

**1<sup>st</sup> International Congress on Science and Faith:  
Incompatible or Complementary?**

**November 7-9, 2018**

**Icons of Evolution**

**Jonathan Wells**

**Ph.D. in Theology, Yale University**

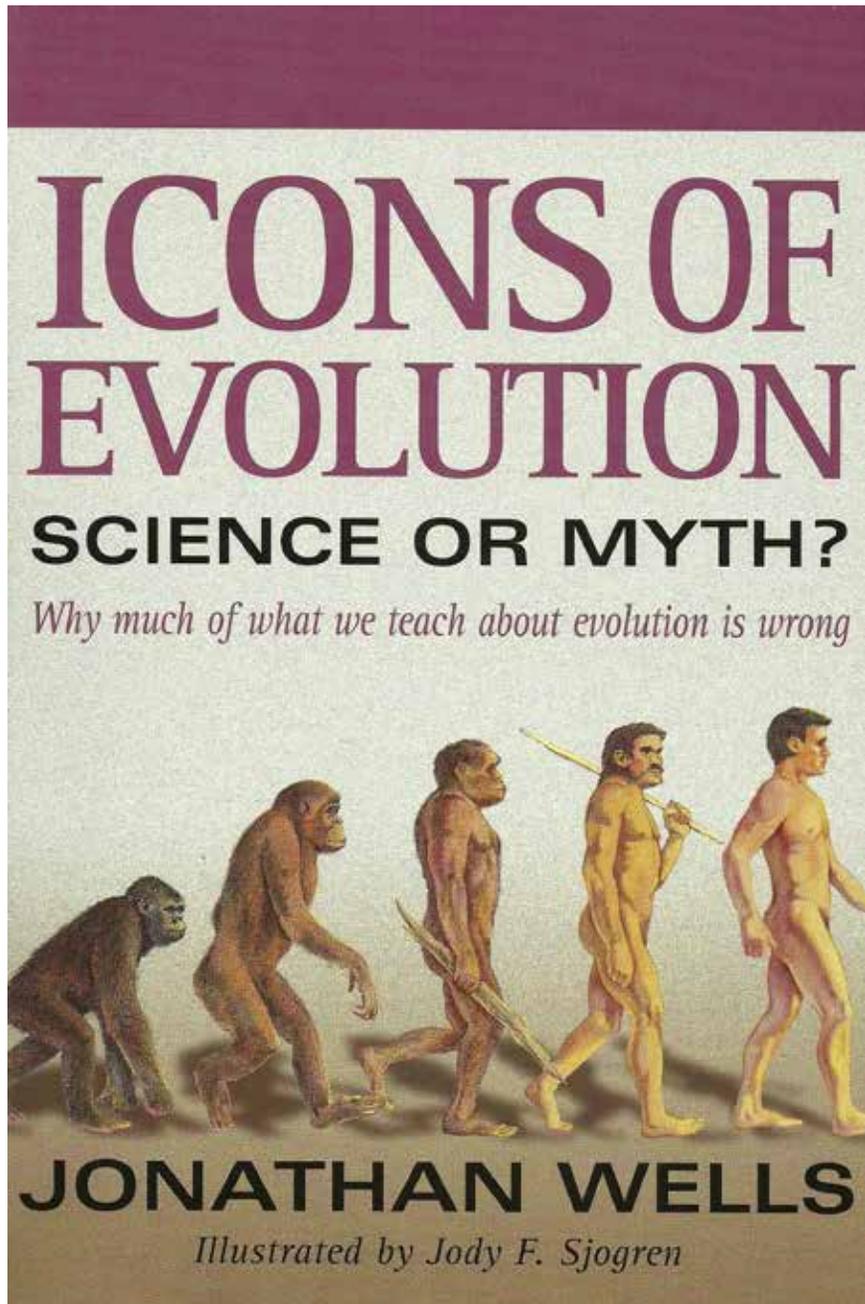
**Ph.D. in Biology, University of California at Berkeley**

**Senior Fellow, Discovery Institute, Seattle**

# What Is Evolution?

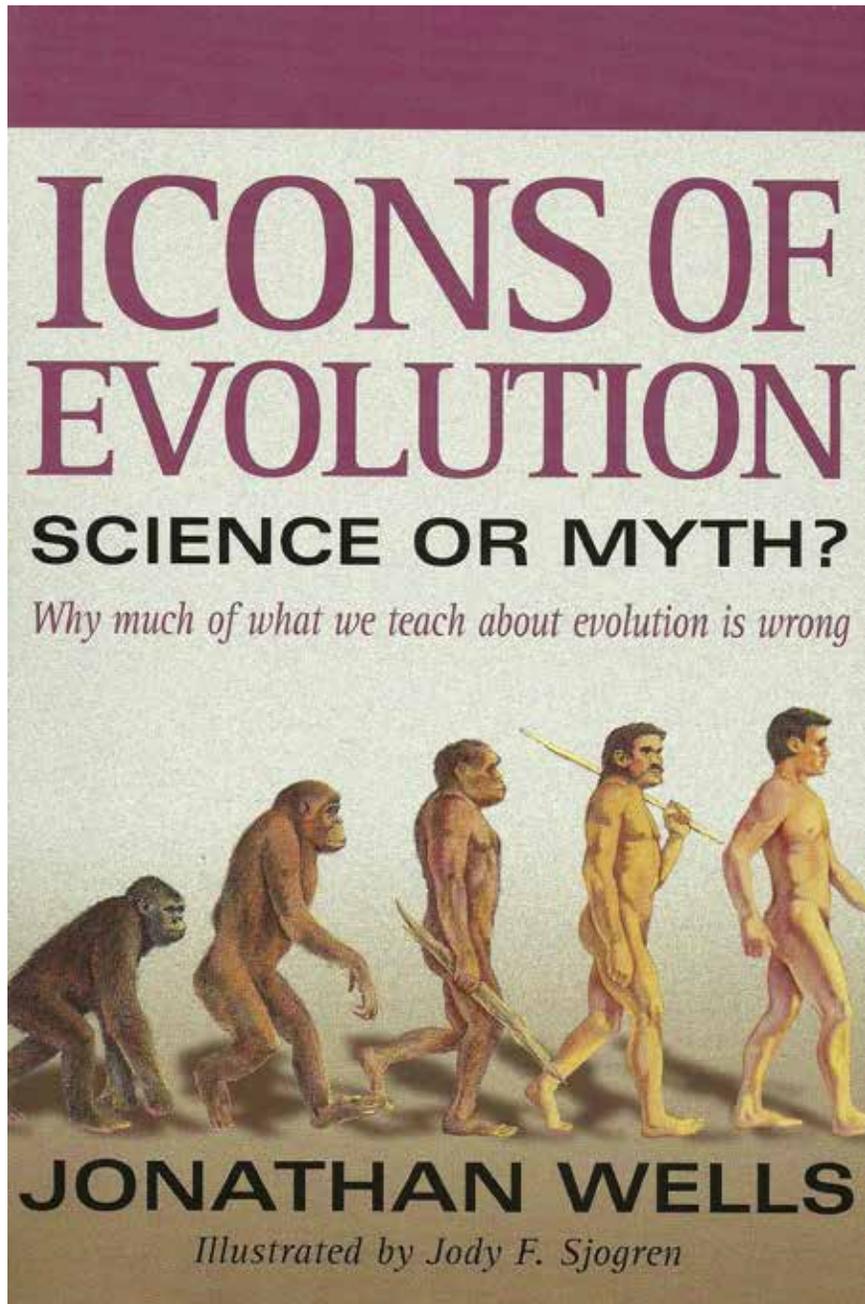
As we have seen, “evolution” can mean several different things.

I use it here to refer to Neo-Darwinism – the doctrine that all living things are descendants of a common ancestor, modified by unguided natural processes such as accidental mutations and natural selection.



In 2000, I published *Icons of Evolution: Science or Myth?*, in which I pointed out that many images used to convince students of Neo-Darwinism misrepresent the evidence.

2000

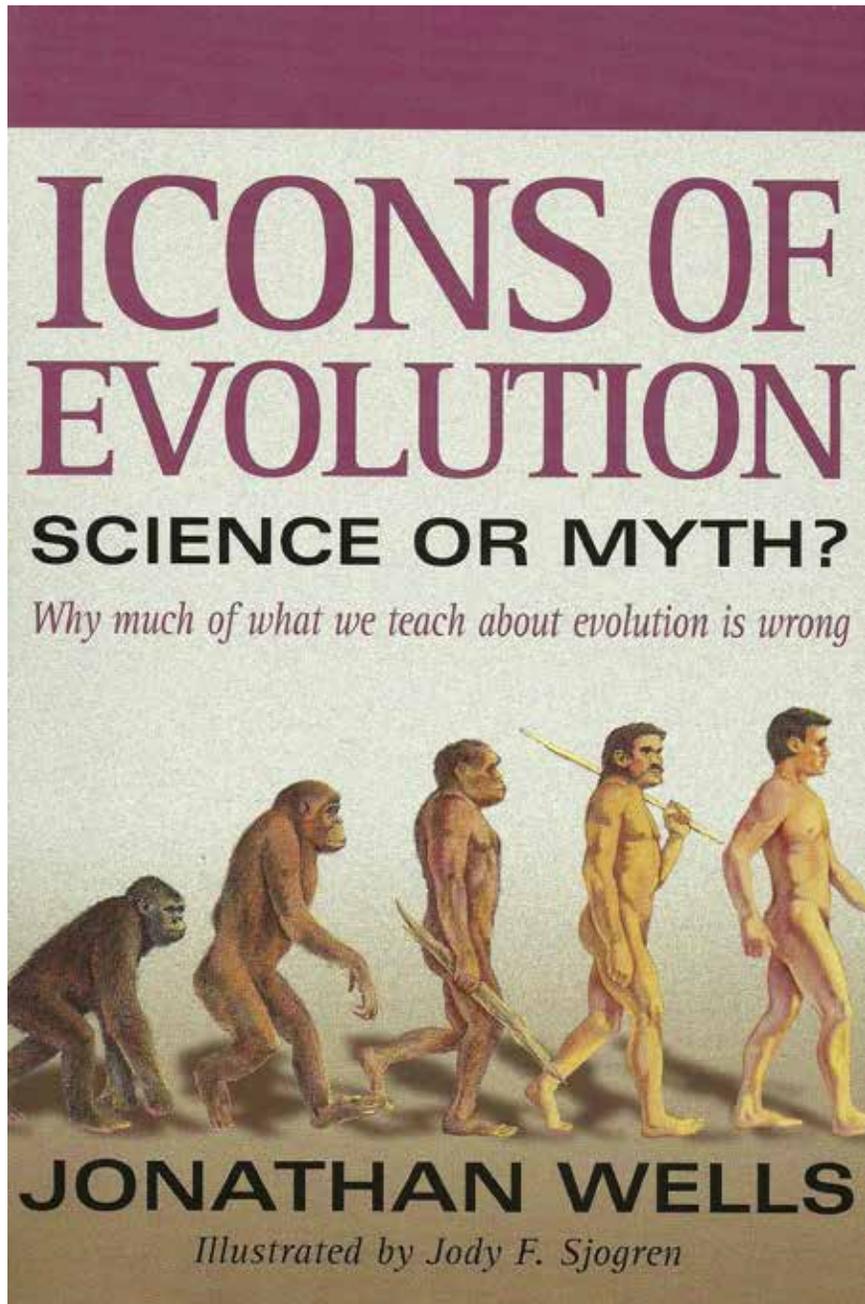


Since the images are used to promote Neo-Darwinian doctrine, I called them “icons of evolution.” I concluded, “Much of what we teach about evolution is wrong.”

2000

# Ten Icons of Evolution

The Miller-Urey Experiment  
Darwin's Tree of Life  
Homology in Vertebrate Limbs  
Haeckel's Embryos  
*Archaeopteryx*  
Peppered Moths  
Darwin's Finches  
Four-winged Fruit Flies  
Fossil Horses  
From Ape to Human



2000

# Ten Icons of Evolution

## The Miller-Urey Experiment

Darwin's Tree of Life

Homology in Vertebrate Limbs

Haeckel's Embryos

*Archaeopteryx*

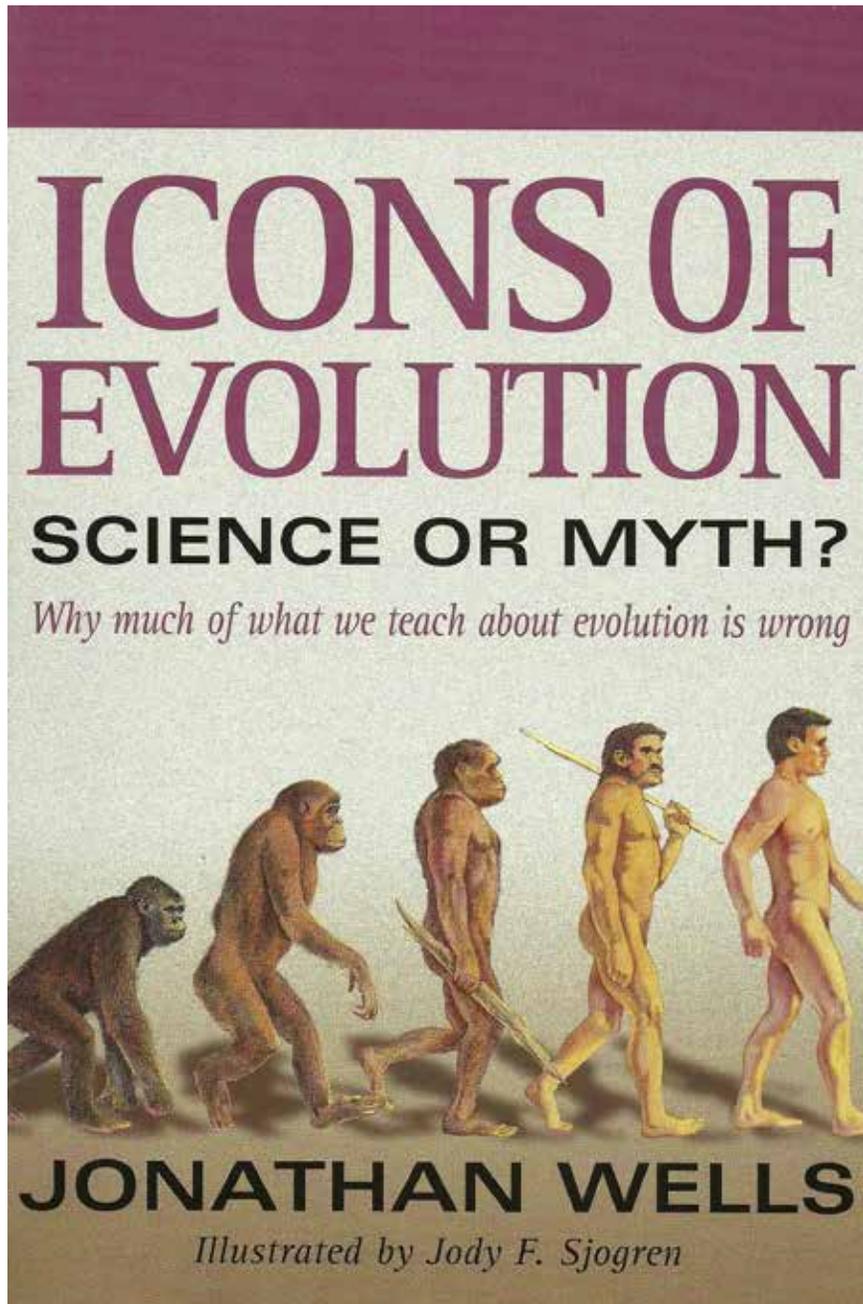
Peppered Moths

Darwin's Finches

Four-winged Fruit Flies

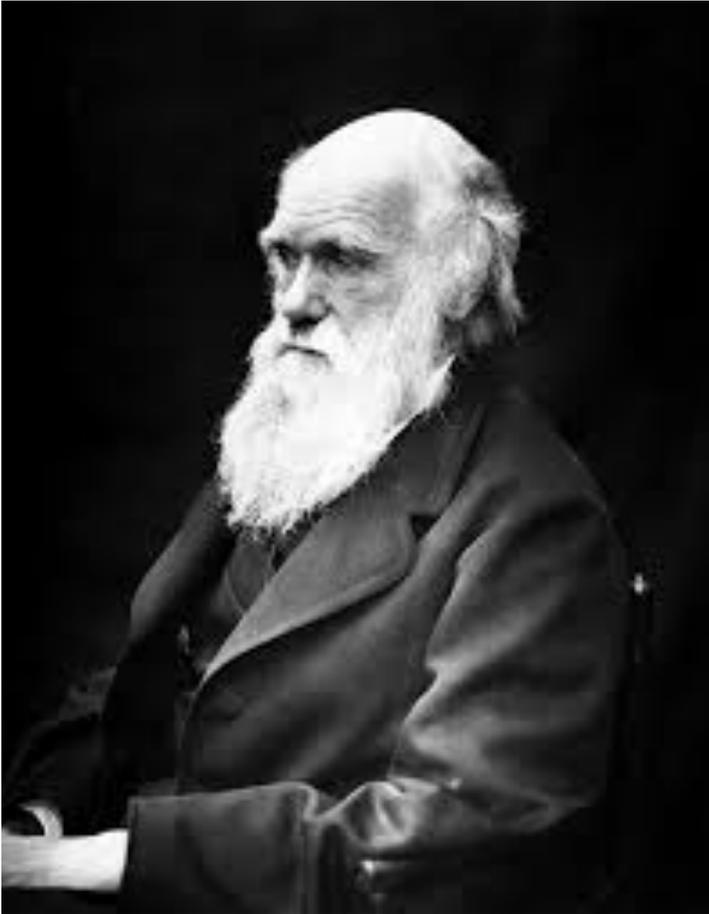
Fossil Horses

From Ape to Human



2000

# Darwinism



**Charles Darwin**

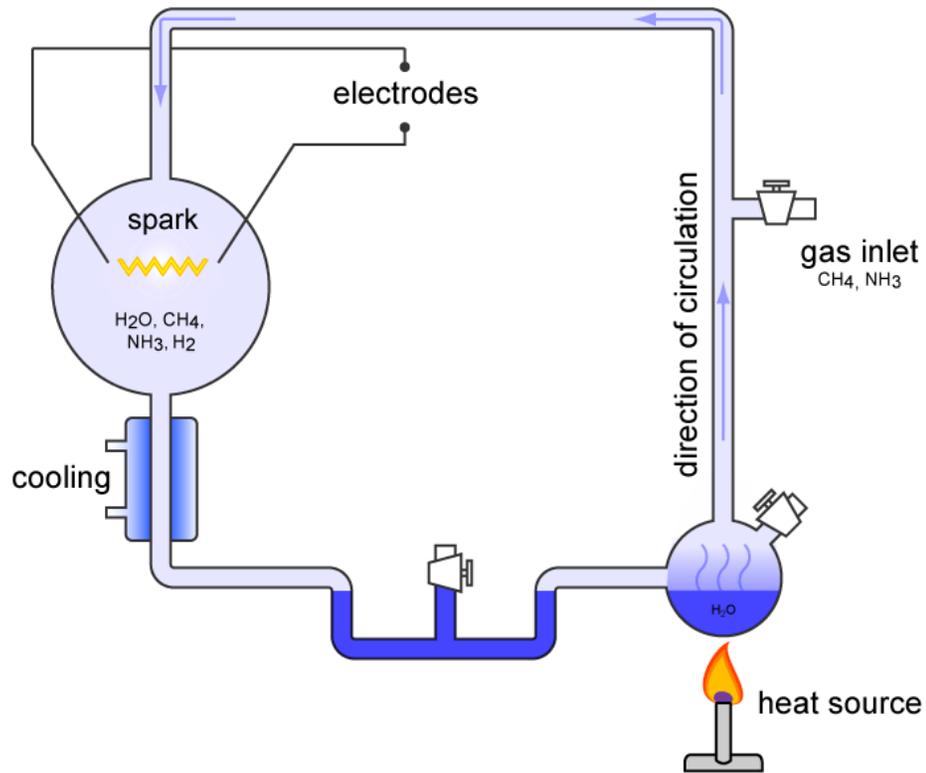
*Letter to Joseph Hooker*  
(1871)

Although Darwin did not deal with the origin of life in *The Origin of Species*, he speculated in a letter that it might have begun spontaneously “in some warm little pond with all sorts of ammonia & phosphoric salts” — that is, without any divine design. Today, when evolution is taught it usually includes the origin of life by purely material means.

In the 1920s, Russian scientist A. I. Oparin and British scientist J. B. S. Haldane suggested that the Earth's primitive atmosphere consisted mainly of methane, ammonia, hydrogen, and water vapor. They argued that lightning in such an atmosphere could produce the chemical building blocks of life, which could have then dissolved in the ocean to form a primordial "soup" from which the first living cells emerged.

A. I. Oparin, *The Origin of Life* (1924); J. B. S. Haldane, *Rationalist Annual* (1928)

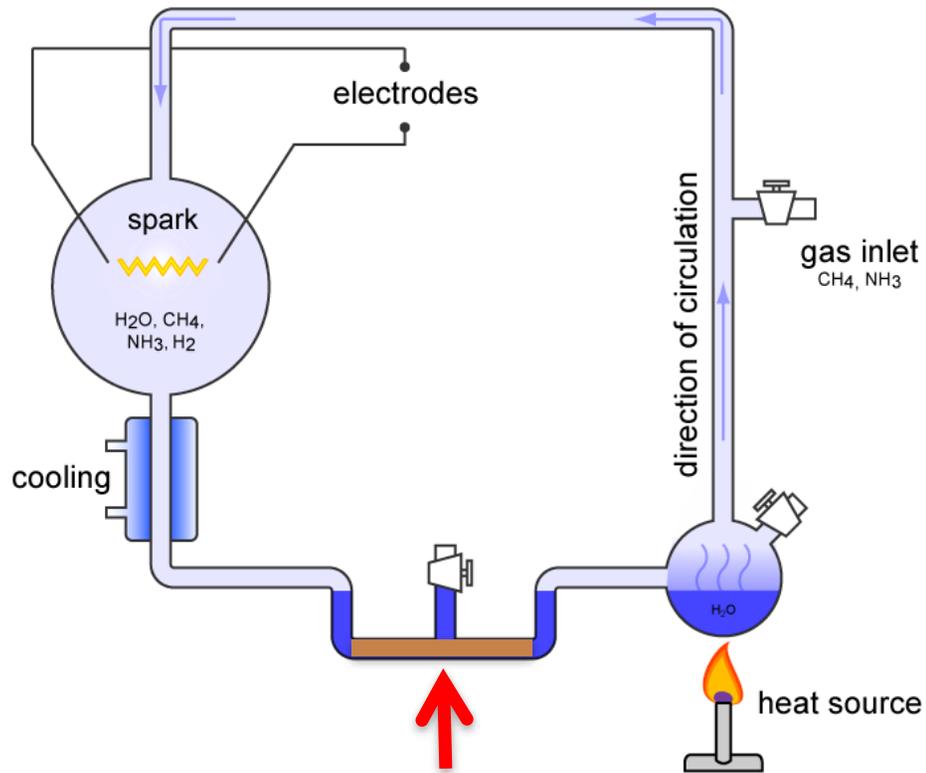
# The Miller-Urey Experiment



In 1953, Stanley Miller (in the laboratory of Harold Urey) circulated methane, ammonia, hydrogen, and steam through a glass apparatus, using an electric spark to simulate lightning.

Source: Carney (Hebrew Wikipedia)

# The Miller-Urey Experiment



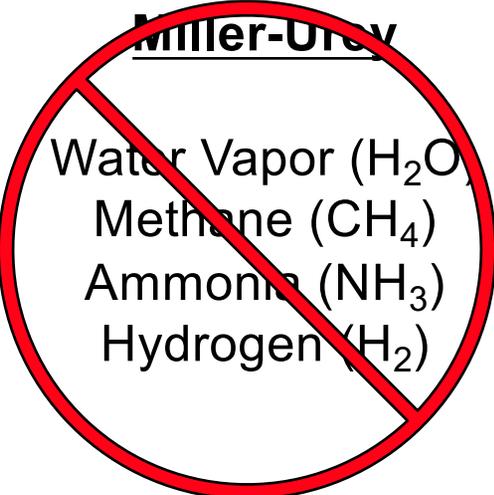
After a week, Miller collected a brown, tarry substance (red arrow) that contained some amino acids, the chemical building blocks of proteins.

Source: Carney (Hebrew Wikipedia; arrow and brown tar added)

# The Miller-Urey Experiment

**Scientists announced that Miller had demonstrated the first step in the origin of life.**

# The Miller-Urey Experiment

<u>Miller-Urey</u>	<u>Volcanoes</u>
 Water Vapor (H <sub>2</sub> O) Methane (CH <sub>4</sub> ) Ammonia (NH <sub>3</sub> ) Hydrogen (H <sub>2</sub> )	Water Vapor (H <sub>2</sub> O) Nitrogen (N <sub>2</sub> ) Carbon Dioxide (CO <sub>2</sub> ) Carbon Monoxide (CO)

By 1980, however, geochemists had concluded that the Earth's early atmosphere consisted of gases like those emitted from modern volcanoes, and that any hydrogen (being the lightest element) would have escaped from Earth's gravity into space.

# The Miller-Urey Experiment

When Miller repeated his experiment with a realistic mixture of gases, it did not produce the building blocks of proteins.

“Glycine is almost the only amino acid produced from CO and CO<sub>2</sub> model atmospheres [and then **only if there is more H<sub>2</sub> than CO or CO<sub>2</sub>**]. ... If it is assumed that an abundance of amino acids more complex than glycine was required for the origin of life, then these results indicate the requirement for CH<sub>4</sub> [methane] in the primitive atmosphere.”

Gordon Schlesinger and Stanley L. Miller, *Journal of Molecular Evolution* (1983)

# The Miller-Urey Experiment

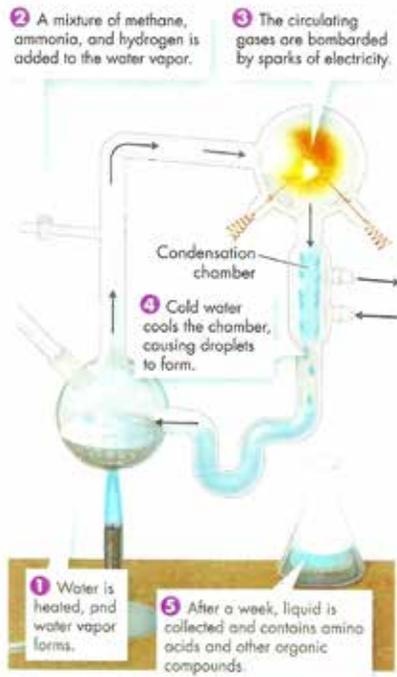
“Miller’s experiment was supposed to be a true simulation of prebiotic [i.e., pre-life] chemistry on the primitive Earth. But now nobody believes this any more.”

Freeman Dyson, *Origins of Life* (Cambridge University Press, 1999)

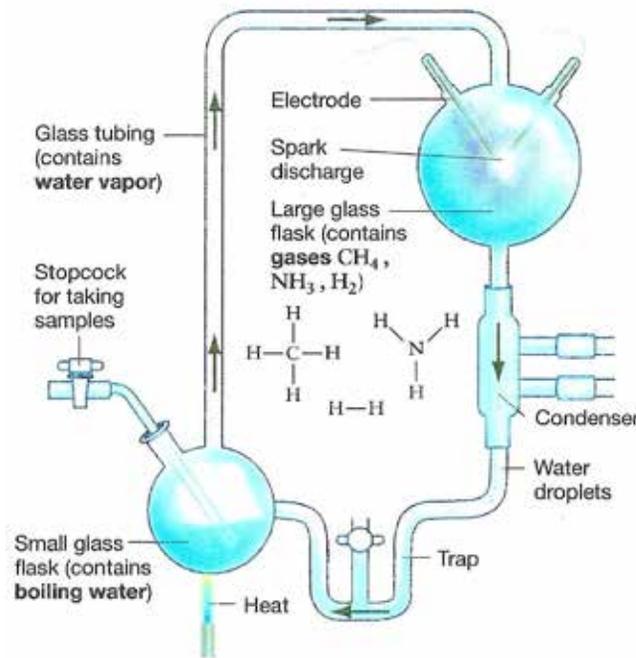
# The Miller-Urey Experiment

Yet in 2000, U.S. textbooks still used the Miller-Urey experiment to convince students that life originated materialistically.

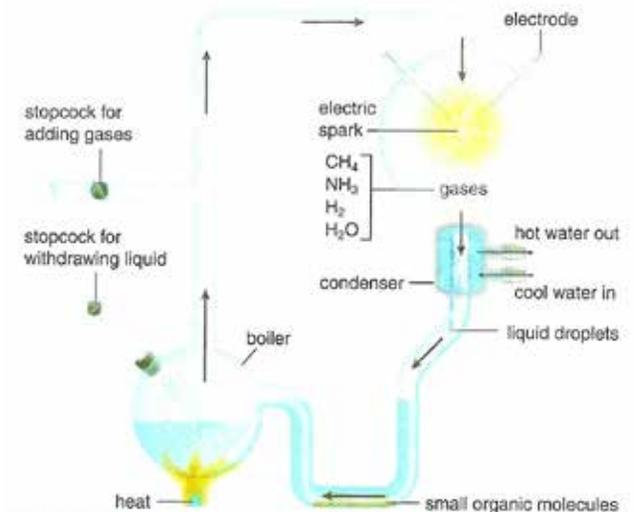
**And U.S. textbooks are still using it.**



Kenneth R. Miller  
& Joseph S. Levine,  
*Biology* (2014)



Scott Freeman, et al.,  
*Biological Science* (2014)



**Figure 18.2 Stanley Miller's experiment.** Gases that were thought to be present in the early Earth's atmosphere were admitted to the apparatus, circulated past an energy source (electric spark), and cooled to produce a liquid that could be withdrawn. Upon chemical analysis, the liquid was found to contain various small, organic molecules, which could serve as monomers for large, cellular polymers.

Sylvia Mader and Michael  
Windelspecht,  
*Biology* (2015)

# The Miller-Urey Experiment

The Miller-Urey experiment is irrelevant to the origin of life. It persists because it serves as a tool for indoctrination – for convincing students that science has demonstrated that life originated materialistically.

# Ten Icons of Evolution

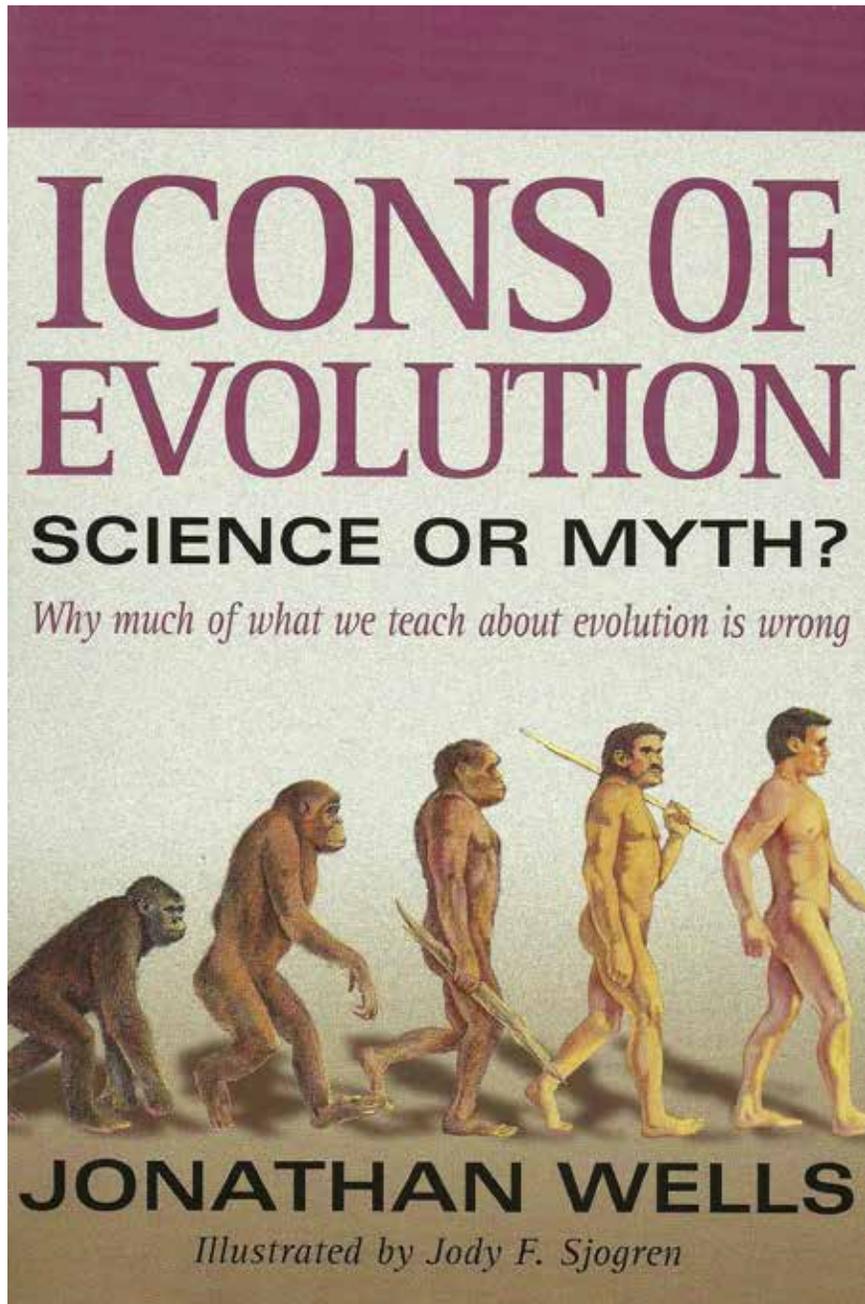
The Miller-Urey Experiment

Darwin's Tree of Life

Homology in Vertebrate Limbs

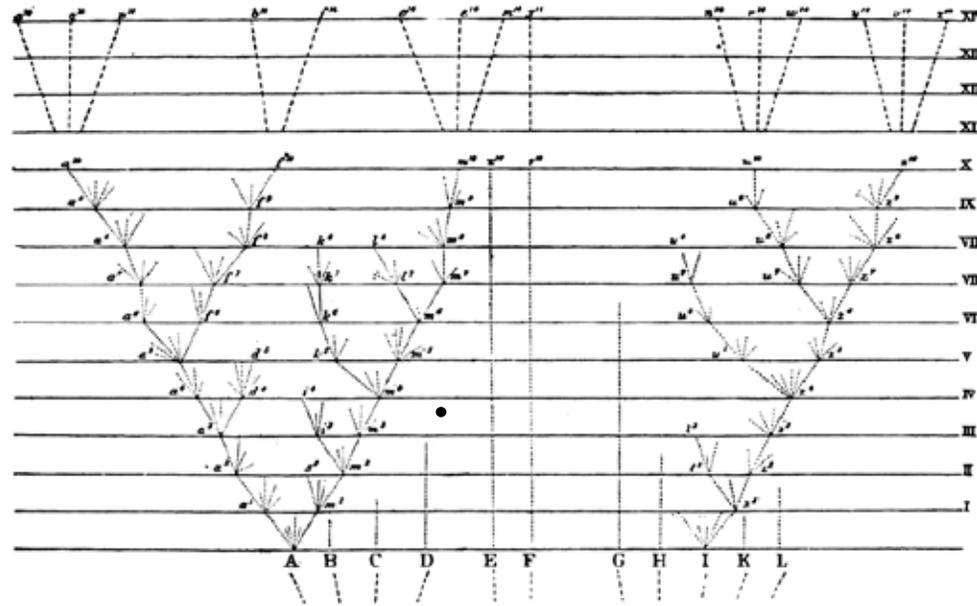
Haeckel's Embryos

**I discussed these in detail yesterday, so today I will just summarize them here.**



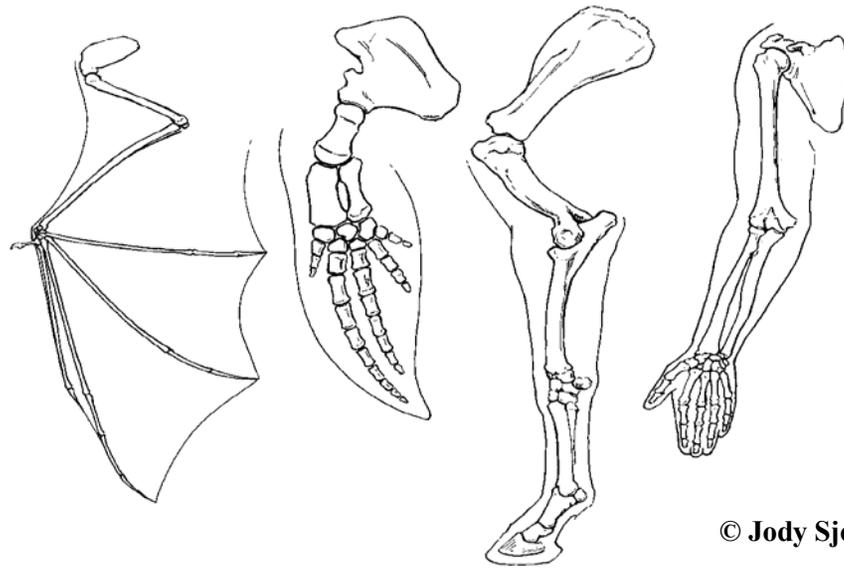
2000

# Darwin's Tree of Life



Darwin thought descent with modification from common ancestors would produce a branching-tree pattern, but there are many inconsistencies between this pattern and the evidence from fossils, embryos, homology, biogeography, and molecules. The history of life is not accurately represented by a tree.

# Homology in Vertebrate Limbs



© Jody Sjogren

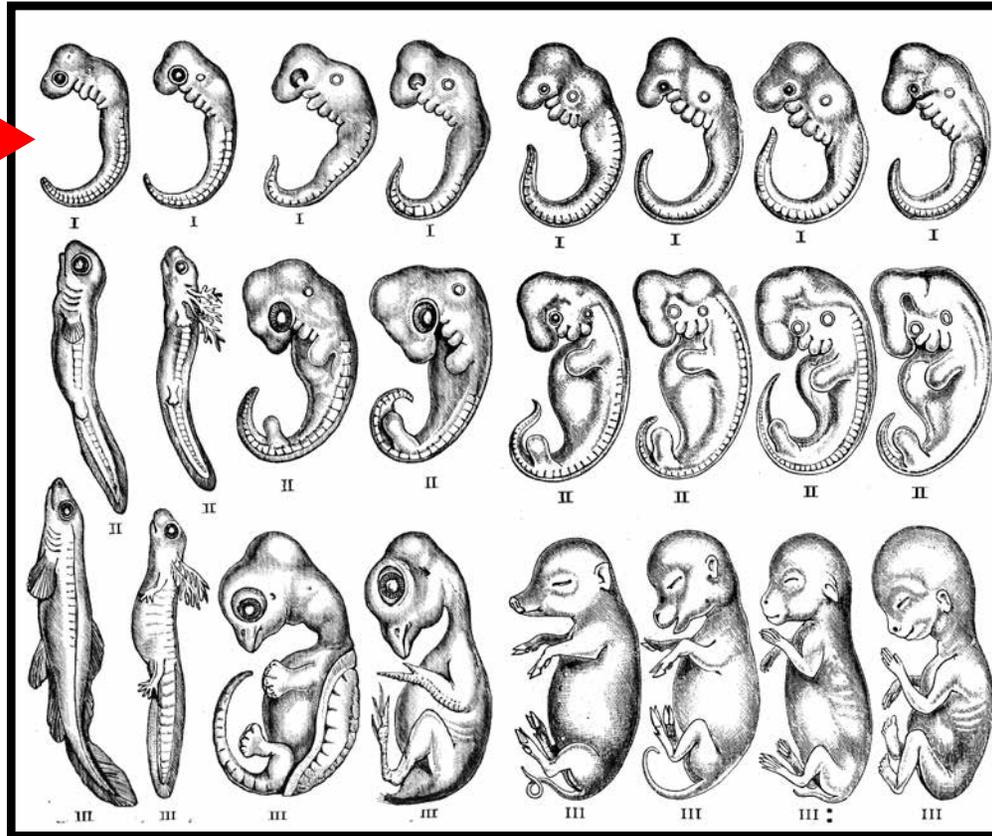
**Bat** **Porpoise** **Horse** **Human**

Darwin thought homology (similarity of structure and position) was evidence for common ancestry rather than common design, but his followers re-defined it to mean similarity due to common ancestry, so it can no longer be used as evidence for common ancestry.

# Haeckel's Embryos



These have been distorted to make them look more similar than they really are.

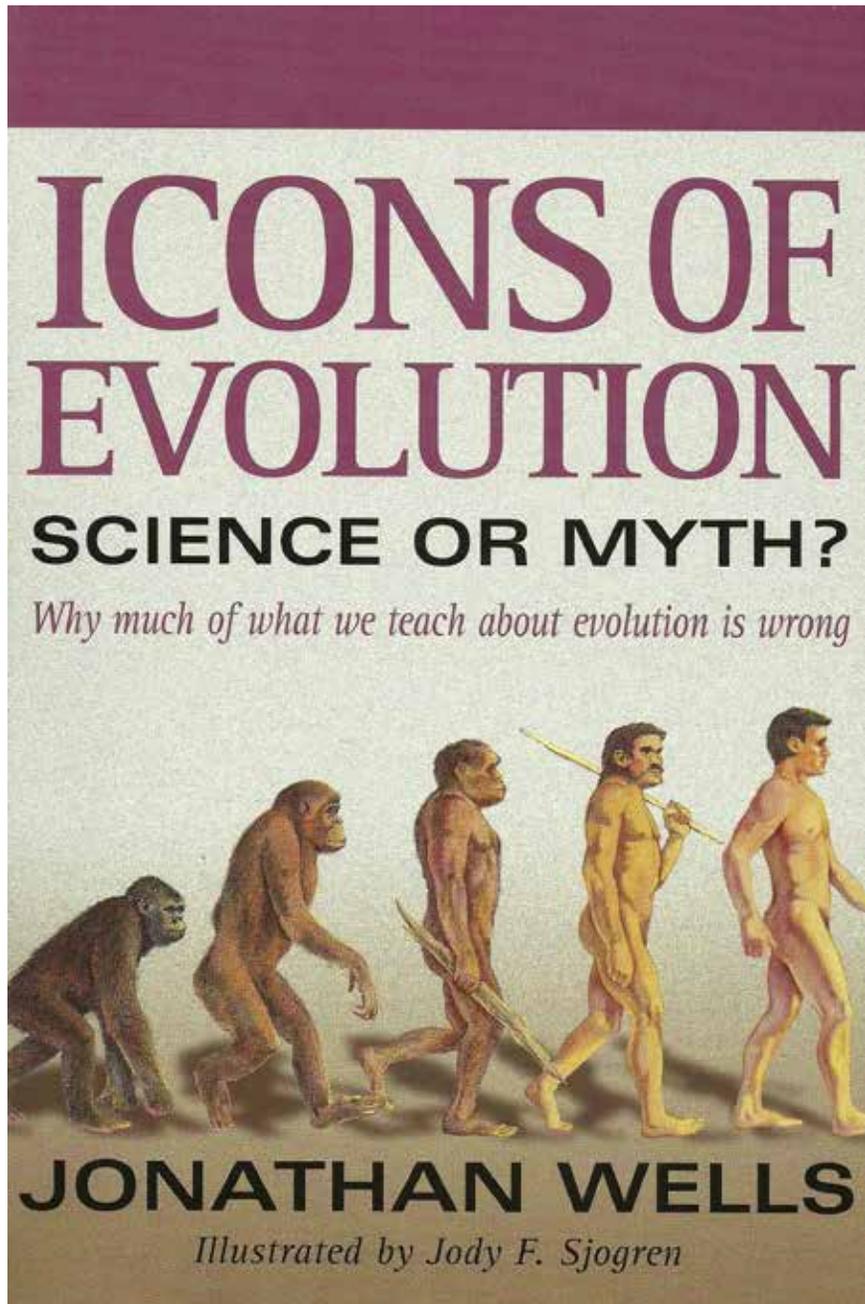


Haeckel completely omitted earlier stages in which the embryos are radically different.

Darwin thought vertebrate embryos are most similar in their early stages, providing evidence for a common ancestor, but early vertebrate embryos actually look very different.

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# *Archaeopteryx*



Bony Tail

Claws on Wings

The first fossil of *Archaeopteryx* (Greek for “ancient wing”) was discovered in 1860. It had a long, bony tail, claws on its wings, and teeth in its mouth. It was regarded as the “missing link” between reptiles and birds, and as a confirmation of Darwin’s theory.

# *Archaeopteryx*

But there are too many anatomical differences between *Archaeopteryx* and modern birds for the latter to have descended from the former.

According to University of Kansas fossil bird expert Larry D. Martin, “*Archaeopteryx* is not ancestral of any group of modern birds.”

Instead, it is “the earliest known member of a totally extinct groups of birds.”

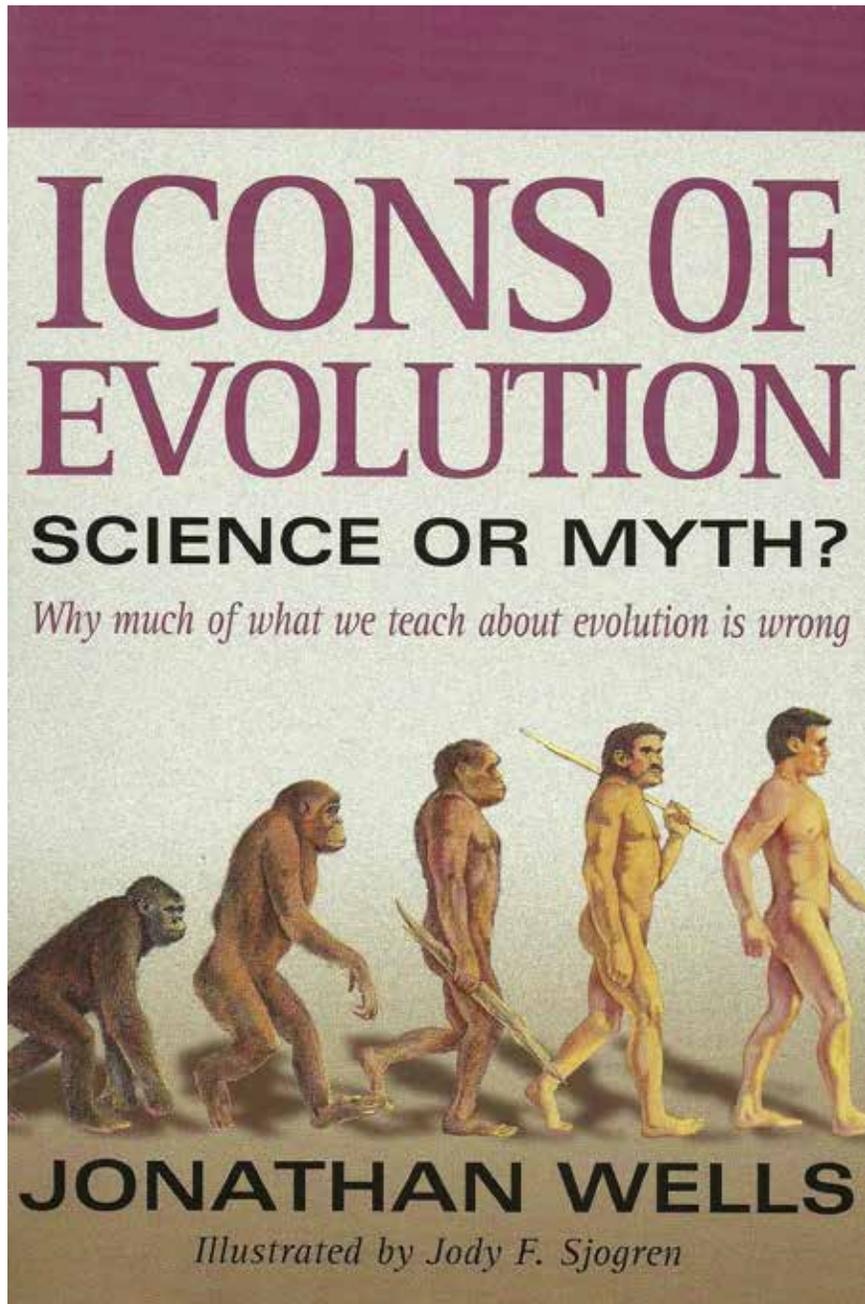
So *Archaeopteryx* is not the “missing link.”

# *Archaeopteryx*

*Archaeopteryx* still appears in many biology textbooks, but it is not the icon of evolution it once was.

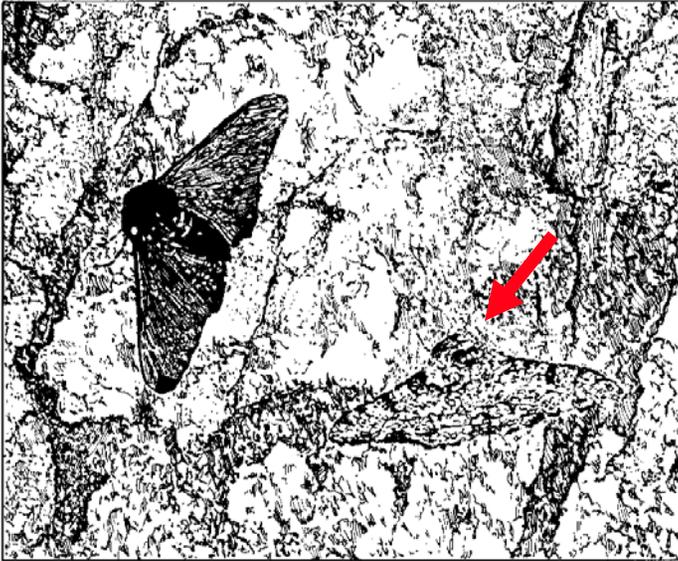
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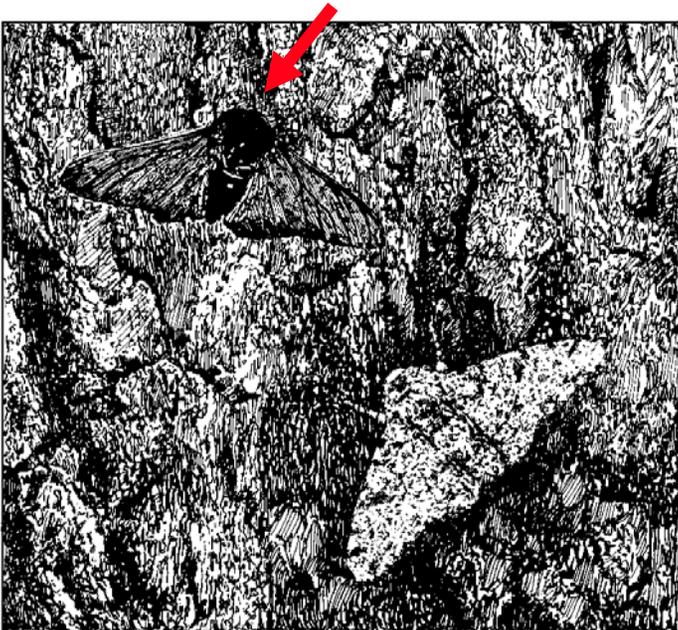
2000

# Peppered Moths



Peppered moths occur in a light-colored and a dark-colored variety. In the early 19<sup>th</sup> century, many tree trunks in England were covered with light-colored lichens, and the light-colored moths (**red arrow**) were hard to see against them.

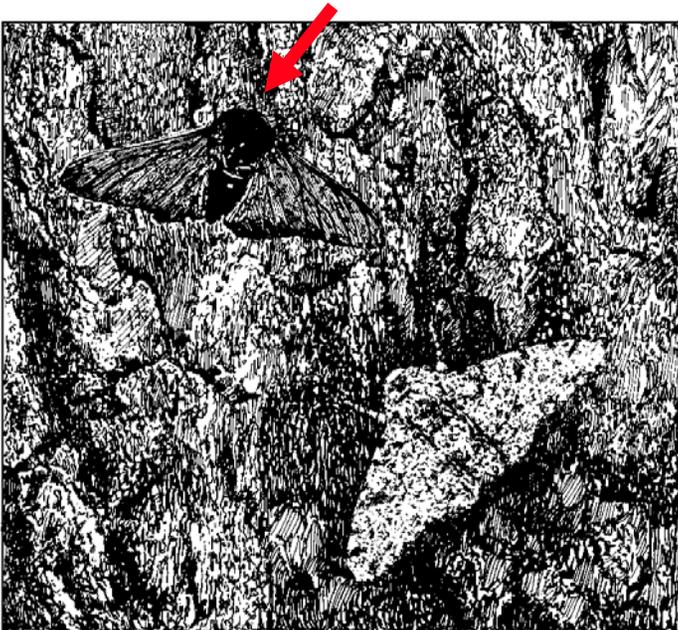
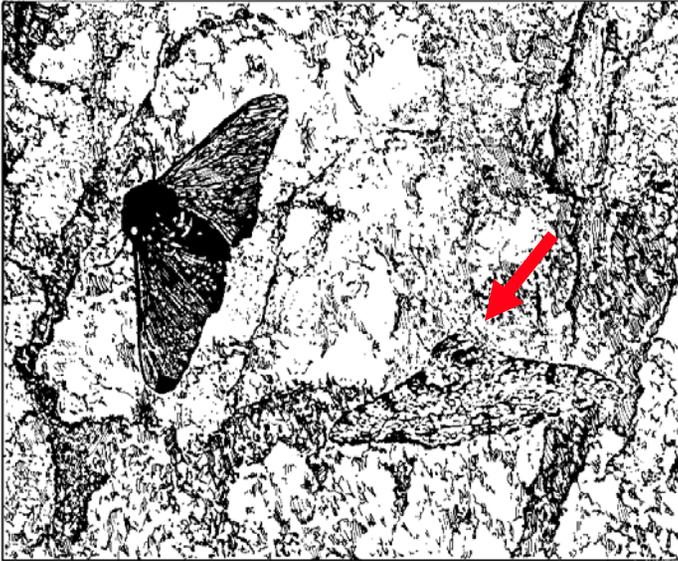
# Peppered Moths



By mid-19<sup>th</sup> century, industrial pollution had killed most of the lichens on trees around big cities, exposing the dark bark underneath. Dark-colored (“melanic”) moths (**red arrow** in lower panel) became much more common around cities, a phenomenon called “industrial melanism.”

Illustration by Jody F. Sjogren

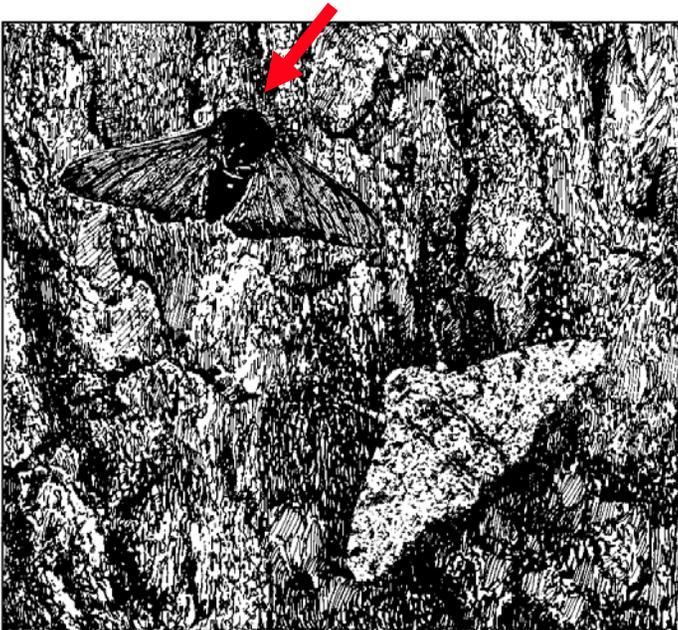
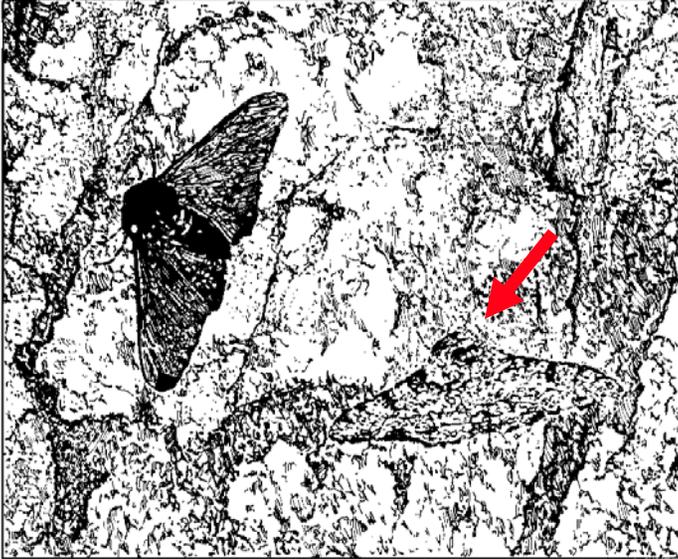
# Peppered Moths



According to Neo-Darwinian theory, since the melanic moths were better camouflaged on the dark tree trunks, birds ate the light-colored moths and more melanic moths survived. In other words, industrial melanism was attributed to natural selection.

Illustration by Jody F. Sjogren

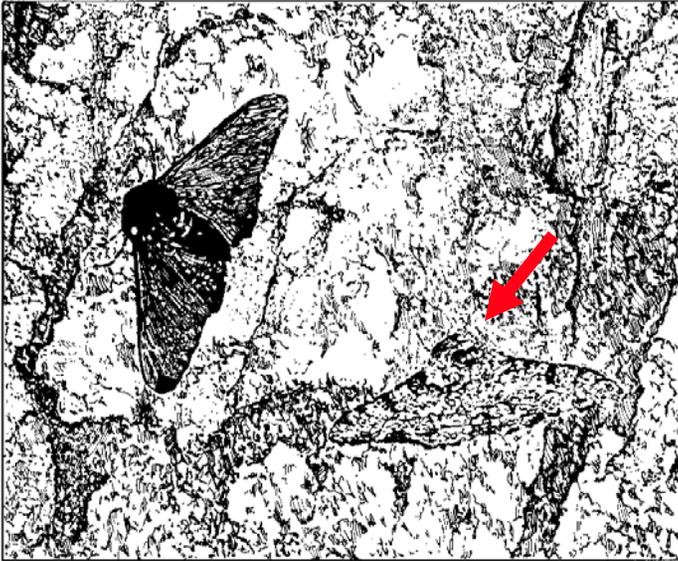
# Peppered Moths



In the 1950s, British physician Bernard Kettlewell released captive moths onto nearby tree trunks and observed that (as expected) more light-colored moths survived in unpolluted woodlands and more melanic moths survived in polluted woodlands.

Illustration by Jody F. Sjogren

# Peppered Moths



In 1959 Kettlewell called this “Darwin’s missing evidence,” and it was used as evidence for evolution in biology textbooks – along with photos showing light- and dark-colored moths on light- and dark-colored tree trunks.

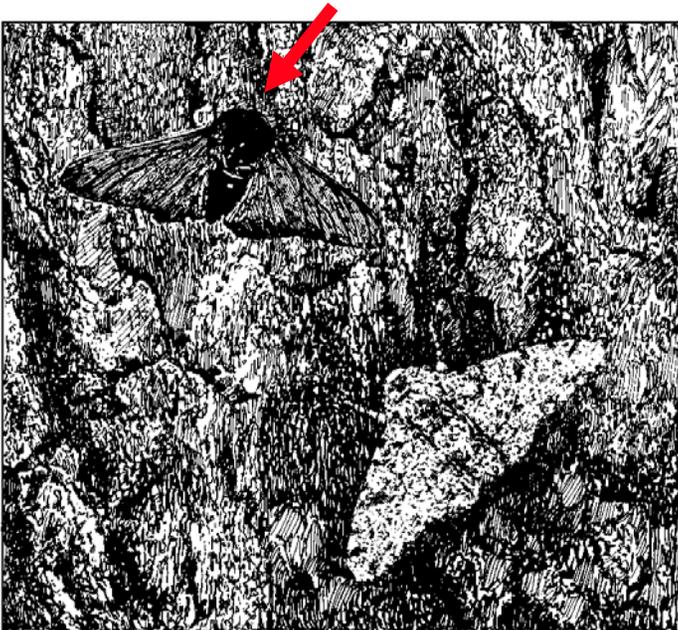
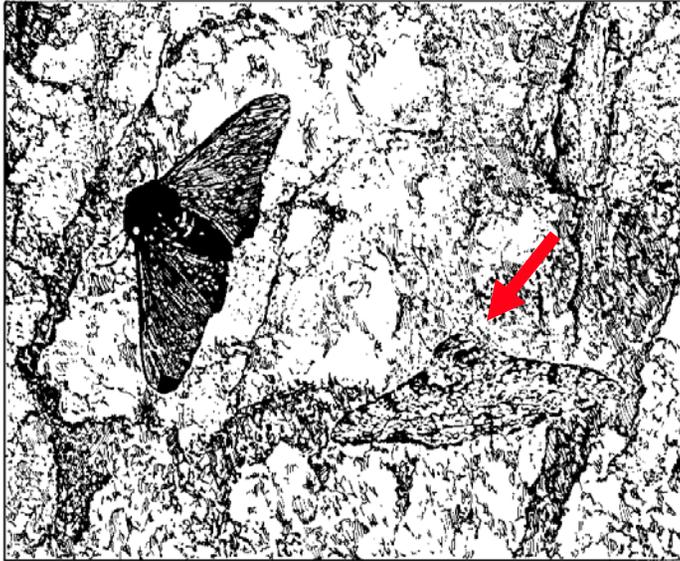


Illustration by Jody F. Sjogren

# Peppered Moths



Note that even if the peppered moth story were 100% true, it would show only a shift in the relative proportions of two existing varieties. In other words, it would show only microevolution, not macroevolution.

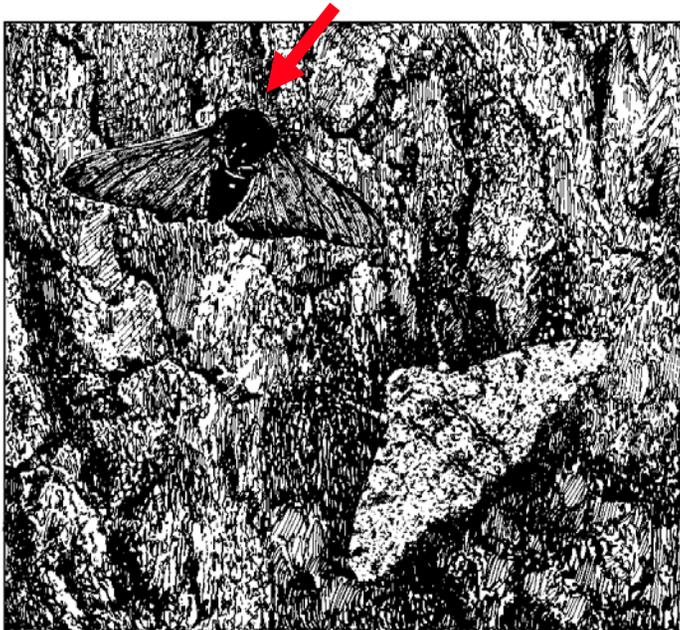


Illustration by Jody F. Sjogren

# Peppered Moths



Illustration by Jody F. Sjogren

Yet by 1990, biologists realized that most peppered moths in the wild don't even rest on tree trunks. They rest where they can't be seen – probably high in the upper branches.

One study listed 8,426 moths found in traps from 1952-1974. During a comparable period only 6 moths had been found resting on tree trunks.

Michael Majerus, *Melanism: Evolution in Action* (1998)

# Peppered Moths



Illustration by Jody F. Sjogren

In 1987 peppered moth experts Rory Howlett and Michael Majerus reported that it seems certain that most peppered moths “rest where they are hidden,” and that “exposed areas of tree trunks are not an important resting site for any form” of peppered moth.

Howlett & Majerus, *Biol. J. of the Linnean Society* (1987)

# Peppered Moths



University of Chicago evolutionary biologist Jerry Coyne concluded that this invalidates Kettlewell's experiments, "as moths were released by placing them directly onto tree trunks." Coyne wrote that this "prize horse in our stable of examples" of evolution "is in bad shape."

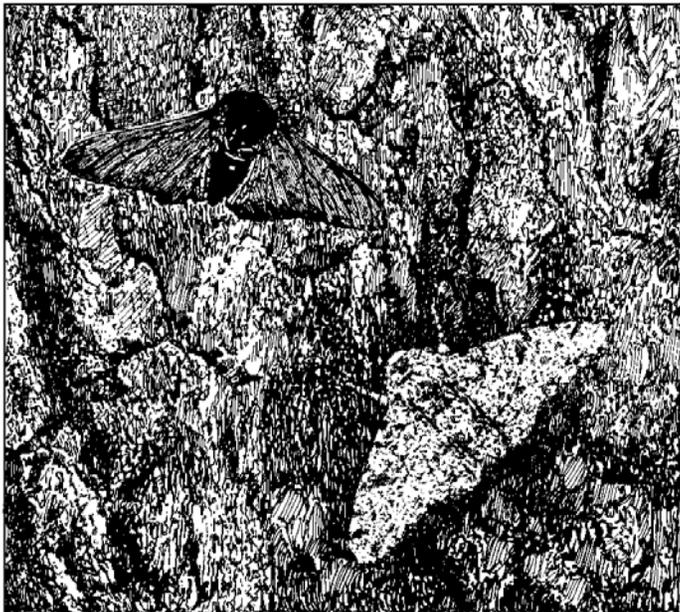


Illustration by Jody F. Sjogren

*Nature*, "Not black and white" (1996)

# Peppered Moths



It turns out that the textbook photos had been staged using dead moths pinned in place, or live moths that had been placed on tree trunks artificially and then photographed before they could fly away.



Illustration by Jody F. Sjogren

# Peppered Moths



Illustration by Jody F. Sjogren

A Canadian textbook-writer who knew that peppered moth pictures were faked used them anyway. In a 1999 interview he said, “You have to look at the audience. How convoluted do you want to make it for a first time learner?” High school students “are still very concrete in the way they learn,” he continued. “The advantage of this example of natural selection is that it is **extremely visual.**”

Bob Ritter, *Alberta Report Newsmagazine* (1999)

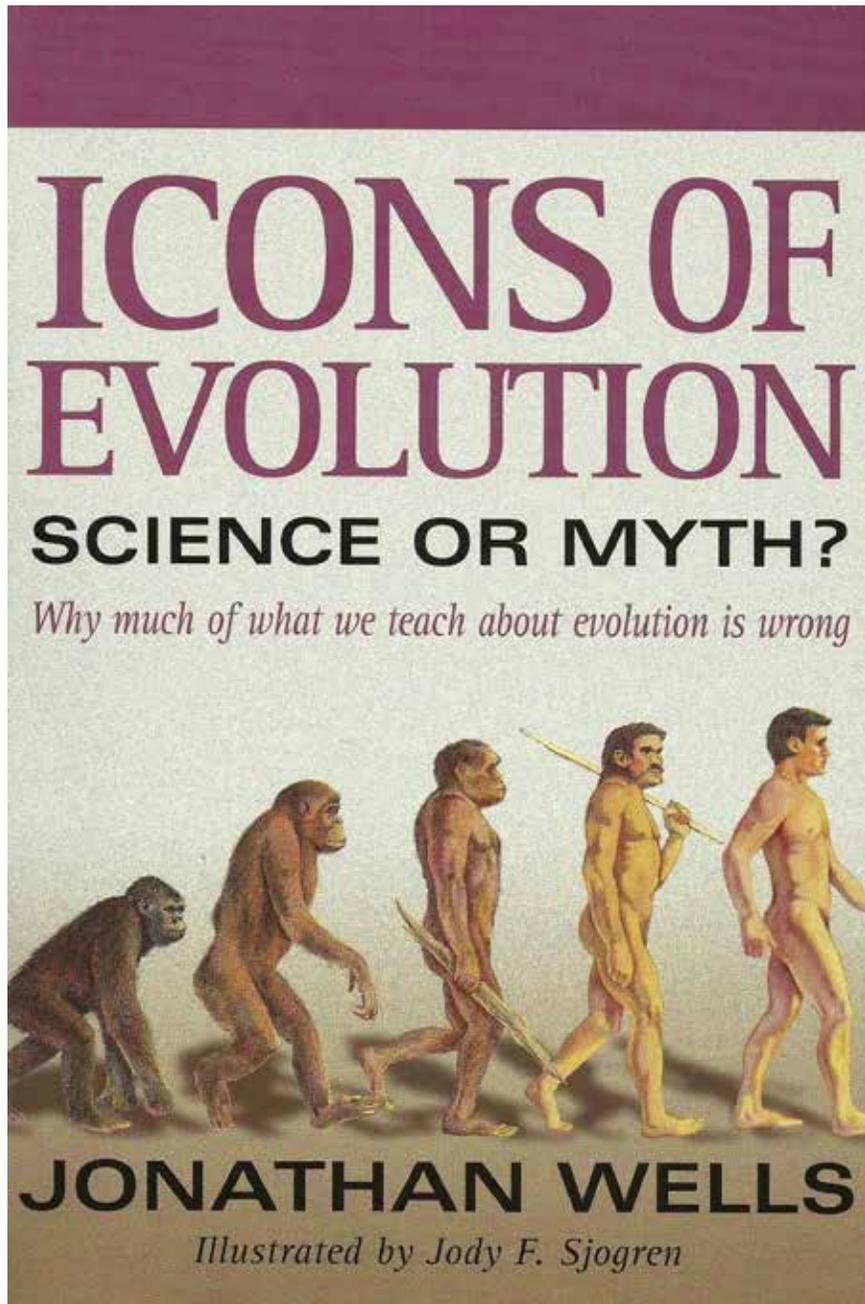
# Peppered Moths

Extremely visual, perhaps.

But wrong.

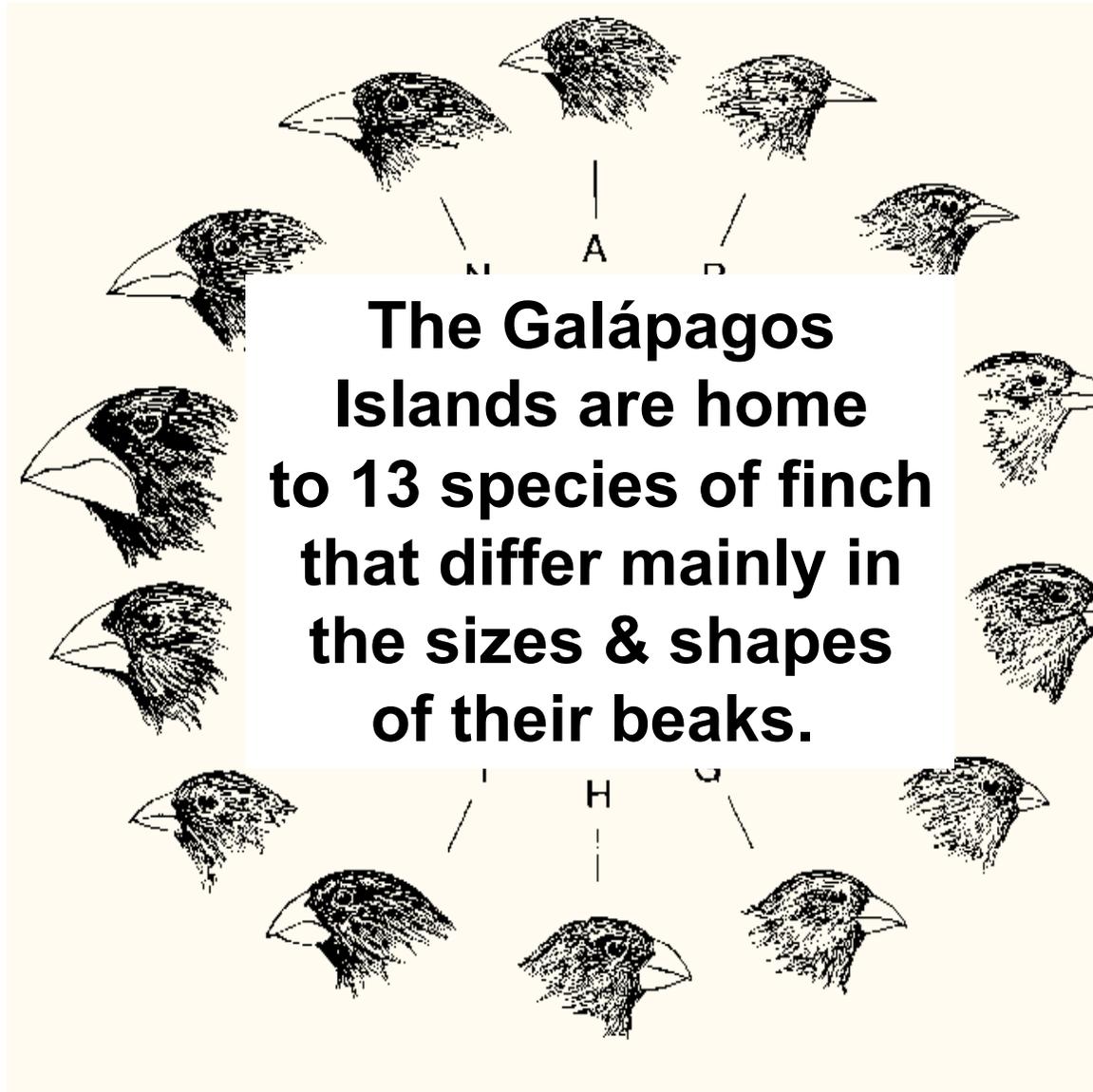
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Four-winged Fruit Flies  
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From Ape to Human



2000

# Darwin's Finches



## Galápagos Islands

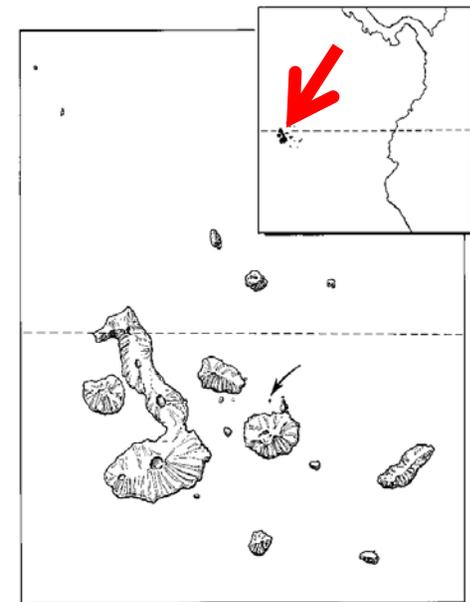
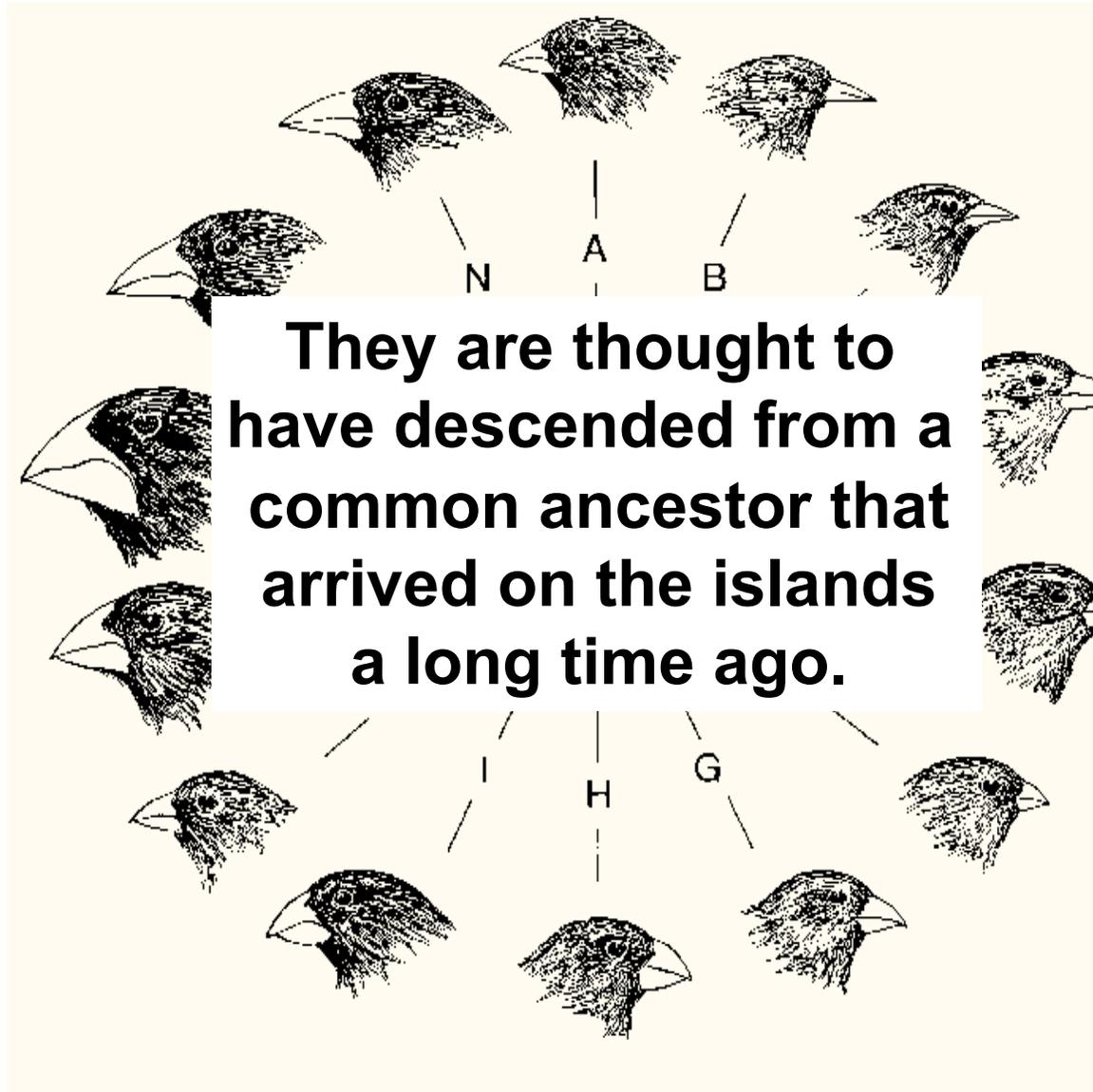


Illustration by  
Jody F. Sjogren

# Darwin's Finches



## Galápagos Islands

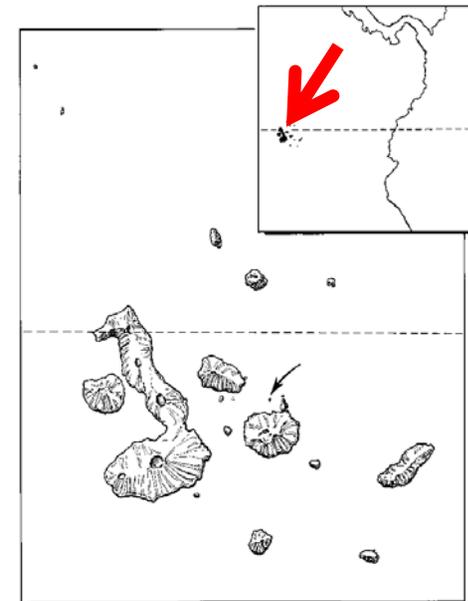


Illustration by  
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# Darwin's Finches



## Galápagos Islands

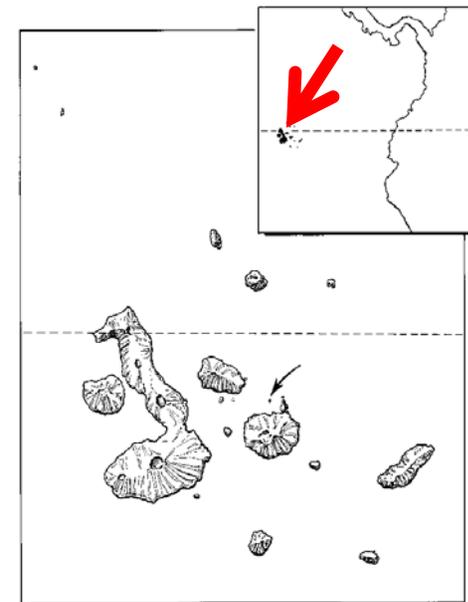
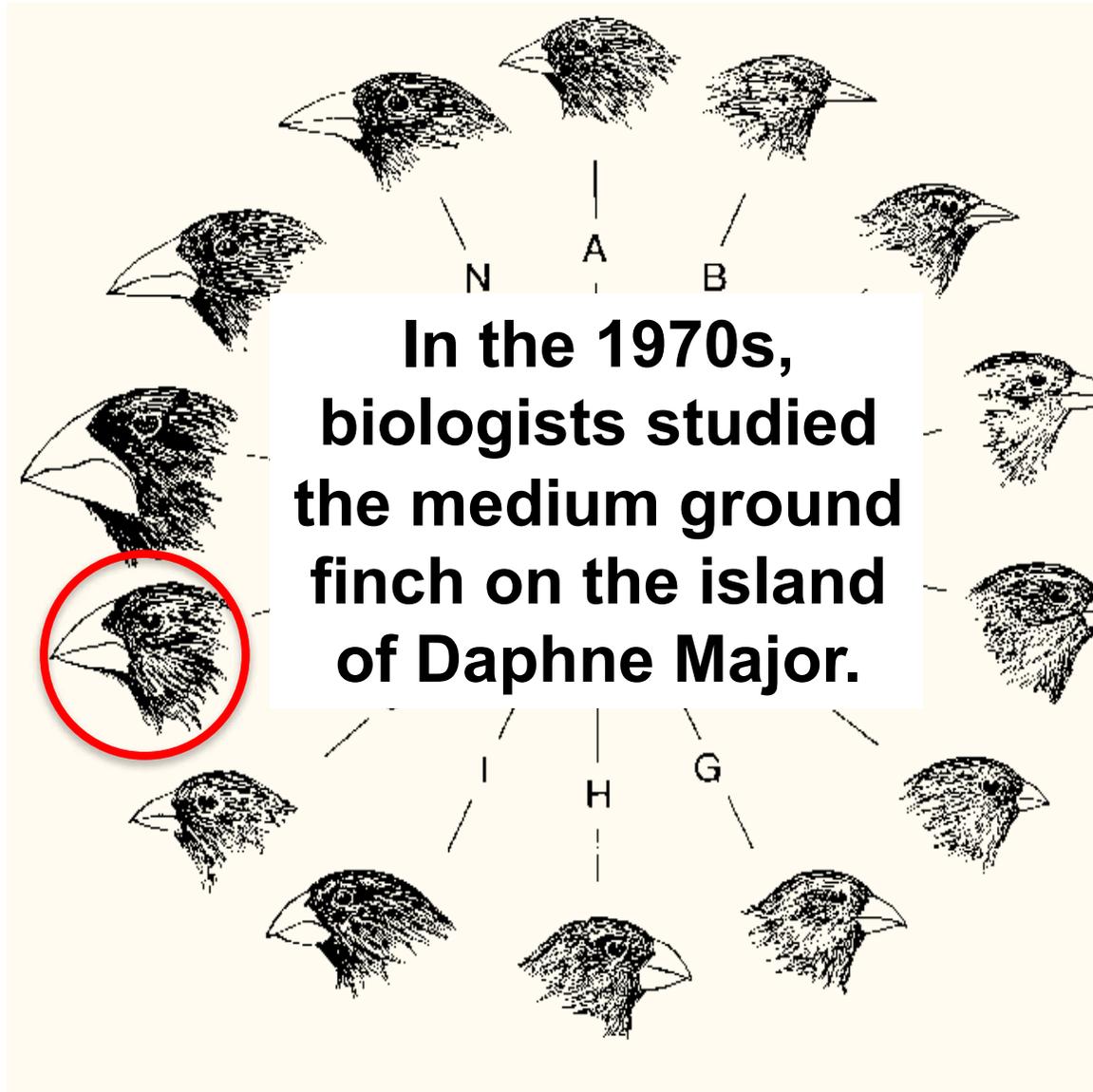


Illustration by  
Jody F. Sjogren

# Darwin's Finches



## Daphne Major

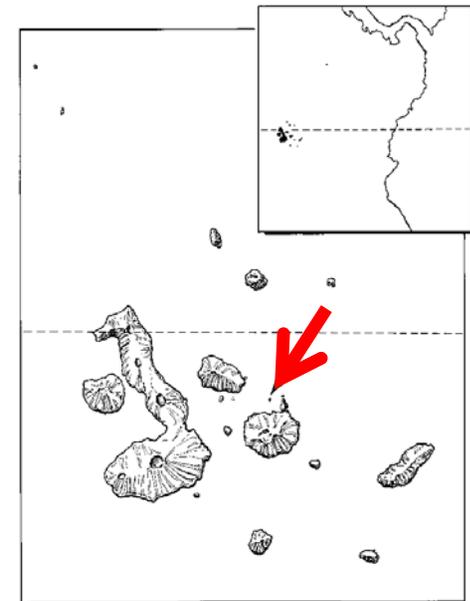
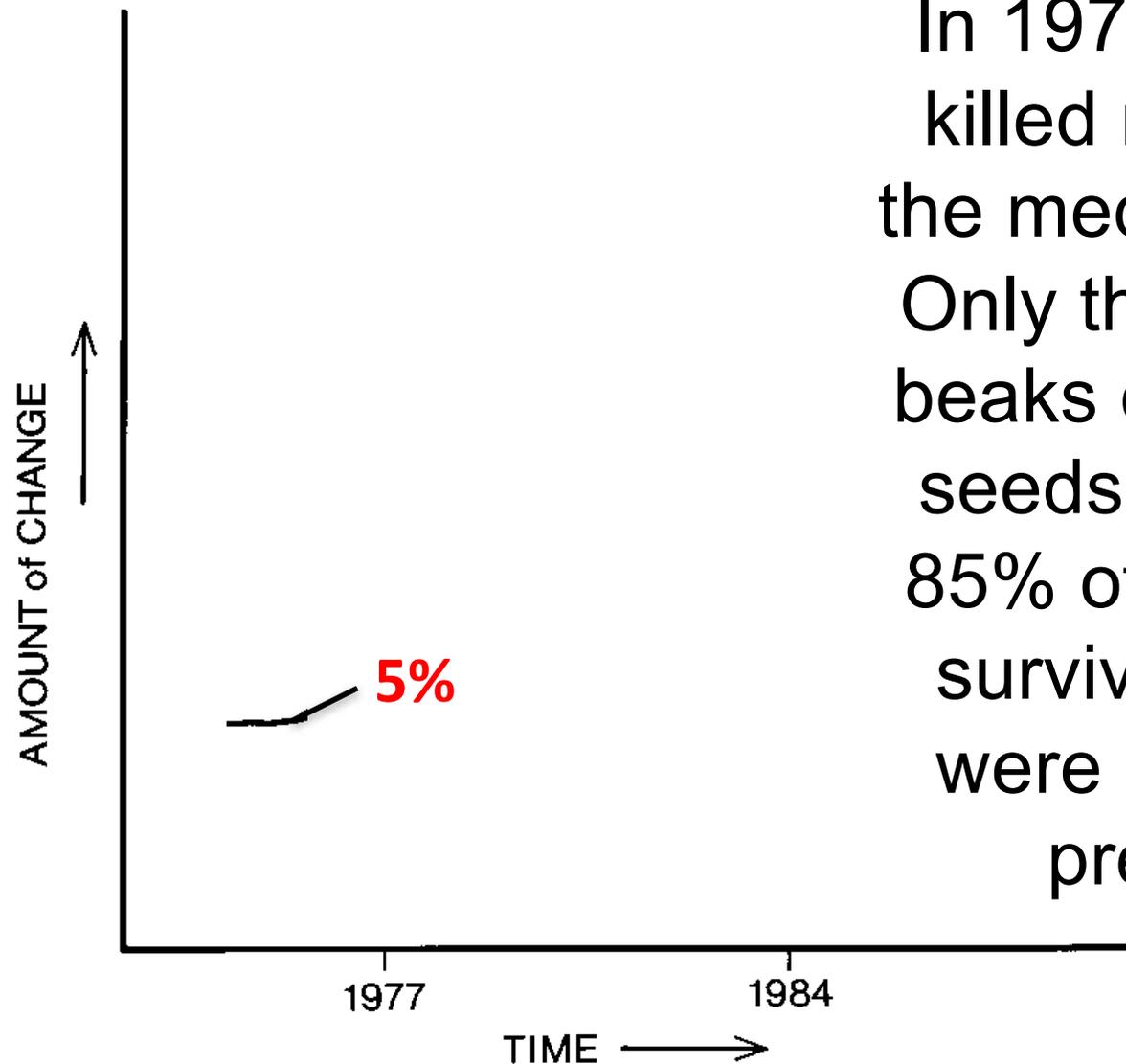


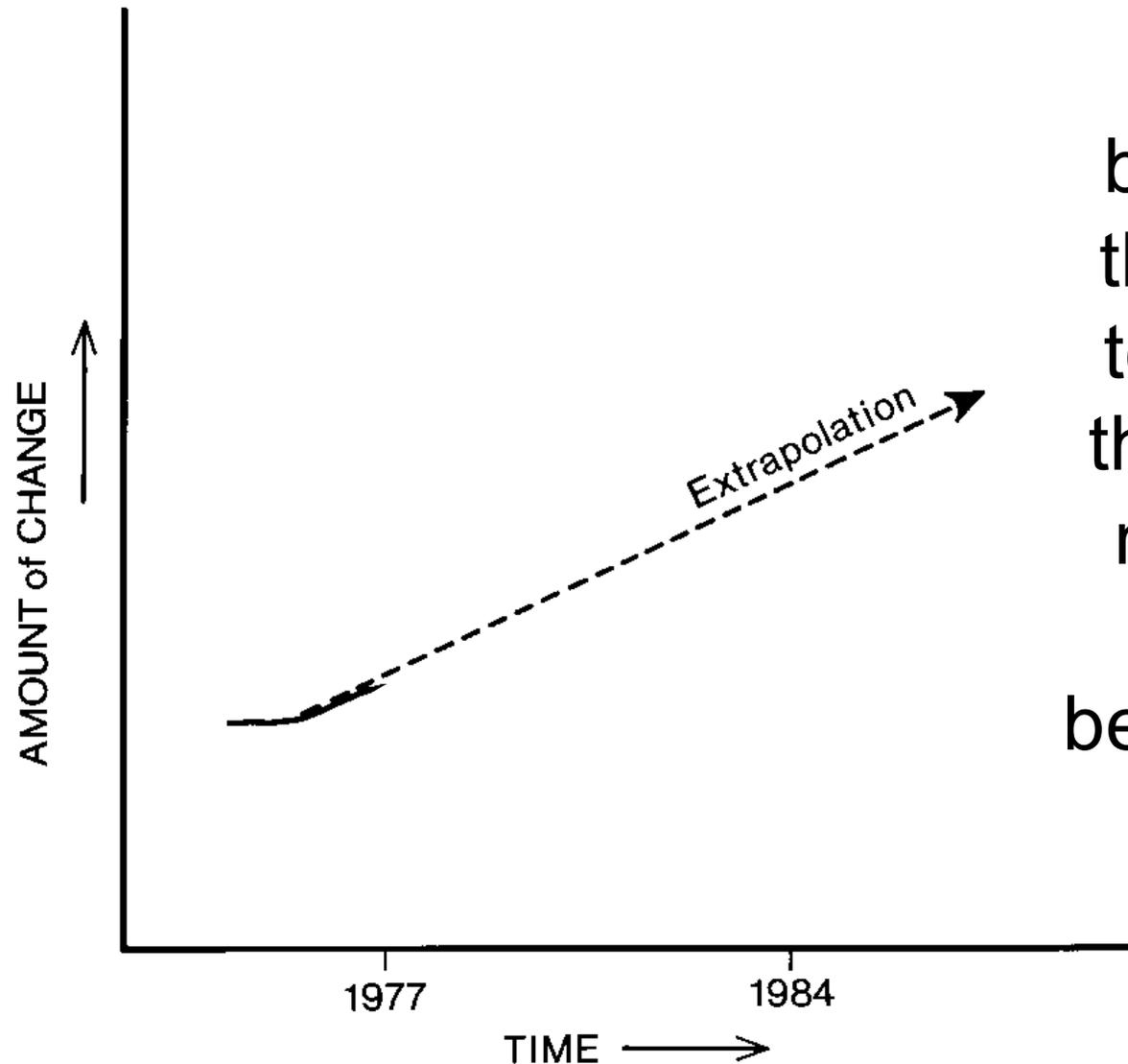
Illustration by  
Jody F. Sjogren

# Darwin's Finches



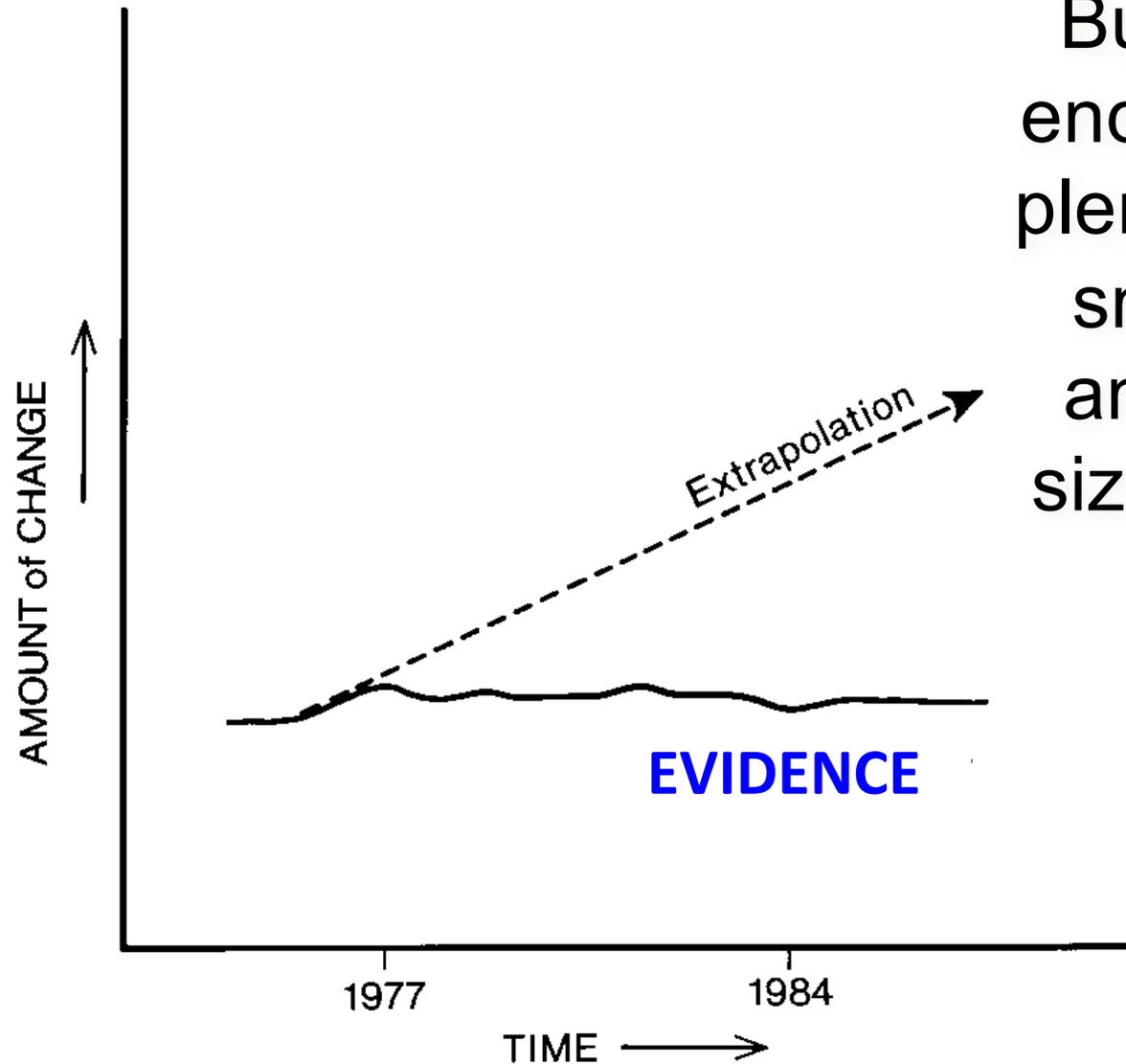
In 1977, a severe drought killed most of the food for the medium ground finches. Only those with the largest beaks could crack the hard seeds that remained, and 85% of the birds died. The survivors had beaks that were 5% bigger than the previous average.

# Darwin's Finches



Extrapolating from this increase, the biologists estimated that a drought every ten years could turn this population into a new species in 200 years. The finches became an icon of the origin of species (“speciation”).

# Darwin's Finches



But when the drought ended and food became plentiful again, birds with smaller beaks thrived and the average beak size returned to normal.

**No net evolution occurred.**

Darwin's finches provide good evidence of natural selection in action. But the small, reversible effects that were observed occurred only within an existing species.

In other words, Darwin's finches (like peppered moths) are only about microevolution, not macroevolution.

# Darwin's Finches

Yet many recent biology textbooks feature Darwin's finches as an icon of macroevolution.



Kenneth R. Miller  
& Joseph S. Levine,  
*Biology* (2014)



Jane B. Reece, et al., *Campbell Biology* (2014)



**Figure 15.9 Galápagos finches.** Each of the 13 species of finches has a beak adapted to a particular way of life. For example, (a) the heavy beak of the large ground-dwelling finch (*Geospiza magnirostris*) is suited to a diet of large seeds; (b) the beak of the warbler-finch (*Certhidea olivacea*) is suited to feeding on insects found among ground vegetation or caught in the air; and (c) the longer beak, somewhat decurved, and the split tongue of the cactus-finch (*Cactornis scandens*) are suited to extracting the flesh of cactus fruit.

Sylvia Mader and Michael Windelspecht, *Biology* (2015)

# Darwin's Finches

**There is another serious problem with using the finches as an icon of evolution.**

# Darwin's Finches

In the 1980s, biologists noticed that several finch species were hybridizing and producing offspring that were hardier than their parents. In other words, the “species” were in the process of merging. This is the opposite of diverging in the branching-tree pattern required for Neo-Darwinian evolution.

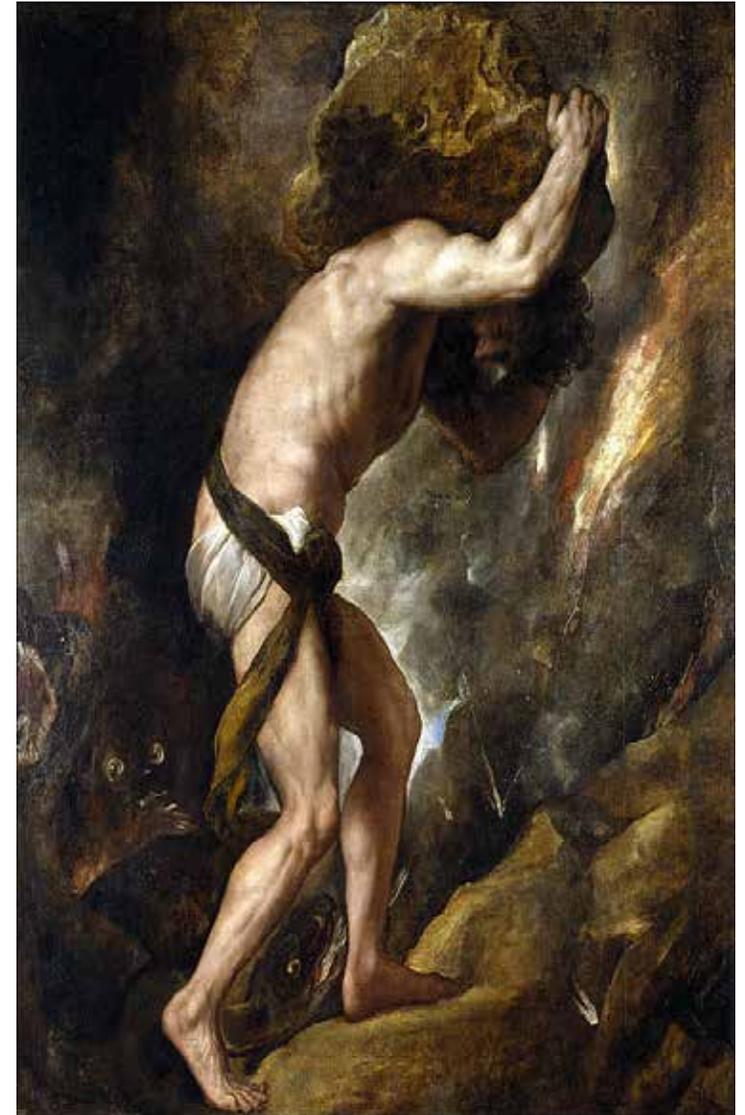
# Darwin's Finches

In fact, scientists in 2015 reported DNA evidence that Darwin's finches have been interbreeding extensively ever since they arrived on the islands.

Lamichhaney, Berglund, Almén, Maqbool, Grabherr, Martinez-Barrio, Promerová, Rubin, Wang, Zamani, Webster, Andersson, and Rosemary and Peter Grant, *Nature* (2015)

# The Myth of Sisyphus

In Greek mythology, Sisyphus was a king noted for his greed and deceitfulness. He also considered himself cleverer than the gods, so when he died he was condemned to spend eternity rolling a huge boulder up a steep hill. Every time he approaches the top, the boulder escapes his grip and rolls back down the hill, and Sisyphus has to start over.



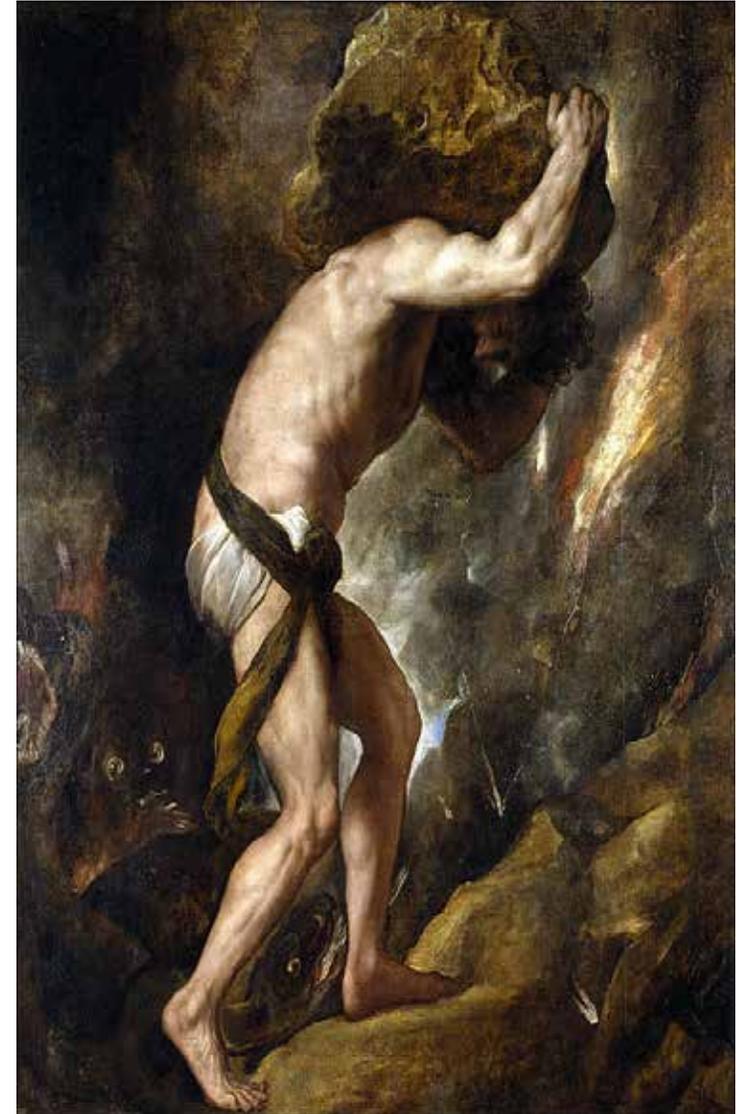
Titian, 1549 (Wikipedia)

# Darwin's Finches

Biologists Bailey McKay and Robert Zink wrote in 2015 that although the Galápagos finches are an icon of Neo-Darwinian evolution that is “featured in nearly every textbook on evolutionary biology,” they actually “cycle between stages of differentiation and never attain species status, a process we refer to as

**Sisyphean evolution.”**

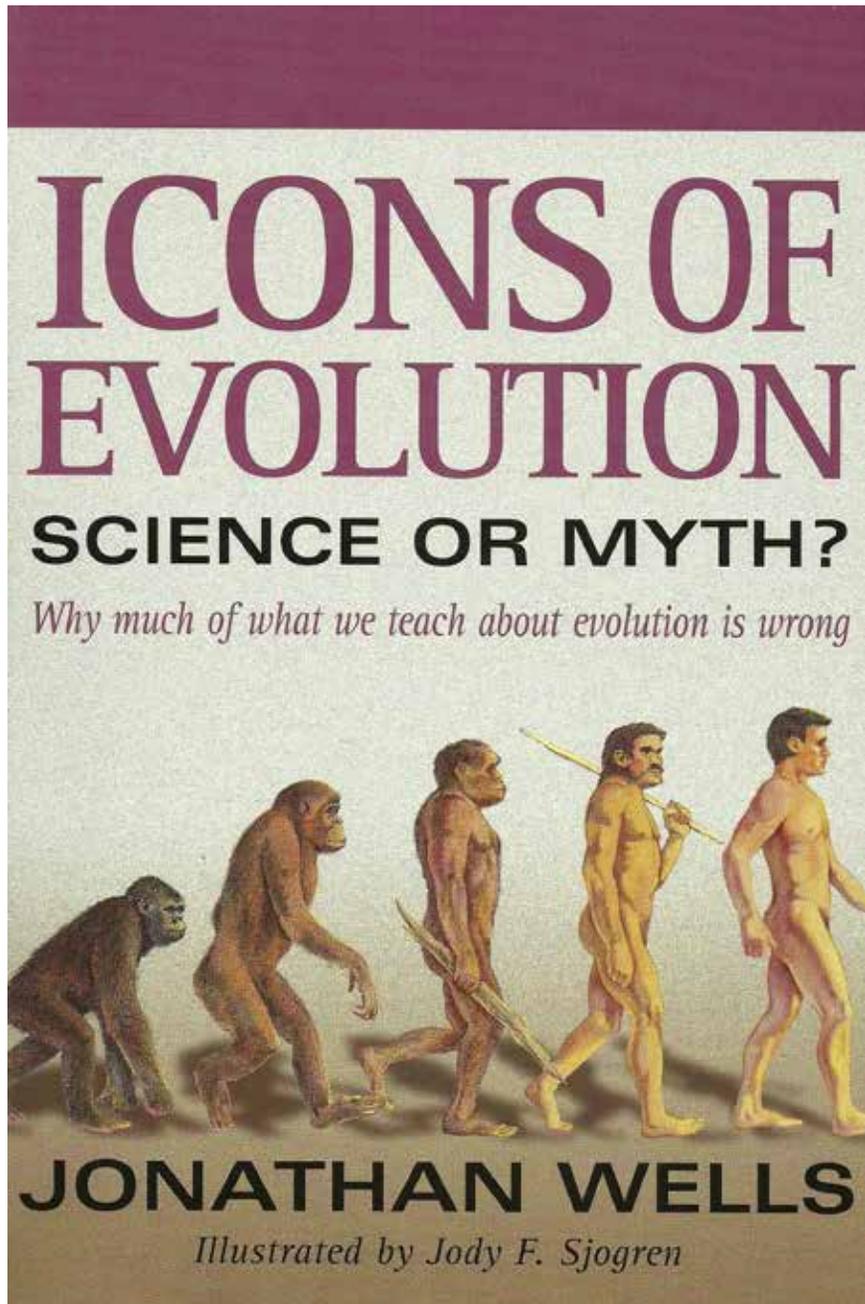
Bailey McKay and Robert Zink, *Biological Reviews of the Cambridge Philosophical Society* (2015)



Titian, 1549 (Wikipedia)

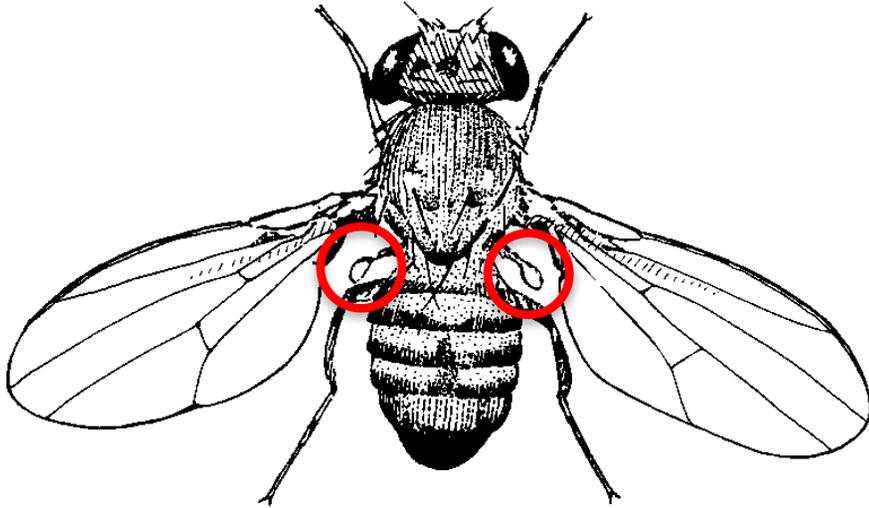
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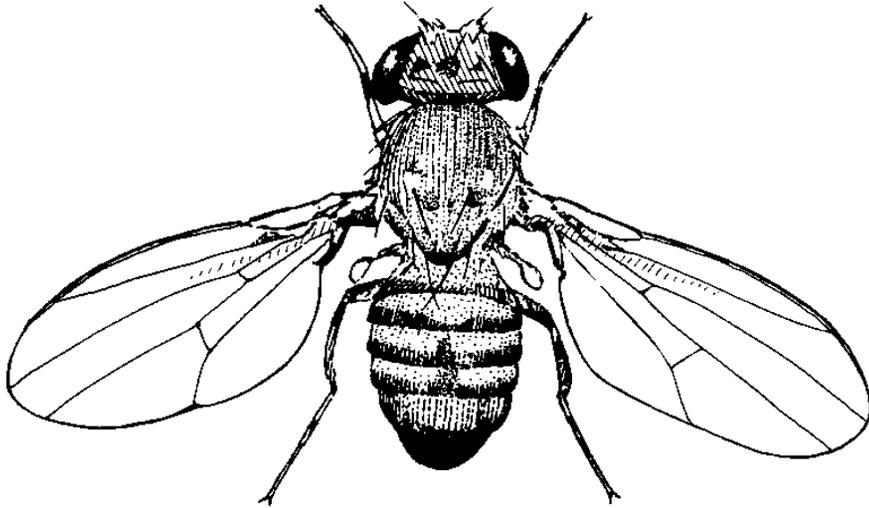
# Four-winged Fruit Flies



## Normal Fruit Fly

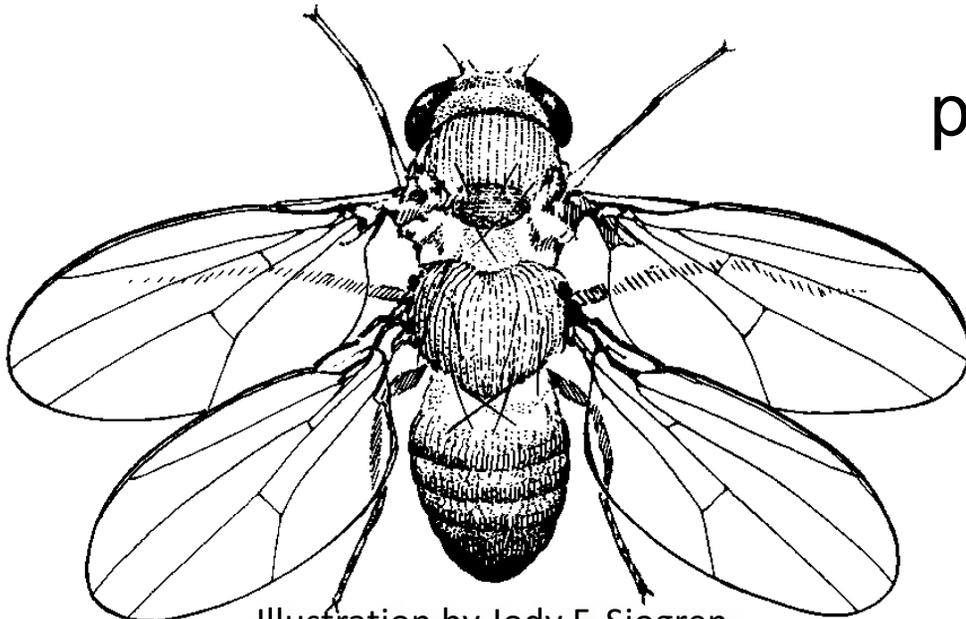
Normal fruit flies have one pair of wings, and one pair of “balancers” (red circles) to steady them in flight.

# Four-winged Fruit Flies



## Normal Fruit Fly

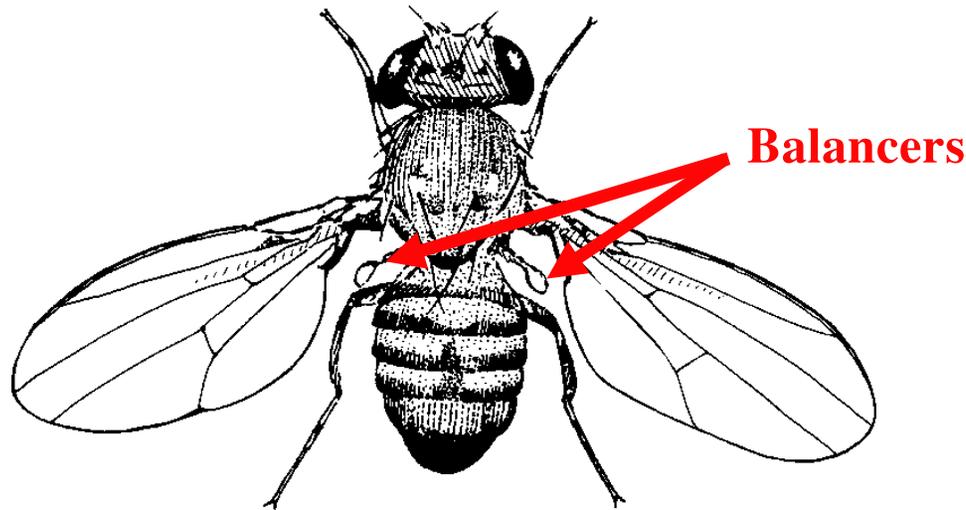
In the 1970s, geneticist Ed Lewis artificially combined three separate mutations to produce a four-winged fruit fly.



## Four-winged Fruit Fly

Illustration by Jody F. Sjogren

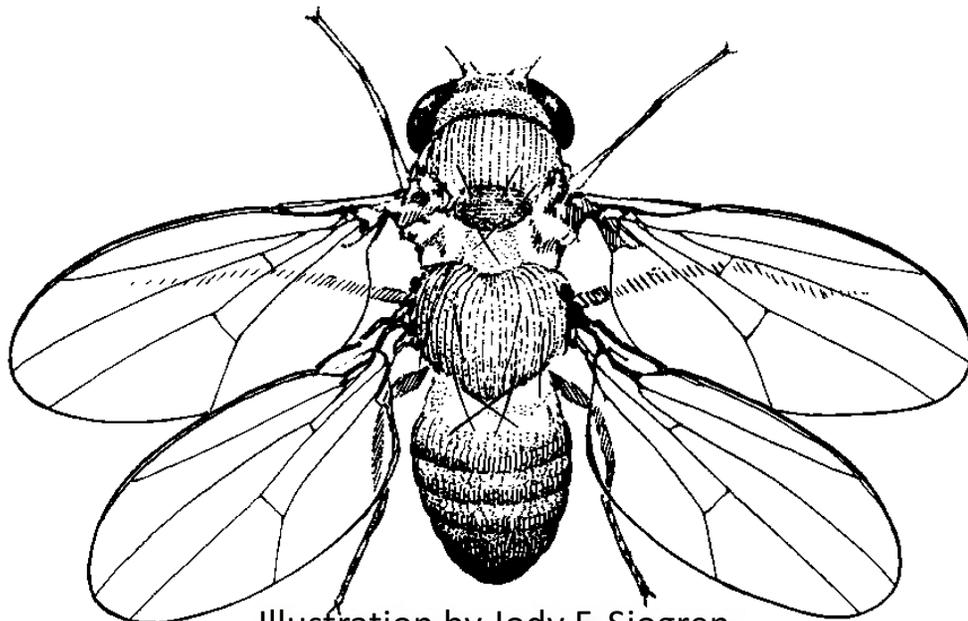
# Four-winged Fruit Flies



Balancers

Normal  
Fruit Fly

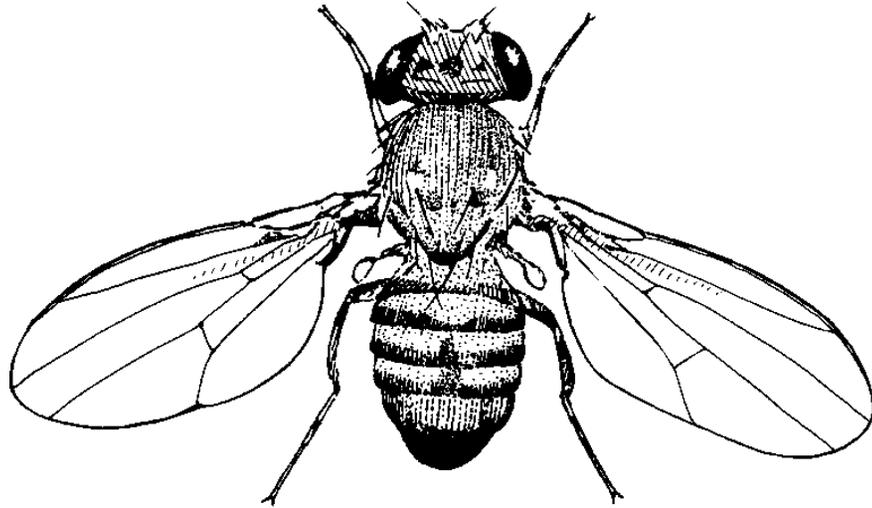
But the mutations  
eliminated the balancers,  
which are needed for  
flying.



Four-winged  
Fruit Fly

Illustration by Jody F. Sjogren

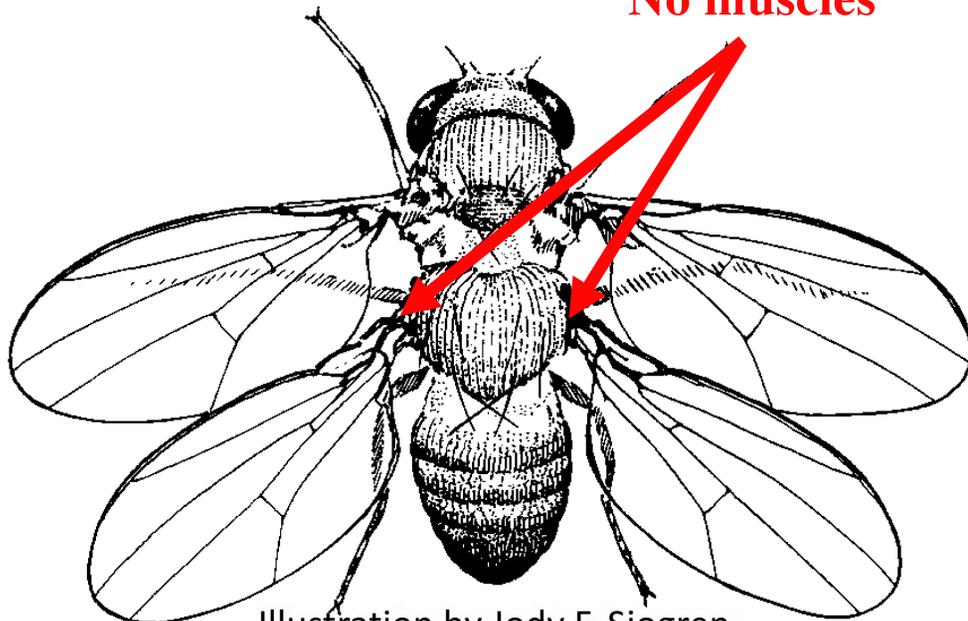
# Four-winged Fruit Flies



## Normal Fruit Fly

And the second pair of wings lacks flight muscles. So the four-winged fly has great difficulty flying and mating.

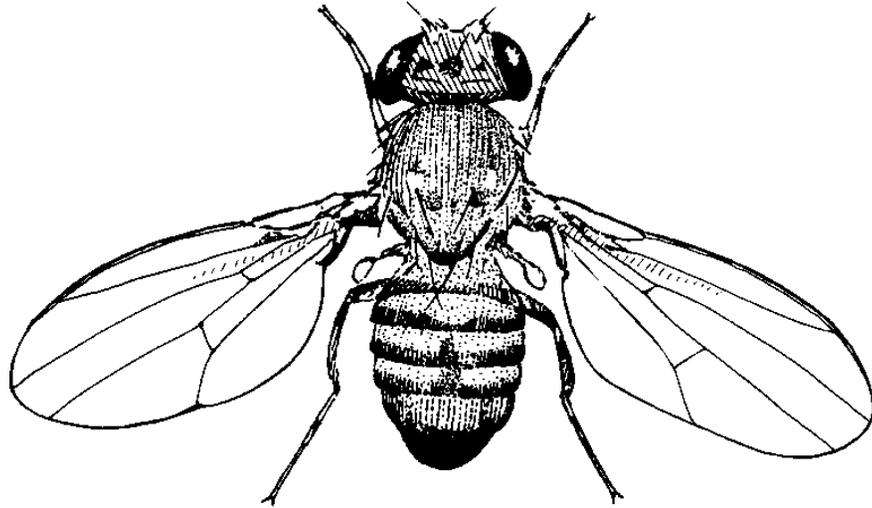
No muscles



## Four-winged Fruit Fly

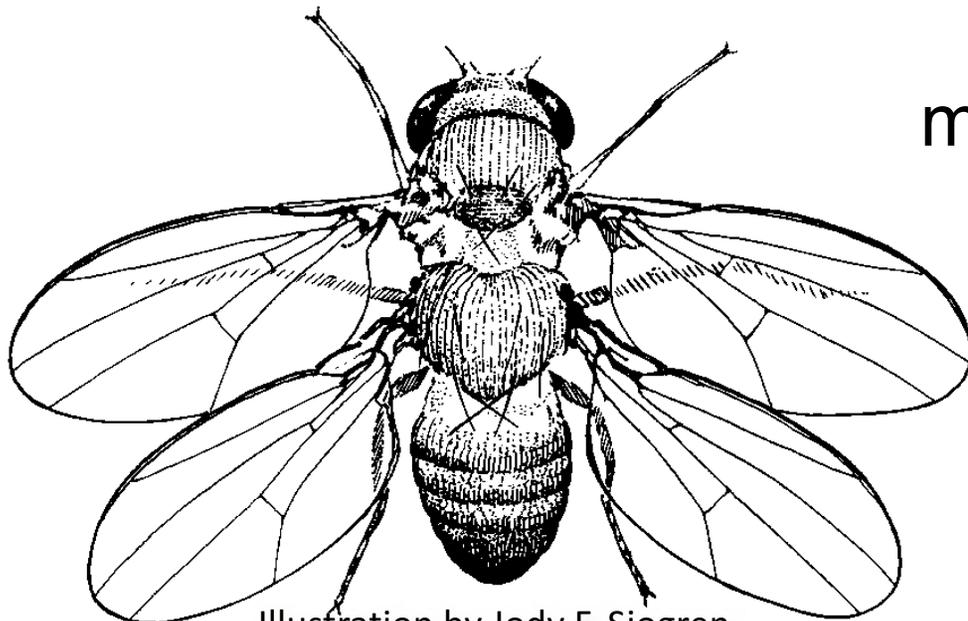
Illustration by Jody F. Sjogren

# Four-winged Fruit Flies



## Normal Fruit Fly

The four-winged fruit fly is a cripple, not an evolutionary step forward. Yet some people use it as evidence that mutations can provide the raw materials for evolution.



## Four-winged Fruit Fly

Illustration by Jody F. Sjogren

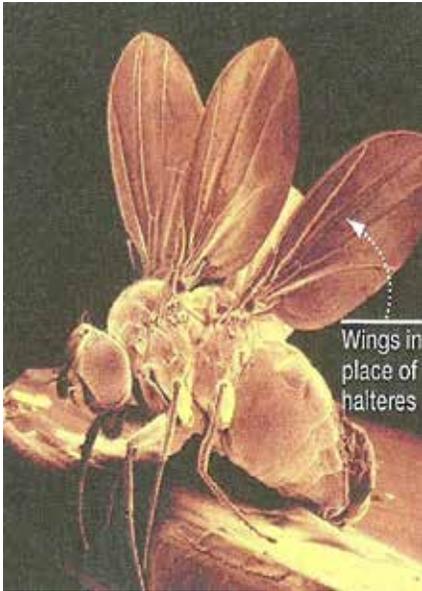
# Four-winged Fruit Flies

“Interfere with [the] genes, by design or by accident, and what might emerge was a fly with an extra set of wings... [This] led biologists to realize that the recipe for building the animal body is controlled by remarkably few genes—and that by studying small changes in the recipe, they could also show how these genes produce *variation*, the raw material for evolution.”

Biologist and textbook-writer Kenneth R. Miller,  
*Only a Theory: Evolution and the Battle for America's Soul* (Viking, 2008)

# Four-winged Fruit Flies

Many recent U.S. textbooks likewise use four-winged fruit flies to convince students that DNA mutations can produce anatomical changes that provide the raw materials for evolution.



Scott Freeman, et al.,  
*Biological Science* (2014)



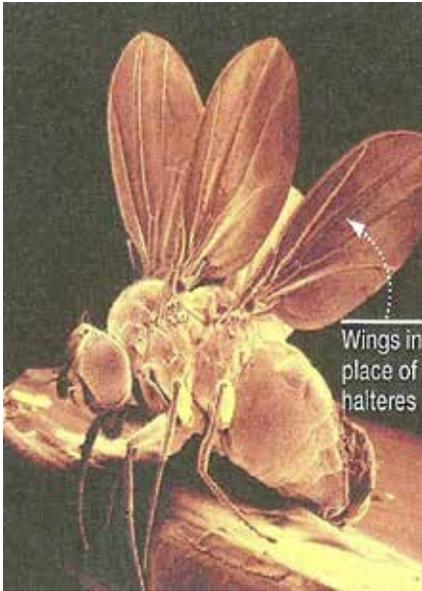
Mason, Losos, and Singer,  
*Raven and Johnson Biology* (2014)



Mader & Windelspecht,  
*Biology* (2015)

# Four-winged Fruit Flies

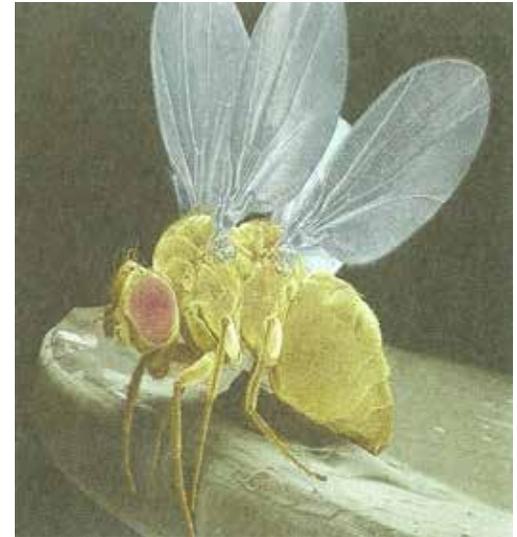
Yet neither Miller nor these textbooks mention that four-winged fruit flies are helpless cripples that cannot live outside the laboratory. They are evolutionary dead ends.



Scott Freeman, et al.,  
*Biological Science* (2014)



Mason, Losos, and Singer,  
*Raven and Johnson Biology* (2014)



Mader & Windelspecht,  
*Biology* (2015)

# What can DNA mutations accomplish?

We can mutate a fruit fly embryo as much as we like (using a technique called “saturation mutagenesis”), and as far as we can tell from the evidence there are only three possible outcomes:

- **A normal fruit fly.**

# What can DNA mutations accomplish?

We can mutate a fruit fly embryo as much as we like (using a technique called “saturation mutagenesis”), and as far as we can tell from the evidence there are only three possible outcomes:

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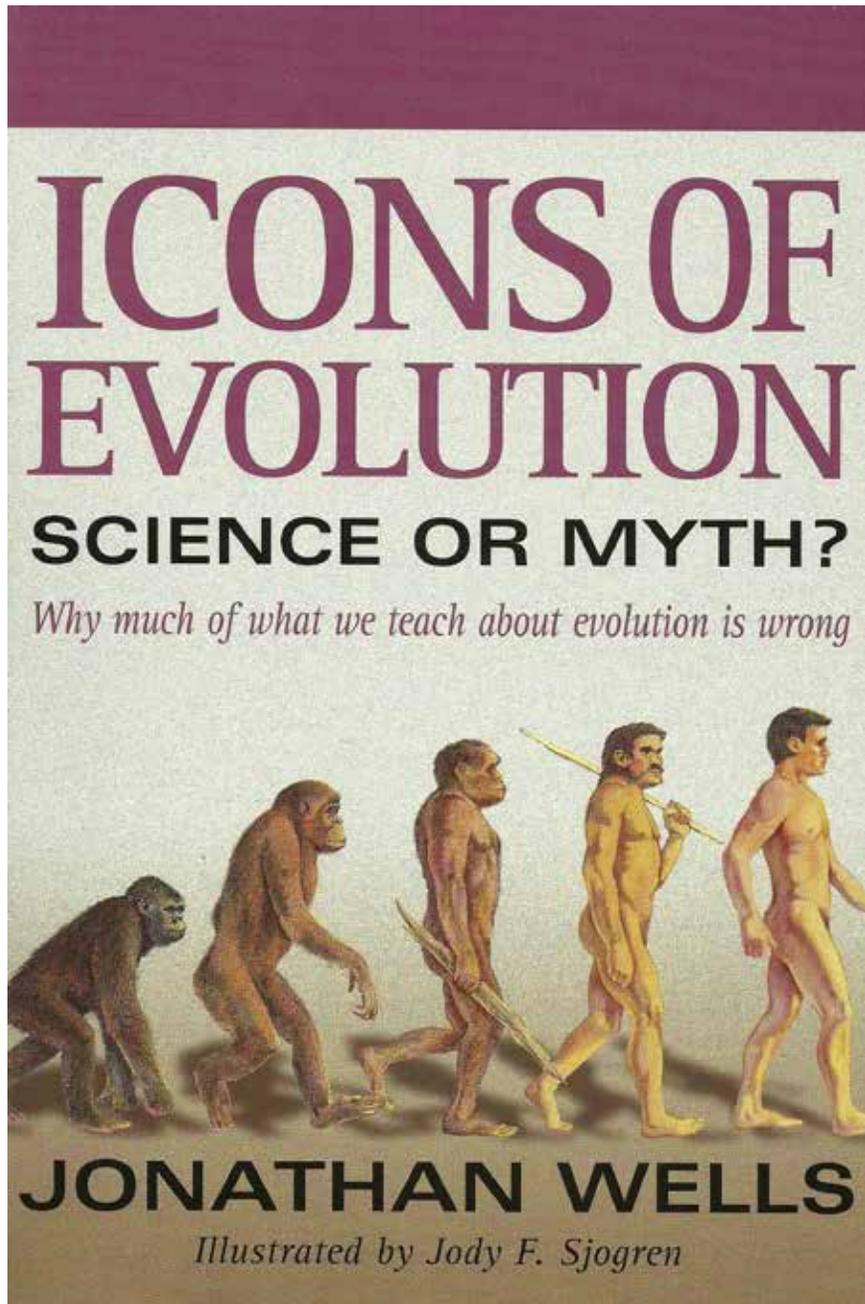
# What can DNA mutations accomplish?

We can mutate a fruit fly embryo as much as we like (using a technique called “saturation mutagenesis”), and as far as we can tell from the evidence there are only three possible outcomes:

- **A normal fruit fly.**
- **A defective fruit fly.**
- **Or a dead fruit fly.**

# Ten Icons of Evolution

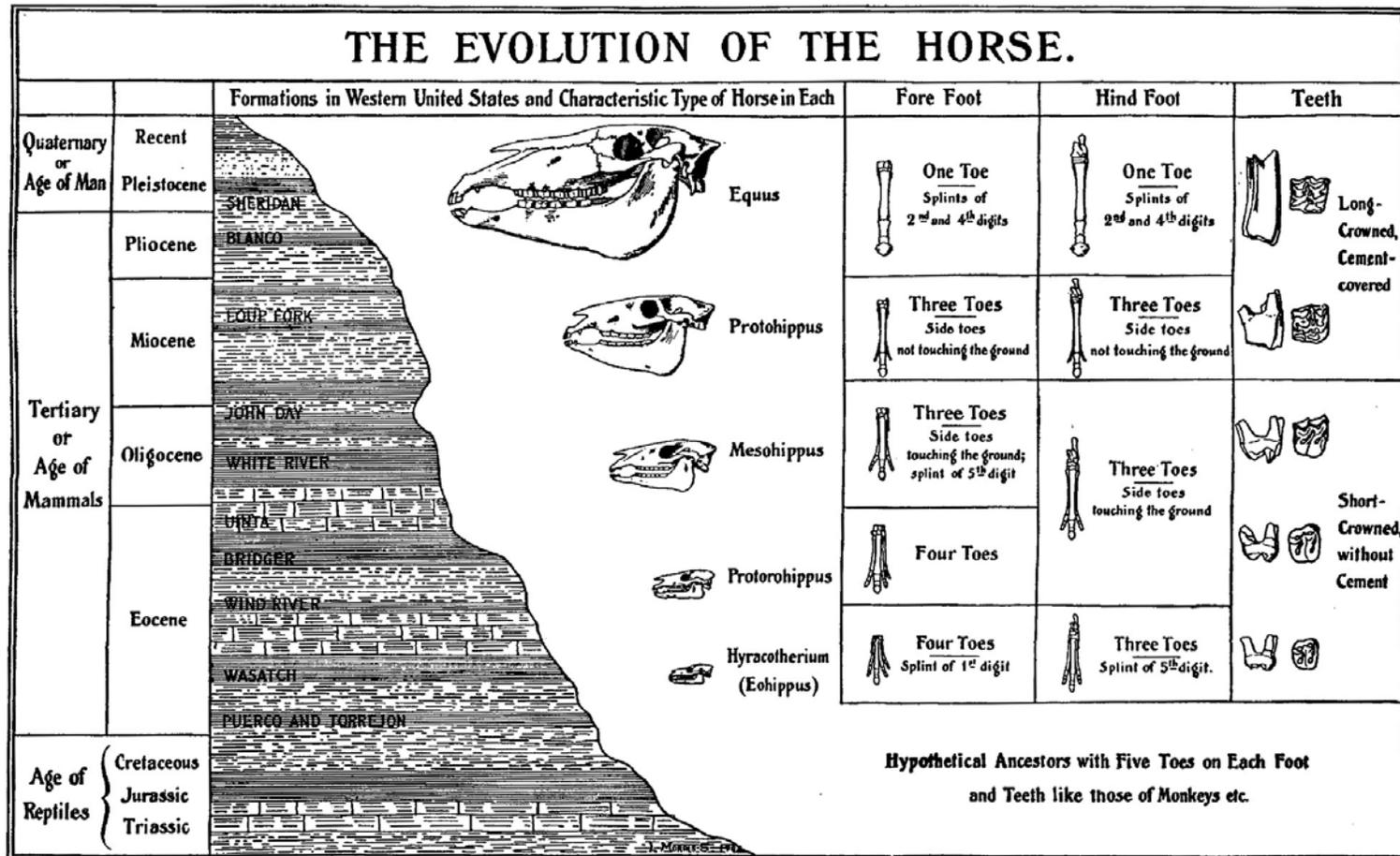
The Miller-Urey Experiment  
Darwin's Tree of Life  
Homology in Vertebrate Limbs  
Haeckel's Embryos  
*Archaeopteryx*  
Peppered Moths  
Darwin's Finches  
Four-winged Fruit Flies  
**Fossil Horses**  
From Ape to Human



2000

# Fossil Horses

A century ago, horses were thought to have evolved in a fairly straight line from a small animal with three or four toes into the large modern horse with one toe.



William D. Matthew, *American Museum of Natural History Journal* (1903)

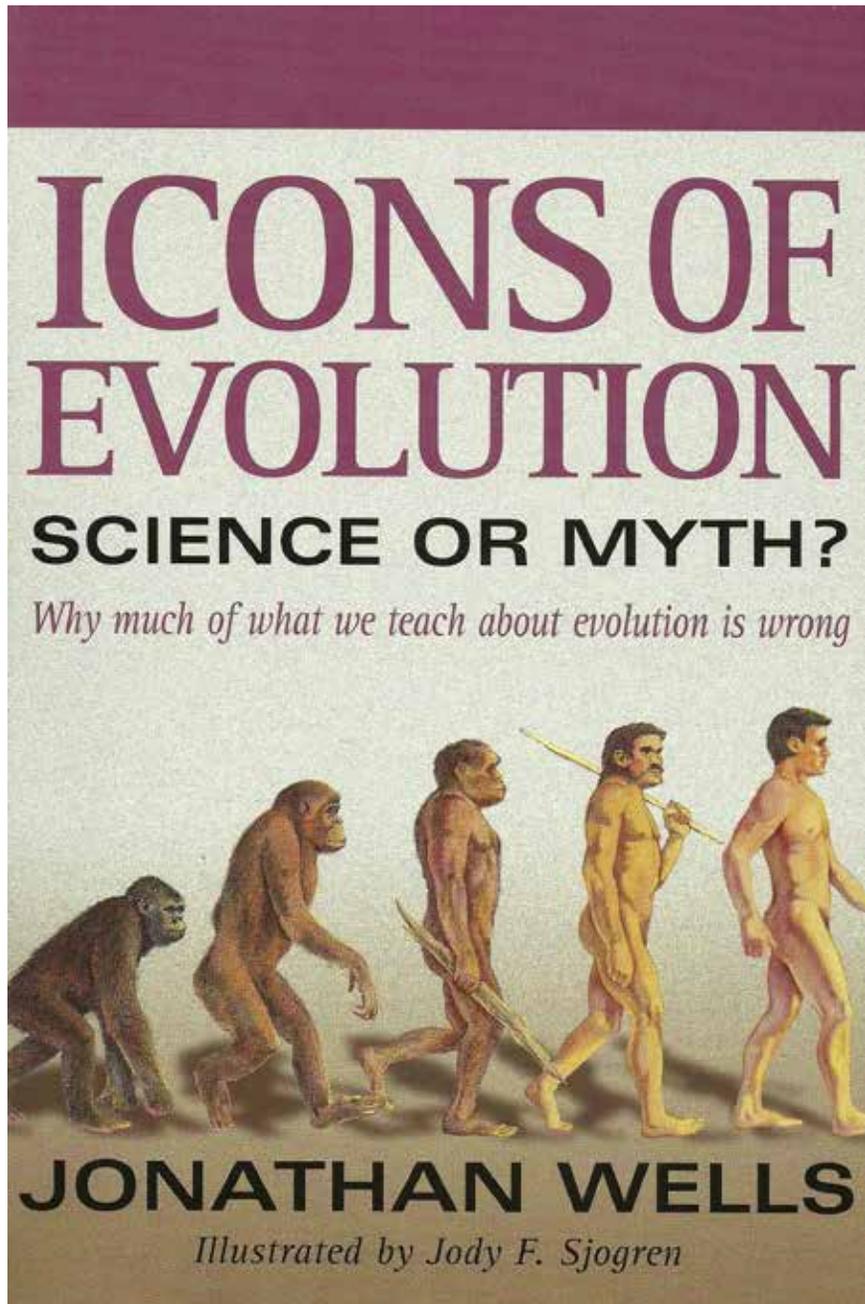
# Fossil Horses

As more fossils were discovered, scientists realized that horse evolution was much more complicated, with many side branches – some of which went extinct. Although some textbooks still feature fossil horses, their place has largely been taken by fossil whales.

I will talk about fossil whales in a few minutes.

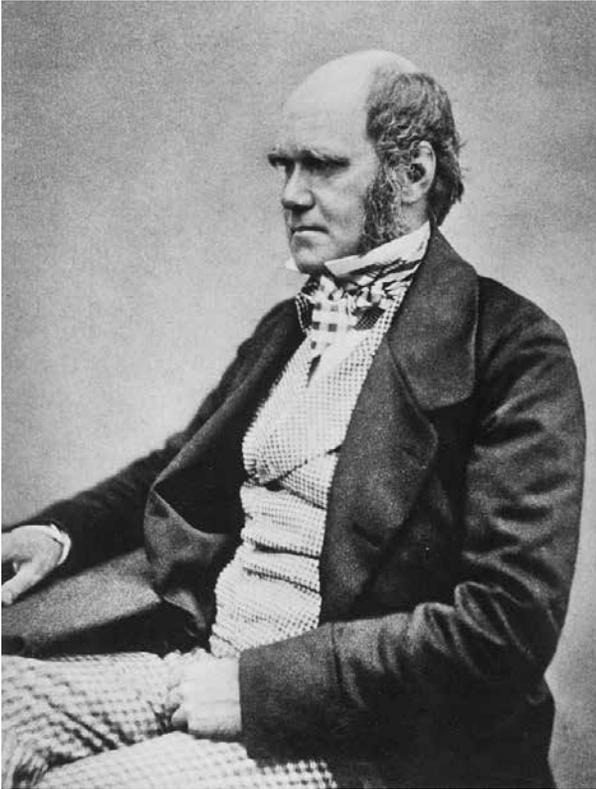
# Ten Icons of Evolution

- The Miller-Urey Experiment
- Darwin's Tree of Life
- Homology in Vertebrate Limbs
- Haeckel's Embryos
- Archaeopteryx*
- Peppered Moths
- Darwin's Finches
- Four-winged Fruit Flies
- Fossil Horses
- From Ape to Human**



2000

# From Ape to Human



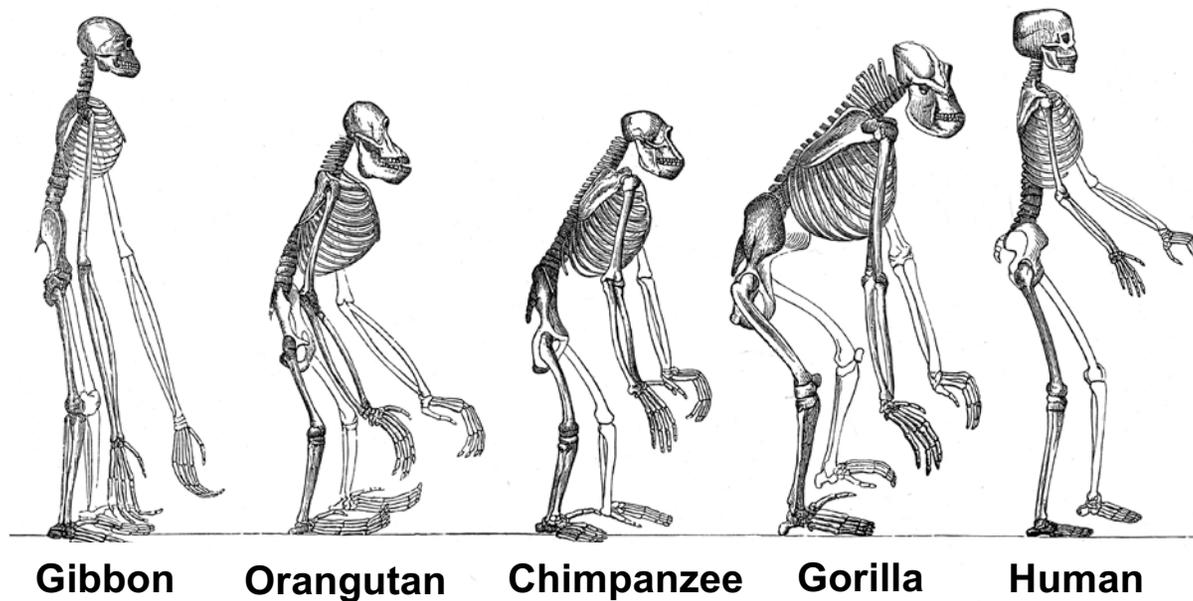
**Charles Darwin**

*The Descent of Man, and  
Selection in Relation to Sex*  
(1871)

Darwin began *The Descent of Man* by stating that “man is constructed on the same general type or model as other mammals.” He continued, “man bears in his bodily structure clear traces of his descent from some lower form.”

# From Ape to Human

Neanderthal bones had been discovered in 1856, but they were not thought to be related to humans. So Darwin had no fossils to support his view. The “clear traces” he mentions were homologies with living apes.



# From Ape to Human



Since then, many fossils have been found of animals with both ape-like and human-like features, but most such fossils are very fragmentary. This – the famous “Lucy” fossil (a chimpanzee-like animal about 3½ feet tall) – is one of the more complete.

**“Lucy” is one of the “hominins,” a group that includes us and extinct animals thought to be our ancestors.**

# From Ape to Human

Despite the claims in many textbooks, human evolution is still a mystery. In 1982, fossil experts Niles Eldredge and Ian Tattersall noted that it is a “myth that the evolutionary histories of living beings are essentially a matter of discovery.” If this were really true, they wrote, “one could confidently expect that as more [hominin] fossils were found the story of human evolution would become clearer. Whereas if anything, the opposite has occurred.”

Niles Eldredge and Ian Tattersall, *The Myths of Human Evolution* (1982)

# From Ape to Human

In 2015, fossil experts Bernard Wood and Mark Grabowski wrote: "[T]he evolutionary sequence for the majority of hominin lineages is unknown. Most hominin [species], particularly early hominins, have no obvious ancestors."

# From Ape to Human

A deeper problem is that fossils alone cannot demonstrate ancestor-descendant relationships.

If you were to find two complete human skeletons, unless you also found identifying marks and written records (or in some cases DNA), you could not tell if they were related – and yet they are from the same recent species.

With fossils of different species, extinct and widely separated in time, the problem is much worse.

# From Ape to Human

“The idea that one can go to the fossil record and expect to empirically recover an ancestor-descendant sequence... has been, and continues to be, a pernicious illusion.”

Gareth Nelson, "Presentation to the American Museum of Natural History" (1969)

“No fossil is buried with its birth certificate. That, and the scarcity of fossils, means that it is effectively impossible to link fossils into chains of cause and effect in any valid way.” “To take a line of fossils and claim that they represent a lineage is not a scientific hypothesis that can be tested, but an assertion that carries the same validity as a bedtime story – amusing, perhaps even instructive, but not scientific.”

Henry Gee, *In Search of Deep Time* (1999)

# From Ape to Human

The people I have just quoted are not creationists. They are simply being candid about how little we can learn from the fossils and how much remains unknown.

It is true that we have fossils of extinct animals with ape-like and human-like features. But interpreting what those fossils mean depends heavily on philosophical and theological assumptions.

# From Ape to Human

## What about DNA?

Scientists have reported that chimpanzee DNA is 95-99% similar to human DNA, and many argue that this proves chimps and humans share a common ancestor.

But does it?

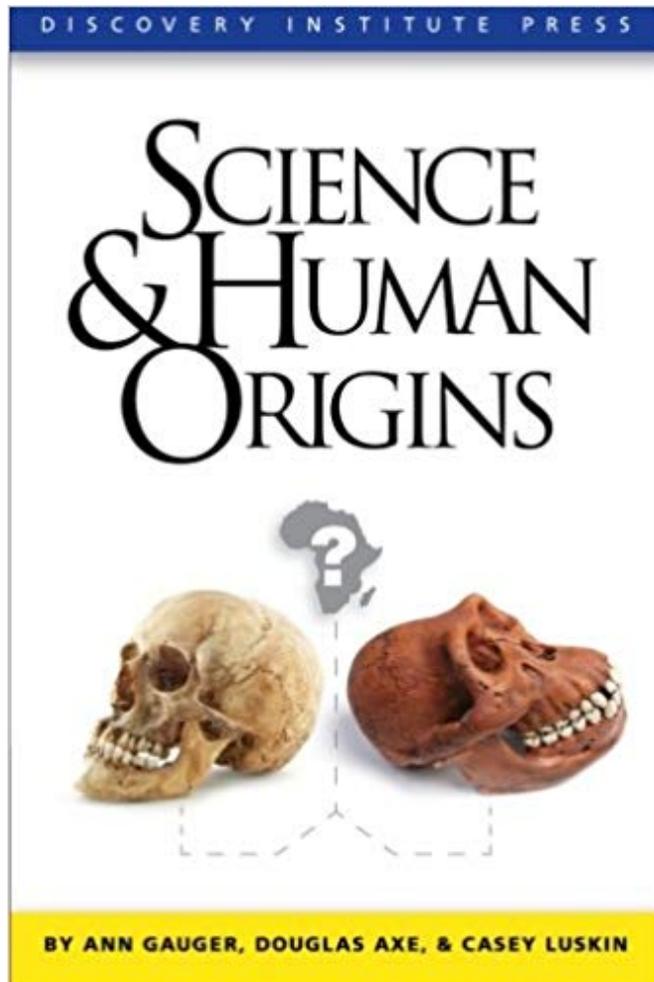
# From Ape to Human

## What about DNA?

Anthropologist Jonathan Marks doesn't think the similarity of chimp and human DNA carries much significance. First, the “genetic data tell us precisely what we already knew,” namely that there are striking similarities between chimps and humans. Second, since there are only four subunits in DNA, any two sequences will be, on average, about 25% similar. (Our DNA is 35% similar to that of a daffodil.) Third, there are significant *differences* between chimps and humans, both anatomical and behavioral.

# From Ape to Human

## What about DNA?

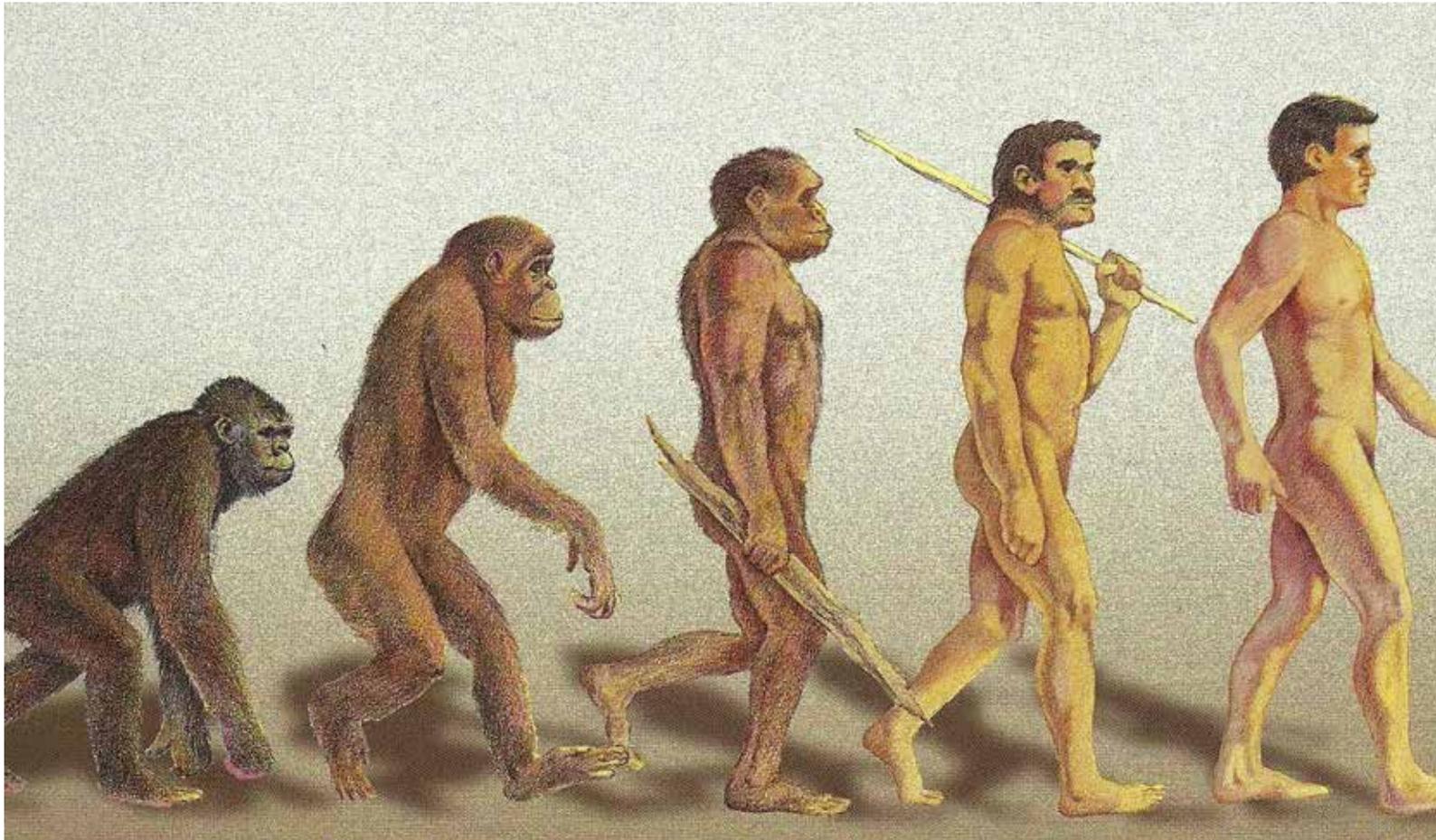


Some evolutionary biologists have used population genetics theory to argue that humans must have originated as a large population rather than a single pair, and that Adam and Eve did not exist.

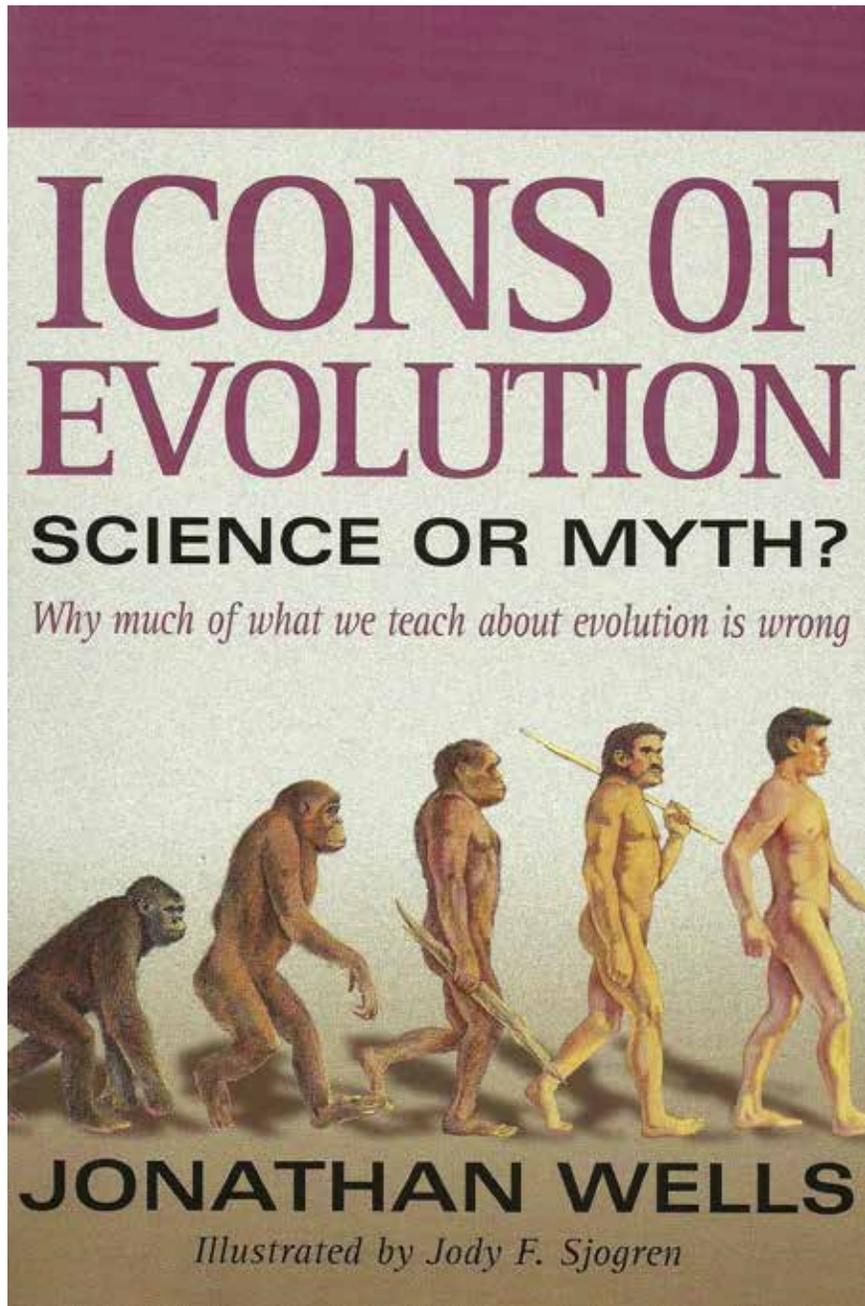
But other biologists have argued that this application of the theory is based on false assumptions and does not rule out an original pair.

# From Ape to Human

So there are many scientific uncertainties about human origins. But the ape to human icon marches on.



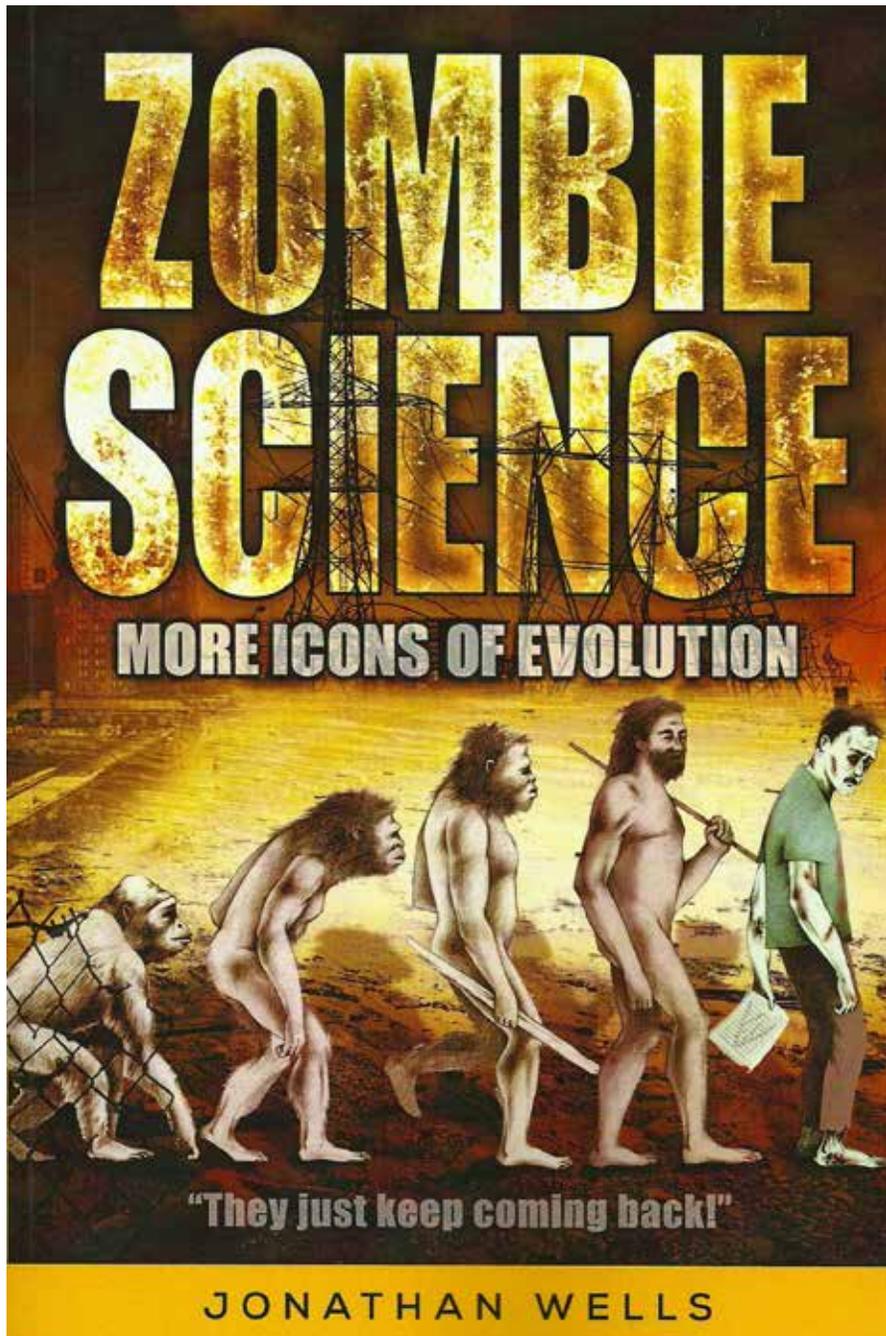
© 2000 by Jody F. Sjogren



The icons of evolution are useful for indoctrination. But because they misrepresent the scientific evidence, one could say that they are empirically dead.

Yet they continue to stalk science education, like zombies.

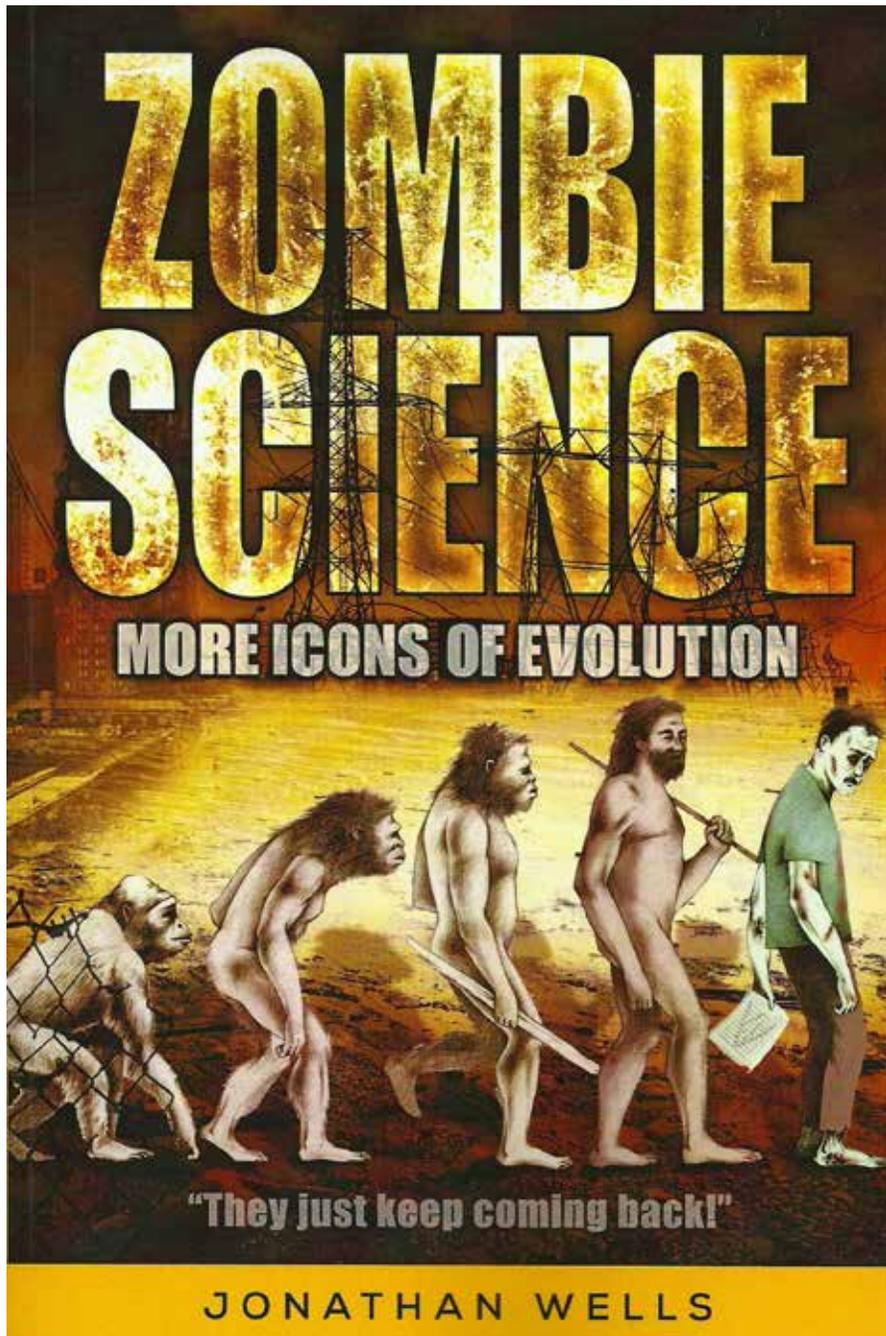
2000



2017

In 2017, I showed that the ten original icons of evolution are still with us. I also wrote about six additional icons.

DNA: The Secret of Life  
Walking Whales  
The Human Appendix  
The Human Eye  
Antibiotic Resistance  
Cancer



2017

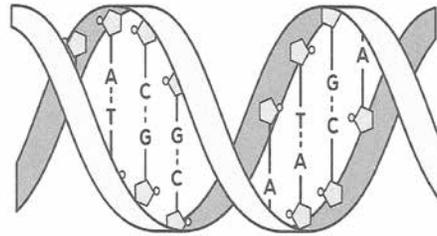
In 2017, I showed that the ten original icons of evolution are still with us. I also wrote about six additional icons.

In the interest of time, I will merely summarize the following four icons:

DNA: The Secret of Life  
The Human Appendix  
The Human Eye  
Cancer

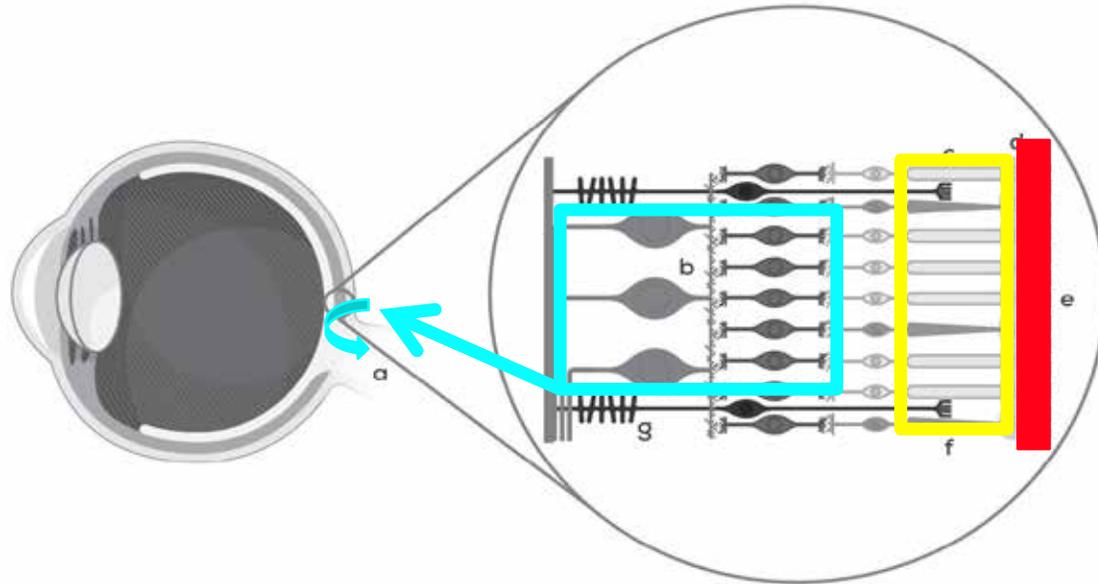
The rest I will discuss in more detail.

# DNA: The Secret of Life



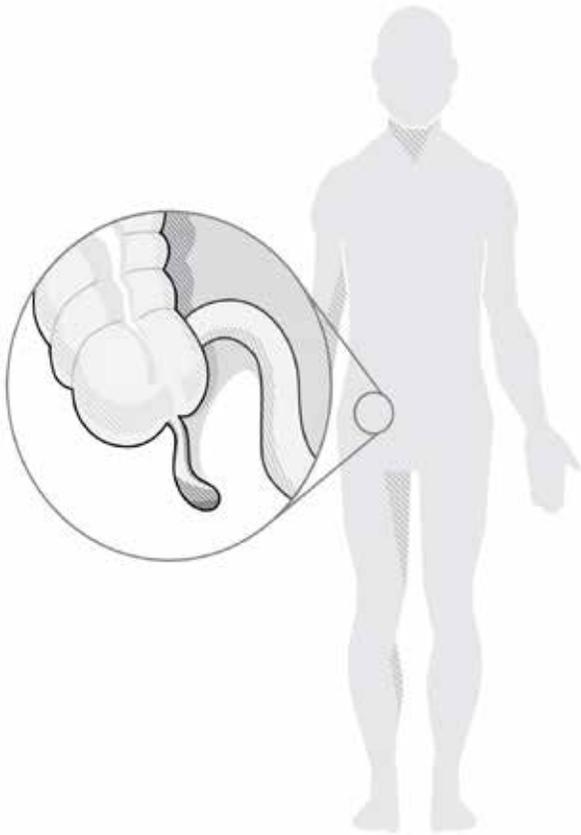
In Neo-Darwinism, DNA is considered the secret of life because it supposedly contains a program for embryo development. By changing the program, DNA mutations can thus produce the raw materials for evolution. But biologists now know that DNA does **not** contain a program for embryo development, and that DNA mutations cannot provide what Neo-Darwinism needs.

# The Human Eye



Neo-Darwinian biologists argue that the human eye is badly designed, because the nerve cells (blue box) are in front of the light-sensing cells (yellow box). They claim that this bad design is evidence that the human eye evolved by unguided processes. But the light-sensing cells require an abundant supply of blood (red bar), which is opaque, while the nerves are almost transparent. If the blood supply were in front of the light-sensing cells we would be blind. So the human eye is very well designed.

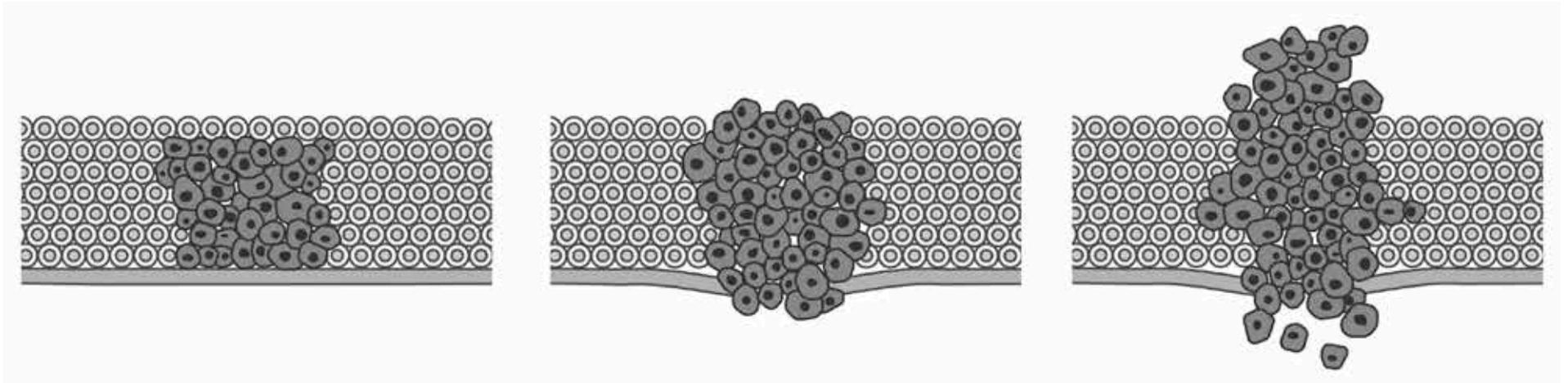
# The Human Appendix



The human appendix is a blind-ended tube several inches long that extends from where the small intestine joins the large intestine. Darwin and his followers claimed it is useless and best explained as a by-product of unguided evolution.

But since 1900 biologists have known that it is a useful part of our immune system, which protects us from disease.

# Cancer



Some evolutionary biologists argue that because cancer cells reproduce on their own they constitute a new species. Other evolutionary biologists argue that cancer cells introduce new functions and thus explain how mutations can produce raw materials for evolution. But cancer does not make new organisms; it **destroys** them. It is devolution, not evolution.

# Additional Icons of Evolution

DNA: The Secret of Life

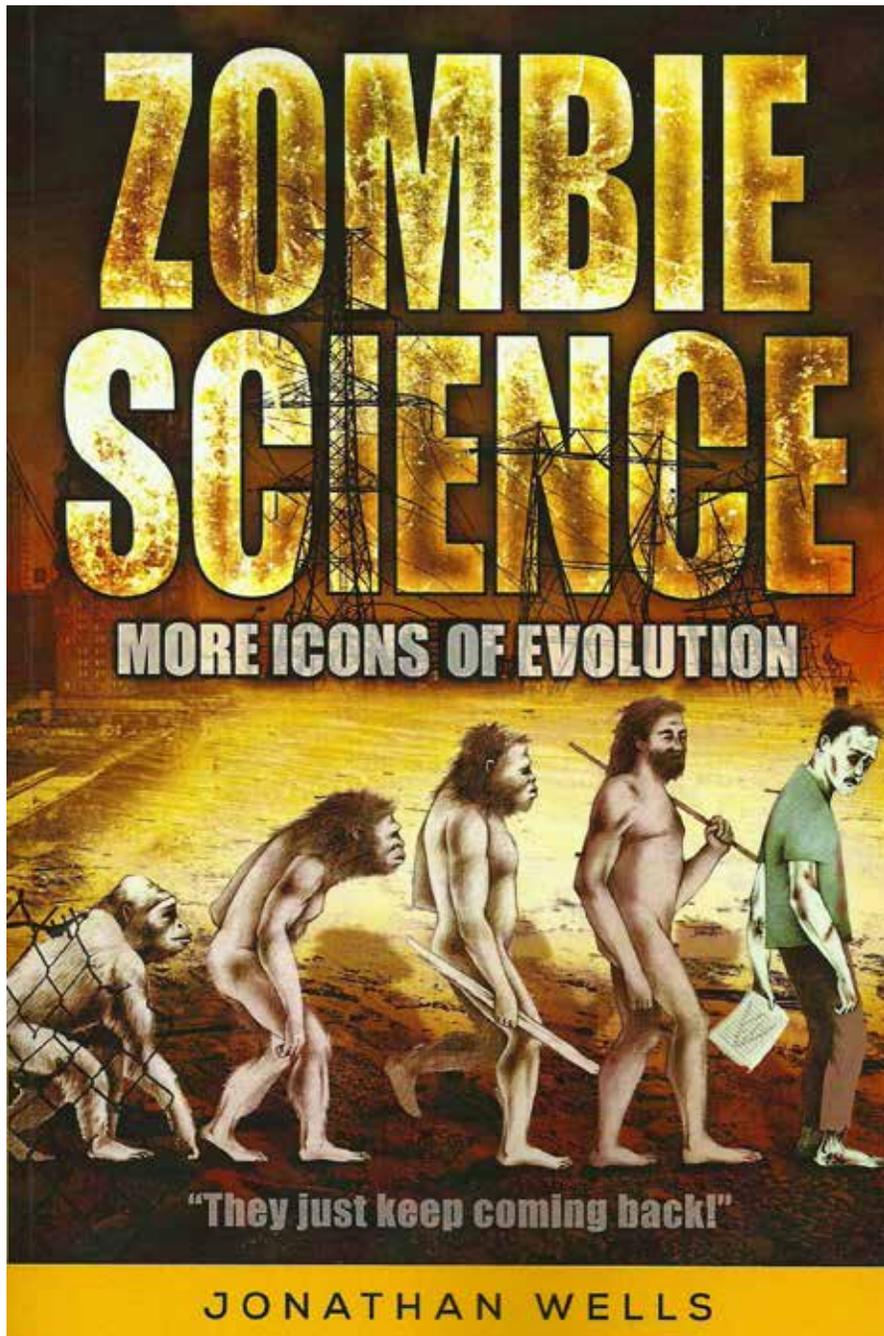
**Walking Whales**

The Human Appendix

The Human Eye

Antibiotic Resistance

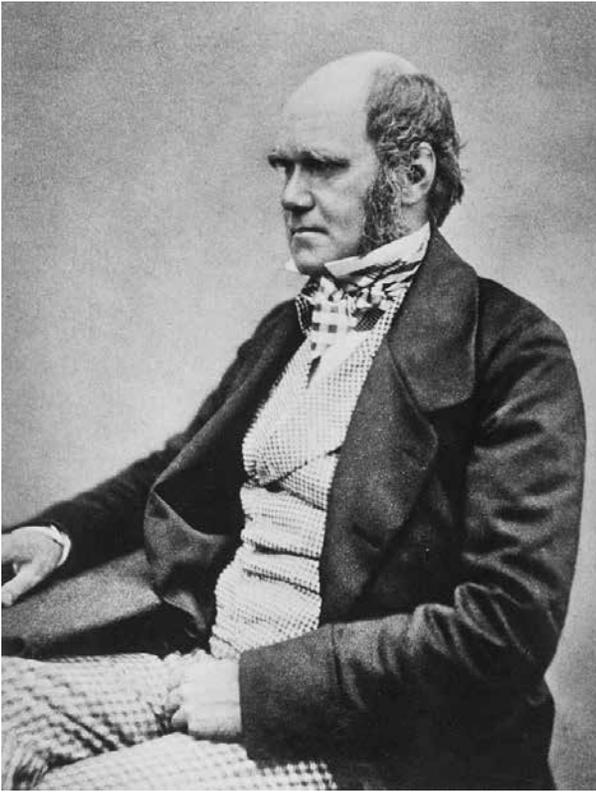
Cancer



2017

# Whale Evolution?

Darwin noted that bears had been seen “swimming for hours with widely open mouth, thus catching, like a whale, insects in the water.” So “I can see no difficulty in a race of bears being rendered, by natural selection, more and more aquatic in their structure and habits, with larger and larger mouths, till a creature was produced as monstrous as a whale.”



**Charles Darwin**

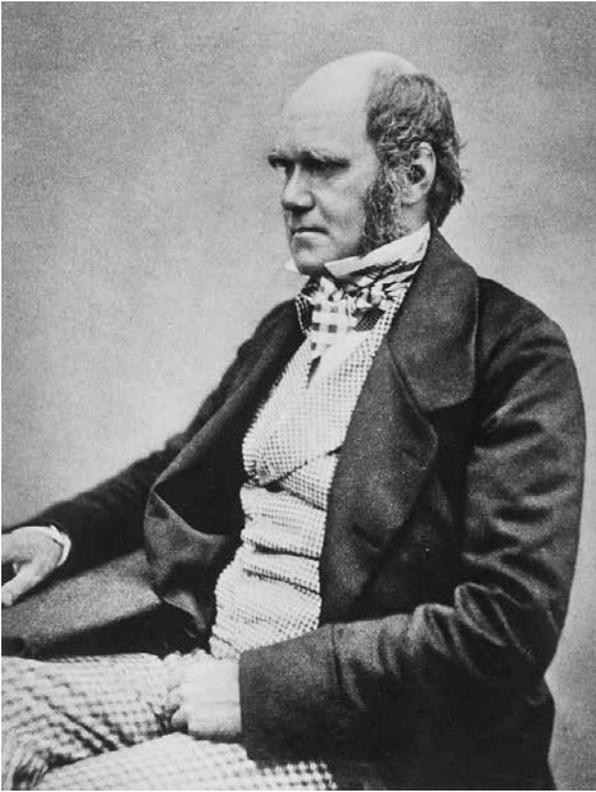
*The Origin of Species* (1859)



Source: Cephas (Wikipedia)

# Whale Evolution?

Critics laughed at this, and Darwin removed it from subsequent editions of his book. But he continued to believe that natural selection could turn bears into whales. In any case, since land mammals appear in the fossil record before whales, Darwin believed that whales were modified descendants of land mammals.



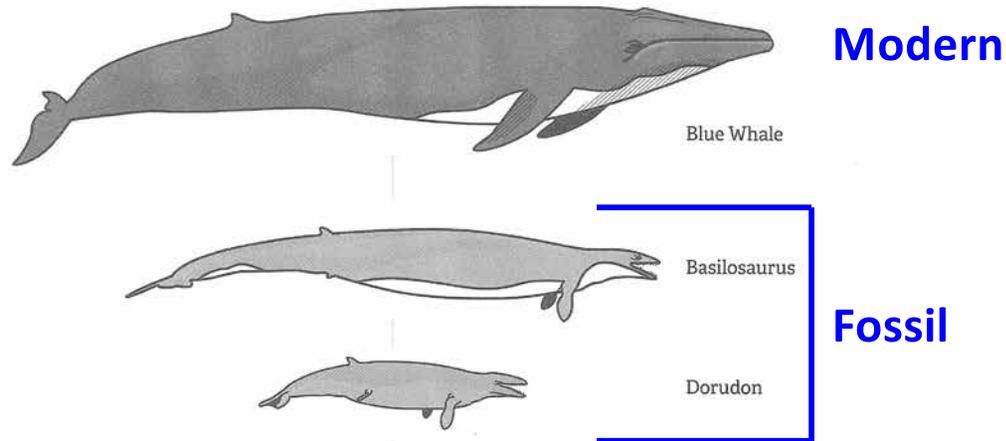
**Charles Darwin**

*The Origin of Species* (1859)



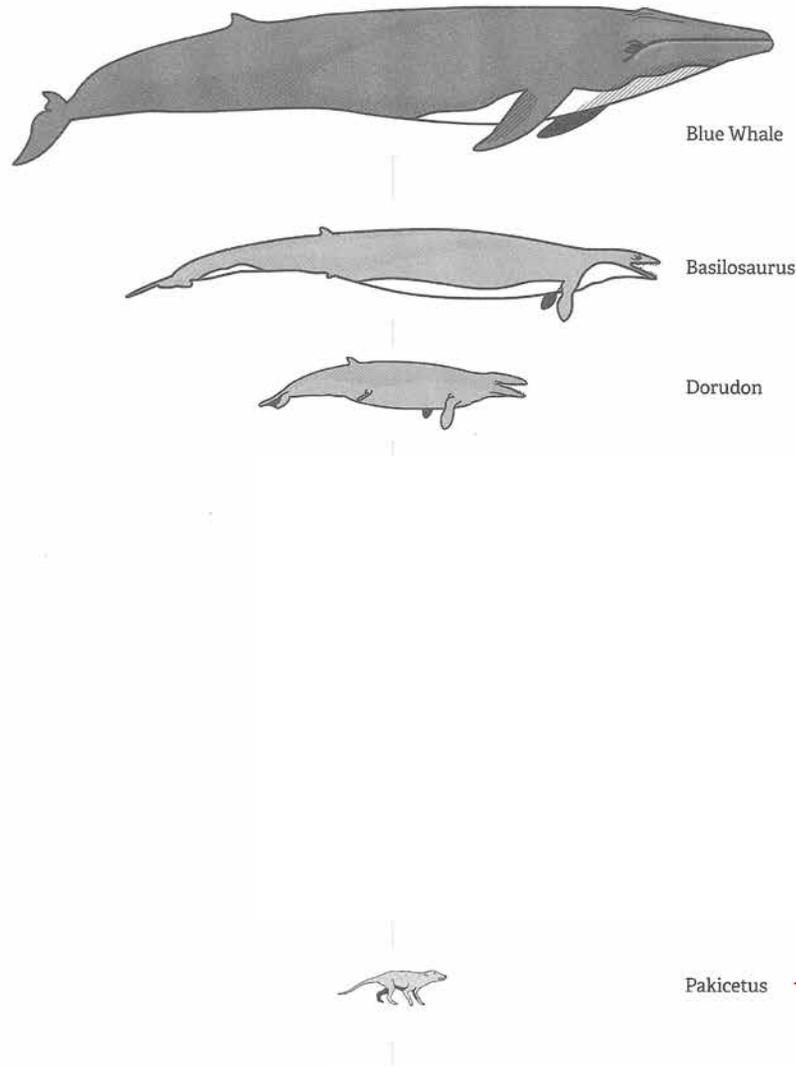
Source: Cephas (Wikipedia)

# Fossil Whales



In Darwin's time, two species of fossil whales had been discovered. But there were no fossils of intermediate forms to provide evidence that whales had evolved from land animals.

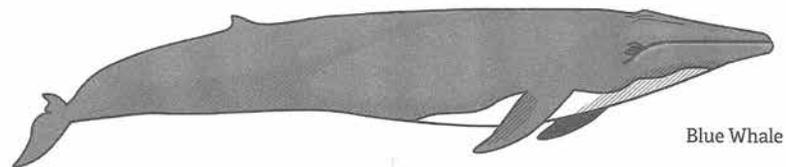
# Walking Whales?



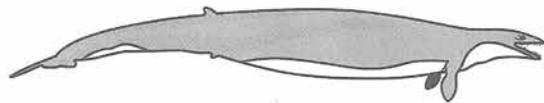
In the 1980s, a wolf-sized land mammal was announced to be the ancestor of modern whales, because it had a bone in its ear that resembled a bone found in the ears of whales. It was named *Pakicetus* (“Pakistani whale”).

But critics pointed out that there was still a huge gap between *Pakicetus* and true whales.

# Walking Whales?



Blue Whale



Basilosaurus



Dorudon



Rodhocetus



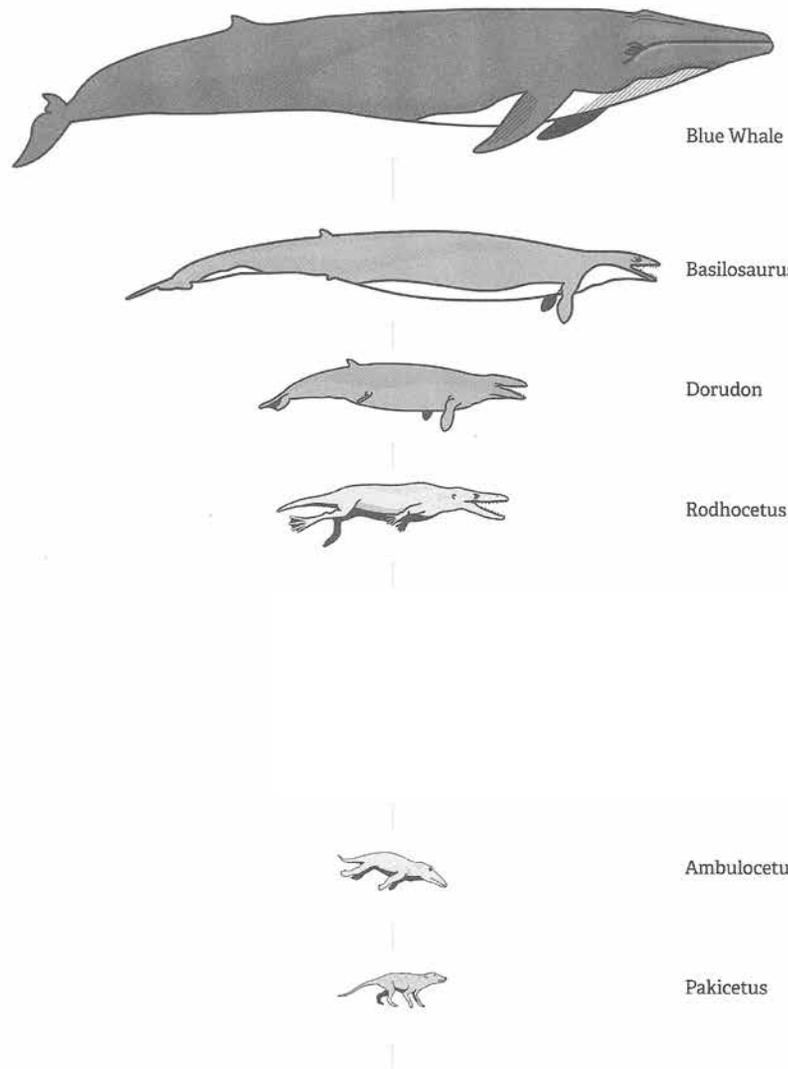
Ambulocetus



Pakicetus

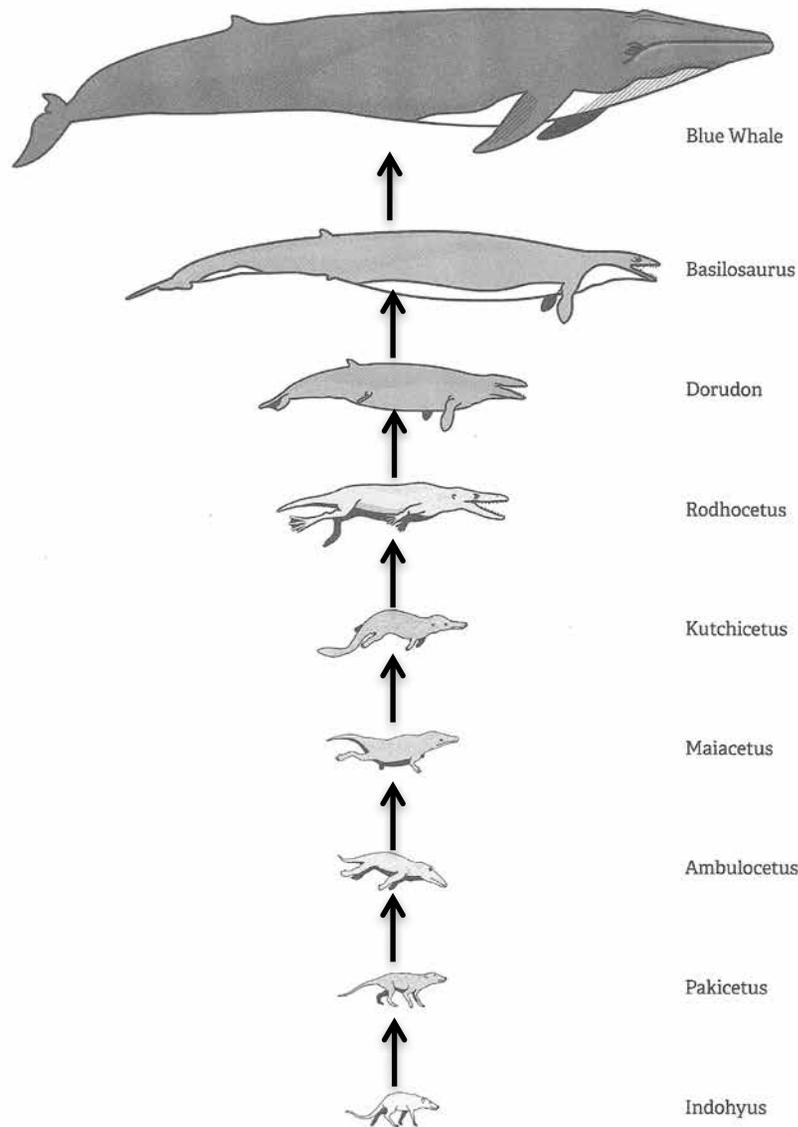
In 1994, scientists found a fossil they called *Ambulocetus natans* (“walking swimming whale”). Scientists also discovered another fossil, *Rodhocetus*. Both *Ambulocetus* and *Rodhocetus* had legs, and scientists announced that they were “walking whales” and were intermediates between *Pakicetus* and true whales.

# Walking Whales?



Harvard evolutionary biologist Stephen Jay Gould wrote, “The embarrassment of past absence has been replaced by a bounty of new evidence—and by **the sweetest series of transitional fossils an evolutionist could ever hope to find** .... I cannot imagine a better tale for popular presentation of science or a more satisfying, and intellectually based, political victory over lingering creationist opposition.”

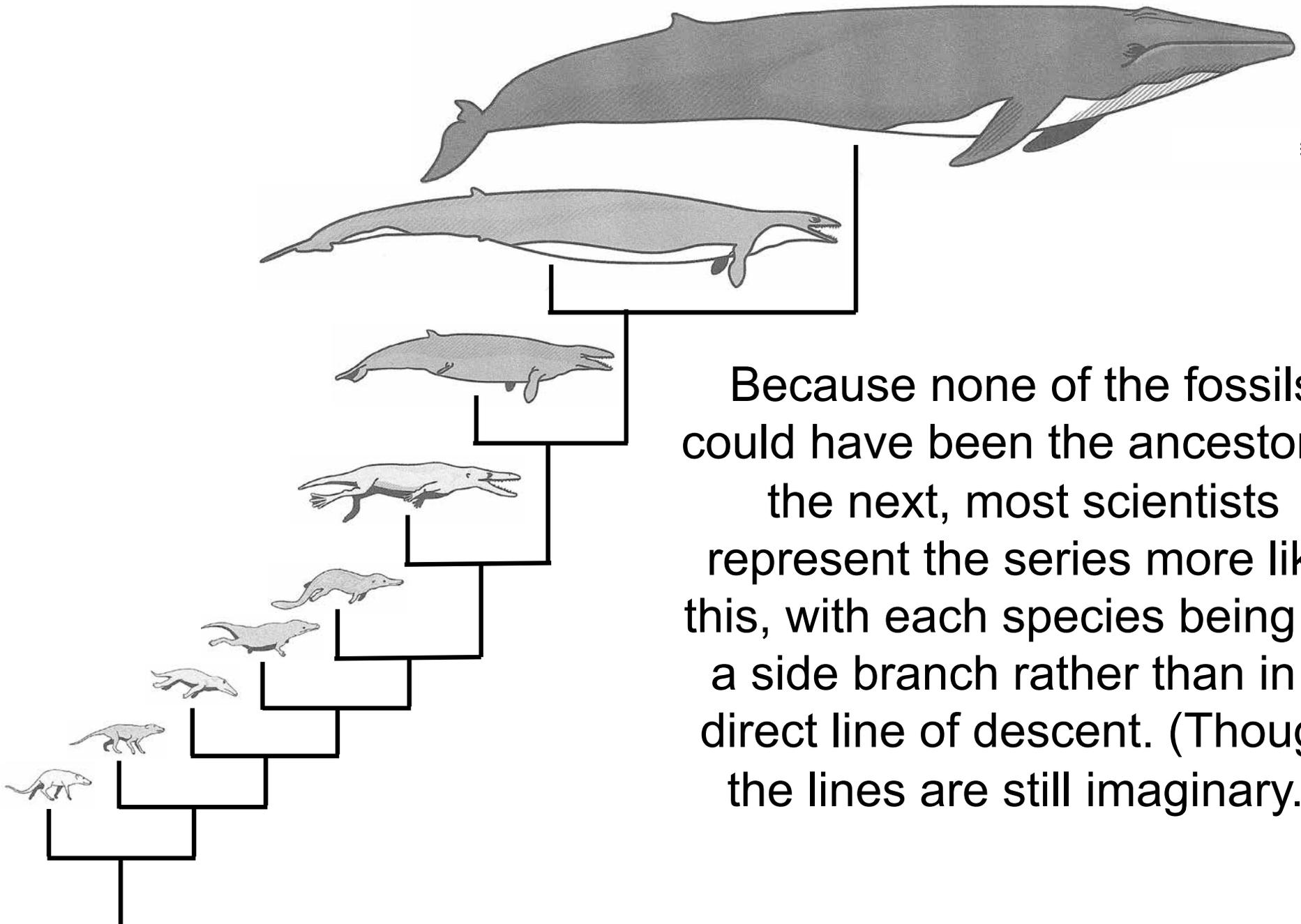
# Walking Whales?



Other fossils were later found. Modern biology textbooks use them as evidence that whales gradually evolved from land mammals.

But each animal in this series would have had to lose features to become the next in line. The arrows in the drawing at the left are purely imaginary.

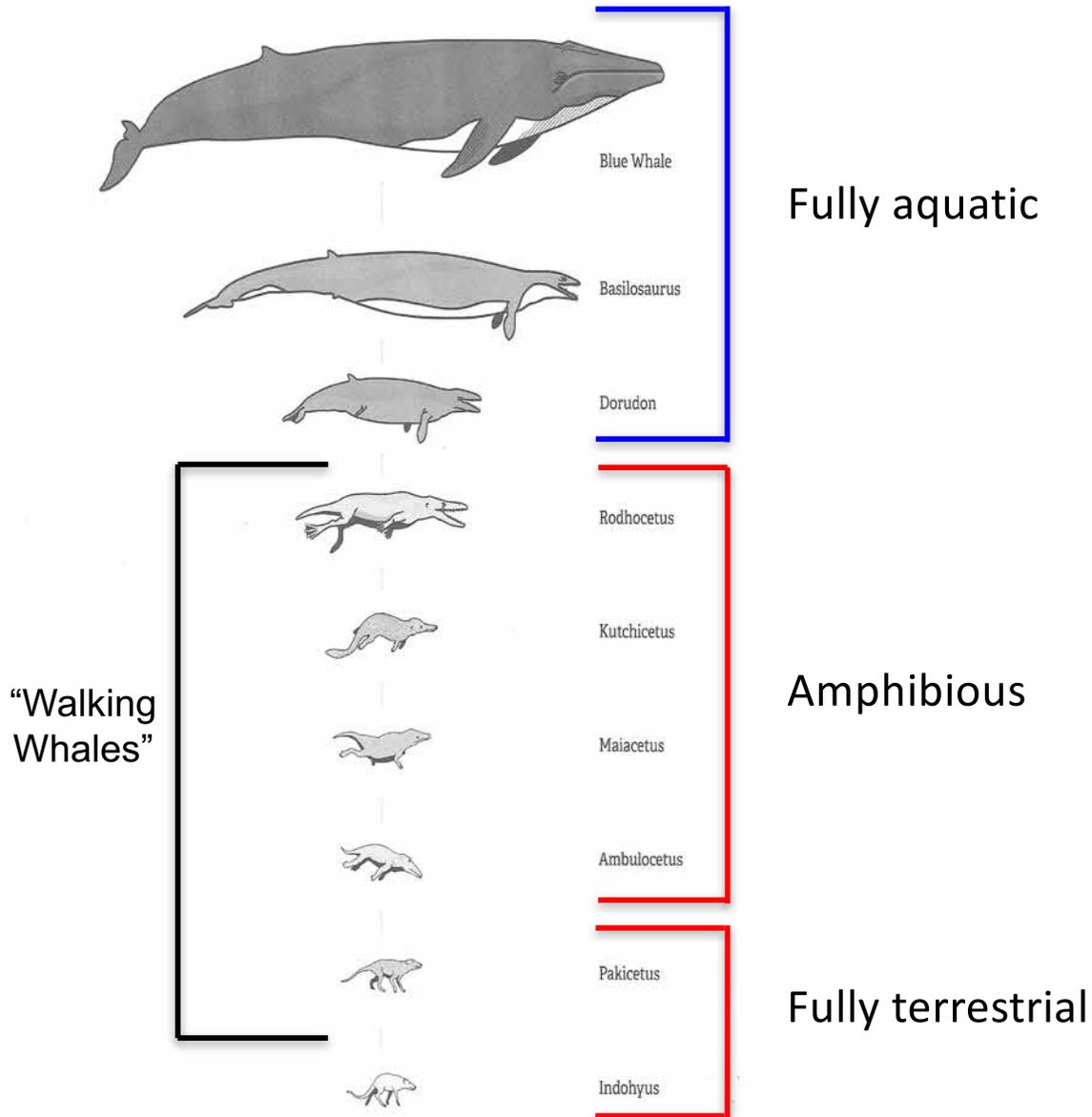
# Walking Whales?



Because none of the fossils could have been the ancestor of the next, most scientists represent the series more like this, with each species being on a side branch rather than in a direct line of descent. (Though the lines are still imaginary.)

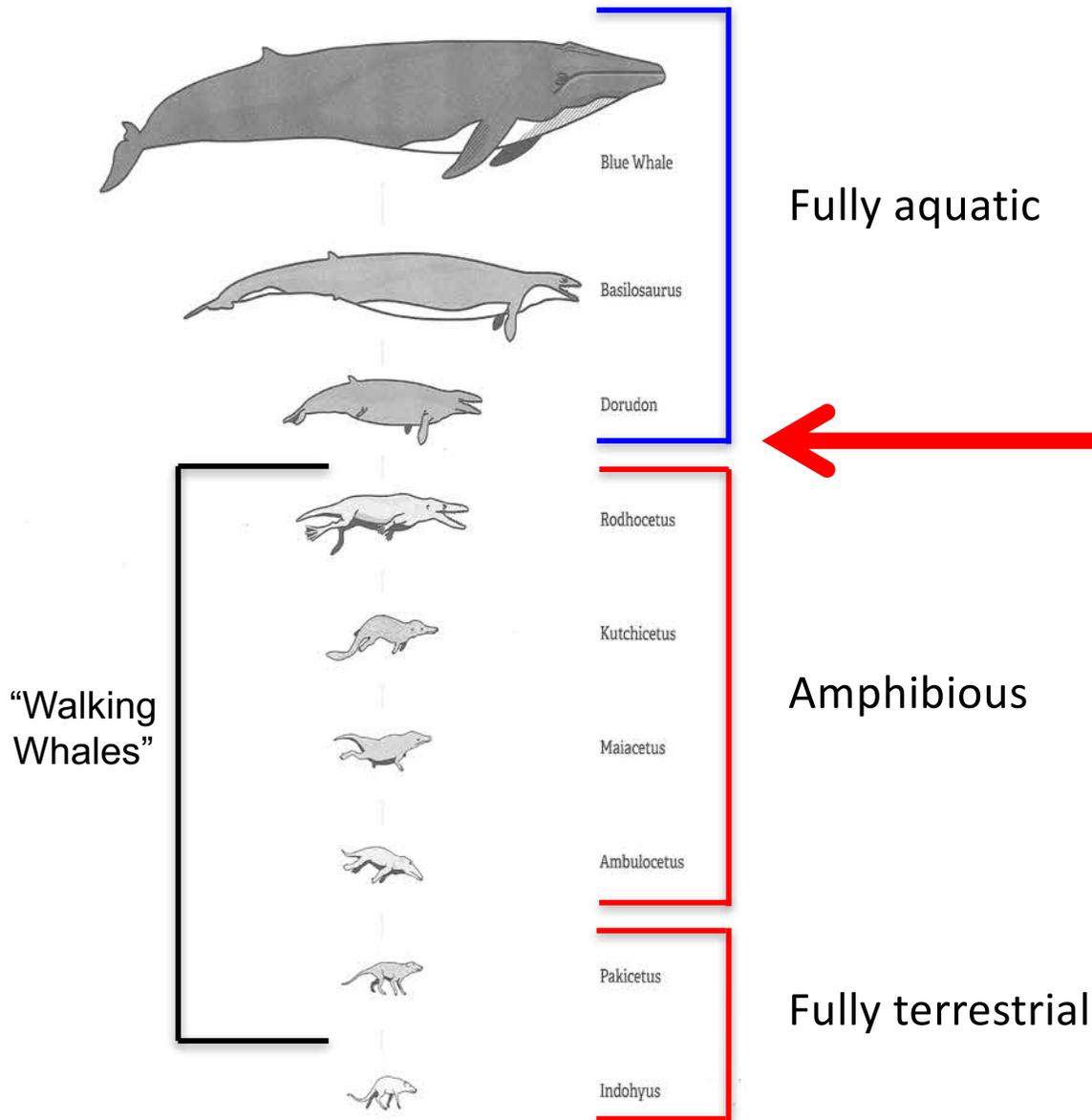


# Walking Whales?



Furthermore, all of the “walking whales” are either fully terrestrial animals or amphibious land animals similar to modern sea lions or sea otters.

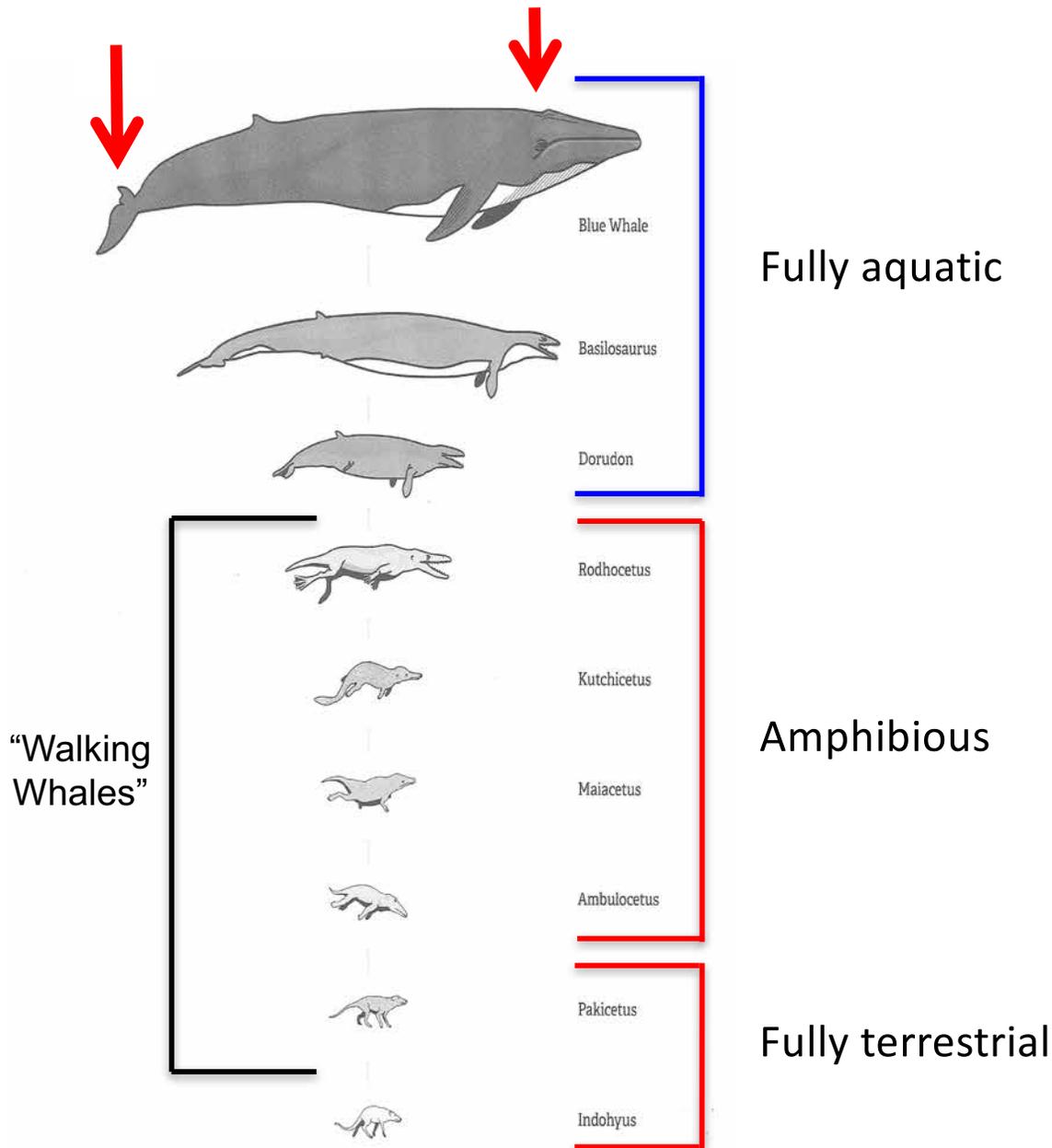
# Walking Whales?



**The most important transition of all – from amphibious to fully aquatic – is missing.**

Furthermore, all of the “walking whales” are either fully terrestrial animals or amphibious land animals similar to modern sea lions or sea otters.

# Walking Whales?



**The most important transition of all – from amphibious to fully aquatic – is missing.**

True whales live their entire lives in the water, and they must have specialized organs not present in the “walking whales,” such as tail flukes and blow holes (red arrows), to survive.

# Walking Whales?

So “the sweetest series of transitional fossils” is not so sweet after all.

# Additional Icons of Evolution

DNA: The Secret of Life

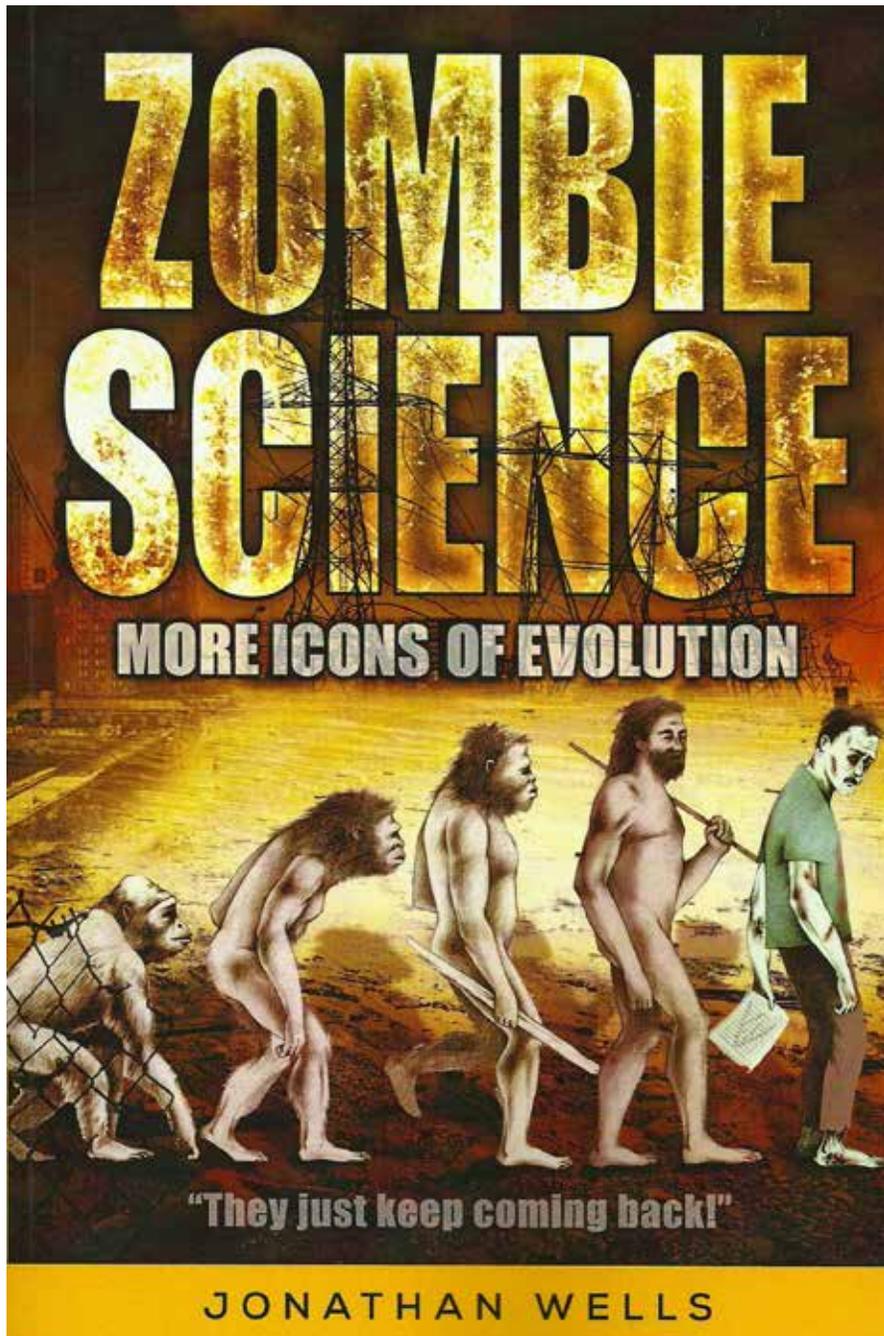
Walking Whales

The Human Appendix

The Human Eye

**Antibiotic Resistance**

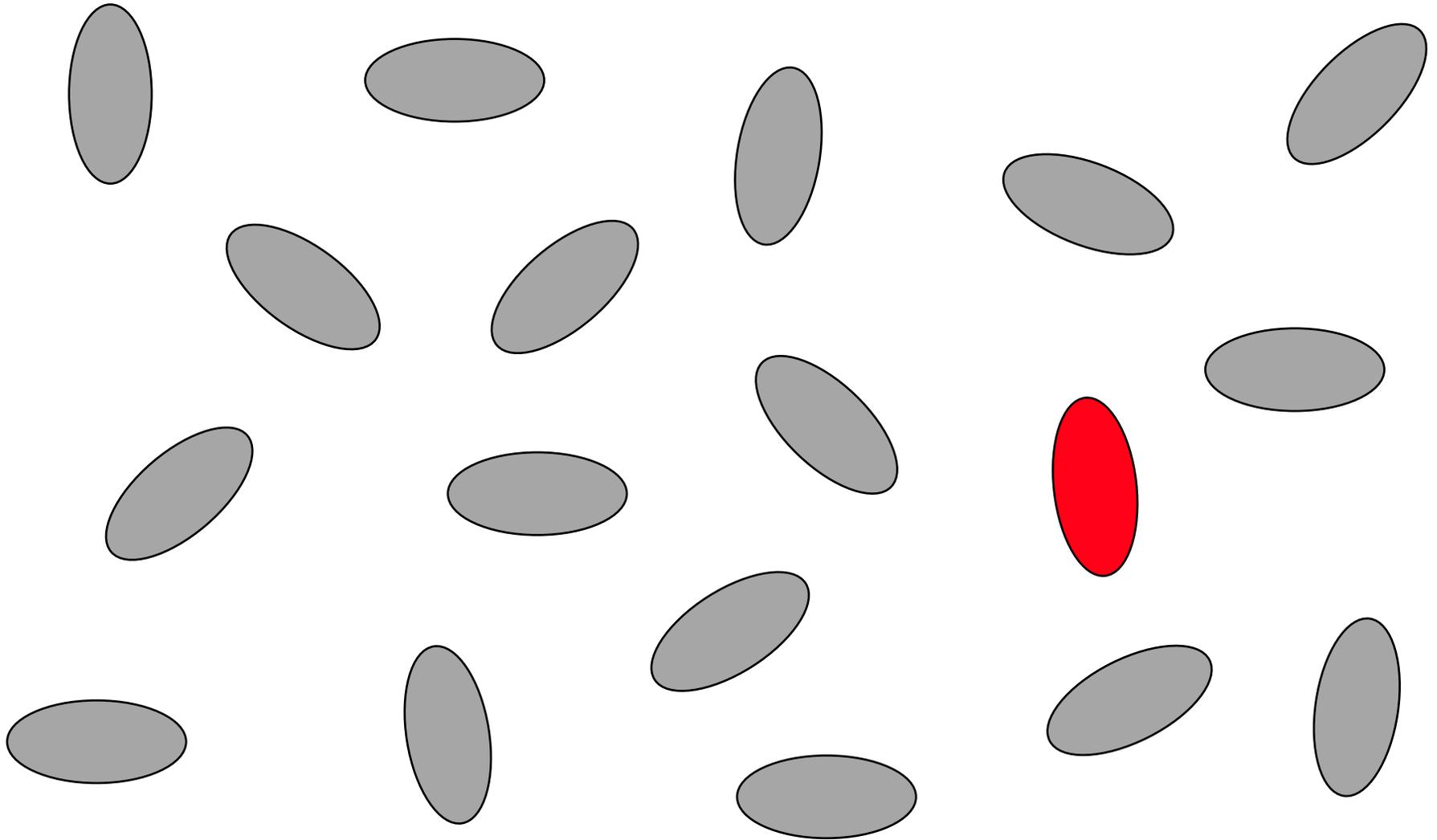
Cancer



2017

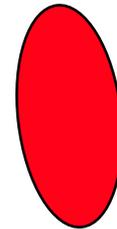
# Antibiotic Resistance

A population of disease-causing bacteria might contain a cell (red) that is resistant to an antibiotic.



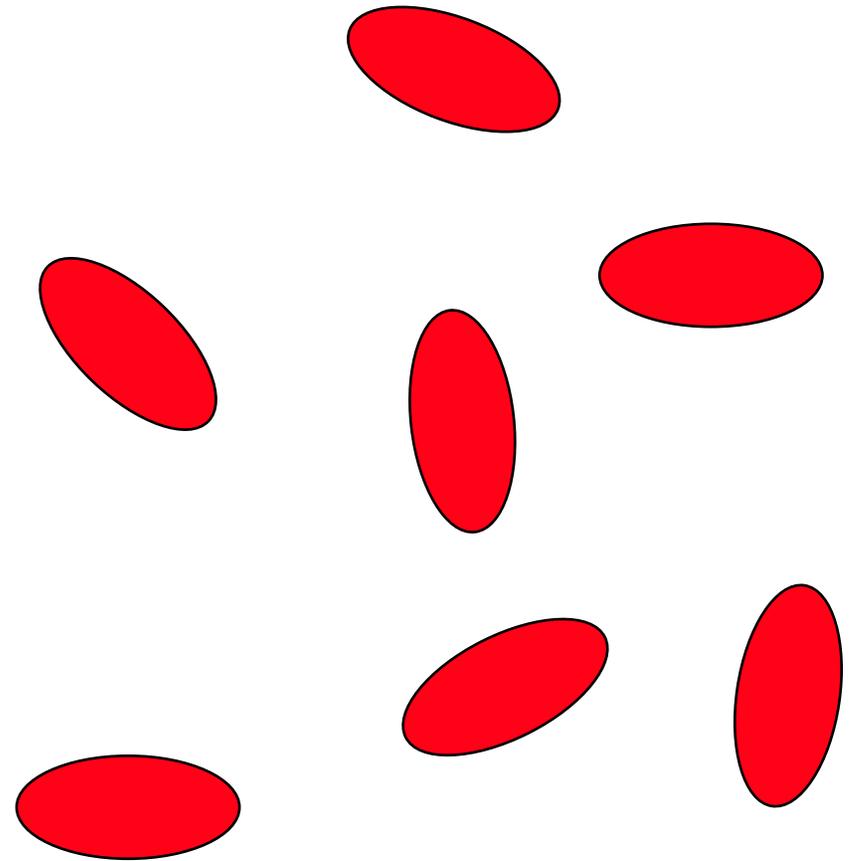
# Antibiotic Resistance

When the antibiotic is administered, all the cells die except the resistant one.



# Antibiotic Resistance

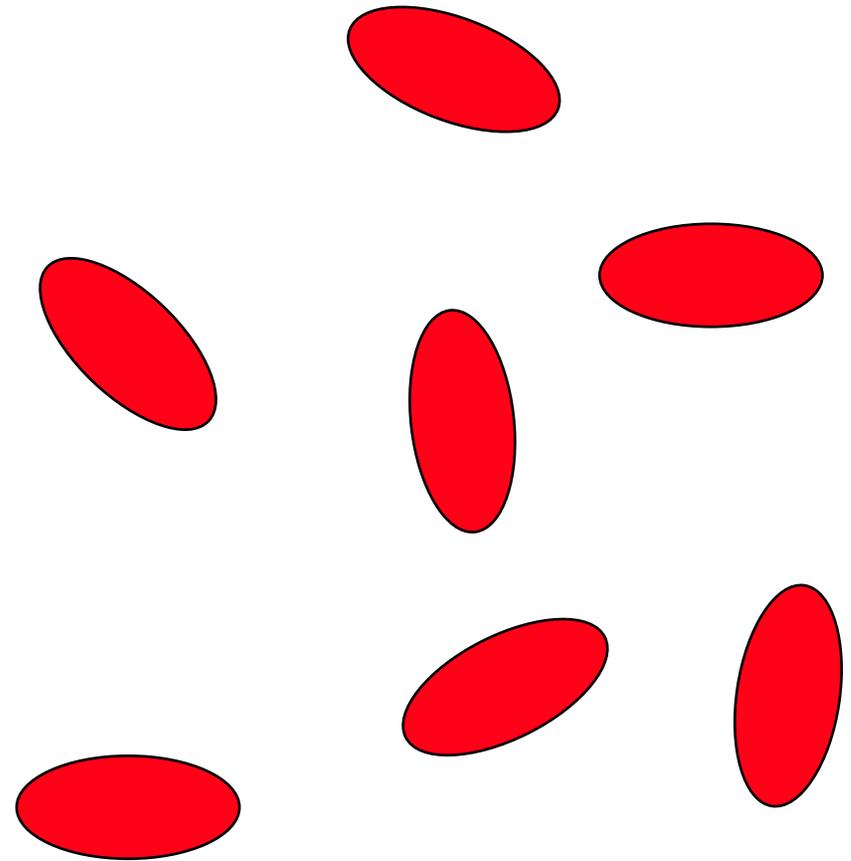
The resistant cell then multiplies to make a population of bacteria that are resistant to the antibiotic.



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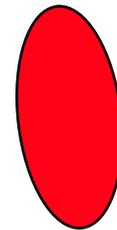
**This has become a serious medical problem.**



# Antibiotic Resistance

**Where does the original resistant cell come from?**

In some cases (such as penicillin resistance), the cell carries a complex enzyme that inactivates the antibiotic. The origin of this enzyme is unknown. In other cases (such as streptomycin resistance) a mutation might slightly damage the molecule in the cell that the antibiotic would normally target and poison. Since the antibiotic can no longer recognize the target molecule, the cell survives even though it is damaged.



# Antibiotic Resistance

Because it involves selection (and sometimes mutation), antibiotic resistance is often used as evidence for Neo-Darwinism. It has become an icon of evolution.

But no new species have been produced. Streptomycin-resistant tuberculosis bacteria are still tuberculosis bacteria. In other words, antibiotic resistance is an example of microevolution, not macroevolution.

British bacteriologist Alan Linton wrote in 2001: “Throughout 150 years of the science of bacteriology, there is no evidence that one species of bacteria has changed into another... Since there is no evidence for species changes between the simplest forms of unicellular life, it is not surprising that there is no evidence for evolution... throughout the whole array of higher multicellular organisms.”

Alan H. Linton, *Times Higher Education Supplement* (2001)

# Conclusions

- The icons of evolution are used in biology textbooks to convince students that the origin and evolution of life can be explained solely by unguided natural processes. So they are illustrations used to promote a materialistic doctrine.

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# Conclusions

- The icons of evolution are used in biology textbooks to convince students that the origin and evolution of life can be explained solely by unguided natural processes. So they are illustrations used to promote a materialistic doctrine.
- Yet the icons of evolution misrepresent the evidence, so they are empirically dead.
- This is zombie science.

**For more information:**

**<https://iconsofevolution.com>**

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