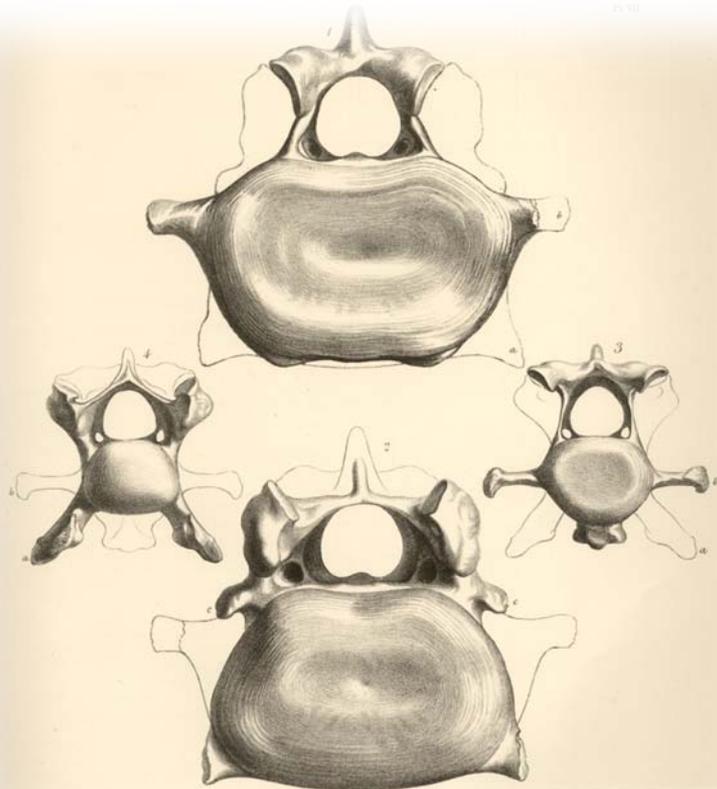
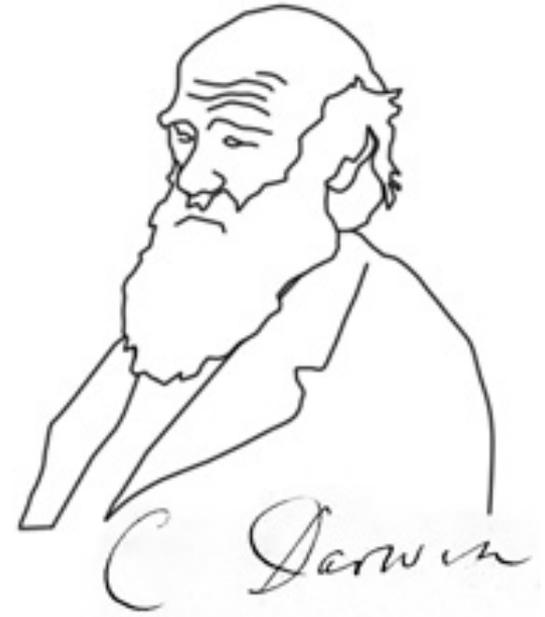


# ***EVOLUTION: WHY DOES IT MATTER?***



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© The Complete Work of Charles Darwin Online

*Cervical Vertebrae of*

*L. Mammalia, 1871, Plate 10*

*What did evolution  
ever do for me?*

[www.christs.cam.ac.uk/darwin200](http://www.christs.cam.ac.uk/darwin200)

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Evolution is...

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...quite a simple idea

# EVOLUTION: WHY DOES IT MATTER?

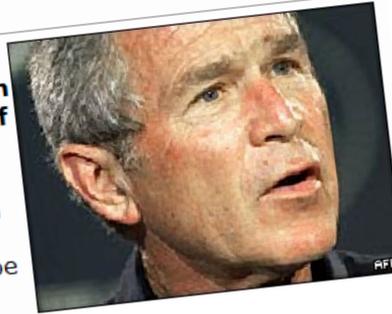
But evolution is a controversial subject...

## Bush weighs into evolution debate

By Jonathan Beale  
BBC News, Washington

President George Bush has started a national debate in the US over the teaching of evolution in school.

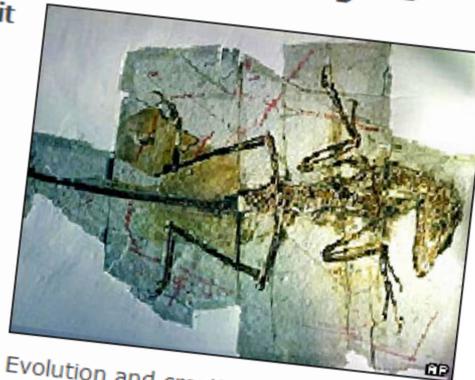
The president has suggested that a theory known as "intelligent design" should be taught in the classroom.



## 'Creationism' biologist quits job

Professor Michael Reiss has quit as director of education at the Royal Society following the controversy over his recent comments on creationism.

Last week Prof Reiss - a Church of England minister - said creationism should be discussed in science lessons if pupils raised the issue.



Evolution and creationism could both be examined. Prof Reiss said

it shouldn't be...

# ***EVOLUTION: WHY DOES IT MATTER?***

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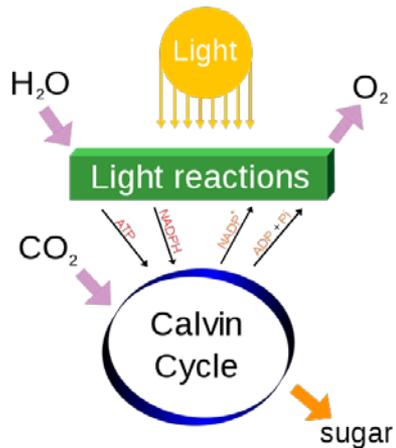
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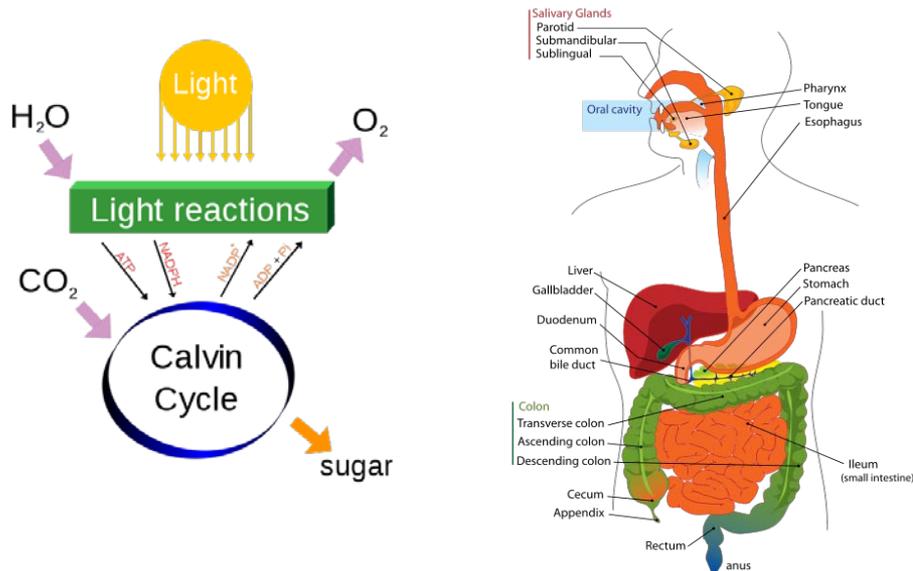
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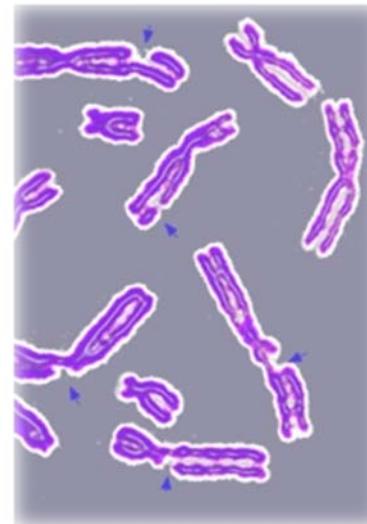
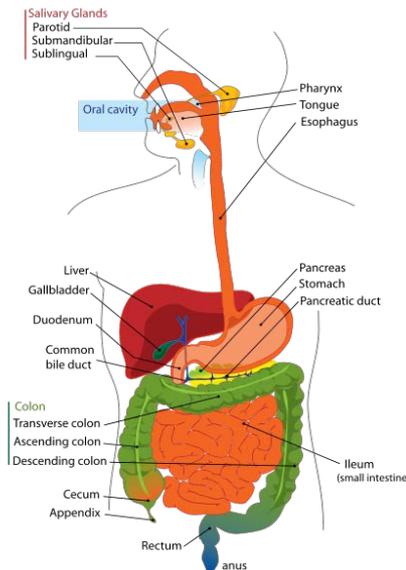
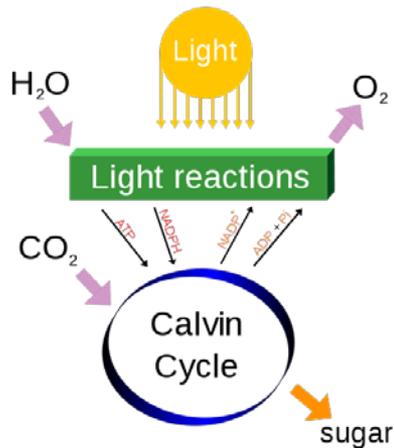
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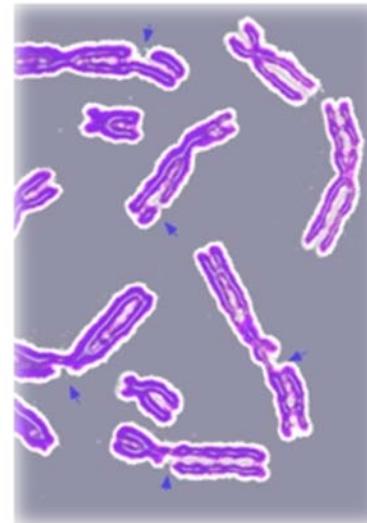
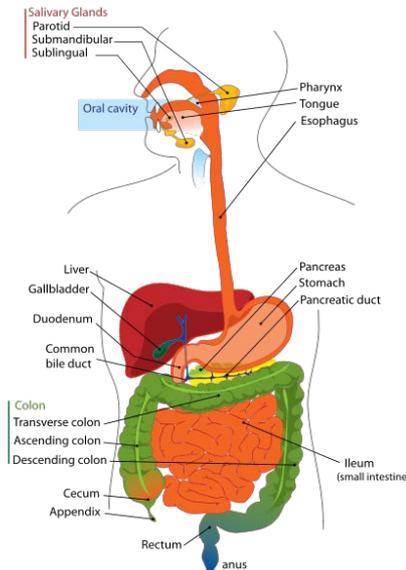
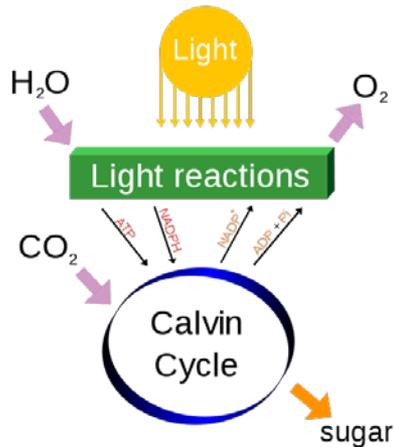
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to eutrophication

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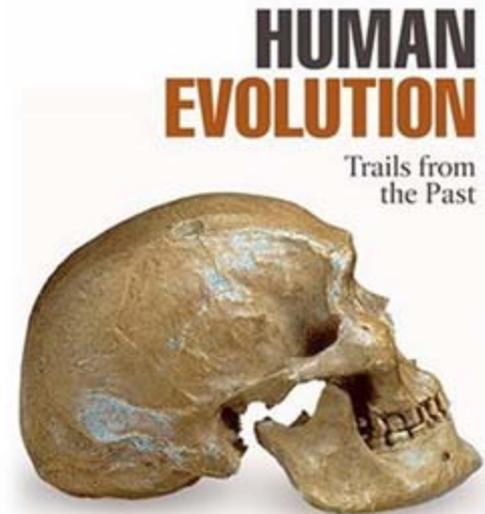
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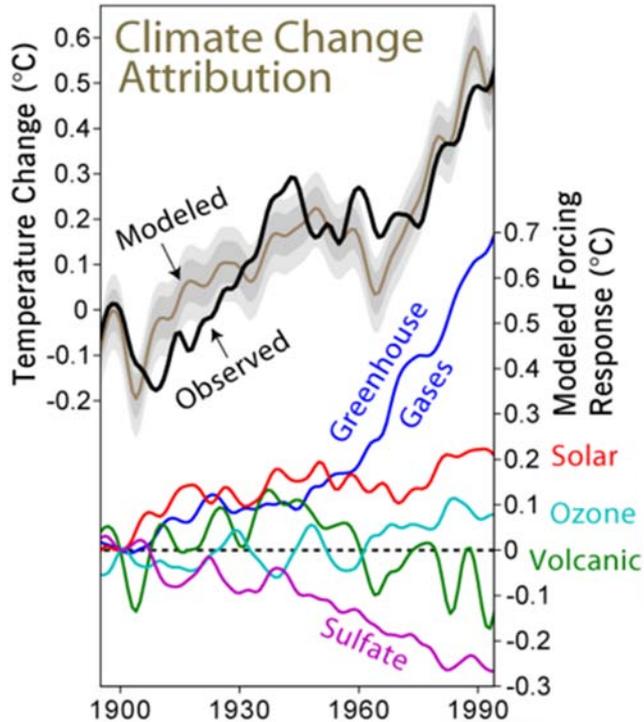
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where we came from...

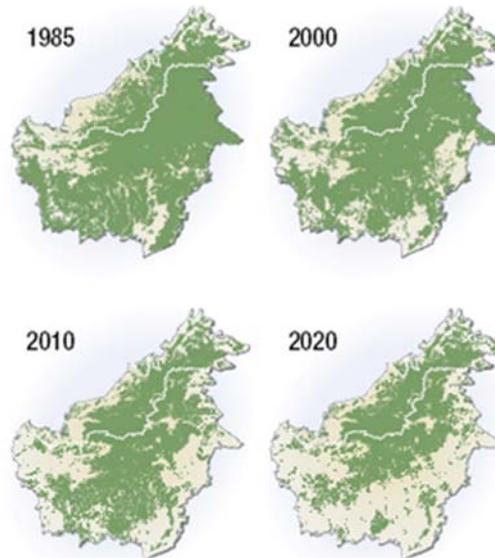
# EVOLUTION: WHY DOES IT MATTER?

Why is evolution important?



**We live in a changing world:**

- can life keep up with the pace?
- what species are under threat?
- how can we conserve biodiversity?



*will our crops be ok??  
are GM foods so bad?*

# ***EVOLUTION: WHY DOES IT MATTER?***

Why is evolution important?

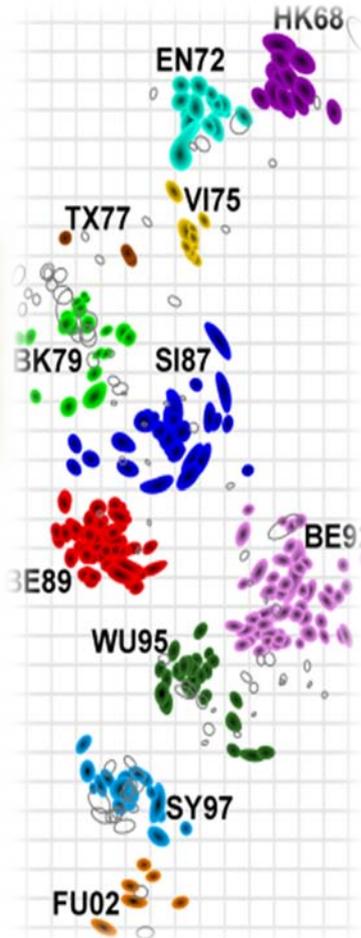
## **HELP! EVERYTHING'S DISEASED!**

- how do animal diseases spread?
- why are they so deadly?
- how can they be stopped?
  
- how and when do they jump to humans?



# EVOLUTION: WHY DOES IT MATTER?

Why is evolution important?



## HELP! I AM DISEASED!

- how do you hit a moving target?  
- *flu, HIV, cancer*
- how do we deal with antibiotic resistance?

# ***EVOLUTION: WHY DOES IT MATTER?***

## Why is evolution important?

**For example Influenza (aka. the flu)**

- caused by a virus
- spread around the world in seasonal epidemics
- kill >100,000 people each year
- **pandemics** occur when a new strain spreads – can kill millions



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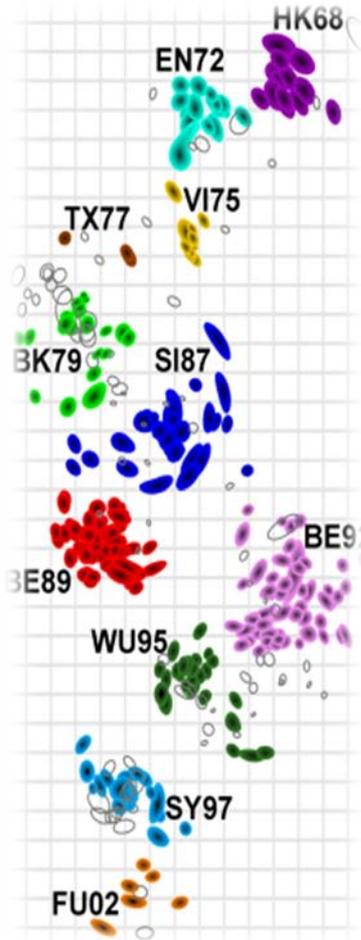
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A vaccine is available, but because the virus evolves so quickly a new vaccine must be chosen before each epidemic begins.

The **World Health Organisation** (WHO) is responsible for choosing the best vaccine.

# EVOLUTION: WHY DOES IT MATTER?



## EVOLUTION IN ACTION:

- biologists collect information about the virus year round from all over the world
- they have developed away to map the characteristics of the flu virus in 2D
- they call it an *Antigenic Map*
- they use it to visualise the virus' evolution
- and help to predict the evolutionary direction of the virus to choose the most effective vaccine

# EVOLUTION

## CONCLUSIONS:

- Evolution is the key process to have shaped life
- Understanding evolution helps us understand the living world
- Evolution has important practical uses in conservation, managing food resources & coping with climate change
- Evolution has important practical uses in medicine

*For more examples and further information visit:*

[www.christs.cam.ac.uk/darwin200](http://www.christs.cam.ac.uk/darwin200)