

## Darwin and Lamarck; Chat show.

### Cast

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|------------------------|---|
| Graham Ross:           | Interviewer   |
| Charles Darwin:        | British scientist, explorer, geologist and botanist |
| Jean-Baptiste Lamarck: | French scientist and biologist                      |
| Rev Finn:              | Christian protestor                                 |
| Protestor 1            | Religious protestor in the audience                 |
| Protestor 2            | Religious protestor in the audience                 |
| Richard Owen           | Scientist   |
| Prof Brian Cox         | Modern scientist.                                   |
| David Attenborough     | Famous TV presenter                                 |
| Audience               | The rest of the audience                            |

### Scenery;

Graham Ross is in one chair alongside him are Charles Darwin and J-B Lamarck. Everyone else is in the audience.

Graham Ross: Good evening ladies and gentlemen. Welcome to this special science discussion evening. Now we are in 1850 people have made loads of new discoveries. On a packed program tonight we are here to discuss the theory of evolution. One of our guests has suggested that we humans have evolved from monkees!!!

Audience Make loud monkey noises.

Graham Ross: Calm down, and stop monkeying around. Let's introduce our special guests tonight. Our first guest is the famous scientist, recently returned from his voyage to the Galapagos Islands, Charles Darwin.

Audience: *{Claps and cheers}*

Charles Darwin: Hello.

Graham Ross: Our second guest, all the way from French France is Jean-Baptiste Lamarck.

Audience: *{Claps and cheers}*

Lamarck: Bon jour tout le monde.

Graham Ross: Mr Darwin, I have a copy of your new book "The Origin of Species." In it you describe how us humans have evolved from apes, is that right?

Darwin: No, absolutely not. Many people think that, but what I say is that apes and us share a common ancestor.

Ross: I don't understand are we related to chimps or not?

Darwin: Think of us more like very very distant cousins. Way back in time there would be an ape like mammal which over time has evolved into lots of different species like apes, monkeys and of course us humans.

Ross: Ah yes, evolution you have a new theory don't you? What's it called?

Darwin: It's called Natural selection.

Ross: Some people call it survival of the fittest don't they? Does it mean that it's only the runners and people who work out will survive.

Darwin: No no not at all. Its means the animals and plants best suited survive and importantly go on to breed and have young or offspring.

Ross: How would you explain how something as complicated as a hedgehog evolved?

Darwin: Well way back in history hedgehogs would have been just a furry animal but some of them might have had slightly thicker harder fur than others, we call these slight differences variation. If there were snakes around they would eat the furry hedgehogs but the ones with the harder fur might have been slightly less likely to be eaten. The snakes not liking the hard fur. When it came to breed there would be more hard furry hedgehogs around and so there would be more hard furred baby hedgehogs. These would grow up and some of them would once again be more likely to escape the snakes and so would breed producing even harder furred babies. Over millions of years as each generation went by the number of hedgehogs with hard fur would grow and the fur would get harder and harder evolving into spines.

Protestor 1 and 2: {standing up} Boooo Booooo rubbish....We all know God created the hedgehog.

Lamarck: Rubbish..... piffle....poppy cock.

Ross: Settle down everyone, Sorry Jean Baptiste, you disagree.

Lamarck: It's completely wrong. Hedgehogs would have strained their fur and bristled up to avoid the snakes turning their fur into spines. When they have babies they pass it on to them.

Ross: Interesting, so how would you explain a weird creature like the giraffe?

Lamarck: Giraffes originally looked a bit like antelopes reaching up to eat high leaves. When all the low leaves had been eaten they had to stretch up to reach the higher leaves, stretching their necks. Over time their necks grew really long and they then passed this on to their young.

Darwin: Rubbish, you know that's not true. No matter how much you reach up to a tall shelf your arms never get longer.

Ross: How would you explain it?

Darwin: I agree originally the giraffe would look like an antelope. Some antelopes would have slightly longer necks this would help them reach slightly more leaves so if there was a drought and leaves were scarce then these longer necked antelopes would have survived and had babies with slightly longer necks. Over millions of years this would have gradually led to the neck getting longer.

Rev Finn: {stands up in the audience} My name is reverend Finn. I am a bishop in the Church of England and it's all rubbish, we all know God in his wisdom created the giraffe with its long neck. How dare you say that. Plus we all know the earth is only about 6000 years old. There wouldn't be time for this to have happened..millions of years you say?? Pah!!!!

Richard Owen *{Also stands up from the audience}* Though I disagree with Darwin, we have just found out that the world is much older than that, there would be time. The one big problem is that where is the evidence of all the animals with neck lengths in between the antelope and giraffes?? There are no fossils that show these animals ever existed??

Ross Calm down calm down everyone. {to Richard Owen} And who are you??

Richard Owen My name is Richard Owen, I was a friend of Darwin's but I am now his scientific enemy. I and many other scientists don't like the idea of being evolved from apes and there is no evidence of fossils to support Darwin's theory. God created man and the giraffe and the hedgehog!!!!

Protestor 1,2 and Rev Finn {loud cheers}

Ross: What do you say Charles?

Darwin: I know it's difficult to believe and I haven't got all my evidence yet but there are lots of other scientists who agree with me.

Brian Cox: Like me!!!

Ross: (exasperated) and who the flip are you!!!!

Brian Cox: My name is Brian Cox and I am a famous scientist from the 21<sup>st</sup> century, I have travelled back in time to support Charles Darwin. Us in the 21<sup>st</sup> century now largely believe Darwin. We have found a lot more fossils that support his theory.

Richard Owen: But how is the information passed onto the offspring?? How are the longer necks inherited??

Brian Cox: In the 21<sup>st</sup> century we have discovered that all cells in the body contain a molecule called deoxy ribo nucleic acid, DNA for short, that passes the information to babies in something called genes.

David Attenborough: *{standing up}* But Darwin was wrong about something.

Ross: Oh no and who are you?

Attenborough. I am also from the 21<sup>st</sup> century, I came with Brian, we now think that the necks of giraffe evolved longer because of male giraffes fighting for females.

Protestor 1: Booo. Everyone knows giraffes don't fight.

Attenborough: They do and I have amazing video footage that shows this.

Ross: And what is this video???

Attenborough: Let me show you.

{video comes on the screen}

Darwin: Don't you see, that's amazing. Having a longer neck would be a real advantage in fighting. The males with the longer necks would win and breed with the females. His long neck what did you call it D N A would be passed on. Giraffe necks could evolve very quickly.

Brian Cox: Correct Charles. We have lots of evidence of evolution now, in moths, bacteria, fish..in all species in fact, even humans.

Ross: What do you mean?

Cox: Humans once were all black skinned and lived in Africa. When they migrated to northern countries there was not enough sun to produce the very important vitamin D in their skin. Without vitamin D you die quite quickly. Humans with a slightly lighter skin would survive as they could make tiny quantities of vitamin D, they would have babies who would also have light skin, they would survive and so on. Relatively quickly humans in northern countries quickly became white skinned.

Ross: It seems like Charles Darwin is right. Natural Selection is how we evolved. I am sorry Lamarck, it seems you are wrong.

Audience {all cheer}

Ross: So there you have it folks, we were evolved from apes!!!!

Cox, Attenborough and Darwin and all the audience:  
{shouting} No No No, we shared a common ancestor!!!!!!

Ross: Good night

Audience {claps}