

Dr Arthur Jones

Animal Variation

Does It Prove Evolution?

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1. Introduction

I first encountered the issue of origins as a high school student in the middle of the 1960s. At that time I found little help in the available Christian literature – which was very sparse compared to today. The (mainly American) creationist literature breathed an overly rationalist view of science, and also tended to promote dubious scientific theories. The modern revelations from the history and philosophy of science (then just beginning) were ignored or unknown. The theistic evolution literature I found very unsatisfactory regarding its treatment of orthodox Christian theology, and of Biblical exegesis. I decided that I must try to find out for myself. In 1965 I went to Birmingham University (UK) to read biology, determined to find out all I could about creation and evolution and eventually do research in some relevant topic of origins biology. By the time I left with a doctorate in zoology, I had become a convinced creationist on both Biblical and scientific grounds. In the nearly 50 years since, I have encountered much to refine my understanding, but nothing to change that fundamental conviction.

2. Science and Faith

[For a more comprehensive and detailed discussion of this section see Jones 2019. The commitments being discussed here are vital to understanding what is happening in our society today.]

2.1. Evolution is also Religion

2.1. The *Bush of Knowledge* (© Richard Russell & Arthur Jones, 1969) shows how – in every area of study – the data (*aka* ‘facts’) are understood in the terms of a theory, against the frame of reference of a paradigm (*aka* conceptual framework,

research programme), within a philosophical view of reality, and from a religious stance.

The term 'religion' (*aka* 'faith' or 'worldview') can be misunderstood as referring only to the followers of the main world religions (such as Christianity, Islam, Judaism, Hinduism *etc.*). The term 'worldview' is thus often to be preferred, because it is widely accepted that *everyone* has a worldview. However, with that understanding, we will stay with the more familiar word 'religion'.

The religion of those who accept the secular scientific theory of evolution is that of **ATHEISM**. BUT we must remember that ***someone's religion is not what they might claim it is, or even what they might think it is!***

Someone's religion *is* **ATHEISM** if they live and act:

- *as if* there is no God
- *as if* faith is irrelevant to everyday life
- *as if* a Godless and faithless life is natural and normal

So the challenge to us all is: 'What kind of life feels most natural and normal to us?' Is it that of a Biblical Christian worldview, or that of a secular, naturalist worldview?

At Birmingham University I immersed myself in the philosophy and history of science and particularly in the history of thinking about origins. The falsity of the common propaganda – that evolution is science, but creation is religion – was soon apparent, as I uncovered the commitment of secular evolutionists to religious faith in *Naturalism* and *Evolutionism*.

2.2. Naturalism *Naturalism* (*aka* scientism, positivism, physicalism, and (scientific) materialism, though, strictly these all have their own specific nuanced meanings) is the faith that physical (material) nature is all there is and that natural, unguided, unintelligent processes can generate the huge amounts of functional information that are needed for evolution:

"Logically derived from confirmable evidence, evolution is understood to be the result of an unguided, unplanned process of random variation and natural selection. As the foundation of modern biology, its indispensable role has been further strengthened by the capacity to study DNA. In contrast, intelligent design is fundamentally unscientific; it cannot be tested as scientific theory because its central conclusion is based on belief in the intervention of a supernatural agent."

(Letter to Kansas State Board of Education, signed by 38 Nobel Laureates, 09 September 2005, https://en.wikipedia.org/wiki/Kansas_evolution_hearings, last edited 02 June 2019, accessed 11 September 2019.

2.3. Evolutionism The religious root of evolution – *Evolutionism* – is the *faith* that the rationalistic *unity* of the world must ground in a physical *continuity* through space and time – see Jones, 1998, chapter 2, and Jones, 2019).

2.4. Faith is Foundational Those years of full-time study left me with the conviction (which the passing years have only strengthened) that the foundational issue is indeed one of faith. If your faith commitment is to *Naturalism*, then you clearly cannot accept some of the lines of evidence that carry weight for a Christian theist.

“It is not that the methods and institutions of science somehow compel us to accept a material explanation for the phenomenal world, but, on the contrary, that we are forced by our *a priori* adherence to material causes to create an apparatus of investigation and a set of concepts that produce material explanations, no matter how counterintuitive, no matter how mystifying to the uninitiated. Moreover, that materialism is absolute, for we cannot allow a divine foot in the door ... To appeal to an omnipotent deity is to allow that at any moment the regularities of nature may be ruptured, that miracles may happen ...”
Richard Lewontin (Professor of Zoology, Harvard University), 1997: 31.

In the public realm, where no faith commitment should be taken for granted (and we all have one), we can discuss other issues only when those faith commitments are on the table for scrutiny and critique. Naturalists actually have more hard questions to face than theists!

2.5. Life in Doctoral Research Let me return to my experience at Birmingham University. During my undergraduate days when my skepticism became known, my zoology professor made a point of telling me that no skeptic of evolution would be allowed to do research in his department! However, he did allow me to do research. I do not know why he relented. From the pressure that was put on me, I can only assume that it was thought that I could be convinced of the error of my ways. If that was the intention, then it badly backfired. Many a visiting scholar was brought into my laboratory to convince me, from their area of expertise, that evolution was indisputably true. Of course, hardly knowing their field, I never had an answer at the time, but after they had gone I would look up the relevant research and carefully analyse it. I always found that the evolutionist case was much weaker than it had seemed and that alternative creationist interpretations could be provided which were just as, or more convincing. This did, however, create an odd situation. On the one hand, the staff saw someone constantly out-argued and therefore doubtless attributed my persistence in heresy (*sic*) to irrational bias. On the other hand, my searches in the research literature were constantly multiplying sound reasons for holding to that heresy. My position was further strengthened by the results of my own biological research.

3. Two foundational Laws of Biology

There are two fundamental laws in biology that I want us to consider: the law of biogenesis and the law of heredity.

3.1. The Law of Biogenesis: Living things arise only from other living things.

Origin of Life [OOL] studies have taught us a lot, but as regards OOL they have bequeathed us abysmal results and seemingly insurmountable problems. The problem is that – *outside of living organisms* – the organic products of these experiments react together to produce biologically useless materials. What OOL experiments overwhelmingly give us are *geo-polymers* – complex red oils and black tars – not the molecules of life.

3.2. The Law of Heredity: Living things arise only from other living things of the same kind.

All living organisms belong to distinct natural kinds. Variation and hybridisation occur only within these kinds. In every experiment to date where we have tried to push past the normal limits of variation, whether with *Drosophila*, *E. coli*, or a variety of other plants and animals, we have always been stopped at a point where either further changes are lethal to the species, or further variation is simply not possible.

Consider the example of bacteria. These have been experimented on over far more generations than any other organisms (in fact over thousands of generations), but with no evolutionary results:

“Throughout 150 years of the science of bacteriology, there is no evidence that one species of bacteria has changed into another”

Prof Alan Linton, Bacteriologist, Bristol University, (2001: 29)

The Darwinian Theory of evolution predicts that hundreds, thousands, millions, and even billions of bits of functional information can be generated through natural processes. This is a fundamental tenet, yet we have no evidence of natural processes that can do any such thing. At present about 30 bits is all that can be achieved (Durstun, 2008 – this paper is no longer available online, but see Durstun, 2017, 2019).

These two laws are the most rigorously tested and confirmed in the whole of biology. No exceptions to them have ever been found.

4. Variation

4.1. Evolution is More than Variation By evolution I mean universal common descent and naturalism. We must remember that, as contrasted with creationism, evolution is *not* the theory that organisms show variation – that has

always been accepted by all sides – but the theory that there are *no limits to that variation*. It is the belief that there has been a continuous development in time from hydrogen to humans, dust to stars, particles to peoples. In terms of naturalism it is the belief that natural, unguided, unintelligent processes can generate significant amounts of functional information.

4.2. Variation and the Law of Heredity The *Law of Heredity* contradicts that claim. All living organisms (and all fossil remains) belong to distinct natural kinds. Variation and hybridization occur only within these kinds. In every single breeding experiment to date, where we try to push the limits to see how far we can go, we always hit a limit beyond which further change is lethal, or not possible. There are no exceptions:

“To clarify, individual experiments involving a particular trait may encounter a dead end, but given the millions of different organisms on the planet, evolutionary pathways to a novel genus, order, or phylum should be relatively easy to find with some experimentation if Darwinian evolution is possible. We should not expect to encounter dead ends for 100% of our experiments.”
(Durstun 2008, page 4; see Durstun 2017, 2019).

The problem isn't that we haven't tried for long enough; the problem is that we hit the biological boundaries so soon. Nor is there any evidence that time is a relevant factor. With bacteria, for example, we have been pursuing the experiments for thousands of generations as noted above (Linton, 2001, see also Behe, 2007)

5. The Cichlid Fishes

5.1. Studying a Created Kind. For my research I decided to tackle the issue of the identity and nature of the created kinds (Jones 1972). This was in response to a common evolutionist challenge that always seemed to me to be a very reasonable one. If there are distinct created kinds then they should be identifiable. I wanted to, provisionally, identify a kind, and then investigate the processes of variation within that kind, in order to confirm that it is a distinct natural kind, and gain some handle on the limits to the variation. In order to carry out this investigation, I needed to be able to keep and breed large numbers of species. In terms of practicality and affordability, that meant either insects, or fish. My background was in vertebrate studies, so that meant fish. My supervisor was a fan of the cichlid aquarium fish, so that was quickly settled!

For an excellent overview of the cichlid family (Cichlidae) see:
<https://en.wikipedia.org/wiki/Cichlid>, accessed 05 September 2019 (Wikipedia can be unreliable, but this entry is very good).

5.2. How Many Species? There are about 32,000 living fish species. The cichlids are perch-like, ray-finned fish. The Cichlidae is the third largest vertebrate family. The largest is the Cyprinidae (cyprinids - about 2½ thousand species of carps)

and minnows), followed by the Gobiidae (gobies – about 2000 species). The Cichlidae (cichlids), have at least 2000 species and 200 genera, but genera and species identifications are often controversial (the usual disagreements between ‘lumpers’ and ‘splitters’).

5.3. Food Fish Some cichlids are important food fish (e.g. the *Tilapias*) and others are game fish (e.g. *Cichla*). The fish in the account of the apostle Peter’s conversation with Jesus over the temple tax, and the subsequent fishing trip to the Lake of Galilee (*Matthew* 17:24-27) was most probably a *Tilapia* species, still known locally as ‘St Peter’s fish’. The mother fish holds the eggs in her mouth, and immature fry will swim back to her mouth when danger threatens. When the fry become too large, she will pick up a stone or other suitable object (in the *Matthew* 17 case, a coin) to keep them out!

5.4. Popular Fish The cichlids are very popular aquarium fish. Highly valued are Angelfish (*Pterophylum*), Discus (*Symphysodon*), Convict (*Archocentrus*) and Oscars (*Astronotus*).

I once trained a large Oscar to jump as much as a foot out of the tank water to grab worms from my fingers! He did this regularly, until one day he missed and landed on the aquarium room floor! He survived the ordeal, but would never jump again.

In January 2006, papers were telling the story of an Oscar, that was reported to have markings appearing to Muslims to spell Allah (‘God’) in Arabic (see http://news.bbc.co.uk/2/hi/uk_news/england/lancashire/4667610.stm, accessed 05 September 2019).

5.5. Geographical Distribution The natural distribution of cichlids is Central and South America and southern North America, the West Indies, Africa, South-West Asia (Middle East), Madagascar, Sri Lanka and southern India. They have also been introduced elsewhere around the world (so-called ‘exotics’).

5.6. Freshwater? When I started my research, cichlids were commonly described as strictly freshwater. Since they are found in the tropical freshwaters of three continents, with a lot of seawater between, there are fascinating problems of biogeography here. I hypothesised that members of all, or at least most fish kinds that survived the Flood (of Noah, *Genesis* 6-8) must be able to survive both seawater and fresh and much mixing of the two. After the post-Flood diversification within the kinds we should still find that, in marine kinds, there are some species that can tolerate much fresher water and, in freshwater kinds, some species that can tolerate much saltier water. With my cichlids I found that this was indeed the case. I was able to keep some species (e.g. jewelfish, *Hemichromis*) in pure seawater for more than two years with no harmful effects – they lived and reproduced normally. It is now known that several cichlids are found in brackish and marine environments (e.g. species of *Cichlasoma*, *Tilapia*, *Hemichromis* and *Etroplus* - chromides). Literature

searches again revealed that this was a common pattern throughout the fish families.

5.7. Size Cichlids range in size from 2.5 cm (*Apistogramma*, *Taeniacara*, *Neolamprologus*) to 1 metre (*Cichla*, *Boulengerochromis*)
Body shape ranges from compressed and disc-shaped (e.g. *Discus*) to elongate and cylindrical (e.g. *Crenicichla*).

5.8. Jaws and Diet The cichlid diversity is probably due to a very versatile jaw design and to the advanced care of eggs and young. Cichlids have toothed outer jaws (premaxillary and maxillary bones) that gather the food, while toothed inner jaws (pharyngeal plates) crush or mash the food. These jaws and teeth show remarkable variation, facilitating a wide variety of diets (.tiny water plants (phytoplankton), organic debris, algae etc. on rocks ('aufwuchs'), algae on submerged plants (periphyton), vascular plants, insects, molluscs, fishes, fish eggs, fish scales, fish fins, fish eyes(!) etc.) Of the African Lake Malawi cichlids, the evolutionary biologist Douglas Futuyma wrote in 1979, 'The form of the teeth in many of the cichlids is so extraordinarily modified for specialized feeding that it far transcends the range of tooth shapes found elsewhere among cichlids, or even among all other fishes. Were these species not obviously related to more orthodox forms, they would probably be assigned to different families.' (Futuyma 1979, 393). As Futuyma notes, these cichlids are the most spectacular of the "species flocks" (populations containing many similar species) that are found in many groups of fishes (Futuyma 1986, 246).

5.9. Reproduction Part of the attraction of cichlids is their wonderful courtship behaviour and their care of the eggs and young. There are three main types of cichlid reproduction:

- *Substratebrooding*, laying on a surface, which can be the wall or roof of a cave (or of, say, a flowerpot placed in a fish tank);
 - *Mouthbrooding*, a parent brooding the eggs in the mouth and, later, taking the immature fry into the mouth when danger threatens;
 - *Substratebrooding* of eggs, followed by *Mouthbrooding* of young fry.
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6. Cichlid Variation in the African Great Lakes

Large species flocks of cichlids are found in the great African lakes as well as a great variety of cichlid forms.

7. Are Cichlid Fishes a Natural, Created Kind?

Those years of research were fascinating. I learnt two key lessons. The evidence of evolution may seem very impressive, but:

7.1. There is No Blurring of Boundaries The more I studied the cichlids, the more that experience led to an increasing awareness of the unity and distinctiveness of the cichlids. For all the diversity of species, I found the cichlids to be an unmistakably natural group, a created kind. The more I worked with these fish the clearer my recognition of ‘cichlidness’ became and the more distinct they seemed from all the ‘similar’ fishes I studied. Conversations at conferences and literature searches confirmed that this was the common experience of experts in every area of systematic biology. Distinct, natural kinds really are there and the experts know it to be so (see Jones 1982-1983: 165-166).

7.2. The Patterns of Variation are Mosaic, Not Genealogical

Developmental studies have shown that the enormous cichlid diversity (of at least 2000 ‘species’) is actually produced by the endless permutation of a relatively small number of character states: 4 pigment colours, a dozen or so basic pigment patterns and so on. The same characters (or character patterns) appear ‘randomly’ all over the cichlid distribution. The patterns of variation are ‘modular’ or ‘mosaic’; evolutionary lines of descent are nowhere to be found (see Jones, 1972, 1982, 1982-3, 1998)

The same mosaic patterns are found at every level in the taxonomic hierarchy (see, e.g., Louis Vialleton (1929) on mammals, Douglas Dewar (1957) on birds, and Arthur Jones (1972) on fishes. At lower levels (species and genera) the character states may be largely linked to genomic heredity, but at higher levels (family and above) the linkage will be largely to whole-cell features of heredity, that are still little understood (see Jones, 2019, section 9, pages 17-22)

7.3. A fascinating example of the unity of the cichlid Kind comes from swaps of young between Substrate- and Mouthbrooding breeding adults. These swaps have been successfully accomplished, showing that appropriate behaviour patterns that are not normally shown are dormant, probably throughout the cichlid family, and can be activated if required.

8. How Old Are the Cichlids?

8.1. This kind of adaptive variation can occur quite rapidly (since it involves only different permutations of what is already there) and some instances of cichlid ‘radiation’ (in geologically ‘recent’ lakes) are indeed dateable (by evolutionists) to within time-spans of no more than a few thousand years. Lake Victoria has had at least 500 endemic species of cichlids. Although the lake is thought to be as much as 500,000 to 750,000 radiometric¹ years old, it is known to have dried up and been refilled several times, so that the recorded cichlid diversification has occurred in a much shorter time-span (Spinney 2010). The small Lake Nabugabo has five

¹ Age given by a relevant method of dating by radioactive elements found in fossils or surrounding/underlying rocks. These dates may not translate to actual years. Many contestable assumptions are inevitably involved.

endemic (unique) species but is separated from Lake Victoria by a strip of low-lying land dated by radiocarbon analysis at no more than 400 radiometric years. Speciation also appears to have been rapid in Lake Malawi. For details see Fryer & Iles (1972); Owen *et al* (1990).

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10. About the Author

Arthur Jones holds a doctorate in biology (1972) for a thesis exploring alternatives to materialistic evolution [*aka Darwinism*] in the field of origins. Until he retired in 2018, he was (from 1976) a Chartered Biologist (CBiol), a member of the *Royal Society of Biology* (MRSB). During a teaching career spanning forty years, he has been a college science lecturer, schoolteacher, teacher trainer and the headteacher of a pioneering Christian school in Bristol. From 1995-97, he was a part-time lecturer in science and religion in the Faculty of Continuing Education, *Birkbeck College, University of London* and from 1996-97 in the Department for Continuing Education, *University of Bristol*. His science and religion courses won two Templeton awards. From 2000 to 2013 he wrote and taught worldview-based courses for Christian professionals, accredited by three more UK universities (*University of Wales, Lampeter, University of Wales, Bangor, and York St Johns*), at both graduate and postgraduate levels. He was also a Research Consultant for Curriculum Development to the *Christian Schools' Trust* and authored *Science in Faith: A Christian Perspective on Teaching Science* (CST, December 1998). He has also authored *No Home & Alone: A School Programme on Homelessness* (Global Concern, 1999), and *Is Creationism a Science Stopper?*, a chapter in John Ashton (ed), *In Six Days: Why 50 Scientists Choose to Believe in Creation* (New Holland, 1999). His last paid employment was as Tutor with *Responsibility for Co-ordination and Development of the Foundation Degree in Evangelism*, Mission Based Training, Church Army, Sheffield. In Education he was also a member of the *Movement for Christian Democracy's Education Policy Group* from 1991 to 1997. After several changes of sponsoring organizations, this group became the *Education Commission* of the UK *Evangelical Alliance*, of which Arthur was a founding member in 2013. From 2004-2011 he was a Trustee (and Company Director) of the *Association of Christian Teachers* (ACT, <http://www.christian-teachers.org.uk/>), and was the Chair from 2007-2011. Currently he is a member of the Scientific Panel of *Truth in Science* (TiS, <https://www.truthinscience.org.uk/>) and a trustee of the *Manchester Centre for the Study of Christianity and Islam* (MCSCI, <http://www.mcsci.org.uk/>) based at the *Manchester Nazarene Theological College* (NTC, <https://nazarene.ac.uk/>).

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