



The Creation-Evolution Debate



Recent Developments

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Some Favorable Evidence for Evolution

- Old earth, some 4-5 billion years
- Initially no life
- Then just simple life
- Then the "Cambrian Explosion"
- Then fish, amphibians, reptiles, birds & mammals, apes, finally humans
- Similar biochemicals among living things
- Similar bone structures among vertebrates



So why doesn't everyone believe in evolution?

- Variety of reasons, depending on world-view:
 - Some have other sources of information besides science which raise questions; these are often religious.
 - But not all object for religious reasons:
 - Michael Denton
 - Dean Kenyon
 - Hubert Yockey
- Not all who have religious reservations think these are the decisive problems.

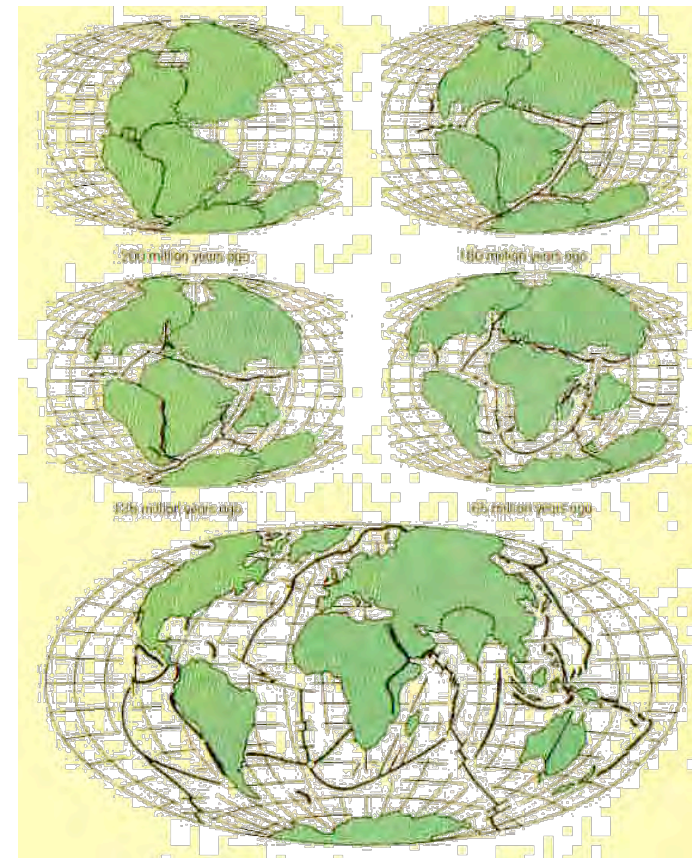
Could so many scientists be wrong?

- Science must finally depend on evidence, not on opinion, even that of experts.
- Thomas Kuhn, *Structure of Scientific Revolutions*, describes the sociology of paradigm changes.
- Consider the case of continental drift.



The Case of Continental Drift

- Till the 1950s, most geologists considered moving continents a wacko idea, since they could not imagine any mechanism to do this.
- As evidence piled up, a rather dramatic paradigm shift occurred, even though the mechanism has still not been fully worked out.



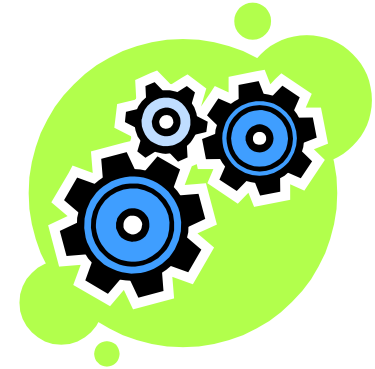
Some Problems for Evolution

- Concerned here with scientific problems, rather than philosophical or theological
- Concerned especially with problems facing naturalistic, rather than theistic evolution, that is, the sort espoused by:
 - Charles Darwin, *Origin of Species*
 - Richard Dawkins, *Blind Watchmaker*
 - Daniel Dennett, *Darwin's Dangerous Idea*

Some Problems for Evolution

Will deal with two main problems, which include various sub-problems:

- (1) Problems with generating the observed level of order, given only random events and selection for survival to produce this
- (2) Problems with the observed fossil record compared to expectations



Problems Generating Order



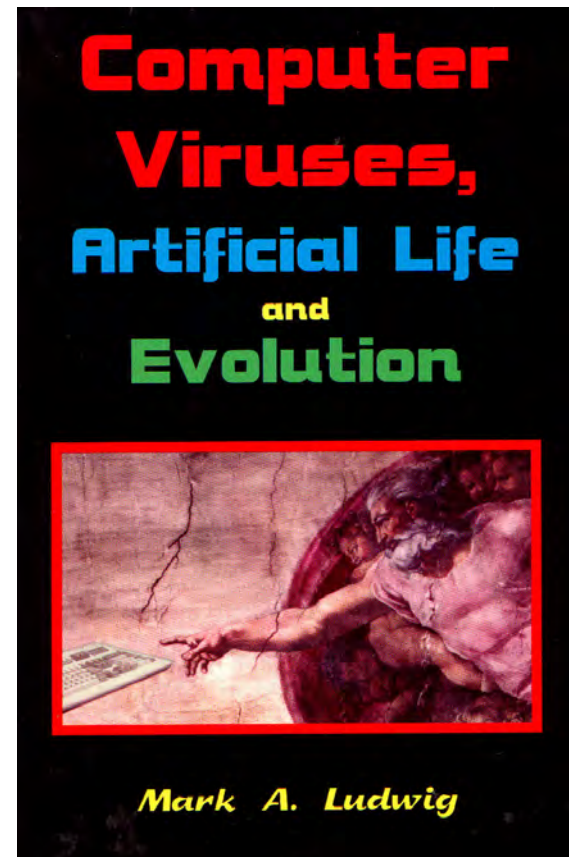
Using Merely Random Phenomena
Selected for Survival

The Origin of Life

- Mutation & natural selection will not work until there is something capable of reproducing for them to work upon.
- The minimal complexity of self-replicating automata is beyond the capability of chance over the entire history of the universe.

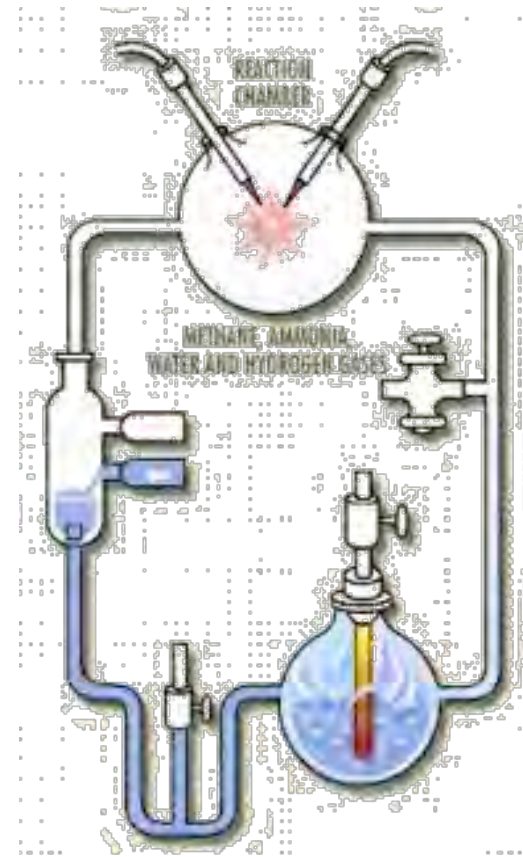
The Origin of Life

- Computer viruses are the closest things to life that humans have created.
- Even the simplest of these are far too complex to form by chance.



The Origin of Biochemicals

- Stanley Miller's famous experiment is just a very small first step.
- Functional proteins have over 100 amino acids each, in very specific order.



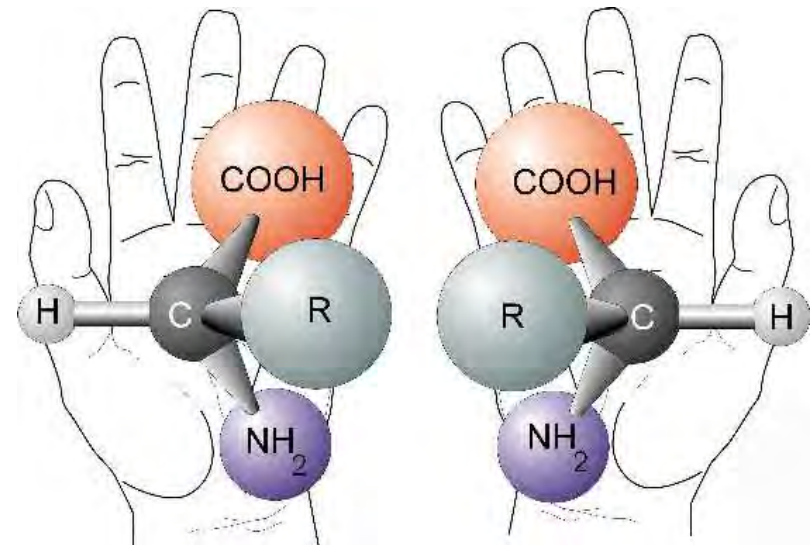
The Origin of Biochemicals

- Making DNA & RNA is far harder.
- These require a number of different environments.
- To date they have only been produced using considerable intervention by the experimenter.



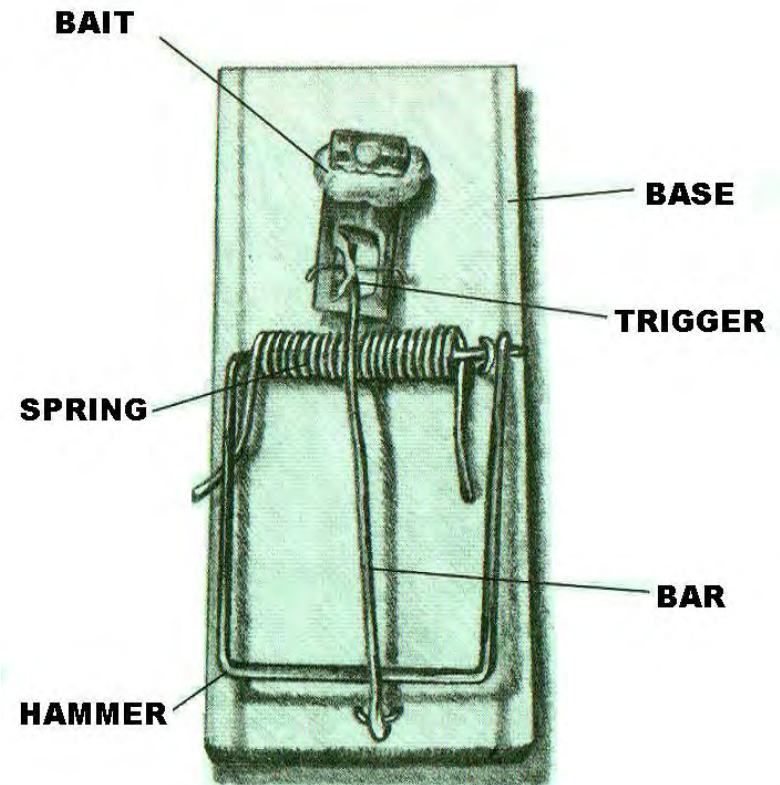
The Problem of Handedness

- The amino acids in living things are left-handed.
- The sugars in DNA and RNA are right-handed.
- Undirected chemical processes produce equal numbers of left- and right-handed.



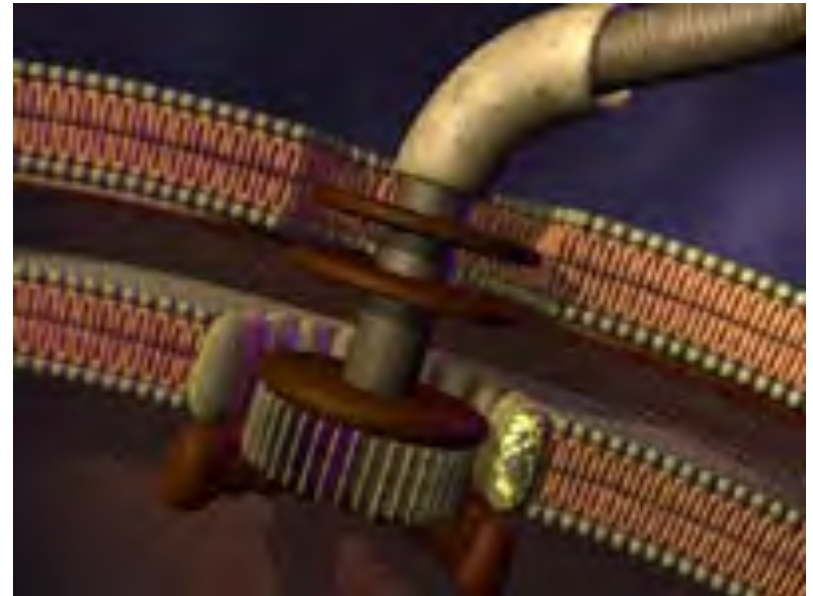
Origin of Chemical Processes and Complex Organs

- The problem of large "minimal (irreducible) complexity"
- What is "minimal complexity"?
- Example:
 - A mouse trap
 - Must have all (irreducible) parts to function



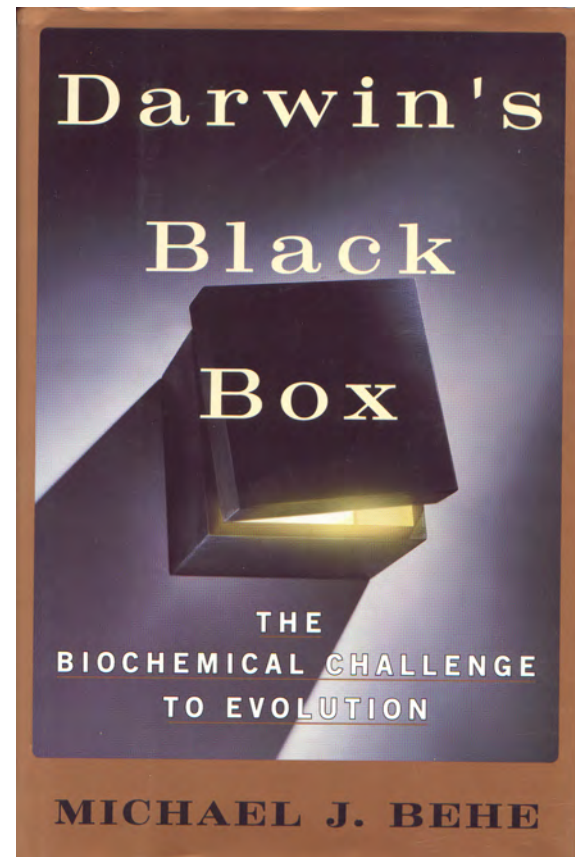
Problem of Processes & Organs

- How build a system that requires many features working together to have any function?
- Example: the rotary motor in *E. coli* flagellium



Problem of Processes & Organs

- Other examples:
 - Blood clotting mechanism
 - Intra-cell transport
 - Vision
- See Michael Behe, *Darwin's Black Box*





Problems with the Fossil Record



Given only purely natural causes

The (Relative) Lack of Transitional Fossils

"The extreme rarity of transitional forms in the fossil record persists as the trade secret of paleontology. The evolutionary trees that adorn our textbooks have data only at the tips and nodes of their branches; the rest is inference, however reasonable, not the evidence of fossils."

Stephen Jay Gould

Natural History 86, #5 (1977): 14

The (Relative) Lack of Transitional Fossils

"Well, we are now about 120 years after Darwin... Ironically, we have **even fewer** examples of evolutionary transitions than we did in Darwin's time. By this I mean that some of the classic cases... have had to be discarded or modified..."

David Raup

Field Museum Bulletin 30 #1 (1979): 25

The (Relative) Lack of Transitional Fossils

"Despite the detailed study of the Pleistocene mammals of Europe, not a single valid example is known of phyletic (gradual) transition from one genus to another."

Steven M. Stanley

Macroevolution: Patterns & Process (1979), 82

The (Relative) Lack of Transitional Fossils

- Notice we say 'relative' lack.
- There is no need to argue that there are no fossils which might be transitional.
- The problem is that Darwinian 'Blind Watchmaker' evolution has only a random walk to cross gaps.
- But the fossil record looks like the transitions are sudden.

What is a 'Random Walk'?

- A movement in which steps are taken in random directions, and often of random length.
- Distance covered = average length of step times **square root** of number of steps.



Fragmentary Fossil Record?

- Darwin (& many since) argued that the lack of transitions is due to the fragmentary nature of the fossil record.
- But there are nearly $\frac{1}{4}$ billion fossils collected and housed in museums.
- How detailed a picture can one construct with $\frac{1}{4}$ billion pixels?

Fragmentary Fossil Record?



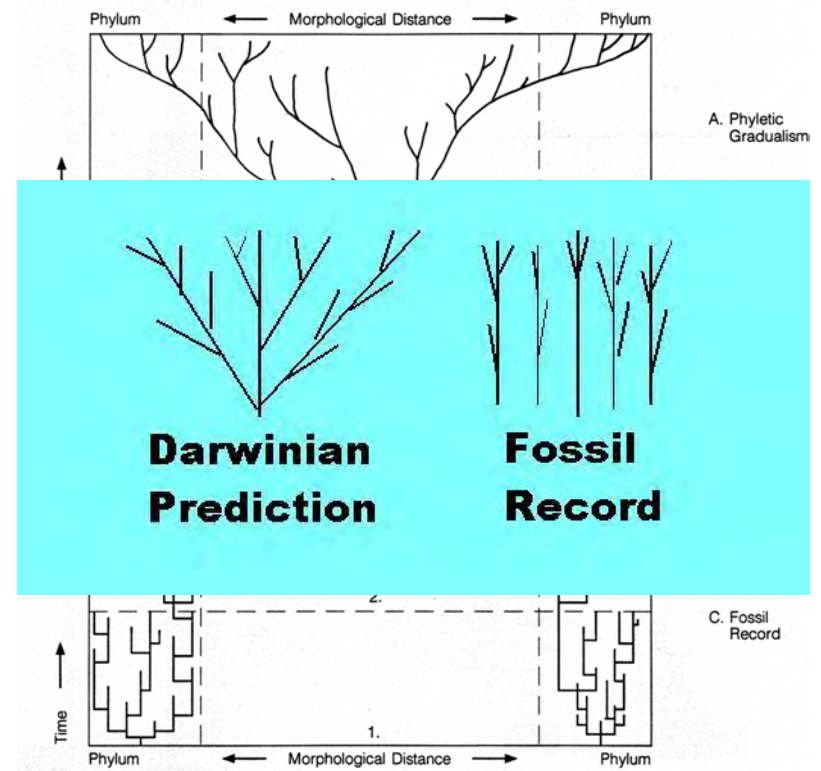
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The 'Shape' of the Fossil Record

- Darwinism predicts a tree of life formed by divergence of species into genera, etc., with the largest differences last.
- The actual data shows the largest differences first, at the Cambrian Explosion.



Effect of Small Populations

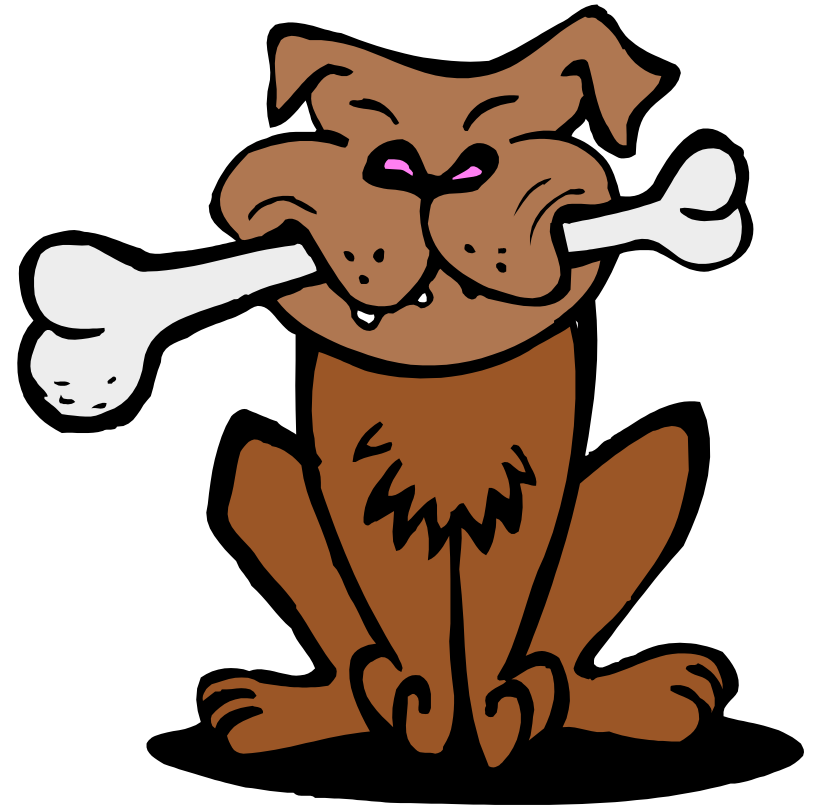
- A particular mutation is more likely to become dominant in a small population than a large one.
- This is used by Darwinists today to argue that all the significant transitions took place in small populations, so we would not expect them to show up in the fossil record.

Effect of Small Populations

- But for transitions across the upper levels of the biological classification system, many mutations would be needed, probably 100s or 1000s.
- The chance of getting 5 (or 10) mutations of the right sort in a population varies with the 5th (or 10th) power of the population size, so large populations are heavily favored.
- This more than cancels out the benefit of a small population.

Biological Classification

- Kingdom: Animals
- Phylum: Chordates
- Subphylum: Vertebrates
- Class: Mammals
- Order: Carnivores
- Family: Canidae
- Genus: Canus
- Species: familiaris



Punctuation

- As Gould, Eldridge & others have noted, the fossil record typically shows sudden transitions to new forms rather than gradual ones.
- Geneticists have not been able to figure out how such transitions could occur.
- This does not favor evolution as an undirected process.

Stasis

- Another feature noted by Gould & others is that living forms (after appearing suddenly) typically remain about the same until they become extinct.
- This suggests mutation & natural selection is basically a conservative process rather than an innovative one.
- This is confirmed by computer simulation.

'Islands' of Function

- Living organisms & the fossil record suggest that each living thing is surrounded by many alternative designs that won't work.
- Undirected evolution must assume all these "islands" are "land bridges" or they are close enough that one mutation can jump the gap.



'Islands' of Function

- But how does one reach new innovations?
 - 2- to 3- to 4-chambered heart?
 - Push-pull lungs to flow-through lungs?
 - Black & white to color vision?
 - Legs to wings?
 - Scales to feathers?
- Many such items have no intermediate forms, and numerous coordinated changes would be necessary for each to work.

Conclusions

- Problems Generating Order
 - Origin of life
 - Origin of specific biochemicals
 - Origin of processes & organs
- Problems w/ the Fossil Record
 - Relative lack of transitional fossils
 - Shape of the fossil record
 - Inadequacy of small populations
 - Punctuation & stasis
 - Islands of function

Conclusions

- If you are determined to hold onto a world-view in which there is no God, undirected evolution must be your explanation, no matter how badly it works.
- Consider for example this remark by noted evolutionist Richard Lewontin:

"We take the side of science in spite of the patent absurdity of some of its constructs ... in spite of the tolerance of the scientific community for unsubstantiated just-so stories, because we have a prior commitment, a commitment to materialism. It is not that the methods and institutions somehow compel us to accept a material explanation of 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."
Richard Lewontin, *NY Review of Books* (9 Jan 97)

Conclusions

- If you are determined to hold onto a world-view in which there is no God, undirected evolution must be your explanation, no matter how badly it works.
- But if you admit these problems indicate a Mind behind the universe, then that Mind may have worked by natural processes or abrupt means.
- But having a God raises the question of what life is all about, and what I am going to do about it.

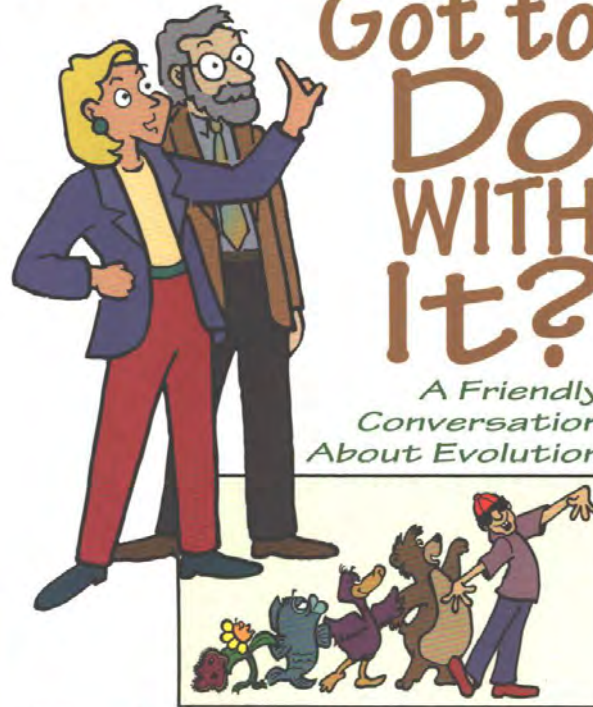
For Further Reading

- Michael Behe, *Darwin's Black Box*
- William Dembski, *Intelligent Design*
- Michael Denton, *Nature's Destiny*
- J. P. Moreland, *Mere Creation*
- Hugh Ross, *The Creator & the Cosmos*
- Hubert Yockey, *Information Theory & Molecular Biology*

For Further Reading

WHAT'S DARWIN Got to Do WITH It?

*A Friendly
Conversation
About Evolution*



Robert C. Newman & John L. Wiester
with Janet & Jonathan Moneymaker