

George Romanes

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George John Romanes FRS (20 May 1848 – 23 May 1894) was a Canadian-born English evolutionary biologist and physiologist who laid the foundation of what he called comparative psychology, postulating a similarity of cognitive processes and mechanisms between humans and other animals.

He was the youngest of Charles Darwin's academic friends, and his views on evolution are historically important. He invented the term neo-Darwinism, which is still often used today to indicate an updated form of Darwinism. Romanes' early death was a loss to the cause of evolutionary biology in Britain. Within six years Mendel's work was rediscovered, and a whole new agenda opened up for debate.

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Life

Romanes was born in Kingston, Ontario, the third son of George Romanes, a Scottish Presbyterian minister. When he was two years old, his parents returned to England, and he spent the rest of his life in England. Like many English naturalists, he nearly studied divinity, but instead opted to study medicine and physiology at Cambridge University. Although he came from an educated home, his school education was erratic. He entered university half-educated and with little knowledge of the ways of the world.^[1] He graduated from Gonville and Caius College, Cambridge with the degree of BA in 1871,^[2] and is commemorated there by a stained glass window in the chapel.

It was at Cambridge that he came first to the attention of Charles Darwin: "How glad I am that you are so young!" said Darwin. The two remained friends for life. Guided by Michael Foster, Romanes continued to work on the physiology of invertebrates at University College London under William Sharpey and Burdon-Sanderson. In 1879, at 31, Romanes was elected a Fellow of the Royal Society on the basis of his work on the nervous systems of medusae. However, Romanes' tendency to support his claims by anecdotal evidence (rather than empirical tests) prompted Lloyd Morgan's warning known as Morgan's Canon:

"In no case is an animal activity to be interpreted in terms of higher psychological processes, if it can

George Romanes



George Romanes, by Elliott & Fry.

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|--------------------|---|
| Born | 20 May 1848 Kingston, Ontario, Canada |
| Died | 23 May 1894 (aged 46) Oxford, Oxfordshire, England |
| Citizenship | British |
| Fields | evolutionary biology physiology |
| Known for | comparative psychology |
| Influences | Charles Darwin |

Signature

George J. Romanes.

be fairly interpreted in terms of processes which stand lower in the scale of psychological evolution and development".^[3]

As a young man, Romanes was a Christian, and some, including his religious wife, later claimed that he regained some of that belief during his final illness.^[4] In fact, he became an agnostic due to the influence of Darwin.^[5] In a manuscript left unfinished at the end of his life he said that the theory of evolution had caused him to abandon religion.^[6]

Romanes founded a series of free public lectures – still running today – the Romanes Lectures. He was a friend of Thomas Henry Huxley, who gave the second Romanes lecture.

Towards the end of his life, he returned to Christianity.^[7]

Romanes on evolution

Romanes tackled the subject of evolution frequently. For the most part he supported Darwinism and the role of natural selection. However, he perceived three problems with Darwinian evolution:

1. The difference between natural species and domesticated varieties in respect to fertility. [this problem was especially pertinent to Darwin, who used the analogy of change in domesticated animals so frequently]
2. Structures which serve to distinguish allied species are often without any known utilitarian significance. [taxonomists choose the most visible and least changeable features to identify a species, but there may be a host of other differences which though not useful to the taxonomist are significant in survival terms]
3. The swamping influence upon an incipient species-split of free inter-crossing. [Here we strike the problem which most perplexed Darwin, with his ideas of blending inheritance. It was solved by the rediscovery of Mendelian genetics, and later work showed that particulate inheritance could underlie continuous variation: see the evolutionary synthesis]

Romanes also made the acute point that Darwin had not actually shown how natural selection produced species, despite the title of his famous book (*On the origin of species by means of natural selection*). Natural selection could be the 'machine' for producing adaptation, but still in question was the mechanism for splitting species.

Romanes' own solution to this was called 'physiological selection'. His idea was that variation in reproductive ability, caused mainly by the prevention of inter-crossing with parental forms, was the primary driving force in the production of new species. The majority view then (and now) was that geographical separation is the primary force in species splitting (or allopatry) and secondarily was the increased sterility of crosses between incipient species.

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External links

- Works by George Romanes at Wikisource
- Catalogue of the Papers of George John Romanes, 1867-1927 (<http://www.bodley.ox.ac.uk/dept/scwmss/wmss/online/1500-1900/romanes/romanes.html>)
- Works by George Romanes (<http://www.gutenberg.org/author/Romanes+George+John>) at Project Gutenberg
- Genealogy, Background and Works of G. J. Romanes (<http://post.queensu.ca/~forsdyke/romanes.htm>)

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