

Cutting down the ‘tree of life’

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“DARWIN WAS WRONG”. No, not the words of this writer but a recent *New Scientist* cover headline relating to a feature article on the so-called ‘tree of life’.¹ Remarkably, in this year of Darwin anniversaries,² it reports that the consensus among biologists is moving away from one of Darwin’s key concepts. His tree of life, an imaginary branching structure mapping the evolution of one species into many, is being abandoned in favour of something far more complex, more like a web of life. In contrast, the Creator’s tree of life, representing the gift of eternal life in Jesus Christ, remains a foundation of the true gospel hope.

A biological revolution

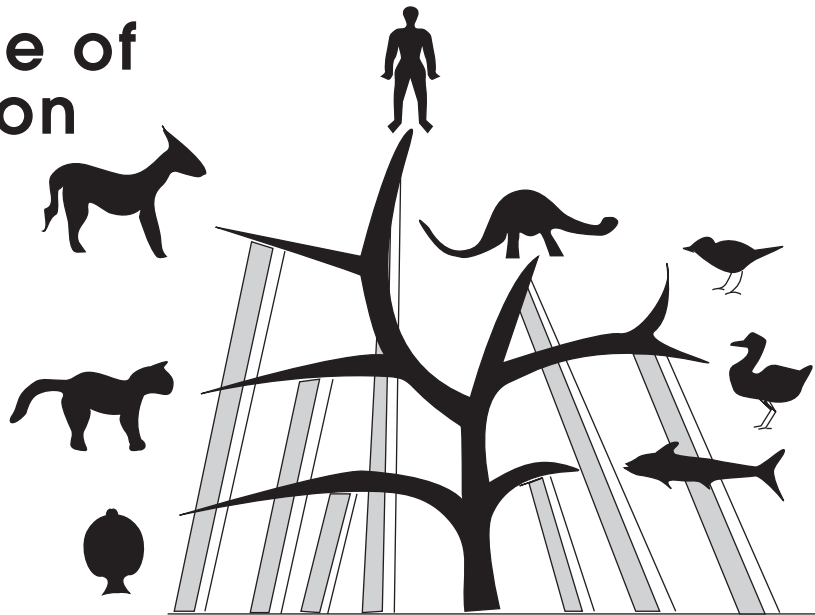
It is difficult to exaggerate the significance of the revolution taking place in biology. The tree-of-life idea, alongside natural selection, was central to Darwin’s thinking, and has been considered to be the unifying principle for understanding the history of life on earth.³ Yet it is now being relinquished under the pressure of many new discoveries in genetics. It is ironic that a flagship BBC documentary on evolution, fronted by Sir David Attenborough just a few days after the *New Scientist* article appeared, was entitled “Charles Darwin and the Tree of Life”. The programme still

presented as established fact the traditional view, complete with elegant graphics demonstrating how “the tree of life branched into a multitude of different species”!

It must be stressed that biologists are in no way abandoning evolution, but have been forced to admit that one of the main planks of the theory has been found wanting. In the words of the *New Scientist* article: “The tree of life, one of the iconic concepts of evolution, has turned out to be a figment of our imagination”. That scientists are very sensitive about this conclusion is demonstrated by the editorial in the same issue, which solemnly warns, “None of this should give succour to creationists, whose blinkered universe is doubtless already buzzing with the news that ‘*New Scientist* has announced Darwin was wrong’”.

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1. Graham Lawton, “Uprooting Darwin’s tree”, *New Scientist*, 24 January 2009, pp. 34-39. The author is features editor of *New Scientist*.
 2. The 200th anniversary of Darwin’s birth was on 12 February, and the 150th anniversary of the publication of *On the Origin of Species* is on 24 November.
 3. “The affinities of all the beings of the same class have sometimes been represented by a great tree. I believe this simile largely speaks the truth”, Charles Darwin, *On the Origin of Species*.

The Tree of Evolution



A tree without roots, propped up by theories

Taken from the Testimony publication *Creation, Evolution and Science*.

A fruitless exercise

Darwin first conceived the idea of a biological tree of life in 1837, recording in his notebook, "I think", accompanied by a spindly sketch of a tree. By the time he published *The Origin of Species*, twenty-two years later, it had become a central plank of his theory and a major contribution to its success. It was conceived as being a record of how every species is related to all others, right back to the origin of life, and completing it became the holy grail of biology. But now, since the discovery of DNA, it has been cut down by a torrent of negative evidence.

At first it was thought that the ability to read the sequences of DNA, RNA⁴ and other biomolecules would provide positive proof of Darwin's tree of life. The closer two related species are, or the more recently their branches split off from the tree, the more alike their sequences would be. The initial efforts with RNA sequences seemed promising, but in the early 1990s problems arose when it became possible to sequence the genes of bacteria. It was found that RNA and DNA sequences sometimes gave conflicting results. For example, RNA sequences might suggest species A was closer to species B than species C, whilst DNA would suggest the exact opposite, ruling out the simple linear descent required to construct a tree.

A web, not a tree?

Biologists now believe instead that bacteria routinely swap genes with other species in a process known as horizontal gene transfer (HGT). This apparently allows features such as antibiotic resistance to pass between species, and leads to the conclusion that microorganisms such as bacteria are widely interrelated in this way.

However, this is only the latest version of the evolutionary argument that common features imply common descent (rather than the equally valid position that common design demonstrates the hand of an intelligent designer). Previously this was applied to large-scale features such as body plans, limbs, digits, and so on. Now it is being applied to genes. If two species share the same gene it is asserted that they must share common ancestry. This leads to some fascinating conclusions. HGT is said to occur, not just in bacteria, but also in plants and animals, possibly by the action of viruses, which apparently can cut and paste sections of DNA from one organism to another. It is reported, for instance, that a piece

4. RNA is a group of molecules, somewhat simpler than the more familiar DNA, which are involved in the copying of gene sequences from DNA and the synthesis of proteins within cells.



Pictures: Wikimedia Commons/Purney Mark

Two species of Galápagos finch, *Geospiza fortis* (above) and *Geospiza fuliginosa* (right)

of snake DNA has been found in cows, but not what effect this might have had! Most organisms, even bacteria, have many thousands of genes, which operate singly or in combination, and the functions of the majority are still unknown. Consequently HGT hardly amounts to a satisfying explanation of how completely new species might have evolved.

The other mechanism being called upon to explain gene transfer is hybridisation, in which two different species interbreed. It is claimed that ten per cent of all animals regularly hybridise with other species. But this calls in question the whole concept of what a species actually is. The classification of plants and animals into families, genera and species is an attempt by man to impose order on the vast complexity of the living world. The accepted definition of a species is “a group of similar individuals that can usually breed among themselves and produce fertile offspring”.⁵ So, when creatures of ‘different’ species successfully interbreed, we are entitled to question whether their classification is valid. This is illustrated by Darwin’s famous finches in the Galápagos Islands, which were split into many species, based mainly upon their beak sizes and shapes, but which regularly ‘hybridise’, seemingly unaware that they should not be mating with birds that scientists have decided are of a different species!⁶

Clearly, whatever hybridisation achieves, it can be little more than a relatively minor shuffling and interchange of the existing genes of each ‘species’, what is often termed ‘microevolution’. It cannot

produce anything radically new, a new organ or body plan of the kind which evolution would need to be a plausible explanation of the origin of a completely new family of plants or animals.

The true tree of life

Scientists have been forced to abandon one of the key components of Darwin’s theory of evolution because they have discovered that biology is far more complex than they thought. One of them has commented, regarding the uprooting of the tree of life, “It’s part of a revolutionary change in biology. Our standard model of evolution is under enormous pressure”.

In contrast to the shifting sands of scientific theories, the truth of the Word of God stands immutable, reassuring us that the works and future plans of the Great Creator are unchanging. The vast complexity of the living world is an expression of His inventive wisdom and infinite power. The original tree of life, from which man was barred through disobedience (Gen. 3:22-24), stands as a potent symbol of the true, eternal life which God has prepared for those who seek salvation in His beloved Son: “He that hath an ear, let him hear what the Spirit saith unto the churches; To him that overcometh will I give to eat of the tree of life, which is in the midst of the paradise of God” (Rev. 2:7).

5. *Oxford Concise Science Dictionary*, p. 679.

6. See “[Science update: evolution in reverse](#)”, *Testimony*, Jan. 2007, p. 25.