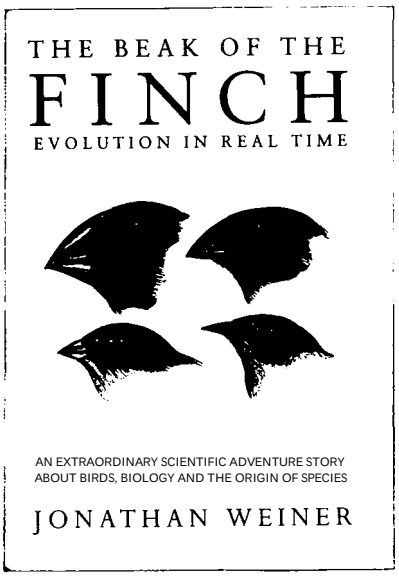
The Beak of the Finch: Evolution in Real Time



by Jonathan Weiner
Random House, 1994

Reviewed by Carl Wieland

Some years back, I was due to have a creation/evolution debate with a university academic in South Australia. Just before the event, I happened to be part of the crowd standing next to my opponent-to-be, a population biologist. Unaware that his creationist opponent was standing close by, he was busily expounding his bewilderment about having to defend what he 'knew' to be true.

He explained that he felt like an astronaut who had just returned from observing the earth from space, only to have to defend the planet's sphericity in public debate. After all, biologists like himself routinely 'see evolution', so what is there to debate?

By 'seeing evolution', he meant seeing examples of inherited changes in populations — but this demonstrates evolution only if the old straw-man argument is accepted that any such heritable change is fatal to biblical creation. Using the evolutionary 'tree' metaphor (see Figure 1), demonstrating genetic change (even to the extent of speciation) is only fatal to the old idea of the 'Linnaean lawn' (see Figure 2), not the 'creationist orchard' (see Figure 3) which has been a part of the modern scientific creation movement since its inception.[1-3]

There is a very heavy burden of proof on those propounding the doctrine that bacteria have self-transformed into palm trees and fish, and the latter turned into tigers and nuclear scientists. For one thing, it demands a natural process capable of generating vast amounts of new, bio-functionally significant coded information. To watch natural selection sifting and sorting through existing information, deleting chunks of it, begs the question of the origin of all that information.

Of course adaptation will occur in variable populations subjected to selection pressure. Plants with a mixture of genes coding for deep roots and shallow roots, if growing in an area where the climate is becoming more arid, will show this phenomenon. Those members of the population with naturally deeper roots will be more likely to survive to pass on their deeper-rooted genes, so in time the population will adapt to its conditions by 'becoming deeper-rooted' — utilizing the store of information **already present** in that population.

However, this process will occur regardless of whether the genetic information (variability) needed for it to take place arose in the first place by creation, or by some process of mutation/selection over countless ages. So a demonstration of such changes can of itself have no real apologetic value for the evolutionist.

The anecdote at the beginning relates very much to the subject of this book review. I can identify (in reverse) with the evolutionist's sense of bewilderment — how is it that, so many years on in the modern creation/evolution debate, intelligent, educated evolutionists have not grasped this simple point? How can they keep

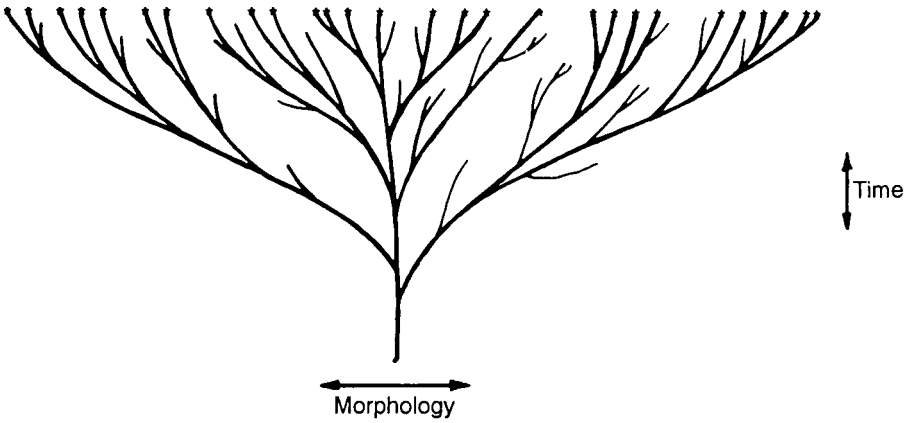


Figure 1. *The evolutionary 'tree' — all today's species are descended from the one common ancestor.*

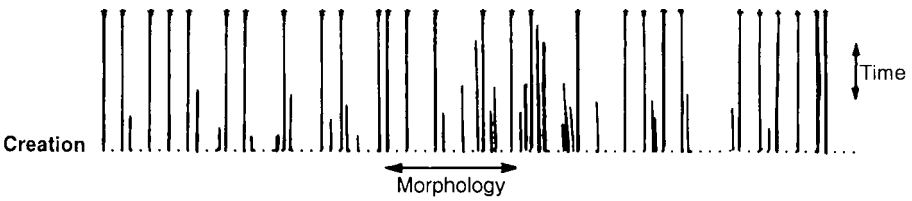


Figure2. *The Linnaean 'lawn' — the Genesis 'kinds' were the same as today's species.*

resurrecting the same straw man ('any inherited change due to selection proves that Genesis is wrong, Darwin was right — particles did become people')?

SEEING EVOLUTION?

The Beak of the Finch: Evolution in Real Time is consciously and deliberately a hymn of praise to evolution, a drawn-out celebration of what the author perceives as a logical deathblow to creationists, who are represented (I should say mis-represented) smugly and patronisingly. Without detracting from the author's brilliant and readable style, I believe that this is the key reason why the book has received near-religious adulation by science journalists and other reviewers.

The message is that now, for the first time, those foolish, bigoted creationists have no leg left to stand on — Weiner's book

> *'tells the extraordinary story of two scientists, Peter and Rosemary Grant, whose ingenious, meticulous and extended work in the Galapagos has culminated in the sight of evolution occurring before their eyes — not in fossils but in living, breathing creatures, Darwin's own famous finches*

We are told this book '*permanently alters one's view of nature and even of life and death'*.

None of what follows is meant to detract from the dedicated fieldwork of the Grants, whose incredibly detailed measurements of thousands of birds over a 20-year period on the small island of Daphne Major are a major contribution to the study of population dynamics and ecology. Others have demonstrated natural selection occurring before (although you might not think it from the hyperbole and fervour accompanying this book), but never with such precision and clarity. I think that their observations of sexual selection are of great importance, also.

EVOLUTION: MORE THAN SELECTION

What a pity that neither the researchers nor Weiner appear to understand the logical fact that, while natural selection may be an intrinsic part of a particular evolutionary model, demonstrating it does not **of itself** demonstrate the 'fact' of evolution — if by that you mean a one-celled organism becoming today's complex biosphere. This fact was apparently grasped by the renowned biologist L. Harrison Matthews F.R.S. writing in the foreword to the 1971 edition of Darwin's **The Origin of Species.** Discussing Kettlewell's experimental observations on the famous peppered moths, Matthews pointed out that while this beautifully demonstrated natural selection, or survival of the fittest, it did **not** show evolution in action.

The book has much of interest for creationist readers. It makes it clear, for instance, that despite the common myth, Darwin did not deduce his theory under the eureka-like inspiration of seeing the finches on the Galapagos. In fact, as Gould has pointed out,[4] Darwin did not know at the time that they were finches. I was also interested to read again of Darwin's experimental finding (with its implications for post-Flood biogeography) that garden seeds still sprouted after 42 days soaking in seawater.

Weiner recounts how Darwin was able to apply selection to breed pigeons so different from each other that if found by biologists in the wild, they would not only have been put into separate species, but even separate genera. This is of course a marvellous demonstration of the amount of variability built into each created kind, allowing it to respond to changing environmental pressures and thus conserve the kind. It also opens a window of understanding into how the intense selection pressures after the Flood could have acted on gene pools of rich variability to allow rapid speciation/adaptive radiation from the restricted number of land-dwelling kinds represented on the Ark.

NO NEW INFORMATION

Not only are all the varieties of pigeons still pigeons, however, but if allowed to interbreed they will revert to the common wild-type rock pigeon. There is no evidence that any truly novel, functional information arises *de novo* in such artificial selection — nor, one finds after reading this book, is there any evidence for this from the Grants' observations of natural selection, either.

Darwin's finches exhibit an unusually high degree of variability. This, coupled with the fact that the Grants and their co-workers were fortunate enough during their 20-year vigil to experience a severe drought and the very opposite, means that it is no surprise that they were able to document

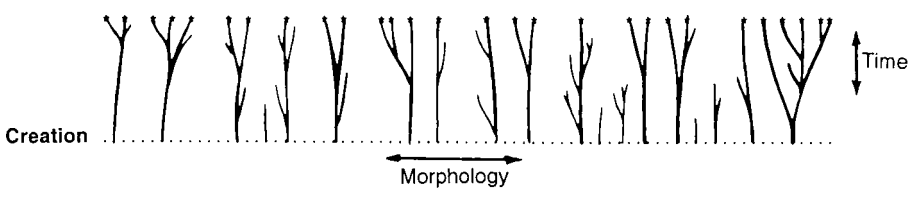
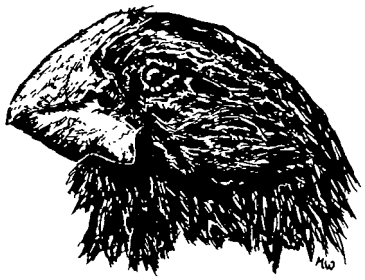


Figure 3. *The creationist 'orchard' — diversity has occurred with time within the original Genesis 'kinds' (baramin).*



some quite rapid changes under selection. When the drought brought a shortage of easily available small seeds, is it any wonder that the birds with big beaks survived better because they were the only ones to be able to crack big seeds, and so on?

In fact, as a 1992 article in **Creation** magazine (actually based on the Grants' work on the Galapagos finches) emphasized,[5] observations showing rapid selection/speciation are helpful to the creation model, which has only a relatively short time in which post-Flood adaptive radiation/speciation must have occurred.

FINCHES: NO NET CHANGE!

After all the 'hype' about watching 'evolution', one reads with amazement that the selection events observed actually turned out to have no net long-term effect. For example, for a while selection drove the finch populations towards larger birds, then when the environment changed, it headed them in the opposite direction. The author says concerning this sort of effect (also seen in sparrows) that '*Summed over years, the effects of natural selection were invisible'* (p. 108). So that when Darwin looked at the fossil record and found it *'static and frozen for long stretches'* (p. 109), this was the reason. Consider, he says,

> *'how much less visible these* [natural selection] *events will be in the strata of rock beneath our feet, in which the generations have been summed for many millions of generations.*'

Evolutionists have long argued the opposite — that evolution is invisible in the short term, but would become visible if we had enough time. Yet according to Weiner, we can see evolution happening in the (very) short term, but any longer and it becomes 'invisible'! The mind boggles at how evolutionists can be blind to this inconsistency.

Weiner quotes a researcher as saying that

> *'A species looks steady when you look at it over the years — but when you actually get out the magnifying glass you see that it's wobbling constantly.'*

Obviously, since macroevolution is supposed to be about long-term, directional change (even the creation/ Flood model requires more directional change than the Grants documented) such *'wobbling back and forth'* (fluctuation around a mean) over short time-spans, with **no net change** over longer time periods, is hardly supportive of the case for evolution. Yet instead of acknowledging this, the researcher goes on to say, *'So I guess that's evolution in action.'*

Most creationists would agree that Darwin's finches probably came from an ancestral pair or two (which were themselves finches), so the idea that some of the descendant species might hybridize, event to the extent of leading to a new species, is hardly threatening. The Grants not only observed such hybridization between species of finches which did not interbreed as a rule, but that under certain conditions the hybrids appeared to be fitter than either of the parent populations. I was surprised when the book hinted that here we were approaching the answer to the mystery of the origin of species. Perhaps the obvious needs to be restated; the mingling of two sets of pre-existing information can scarcely tell one anything about the ultimate **origin** of that information.

There is a particularly misleading sideswipe at creationists on page 216 in the section on DNA and genetics; we are told that if species were created as functional entities, the genes in each species would not change. We are then told that the genes in each generation are '*shuffled and cut . . . like a mammoth deck of cards'* — ergo, creation is wrong. Of course, the reshuffling of pre-existent information by such recombination neither denies original creation of that information nor confirms its naturalistic origins by Darwinian mechanisms. From a creation viewpoint, the 'deck-shuffling' achieved in this way by sexual recombination is an amazingly effective mechanism for maximising variability (without any *de novo* information having to arise post-creation). It enhances the ability of species to avoid or postpone extinction in changing environments, and assists the rapid filling of empty ecological niches (adaptive radiation), such as after the Flood.

MUTATIONS

The real key to the credibility or otherwise of macro-evolutionism is not natural selection, but the question of the origin of the information on which natural selection may act. In the current materialist paradigm, the only conceivable source of such information is mutation (random mistakes as the information on DNA is copied). Yet information theory, common sense and observation unite to indicate that randomness fails as a source of functional information. Thus it is no wonder that the section on mutations/ DNA is markedly fuzzy — almost skipped over in haste. A casual reader could gain the **impression** that random mutations have been involved in the changes observed by the Grants, but close reading reveals that there is no evidence for this at all. Nor is it likely in view of the rapidity of the changes, and the lack of net effect already discussed. The 'storehouse' of variation

is already there, allowing the populations to shift this way and that, as required.

What about the observation on page 217 that three out of three hundred bases ('letters') of the cytochrome *c* sequence are different in two of the finch species? I think these differences are indeed the result of mutations. However, such mutations are unlikely to have, historically, generated the raw material for the differences in the two finch species. They are almost certainly functionally meaningless or 'neutral' mutations, not expressed in the phenotype, and thus transparent to selection. Why? Cytochrome c is a crucial enzyme for life; any copying errors of functional significance (that is, in those stretches of gene critical to the function of the resultant enzyme) are likely to be lethal.

The probable course of events which gave rise to the current base-pair differences (which, because of the redundancy of the code may not have resulted in an amino-acid substitution, or if so, this has been in a non-critical segment of the enzyme, not altering its function) is this: selection operating on existing, functionally significant (created) genetic variation gave rise to the initial divergence of the populations. Because of their reproductive isolation, the populations were free to independently accumulate such 'neutral' mutations in the cytochrome c gene at varying rates and loci.

Towards the end of the book, the author seeks to cement his imagined Darwinian triumph with other examples of 'evolution' such as antibiotic and pesticide resistance. Farmers in the US Bible Belt who would oppose evolution, yet at the same time are spending increasing amounts on spraying their crops as insects become more resistant to pesticides, are treated with the bemused contempt deserved by such 'closed-minded fundamentalists'. Yet his attempts to provide further observations which deal death-blows to Genesis creation have the same logical and scientific weaknesses as the beak arguments. The reader is referred to a recent article in this journal on the subject.[6] Interestingly, Weiner shows in some detail how a mutational change in one particular bacterium (p. 260) gives a survival advantage — but the enhanced survival comes via a loss of information/function.

CONCLUSION

In summary, this book will reinforce the prejudices of the evolutionary faithful; it will delight the shallow-thinking evolutionist who has not bothered to think through or become informed about the matters raised by creationist biologists such as Lester and Bohlin, in their classic **The Natural Limits to Biological Change**.[7] Careful reading of **The Beak of the Finch: Evolution in Real Time** will reveal much to support the creation model, and nothing to dismay the discerning creationist — except frustration at the continuing, seeming 'wilful ignorance' displayed towards creationist biological arguments.

As a very polished, readable account of a piece of classic fieldwork demonstrating natural selection in the wild, the book is noteworthy. As an alleged empirical proof that Darwin was right about the origin of all things, it is easy to show that it fails completely. It never once comes to grips with the crucial question of the origin of biological information. No doubt creationists confronted by bright-eyed evolutionary disciples inspired by this tale of finches' beaks and straw men will end up feeling like astronauts debating flat-earthers all over again.

REFERENCES

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