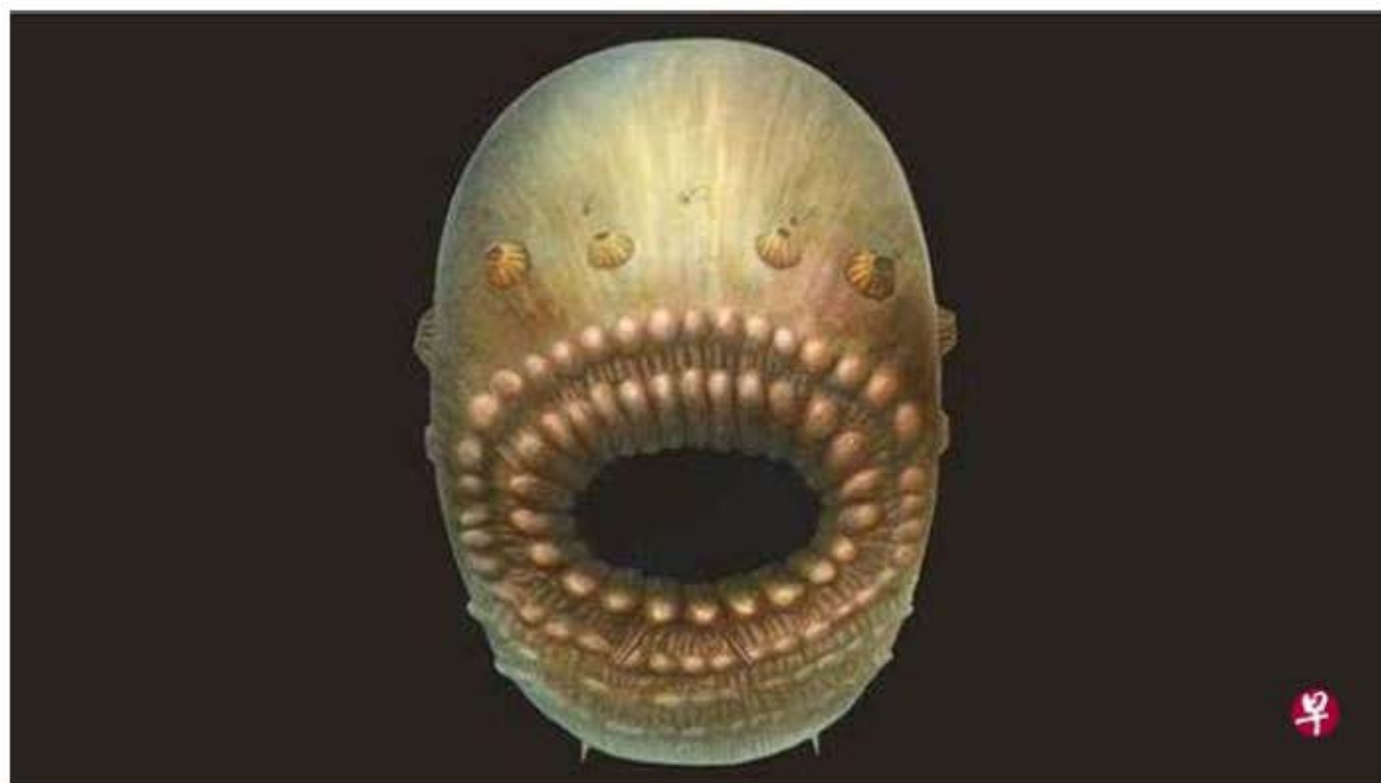
Details of the discovery from central China appear in [Nature](#) journal.



科学家在中国陕西发现最早人类祖先化石

2017年1月31日 星期二 07:00 AM

数码编辑 / 苏亚华 (editor/su-ya-hua)



这是根据化石复原的Saccorhytus像，尺寸大约为1毫米

(联合早报网讯)由英国、中国和德国科学家组成的一个国际研究小组在《自然》杂志发表研究报告说，他们发现了迄今所知的最古老的人类祖先的痕迹。

据BBC报道，科学家说，他们是在中国的陕西省发现这些化石的，化石保存完好。

这些科学家还说，这种生物生活在距今4.5亿年前，是已知最早的通过进化途径转变为鱼，*fish-like* 的生物。

SMARTNEWS

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Bag-Like, Big-Mouthed Sea Creature Could Be Earliest Human Ancestor

This minute wriggly sea blob could represent some of the earliest steps along the path of evolution



ancient creature looked like. (Ilan Han)

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This tiny glob could be humans' earliest known ancestor

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Image credit: S. Conway Morris/Jian Han via Nature

This tiny glob could be humans' earliest known ancestor

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'Wrinkled sack' Saccorhytus with huge mouth, no anus could be our oldest ancestor

Posted Tue 31 Jan 2017, 6:53am



PHOTO: An artist's reconstruction of *Saccorhytus coronarius*, which shows the creature's large mouth. (Supplied: Jian Han)

Don't take this the wrong way, but your oldest ancestor was not exactly a beauty.

MAP: China

Scientists say a tiny marine creature from China that wriggled in the seabed mud about 540 million years ago may be the earliest-known animal in the lengthy evolutionary path that eventually led to humans. It was a weird-looking beast with a bag-like body and, for its size, a really big mouth. And, probably, no anus.

University of Cambridge palaeontologist Simon Conway Morris noted that humans, who appeared a relatively recent 200,000 years ago, have a series of "evolutionarily deeper ancestors" than monkeys and apes. That point is exemplified by the unique-looking creature called *Saccorhytus*, whose name means wrinkled sack.

"And is not beauty in the eye of the beholder?" Mr Conway Morris asked.

Saccorhytus, measuring about 1mm, appears to be the most primitive member of the broad animal group called deuterostomes.

This group includes vertebrates — fish, amphibians, reptiles, birds and mammals including people — as well as animals called echinoderms including starfish and sea urchins and obscure creatures called hemichordates including acorn worms.

2017年01月31日 星期二

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