

# Charles Darwin and His Big Idea

# Pre-Darwin World

- Natural theology and “great chain of being”
- Species as permanent, separate, divine creations
- Victorian concept of perfectly designed world
- A pre-Beagle Darwin had bought into this



# The Early Years

- 1809--(February 12) born to Robert Waring Darwin and Susannah, nee Wedgwood
- 1818-1825--boards at Samuel Butler's school
- 1825--registers for medical curriculum at University of Edinburgh
- 1827--quits medical school and begins religious studies at Christ College at Cambridge

# Cambridge Years

- The man who walks with Henslow
- Introduction to geology with Adam Sedgwick
- Influence of Charles Lyell
- Pursuit of religious studies
- Receipt of BA degree in spring of 1831





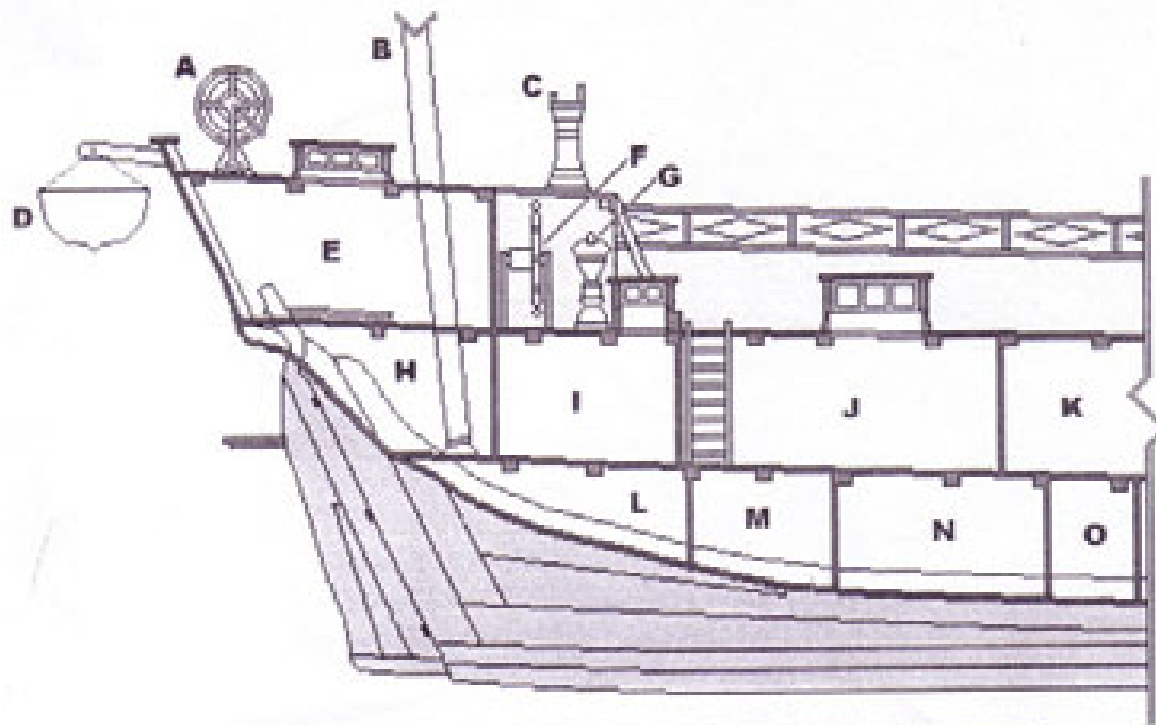




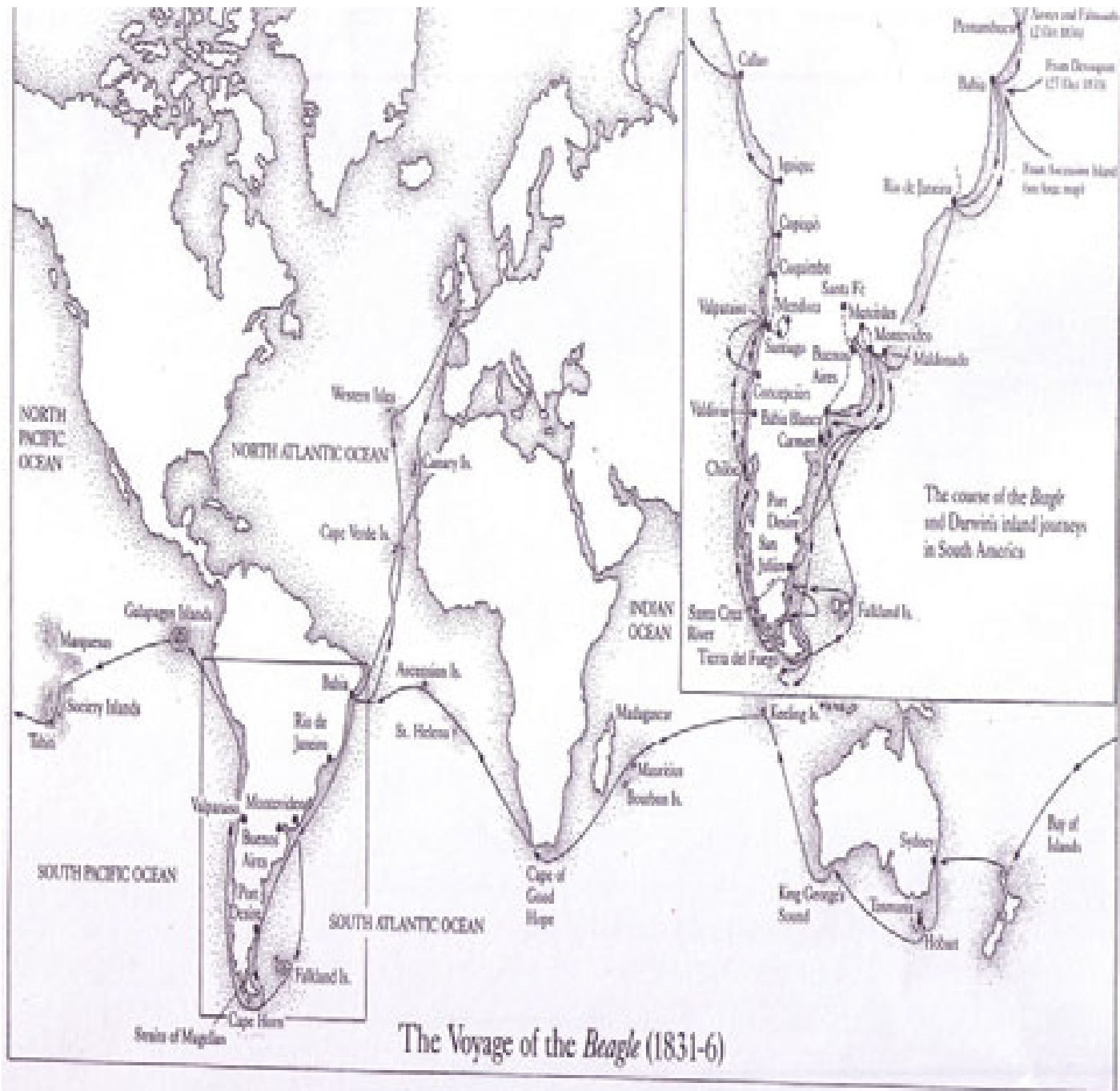


# H.M.S. Beagle Voyage

- Robert FitzRoy re-appointed commander of the Beagle
- Wanted--well educated naturalist and gentleman companion
- A change in mind by Dr. Darwin
- Preparation for and mission of the Beagle
- Darwin's quarters
- Depart Plymouth, England on December 27, 1831



- |                                 |                            |
|---------------------------------|----------------------------|
| <b>A - Sounding winch</b>       | <b>I - FitzRoy's cabin</b> |
| <b>B - Mizzenmast</b>           | <b>J - Mess room</b>       |
| <b>C - Azimuth Compass</b>      | <b>K - Lower deck</b>      |
| <b>D - Dinghy</b>               | <b>L - Bread room</b>      |
| <b>E - Chart Room*</b>          | <b>M - Mess room store</b> |
| <b>F - Steering Wheel</b>       | <b>N - Weapons storage</b> |
| <b>G - Compass</b>              | <b>O - Spirit room</b>     |
| <b>H - FitzRoy's store room</b> | <b>+ - Darwin's cabin</b>  |



The route of the voyage of the *Beagle*, 1831-1836

### *Marry*

Children – (if it Please God)  
– Constant companion, (& friend in old age) who will feel interested in one, – object to be beloved & played with. – better than a dog anyhow. – Home, & someone to take care of house – Charms of music & female chit-chat. – These things good for one's health. – *but terrible loss of time.* –

My God, it is intolerable to think of spending ones whole life, like a neuter bee, working, working, & nothing after all. – No, no won't do. – Imagine living all one's day solitarily in smoky dirty London House. – Only picture to yourself a nice soft wife on a sofa with good fire, & books & music perhaps – Compare this vision with the dingy reality of Grt. Marlbro' St.

Marry  $\rightarrow$  Mary – Marry Q.E.D.

### *Not Marry*

Freedom to go where one liked – choice of Society & *little of it.* – Conversation of clever men at clubs – Not forced to visit relatives, & to bend in every trifle. – to have the expense & anxiety of children – perhaps quarelling – Loss of time. – cannot read in the Evenings – fatness & idleness – Anxiety & responsibility – less money for books &c – if many children forced to gain one's bread. – (But then it is very bad for ones health to work too much)

Perhaps my wife wont like London; then the sentence is banishment & degradation into indolent, idle fool.



# Post Beagle Timeline

- 1836--( October 2 ) returns to England
- 1839--marries Emma
- 1839--publishes his Beagle journal
- 1844--develops a 35 page outline of his theory
- 1846--publishes “Geological Observations on South America” and begins 8 year work on barnacles
- 1859--( November ) publishes “ On the Origin of Species”
- 1868--publishes “ The Variation of Animals and Plants Under Domestication”

# Post Beagle Timeline

- 1871--publishes “ The Descent of Man “
- 1882--April 19, Darwin dies and is buried at Westminster Abbey



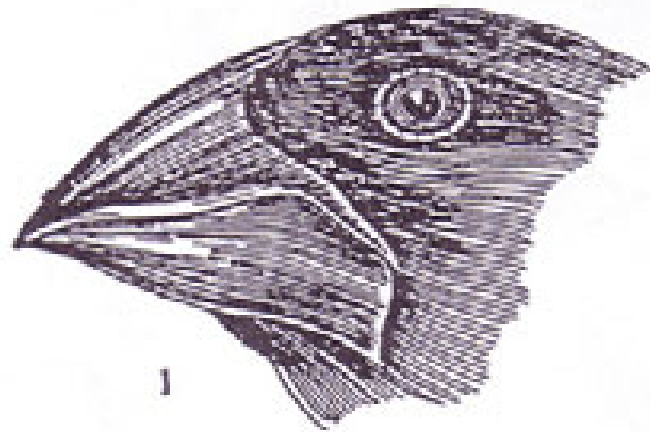
# Darwin the Scientist

- Collector and fact finder
- Correspondent
- Experimenter
- Use of inductive reasoning
- Daily routine

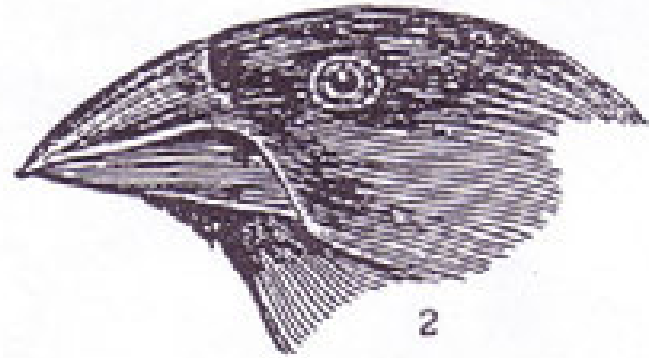


# Darwin's Big Idea

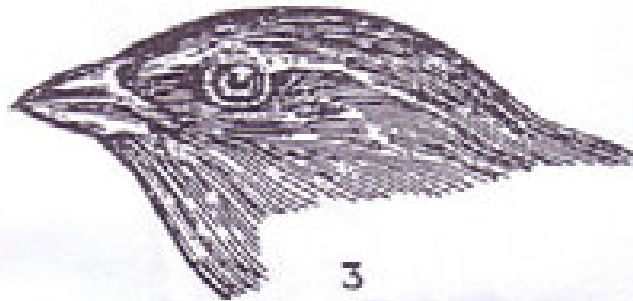
- As early as September 1835 Darwin was speculating about speciation but did not have a mechanism in mind
- By July of 1837, Darwin had firmly accepted evolution by common descent
- In 1837 John Gould informs Darwin that three mockingbirds given him are in fact distinct species as are the finches
- An epiphany moment? Darwin reads Malthus



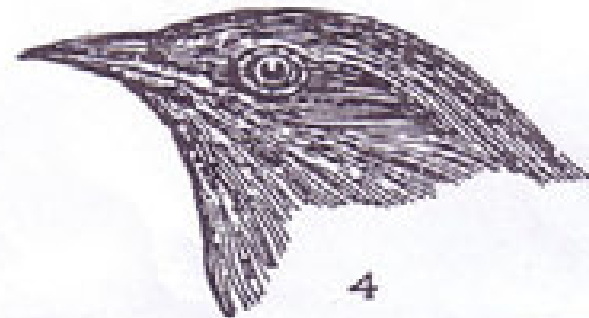
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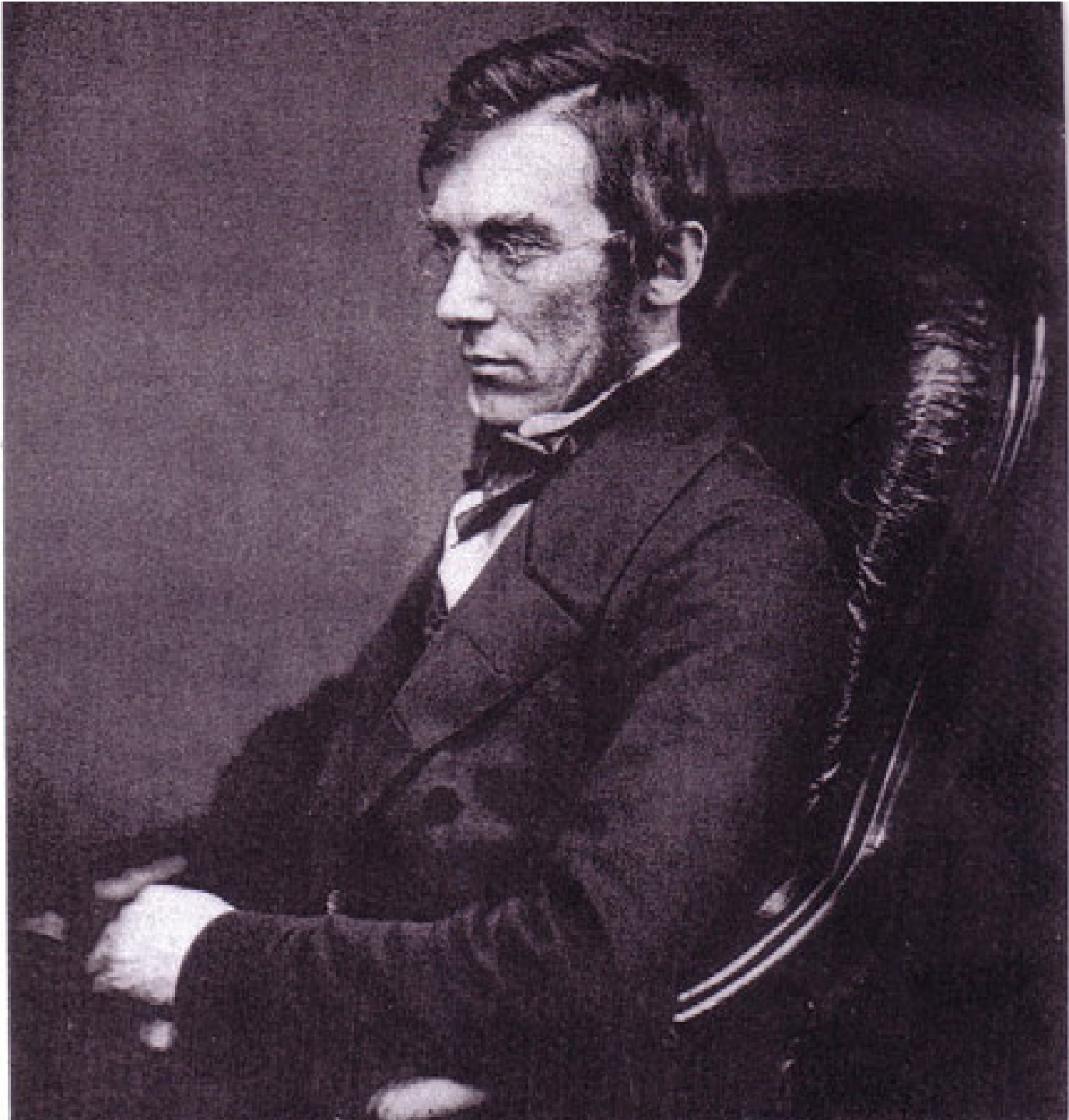
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# Darwin's Gap

- Period from 1838 to 1859, roughly twenty years
- Joseph Hooker's comments and an eight year barnacle diversion
- Darwin's concern over the reception of his theory, Robert Chamber's book
- Desire for a well documented and reasoned argument
- Darwin's health and family demands
- Confides theory to Huxley and Charles Lyell and begins work on "big book"



# Darwin's Gap

- Alfred Russell Wallace letter accelerates Darwin's efforts
- Other Darwin publications
- Origin of Species published November 1859



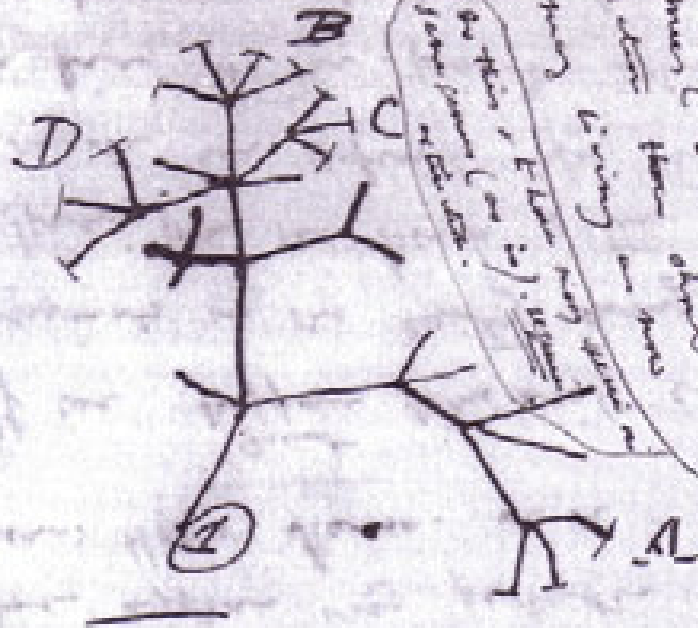




# Origin of Species

- One long argument in a 502 page “abstract”
- Inductive reasoning, use of analogy and circumstantial evidence
- Chap. 1-5: outlines Theory of natural selection
- Chap. 6-9: objections raised against his theory
- Chap. 10-14: theory’s power of explanation

I think



Can't know E - be  
 shown then living  
 in heavy living  
 Do the thing E - be  
 in heavy living  
 in heavy living

then between A + B. various  
 sort of relation. C + B. The  
 first predation, B + D  
 rather greater interaction  
 then former would be  
 formed. - heavy relation

# Reception and Neglect

- Evolution concept accepted, mechanism perhaps not
- A symbol of progress ?
- Supporters--Joseph Hooker.and Thomas Huxley
- 1880's and 1890's Darwin's reputation slumps
- Problems for Darwin--laws of heredity and age of earth and solution by early 1900's
- Eclipse of Darwinism by Lamarckism, saltationism and orthogenesis



**MR. BURCH TO THE RESCUE.**

THE DEPENDABLE GORILLA. "That Man wants to claim my Pedigree. He says he is one of my Descendants."

MR. BURCH. "Now, Mr. Darwin, how could you teach him so?"

N° 10

12 Cms

# LA Petite LUNE

Publié le 1er Octobre, 1900

Éditeur: GILL

Abonnement: 12 Cms

## DARWIN



(Voir à la page 2.)

**\$ 1000 REWARD**

For the proof of the existence of  
a better liniment for human  
& animal flesh than

**"MERCHANT'S GARGLING OIL"**

or a better worm remedy than

**"MERCHANT'S WORM TABLETS"**

MANUFACTURED BY

**MERCHANT'S GARGLING OIL CO.**

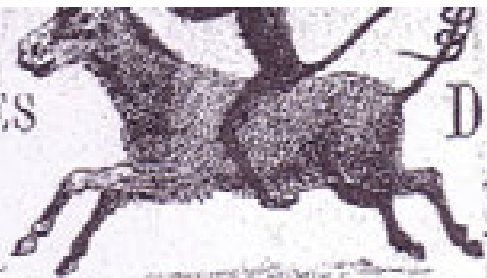
LOCKPORT, N.Y.

*JOHN HODGE, Secy*



IF I AM DARWIN'S GRANDPAPA,  
IT FOLLOWS DON'T YOU SEE,  
THAT WHAT IS GOOD FOR MAN AND BEAST,  
IS DOUBLY GOOD FOR ME.

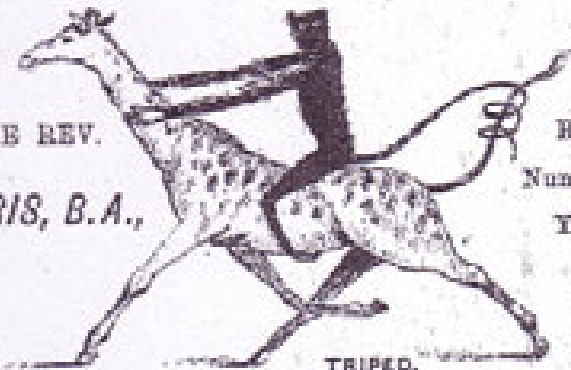
ALL THE  
ARTICLES  
OF THE



DARWIN  
FAITH.

QUADRUPED.

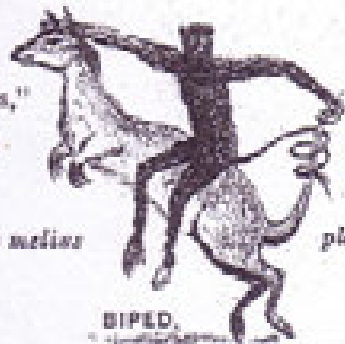
BY THE REV.  
F. O. MORRIS, B.A.,



Rector of  
Nunburnholme,  
Yorkshire.

TRIPED.

Author of  
"A History of British Birds,"  
dedicated by permission



to her most gracious  
Majesty the Queen,  
etc., etc.

*"Ridiculum acri fortius an melius"*

*"plerumque acrius est."*

HORACE.

BIPED.

*Hanno supra!*

PRICE



ONE SHILLING.

UNIPED.





# Darwin Hijacked

- Social Darwinism and the confusion of a scientific theory with an ethical one
- Problem of definition for social Darwinism and over emphasis
- Herbert Spencer in England and William Sumner, Andrew Carnegie, and John D. Rockefeller in U.S.
- Term short-lived and derisive
- Eugenics and genetic determination
- Sterilization laws and restricted immigration
- Nightmare of Nazi Germany

# Darwin Updated and Vindicated

- Rediscovery of genetics and Neo-Darwinism
- The modern synthesis
- Role of Punctuated Equilibrium
- Natural selection remains primary mechanism--  
Darwin got it right!

Percentage of respondents who agree or disagree that humans developed from an earlier species of animals



SOURCE: Jon D. Miller, Michigan State University

\* In 2001.

# Sources

- Origin of Species--Charles Darwin
- Voyage of the Beagle Around the World--Charles Darwin
- The Portable Darwin--Duncan Porter and Peter Graham
- Evolution, the ■ History of an Idea--Peter Bowler
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- Darwin, the Life and Times of a Tormented Evolutionist--Adrian Desmond and James Moore

# Sources Continued

- The Beak of the Finch--Jonathan Weiner