

The fog of fiction blankets the landscape of facts

A review of
EVOLUTION, 3rd edition
by Mark Ridley
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Ridley has done an admirable job of presenting his case for evolution in this 750-page text, *Evolution*, 3rd edition (2004). The text should be viewed as a bipartite entity, which contains excellent material on quantitative genetics, combined with a substandard collection of just-so stories supposedly supporting evolution. The author's intent behind peppering numerous chapters with anticreationist discourses provides no apparent useful purpose.

There are many chapters which offer insight into the quantitative mechanisms of gene action in populations. This information is quite sound and useful for developing future creationist theories.

Other chapters, such as biogeography, provide challenging and thought-provoking questions creationists will need to answer for any future cohesive theories attempting to explain global animal distribution. Of course he overlooks how convenient it is that Darwin invoked biogeographical distributions as evidence for evolution under a fixed continent paradigm, while Ridley does, too, under a plate tectonic paradigm. If evolution can explain such mutually incompatible scenarios, then it really explains nothing.

Without a doubt, Ridley has attempted to present a thorough and relatively detailed argument for evolution. Unfortunately, however, it seems

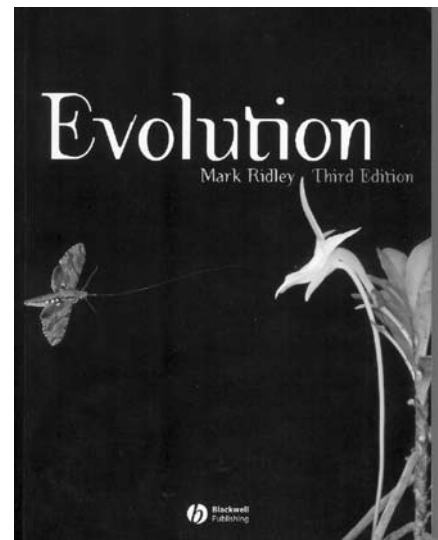
as though Ridley is unable to scientifically justify or adequately explain the most basic and crucial questions haunting evolutionary theory, i.e. origin of life; origin of mitosis; origin of linkage of genotype to phenotype; origin of sex; and others.

Regardless of its imposing size, it is reassuring that this world-recognized tome, by a well-known author, has really presented no threatening challenge to modern creationist theory. In fact, there is a very obvious and glaring contrast between the mathematically well-documented and illustrated chapters on quantitative genetics and those chapters purporting to explain those fundamental questions of evolutionary theory. Ridley continuously challenges creationists to provide observable data and testable hypotheses. However, he hides behind a façade of blatant just-so stories decorated with clever tautologies to explain the difficult, and often intractable, problems facing evolutionary theory.

Origin of life: an intractable problem for goo-to-you evolution

Chapter 18, entitled 'The history of life', devotes a scant three sentences to the biochemical origin of life. The author provides no mathematical, chemical or physical basis to support his claims of the origin of life. In fact his explanation is incredibly naïve, blissfully ignoring well-known problems discussed in origin-of-life scenarios. Ridley states:

'Many of the molecular building blocks of life (such as amino acids, sugars and nucleotides) can be synthesized from a solution of simpler molecules of the sort that probably existed in the prebiotic seas if an electric discharge or ultraviolet ra-



diation is passed through it. Once the molecular building blocks exist, the next crucial step is the origin of a simple replicating molecule' (p. 530).

Unfortunately for Ridley, he is simply wrong about nucleotides—they are complex molecules composed of sugar, nitrogenous bases and phosphate, and there is nothing remotely like them in Miller-type discharge experiments. Even the base cytosine does not have a plausible prebiotic simulation method, and is highly unstable. Also, the conditions to make the bases and sugars are incompatible, so they must have been made in different places. Then somehow they must be brought together to form nucleosides. But even if they were brought together, they simply do not react in water. In an anhydrous reaction, purine nucleosides will form, but only 8% of them will be joined in the right way, with the correct carbon atom on the sugar joined to the correct nitrogen atom on the base. Pyrimidine nucleosides will not form, even under those artificial conditions. And that is without considering the phosphate required for the nucleotides—this would precipitate with the abundant calcium ions.

But even if we grant that the monomers could form, the next crucial step is to explain how: racemates were separated into left- and right-handed amino acids; a condensation reaction to form proteins and lipids occurs in

water without dissolution of the proteins; electric discharges won't destroy newly formed amino acids faster than they can form; nucleic acids form in the same solution as proteins without cross-reactions; the polymer chain reaction would not be terminated by all the unfunctional molecules produced, etc.¹ Apparently, Ridley is not familiar with Thaxton *et al.*'s text² which thoroughly refutes his contentions. Over twenty years ago Shapiro,³ an expert in chemical evolution, addressed and refuted the arguments Ridley is currently making.

Ridley continues further work on his biochemical house of cards and states:

'However no one has yet discovered an autocatalytic RNA that could catalyze its own replication. Such a self replicating molecule would be one of the simplest imaginable living systems.'

The author is using an intractable biochemical conundrum as his sure foundation for the construction of an even more impossible scenario. Complex enzymatic cascades are required to construct RNA. For Ridley to posit an autocatalytic RNA is not science but is simply wishful thinking. To imply to the reader that this system would be representative of a 'living system' goes well beyond legitimate science.¹

The explanation for the evolution of DNA is even more representative of the author's skill at devising sublime tautologies. He states:

'More complex life forms could not evolve until the mutation rate reduced. The evolution of DNA would have reduced, or led to a reduction, of the mutation rate' (p. 530).

There you have it! The precision seen in the chapters on quantitative genetics and population genetics seems to fade here. Where are the elegant equations, and illustrations supporting this theory? The author is well aware of the hundreds of enzymes and carefully controlled reactions which are needed to form DNA. But perhaps he is unaware of the danger of error catastrophe in a poor copying

system. Unfortunately, intractable problems in molecular biology do not lend themselves well to diagrams.

Origin of cells: just-so stories trump science

The academic and scientific fog thickens considerably in Ridley's discussion with respect to the origin of cells:

'Unadorned replicating molecular systems could have persisted, the molecules being replicated as their component building blocks bonded to them and formed copies, or near copies, of the whole. For this system to become more complex, it needs enzymes and metabolic systems that enable it to harvest resources more powerfully, or exploit the resources better by converting them into the molecular units needed for replication' (p. 531).

So much for the precision found in the chapters on quantitative and population genetics.

Watch for the authors' scientific 'sleight of hand' with the statement that:

'A selfish replicating molecule, that used resources manufactured by others, but did not itself manufacture them, would have a selective advantage over other replicating molecules ... This second difficulty was probably overcome by the evolution of cells' (p. 532).

If the author really believed that there is a selective advantage for this 'selfish replicating' molecule, why didn't he do some of those revealing, beautiful, oh-so-scientific calculations he discussed in chapters 7, 8 and 9? Because there is no quantifiable science supporting these statements.

Ridley's thought experiment laboratory is in high gear now. He states: 'If the replicating molecules are enclosed within cells, the products of their metabolism are confined to the cell that produced them and are not available for any selfish replicating molecules outside' (p. 532).

Unfortunately, the remainder of the chapter is simply an iteration of these sad examples of evolutionary 'just-so stories'. Mitosis, a process of cell division which results in two identical daughter cells from the original parent cell, is mentioned only as a process in which 'an apparatus of mobile spindles is formed and pulls the duplicated chromosomes apart' (p. 533). There is no theoretical mechanism or scientific reason provided by the author explaining the reason for, or the mechanisms by which, this 'first mitotic cell', which had spent its entire million-year life painstakingly constructing itself, should suddenly decide to develop an incredibly complex and novel system to enable itself to deconstruct. Although Ridley is fond of conducting 'thought experiments', he fails to provide any explanation for any known biochemical and 'genetic' processes which could account for the evolution of mitosis and meiosis.

Floundering on fossils

Ridley glosses over significant and controversial problems within the stratigraphic record by claiming that

'Between the lungfish and amphibians, a series of fossil forms range from the completely fish-like ... through aquatic ... and partly terrestrial tetrapods to amphibians. The fossil evidence showing the gradual transition is noteworthy in itself, because few evolutionary transitions are so well documented' (p. 541).

What would be even more noteworthy would be a careful examination of the illustration on page 65 which demonstrates no connection between these fossil forms illustrated on page 541. In fact, this diagram favours special creation to the careful observer. Furthermore, Gould took issue with anyone who claimed the stratigraphic record documents 'major evolutionary transitions'.⁴

Ridley continues by indicating that the origin of mammals is 'the best documented of any of the major transitions in evolution, being even better documented in the

fossil record than the origin of the tetrapods' (p. 542).

Using the laundry list of old evolutionary standbys, Ridley mentions the teeth and jaws as evidence of transition from reptiles, stating that 'the bones at the rear of the jaw were evolutionarily liberated, and went on to evolve into the ear bones' (pp. 542–545).

Just a brief examination of some of the facts, however, reveals a dramatic failure of the fossil record to corroborate this reptilian–mammal jaw–tooth transition. As reptiles grow, they shed their teeth in waves with every third tooth being shed, thus providing a useful continuously functioning dentition for eating while the animal is growing. On the other hand, juvenile mammals have a separate deciduous dentition which is anatomically species specific. There is no fossil evidence of a transitional reptilian–mammal dentition, that being part wave replacement and part deciduous tooth replacement. Neither is there any fossil evidence, which would be indicated by dental and jaw pathology, of any attempts by evolutionary mutational processes to gradually develop such a system.

In addition, the enamel microstructure overlying the dentin surface of the teeth is significantly different between reptiles, synapsids and mammals.⁵ Evidence is lacking for reptilian–mammalian transitional dental enamel microstructure and eruption sequence patterns. In fact, the illustration on page 543 shows only fossil animal skulls with a functioning dentition. There are only different-appearing teeth and jaws, but no 'transitional' forms. Just because the teeth and jaws of animals appear different does not corroborate evolutionary processes.

Sexual problems

Chapter 12 is an island of reality in the author's vast sea of just-so stories. Here, Ridley admits,

'sexual reproduction poses an evolutionary problem because it seems to be half as efficient a method of reproducing as its alternative,



Photo by Ray Brooking

Mark Ridley (and other evolutionists) directs our attention away from the whale's jaws because there is no evidence of any transitions, in spite of jaws being well represented in the supposed transitional fossils.

asexual reproduction' (p. 314).

He continues, 'If sex is to outweigh its twofold cost, the sexual female must by this procedure expect to produce a daughter who will be twice as fit as a simple copy of herself.'

The problem is therefore not trivial. Indeed, G.C. Williams has described it as 'the outstanding puzzle in evolutionary biology' (p. 314). The criteria used by the author to determine trivial versus non-trivial evolutionary problems is quite beyond my understanding. Apparently, the origin of life, the cell and mitosis, etc. is trivial. Ridley probably feels that to challenge at least one of the tenets of evolutionary theory in a rigorous mathematical manner provides legitimacy to the myriad of intractable problems he glosses over with his tautologies and just-so stories. In reality, the origin of the sex problem is but the tip of the enormous iceberg of bad science.

Evolutionists admit storytelling

In Chapter 10, Ridley provides an excellent example of why there has never been a Nobel Prize awarded for evolutionary theory. He states:

'We need to keep in mind the status of the evolutionary biologist's argument here. The series of stages

may in some cases not be particularly plausible, or well supported by evidence, but the argument is put forward solely to refute the suggestion that we cannot imagine how the character could have evolved' (p. 263).

He continues and concludes his argument in the following paragraph:

'It is fair to conclude that there are no known adaptations that definitely could not have evolved by natural selection. Or (if the double negative is confusing), we can conclude that all known adaptations are in principle explicable by natural selection' (p. 263).

Hopefully, at this juncture a discerning reader will realize that he is really listening to a magician redefining science and not to a scientist who is providing any scientific evidence to support his theories.

After providing an extremely short explanation of the effects of pleiotropy (one gene may influence the phenotype of more than one part of the body), he states:

'New mutations often disrupt the development of the organism. A new mutant, with an advantageous effect, may also disrupt other parts of the phenotype, and these disruptions will probably be disadvantageous, but if the mutant has a net



The teeth of this dolphin (an odontocete) are very different from the baleen of whales (mysticetes). Although the 'transition' from teeth to baleen is often called an 'adaption' by evolutionists, there is no evidence to support this idea.

positive effect on fitness, natural selection will favor it' (p. 276).

He has simply stated that a net positive effect will be a net positive effect. In reality, pleiotropy entails multiple effects on numerous unrelated genetically controlled developmental cascades, which would drastically affect all Ridley's beautiful single and multilocus population equations. At the least, it renders them incalculable, at worst, it renders them useless. Specifically (with respect to pleiotropic effects and human cranio-facial-maxillary development), there are over 100 known mutational syndromes, which are all harmful, all pleiotropic and which alter normal anatomic function. In each and every one of these mutations, there is attendant pathology. If these same pleiotropic processes account for evolution of the craniofacial and maxillary structures of the supposed 'transitional reptile-mammal' which Ridley maintains were documented in the fossil record, is there evidence of any craniofacial pathology?

Whale tales

Chapter 3, entitled 'The Evidence for Evolution', provides additional ex-

amples of science which do not support evolution. There is a splendid drawing (p. 60) of a baleen whale (whales without teeth but which have fine, long bristles which entrap plankton), with the reader's attention directed to the small atrophic bone, which he called 'pelvic'.⁶

Of course, Ridley would not direct the reader's attention to the jaws, because he would then be forced to explain to the reader how the baleen whales could have evolved from the toothed whales or vice versa. Unfortunately for evolutionary theory, there is absolutely no fossil evidence for any transitional half-toothed, half-baleen whales. Ridley might, however, perform another of his famous 'thought experiments' (since he 'proved' that natural selection can explain any adaptation) and suggest that the hypothetical intermediate whales would have a selective advantage because they could brush their own teeth as they chewed. Knowing this, the author directs the reader's attention to a functional modified 'pelvic' bone—which does have a function.

Vestigial vanity

The author has a universal tendency

to sidestep the difficult questions and then posit questions and problems of a lesser magnitude. He demonstrates this in his comments on vestigial organs: 'But some homologies are immediately persuasive, such as vestigial organs, in which the shared form appears to be positively inefficient' (p. 59). From the broader perspective, Ridley neglects to mention that the list of 'documented' vestigial organs has declined from well over one hundred a century ago to a questionable handful today. Of course he does not provide a graph to illustrate this because it would be obvious that the vestigial organ argument was becoming 'vestigial'.

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A more egregious error is committed in his failure to mention a single example of a *nascent* organ, one which is composed of preadaptations and is about to 'come on the evolutionary stage'. Indeed, if there are hundreds of examples of vestigial organs, then there must also be hundreds of examples of nascent organs. This corollary of the argument seems to have completely escaped the author's notice.

Uninformed about information

The most evident problem which pervades this entire text, and evolutionary theory in general, is the lack of the discussion of information theory. To ignore such a highly developed and sophisticated discipline is to ignore an 'elephant in the living room'. Without a doubt, Ridley understands and uses mathematics and understands its importance in substantiating evolutionary arguments. A chapter devoted to this topic would enhance his text; however, it would also immediately derail the evolutionary argument. For that reason, I am sure, he does not consider it.

The shadow of this giant enigma looms ominously over the entire theoretical evolutionary landscape. There is an absolute necessity for evolutionists to provide evidence for the routine

occurrence of an untold number of information-increasing mutations. No topic of discussion evades this shadow. The manner in which genetic information is created, or the substantiation of information-increasing mutations, is mandated in a legitimate discussion of the evolutionary process.

Gould recognized as much in his statement,

‘Of course, the eyes that are induced by the mouse gene are *Drosophila* compound eyes, since the mouse gene is only the switch gene and another 2,500 genes from *Drosophila* are required to assemble an eye.’⁷

Modification of regulatory genes and Hox genes does not explain the evolutionary development of the eye. Where did the 2,500 genes directing the development of the eye arise?

Gould poses yet another unanswerable problem for ‘info-devo’ theory.

‘How can evolution “know” where to start when faced with millions of potentially alterable molecules and processes, none *manifesting even the first selected step of a forthcoming trend.*’⁸

Specifically, this vast sea of potential incrementally small changes would always be ‘below the radar’ of natural selection. In fact, the initial developmental cascade for any

discrete character (such as enamel microstructure) requires hundreds of previously existing simultaneous and highly complex subroutines which have absolutely nothing to do with that discrete trait. (A crude example is: the flour which makes Christmas cookies has nothing to do with the final shape of the cookie.)

How did these elaborate subroutines ever get started, and especially without the guidance of natural selection? This is most likely the reason why the author limits his best examples for proof of evolution to the HIV⁹ (p. 45) and the diatoms (p. 64), where he states:

‘The diatoms in Figure 3.11 show that the fossil record can be complete enough to reveal the origin of a new species; but examples as good as this are rare.’

Close inspection of the illustration indicates that there was only a 3 µm change in the height of the hyaline (glass-like) area of the cell wall. This example is listed under ‘Fossil evidence exists for the transformation of a species’. No other examples are given. This is hardly convincing fossil proof for molecules-to-man evolution!

Conclusion

Ridley’s evidence for evolution evaporates when viewed through the microscope of information theory. For example: sickle cell anemia involves a loss-of-information mutation,¹⁰ as does bacterial antibiotic resistance.¹¹ Even the usual textbook story of the peppered moth demonstrates only gene shuffling of pre-existing traits without any new information added to the genome, and this is without the recent evidence that the photos were staged.¹²

The trade secret of paleontology is that the stratigraphic record demonstrates only stasis.

When this record is viewed through the lenses of information theory, it demonstrates trivial morphologic changes, no transitional forms of any type, and the outworking of natural selection on previously *created* traits which are viewed as they respond to post-Flood environments.

Ridley’s text can be summed up in one phrase: ‘Sell the sizzle, not the steak.’

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Photo by Jake McArthur

*The development of any eye poses a problem for evolution theory. The *Drosophila*’s compound eye requires 2,500 genes for its assembly. The number of genes involved in human eye (pictured) development is not yet known.*