

Evolution: What it is, how it works, where it's going, why it matters.

Fools rush in where angels fear to tread. Basically, that's why I'm giving this talk instead of leaving it to better men. I do not have a degree in biology; I have a sister with a degree in geology, and that helps. More importantly, I have a different sister with a unique story which brought her to research the family and friends of Darwin in a deep way that brought many things to light. She has been my line on various developments that I will be telling you about.

Please let me tell you a bit of her story.

It begins rather sadly with an abortion which took place many years ago in a lonely situation and, as is common, under the pressure of "friends"... In time, she came to repent of it, and then to pursue the pro-life cause, including becoming involved in rescue work all over Europe. And all over Europe, the response to rescues was the same -- a slap on the wrist, an admonition not to break the law, and no more.

Except in England.

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In this free and fair country, she was clapped into psychiatric prison, and the account of what she suffered there would make your toes curl. She wondered about that. Why was England out of tune like that? What could it mean?

Research revealed that almost all the abortion clinics in England were owned by a very small group of families, most of them closely related to the Darwin, Galton, and Huxley families, the families who had started the Eugenics society a hundred years before, and who

needed the legalization of abortion as a prelude to the state control of birth that seemed to them essential to their program of eugenics. They had worked hard for the passage of laws allowing abortion and wanted laws which would let them demand it.

It was their long term interest in eugenics at the state level that had set them working on the legalization of abortion.

The long tangle of the abortion movement is not my topic today, but it is the reason I have a researcher in my sister. Much of her work is found in a book by John Cavanaugh-O'Keefe, called The Roots of Racism and Abortion. You can find the whole text online.

In my talk today, I'm going to give you a taste of that book. I will define evolution and explain why it can't work the way it is most commonly thought to work. There is a different way that it can work, however, and this is well worth knowing. I would like to explain that, not in complete detail, but enough to make the possible process moderately clear.

Once you see how the process works, it will be easier to understand things about where evolution is going, or, really, where it is not going. Then I will close with a reflection that, as a community dedicated to our Lady, you may find very enjoyable.

Defining Evolution

Let's begin by defining evolution.

We don't want it to mean development, though it is sometimes used that way. I've changed a lot since I was born; that's development; nobody quarrels about whether that happens in the normal course of human life.

And it doesn't just mean "change over time". Lots of things change; no quarrel about that.

When we talk about evolution – and when we quarrel about it, which we do a lot – we are talking about the specific change in which it is claimed that life forms such as frogs developed into life forms like rabbits. No individual frog became a rabbit, but in some way, the frog kind of animal developed into the rabbit kind, and even into the people kind. We know that this cannot happen today; but the claim is that it did happen once.

We can put it another way: The concept of evolution is the concept that there is a single family tree of life, and that even though we know that each animal kind has offspring of its own kind now, somehow it was not always so.

For that matter, many say it will not always be so; a new species could always be around the corner of time. That is another dimension to the concept of evolution, and it is a distinct issue from my perspective. This is unusual in me, though not unique. Most people either think evolution never took place or that it is still going on. Only a few people separate the thought that it once took place from the idea that it is ongoing.

Some other things

Which brings us to consider that besides the single family tree of life, there are some other parts of the definition of evolution as Darwin used it, and we need to mention these.

Darwin not only said that evolution -- in the sense of new genera and species from the old -- had happened, he said it had happened ***by accident***.

We need to be quite firm about this; it is a point of philosophy. Nobody can ever say, scientifically, that something *is definitively* an accident. A scientist can only say that something is accidental with respect to a specific cause. When a child drops a spoon, it is an accident in relationship to any plan to drop spoons, but

it's a thing children do. It always happens. It is part of their experimentation with gravity. It's cause is curiosity, childhood. If the Mom is not prepared for it, she is just silly. It's going to happen.

Similarly, many car crashes are accidental with respect to any plan; but that doesn't mean that there is absolutely no cause: the glare of the sun, the confusion of alcohol, an overdose of sugar, a heart attack... Many accidents have causes of some sort; they're accidental with respect to conscious plans, but they are not absolutely accidental.

For Darwinians, evolution happens absolutely by accident, and I'm insisting that this is a philosophical idea. That doesn't make it wrong; but it's unscientific. A scientist can only say that evolution is accidental with respect to those causes he understands. Evolution is not an aging process; it is accidental with respect to age. It is not a tropical process; it happens in cold places as well as warm, if it happens at all. It is not caused by too much sun; it happens in dark places under the ocean. It is certainly accidental with respect to many causes; but a scientist cannot be sure he has examined all the causes in the whole wide universe.

This part of the Darwinian understanding of evolution is an error of philosophy.

We must also speak of neo-Darwinism, which is Darwinism after they admitted that Mendel had to be taken into account. Mendel had shown that inheritance was orderly, and this suggested that it could not produce a new species. Once the Darwinians acknowledged that Mendel's genetic research showed a perfectly orderly inheritance, they retrieved their accident theory by saying that small, accidental gene mutations could be the engine of evolution, and when these added up, you would have a new species. One or two muta-

tions would just give a new variety, but enough mutations would give a new species. That was their the idea.

Keep in mind that this idea of gene-by-gene evolution preceded the discovery of the double helix, of DNA. It's an idea of genes that goes back to Mendel, and far precedes the understanding of the genetic code as we know it today.

Three ideas

So now there are three ideas in evolution:

- 1) a single family tree of life,
- 2) and new members to that family tree coming along entirely by accident,
- 3) and those accidents are located as individual gene changes.

In response to these three parts of the idea of evolution, I am going to argue:

1) There are a lot of reasons for believing in the single family tree of life; I hope to encourage you to accept that aspect of the theory of evolution.

2) There can't be any scientific reason for believing in accidents.

3) As for gene changes... Well, they happen, but they won't work, not by themselves anyway, for new genera and species. We'll come back to that in a minute.

First, evidence for evolution

Before talking about how evolution might have happened, I want to say just a few words about the reasons people think that it happened, that is, the reasons that people think there is a single family tree of life whose members have appeared in sequence.

Before Darwin ever wrote his book, *The Origin of Species*, scientists were puzzling

about the geologic record, about something that eventually came to be called the "geologic column." The geologic column is a very simple concept, and a very important one. It's like this:

Suppose we got a very large drill bit and drilled a column of the earth, right under my feet, right where I'm standing, straight down five or ten miles below. There'd be the floor of the building I'm in, and the dirt below it, and then there would be sand perhaps, and then stone.

Actually, right here, it would be sand and then the typical basalt of ocean floor.

In other places, there can be many things.

Sandstone is most common; often there is limestone. Below that, maybe some coal, several layers of shale, alternating with more sandstones, and perhaps a granite from some ancient disturbance oozing through the bedrock. There might be gneiss, a compressed granite, or a schist, a compressed sandstone, and eventually we would probably find red or pink quartzites or sandstones, or just possibly one of wine-colored limestones. Such red layers are just about everywhere in the world, sometimes exposed, sometimes deeply buried. In any case, the stone wouldn't be the same all the way down; it would keep changing, telling the story of the weather here and the erosion here, right here in this location, during long past ages. Eventually, we'd get to the mantle, the goo that is too fluid to be called rock, and too hard and heavy to be called anything else. We call it magma when it comes out of a volcano. Actually, nobody has ever (as of 2008) drilled into the mantle, but we know it's there, partly because of how it comes out of volcanoes.

This sequence of rock types – from the top to the mantle – is called the geologic column, and in many ways it differs from location

to location, just as your New Jersey soil differs from my South Dakota loess. But while some things are different from one location to another, there are certain features in the geologic column that are similar in locations all over the world. So sometimes the geologic column means a local thing that's different as your children's eyes; sometimes it means this international discovery which is everywhere the same as all eyes are eyes.

Now, the geologic column is not an ancient idea; it is less than 200 years old. William Smith published his geological map of England in 1815; and that was the very first map of the underworld, and still less than 200 years ago.

Think, for a moment, of 1815. This was the youth of our country and the defeat of Napoleon; it was the beginning of the industrial revolution in England, and it was the generation immediately before Darwin. People were digging all over the place because they were building canals all over England, so the soils, the subsoils, and the sequence of deep rock layers were exposed for inspection. William Smith was the first to match things up, noticing that the soil layers had a regular and predictable sequence, but others quickly followed because it meant they could find coal, and that was money.

What these men saw was that the soil – or rather the rock – in one place ten feet down was the same as in another place 100 feet down. Halfway between, that formation would be 55 feet down, and – starting with William Smith – they began to conceive of the earth as being composed of layers that reached for miles and miles; they began to see the entire land – half of England – as having been tipped and warped so that the surface in one place was in the mines of another, and in between, that same rock type was buried half

as deeply as in the mine. And the other half of England was tipped the other way, with the warm springs of Bath between.

Not only the stones were exposed; men noticed and collected the fossils in the rock types, in the sandstones, in the shales, and especially in the coals and limestones. A pattern emerged. The fossils in the column were not evenly distributed by type. As soon as you got a good way down, you found only fish fossils, never land animals of any kind. Moving up from the marine fossils, the first fossils of land animals were all sorts of amphibians and reptiles; no mammals at all. And when you got to the mammals, there were all sorts of strange critters, judging by their bones. Only in the uppermost layers did men find fossils of the animals they could clearly recognize.

It was this fact that made people think that the various forms of life had not all been created together, but had come to inhabit the earth in a specific sequence. Not only that, but the simplest ones came first, the trilobites and ammonites, and the complex ones only later. Could this sequence be a complete accident? Or did it mean that the simplest ones were first and their offspring gradually accumulated layers of complexity?

Mind you, even the simplest of animals is incredibly complex, but still, the hippo seems a step or two up from the flatworm or the algae; nobody really doubted that.

In any case, the idea of every animal type being created in a single week was hard to square with the fossil record. At first, the Flood was invoked, but it really didn't explain the sequence. Things in a flood just get all mixed around. If the sequence were an accident of the flood, it should not have such clear and distinct layers. But if it represented a sequence of ancient worlds, very different from today but

also different from each other, then what? Had God – or mother nature – changed the rules? You can't get pigs from fish nowadays. Was it once possible?

Darwin said you could do it if you took it in small enough steps, imperceptibly small steps like those Escher paintings where fish become birds and so forth. Darwin was quite sure that evolution, this gradual change from one species to the next, would be discovered to be ongoing.

But the fossil record does not show imperceptibly small steps. It shows jumps. There's a nice little fish, and, "Ping!" – there's an amphibian. Oh, we have a few lungfish, but we don't have a whole fossil layer of lungfish between the fishes and the amphibians. It's not that way.

How it happens – or, doesn't

In fact, as we now see, it couldn't be that way. Changes from one species to the next can't go gene by gene accumulating over the ages until enough genes make a big enough change. A gene will change the length of your nose, the color of your eyes, the dimple in your chin; it won't make you turn into an elephant or a monkey or even a chimpanzee. It won't do this for a very simple and definite reason:

Genes govern the building of the proteins that build our body, but they don't hold the main blueprint and they don't schedule the building process; that belongs to chromosomes. For this reason, we find that when there is a new species within a genus, there is a new chromosome count, and this, in material terms, is the new building plan.

Now the odd – the hard – thing about new chromosomes is that you need them for a new species, but once you get one, you can't breed

with the old species. No matter how many genes you have in common, if you have a new chromosome, there can be no mating except with a creature who has the same new *chromosome*. The very few examples we have of mating between creatures with different chromosome counts -- horses mating with donkeys are an example -- generally result in sterile offspring, such as the mule.

So we see the geologic record pointing to the animals that lived before mankind, and to the fish that lived before the amphibians, and to the ferns that lived before the daisies. And we see the genes that the early species have in common with the modern ones -- sometimes very extensive similarities. We even see chromosomal similarities that are indisputable.

But the bottom line is that new species have new chromosome counts. We humans have 46 chromosomes and the great apes have 48, and we cannot mate and neither could the very first man and woman who had 46 while all the simians around them had 48. You can't get here from there on the gene-change road, no matter how many tiny little steps you take and even if you had a billion years, which you do not.

(Be the time the neo-Darwinians came along, the universe was looking to be billions of years old, and they thought they had a lot of time to work with, but it's not enough. That is, the age of the earth is not long enough for accidental gene-by-gene changes to produce hippos from flatworms.

Notice: this problem of moving from one species to the next is not just a "missing link" from apes to men, but rather all the animal types who cannot reproduce with each other have different chromosome patterns, not just different individual genes. So the evolutionary question – for the natural scientist seeking

natural causes for natural events, which is his vocation, – is this: how can you get one species to produce another species – in an orderly natural way, and quickly, so the fossil record just jumps, every time.

Well, first off, you just about need to use an asexual reproductive system. With asexual reproduction, one mother can have several highly unusual offspring without needing to find a **matching highly unusual** (can you hear how hard this is going to be -- matching highly unusual) father for them. With asexual reproduction, the mother only needs to have one chromosomal change in her germ plasm; she can double it into a new chromosomal pair when she is ready for reproduction.

I'm going to explain how this works in a minute, but for now I only want to say that sex won't work, especially it won't work "by accident" because a change in a whole chromosome is pretty drastic, and getting the same drastic accident to take place twice is just not credibly an accident, still less so when you have to posit this type of paired accident for every species on earth. A few moments' consideration will show you bad it is.

But notice this: A single extra chromosome completely changes the way an organism grows. It changes the blueprint. To give an idea of what I mean, I sometimes say that the difference between a monkey and man is that we spend more time growing our heads, and less time growing our tails. A lot of the genes are the same, but the schedule of growth is different. I don't mean to be irreverent; of course the big difference is our immortal souls, but these cannot be measured and so are not the subject of study in the natural sciences.

Anyway, to continue: we are looking for a chromosomal change in the germ plasm; we want to start a new line of animals that grows

differently. But chromosomes aren't just blobs; they are as different as eyes and noses.

And let me say it just once more before moving on: even if a male has a chromosomal change in his sperm cells, how is he to find a female *in the same* generation, *in the same* location, who *accidentally* has the *same* chromosomal change *in her egg cells*, so as to match up? It is quite a stretch!

How it happens

But all females – even in the species that ordinarily reproduce by sexual means – have an asexual moment. During meiosis, which is the way that germ cells divide at the point of their individual sexual maturity, cells reproduce their chromosomes and then divide until they have half the species number of chromosomes – 23 for humans, instead of 46, 24 for the other great primates, instead of 48.

If a female primate were to have a chromosomal anomaly early on in the formation of her germ line, so that in some way, for example, two of her chromosomes were folded into one, she herself would still develop exactly as expected of her species. Changes in germ plasm do not affect the growth of an individual. Only when she went to mate would there be a new possibility.

Mind you, she would have 47 chromosomes in the cells of her germ line.

[Just an aside: In case you are wondering, this would *not* be not the 47 that we occasionally find in children with trisomia who are unable to develop in a healthy manner.]

It would be a 47 consisting of 24 ordinary species chromosomes, and then 23 more of which 22 were normal to her species and one was a new entity. Such a cell could never develop at all in her body; it would be rejected. But during meiosis, the chromosomes in her germ

plasm would separate so that she could have two egg types – one type with 24 chromosomes ready to pair like her ancestors, and another type with 23 chromosomes and no chance of finding a father. Attached to each egg there would be – as is normal – a polar body with the same number of chromosomes; this polar body is prepared to take off when the sperm come.

As we have said, the female with these strange eggs can hardly expect her 23-chromosome egg to be fathered by a male with a matching 23-chromosome set; it is just too improbable. But a single event of parthenogenesis (I'll explain that in a moment) will suffice to launch the new species. This new species will appear in a single generation without being able to mate even with its nearest cousins. The mother must, indeed, have at least two of the new offspring, one male and one female.

What is parthenogenesis?

You probably had this word in your biology book, but it is not common, and not an important topic, and it has too many syllables anyway. Parthenogenesis is simply the production of offspring by an unmated female in a species that normally reproduces by sexual means. Sometimes a male provides sperm that enter the egg and initiate development but then back out without entering the nucleus. They therefore make no genetic contribution to the offspring. Sometimes there is no male at all. In the lab, development can sometimes be initiated by electrical stimulation.

Either way, once development begins, the polar body re-enters the nucleus of the egg cell and this is what provides the full complement of chromosomes. Even if the chromosome pair number is different from the mother's number, the new creature will develop so long as it has a set of paired chromosomes that describe a

viable body plan.

Sounds like magic. But the reality is that the geologic column points, and has always pointed, to the sudden appearance of new species. Remember all those lungfish that I said were missing? We have lungfish, but they don't seem to be the "missing link" between fish and amphibians; they are only the little note that says, "Oh yes, the lung idea can be grafted onto the fish idea. That's all provided for."

But it isn't really the lungfish themselves that got us the amphibian; it's just the lung idea, the lung potential in the germ plasm, which was always a possibility.

Semi-meiosis

Actually, there is no consensus about how new species come into being; that is, we don't know *how* evolution happens. Darwin's proposal for the origin of species -- tiny changes accumulating -- doesn't really work. We think evolution happens -- or happened -- as I said, because of the geologic column and for other reasons having to do with molecular biology, but the proposition I have just described, which is called the semi-meiotic hypothesis, is the only idea that has been offered as a way to get around the impasse with genes since it has become clear that genes cannot be the engine of evolution. Semi-meiosis was first proposed by John Davison, of the University of Vermont, and for a short time in the 80's, there was a flurry of publicity. Then silence, and as a reward for his labors, he was frozen out of his job.

Semi-meiosis was not proved wrong. It was not attacked. It was simply side-stepped. It wasn't Darwinian. It was heresy. It was natural, but it wasn't accidental, and it cut out that long train of transitional species, which the Darwinians are so much in love with.

Where it's going

And that was not all.

John Davison said something worse.

He said that evolution was over, which is the very nadir of all no-no's. He said that A.S. Romer had shown, not meaning to, that evolution was over for the fishes practically 300 million years ago, maybe more – that they had produced little of note among themselves since 50 or 60 million years after they gave birth to the amphibians. It didn't matter whether you thought the amphibians were their offspring or not; the fact was that the fishes had shut down, in terms of original design work, long ago. If evolution was ongoing, it had abandoned the fishes.

Not only the fish! The amphibians had shut down in their turn, within 50 million years of the appearance of the reptiles.

And then guess what? The reptiles lost their creative edge some while after the birds and mammals came along, and most of the mammals had lost their edge 30 or 40 million years ago. Even the prolific insects had dropped out of the race by then. The primates were the only type of creature that had done anything really new, really evolutionary, in the last 30 million years, and the last thing to come along was us. I mean, we were the last of the primates.

Actually, the evidence for this was contained in an old chart which was supposed to be Darwinian and which did support the idea of a single family tree of life, but which pointed the way all the deepest evidence had been pointing for most of the 20th century: to evolution as a series of dead ends, and finally to the end of evolution.

*** Look at the chart of vertebrate development.

Maybe evolution has no purpose; maybe it's all an accident. Or maybe it is directed to the creation of man. In either case, it's over; that's the clear message of the evidence; and the last thing it did was us; that's the fact.

Look at the chart of vertebrate development. Does it look like a random scramble of changes? Is there no sense of direction? Does it ever even do something so simple as go backwards? If every old type of vertebrate has lost its evolutionary creativity, does the chart suggest that this will be regained?

As long as you think evolution proceeds by gene changes, you will naturally assume that it continues because gene changes continue, and gene changes do not disrupt mating; they are too small to matter. They can be passed on if they are good; they can even be passed on if they are bad, especially if the bad part comes after the age of mating. That's all.

But if evolution proceeds by gene changes, why does the geologic column not show the gradualism that should follow? And why aren't the fishes still producing new families, new genera, new species? The whole phylum of trilobites that dominated the seas for 250 million years died out – why didn't one of the fish families devolve them back into existence?

They can't, that's why. Somehow, evolution is a one-way street. In this, it is like the development of a body. The first cells -- everyone knows they are called stem cells -- can go any direction; they are ancestral to all sorts of tissues; but the mature tissues of the body can only go in a few small directions based upon their limited repertoire of scripts. Evolution is like that. Once there was a frog that could claim elephants and squirrels for his progeny; now all the frogs can do is reproduce other frogs, and only their own species at that.

Something has happened. If you read

books like Genome, you get an idea of why evolution cannot go backwards, but whether or not you see why, it's just that way. We might be able to engineer a dinosaur, just as we might be able to use adult stem cells to grow various tissues, but it will take all our cleverness. It won't happen by accident. It never has, not for millions -- hundreds of millions -- of years.

Darwin thought that evolution was the accidental production of an endless array of new forms. The record indicates that the array is not endless. Although new varieties, which depend only on gene changes, continue to turn up, new species do not. And if this is ambiguous because the definition of species is unclear, then at least, we can say -- my source here is John Davison -- that there have been no new families except for a few mammals for 30 million years. The pattern is clear: if evolution is not completely over, it is largely over. Only one species can possibly be considered to be potentially able to go another step because only the most recently evolved group ever takes another step; if evolution is going anywhere, it is only with our offspring.

What a thought!

Who cares?

So why am I the one telling you these things? Shouldn't the Darwinians be happy that there is now a natural way for their single family tree of life to be generated? Why don't they applaud and crown John Davison with a laurel wreath for finding the answer to the Darwin's burning question, "What is the origin of species; how can the new be born from the old?"

I hesitate to impute motives to others, particularly sordid ones, but there is a political point at stake in Davison's work, and it is an extremely important one to understand. It has to do with the idea of transition species, and

this touches the other philosophical issue that makes Christians so deeply, desperately unhappy with evolution.

The bent ones

You see, if evolution happens gene by gene, then -- point of logic here -- there must once have been a vast population of half-men, the transitional community between ourselves and our primate ancestors. From this it also follows -- as a point of logic -- that mankind is different from the animals, not by a discontinuous bump -- here is the first man! -- but only by degrees.

It gets worse. If men differ from animals only by degrees, then it may reasonably be concluded -- as a point of logic -- that some men are more human than others. For the Englishmen around Darwin, the men who founded the Eugenics Society, there could be no doubt about this last proposition -- some men are more human than others, and in particular, English men are more human than others. Certainly more human than the Irish, whose racial inferiority could be deduced from their very faces: broad, coarse, and ugly.

Nor did it stop there in the white neighborhood. Evolution step by step must mean evolution from the races with dark skin and eyes -- like monkeys -- to the those with light skin and hair like the English. Point of logic.

Many of you will have heard of the Scopes trial, in Dayton Ohio in the 1920's when an American high school teacher was sued for teaching evolution. The ACLU came to his rescue in the name of science... blah, blah, blah, and the myth goes on.

The crucial piece left out of the myth is that the biology text in question said not merely that we belong to a single family tree of life but that the white race was superior to the negro on exactly the grounds I have just ex-

plained. Specifically, it taught that the human race had evolved from the apes (or monkeys or chimps; it doesn't matter) step by step, through the black races, then the lighter yellow and red races, to the ultimate human race, the superior race, the whites. It was further believed that intermarriage between the races could cause the white race to devolve, and the entire race of humanity could slip down into being apes again. If we wanted a strong country, we had to avoid this.

When William Jennings Bryan prosecuted this case, his concern was not that the Bible must be upheld in every literal statement about the origin of man and the earth, but that the fate of a nation could be disastrous if its youth were taught that they would improve their national strength by preventing the participation of a specific ethnic group – the negroes in this case – in its future.

Racism was considered *scientific* by the Eugenics Society -- the little club founded by the Darwin, Huxley, and Galton families -- as also by Hitler who received political and financial support from their ranks. Darwinism -- Darwin's idea about evolution -- was perceived as the proof that racism was scientific and truthful and was justifiable.

Church reservations

Darwinist gradualism was repeatedly condemned by the Church, but the public response was a continual reminder that the Church had not done very well by Galileo, and could not be trusted to be scientific. The drumbeat never let up, not when the English finally agreed to fix their calendar as the Catholics had done 150 years before at the instigation of the very scientific Church, not when they reflected on the execution of Lavoisier by the atheistic French Revolution, and not when the Pope Leo XIII ordered the publication,

at Vatican expense, of every single work that Galileo had ever written. The relentless myth was that the Catholic Church was anti-science and that true scientific and human progress could only come by ignoring her.

So the Church fought the gradualist idea of Darwinism, but the evidence for a single family tree of life was very great, and no sufficiently strong voice was raised to separate the single family tree from the gradualist/accidental concept.

Even now, the idea of incremental humanity is not dead. It is no longer PC to consider the dark-skinned peoples inferior, but the issue of abortion is the same: is humanity something that you have in its fullness right away with life, or is it something that you accumulate little by little, so that some have more than others, and some have so little that it's not really murder to kill them?

This is the issue that keeps evolution hot.

What matters

It really doesn't matter -- theologically -- whether God made our bodies – the first human bodies, that is – in a momentary burst of creative action, molding clay by the seashore, or through the instrumentality of his creative act in other bodies that are not human; we as Catholics are free to believe what seems true in this regard. In that sense, evolution as a single family tree of life is not an issue that need divide us.

But we are not free to believe that some people are more human than others. Inasmuch as this *seems to be* and *has been promoted as* the logical consequence of classical Darwinism and also of neo-Darwinism, it represents a danger to our faith, -- and to our charity -- and it is not a danger that is wholly overcome by affirming that God has created our individual souls. The shadow of the half-

men in that ever-present icon of human evolution – the bent figures between the ape and the free-standing man – always mock our faith affirmation that we are all equally the children of our heavenly Father, and our children are, all of them, human.

How different it all looks when we can confidently assert, as a point of science, that those bent figures are merely imaginary and that neither the geologic column nor the evidence of chromosomes supports the idea of semi-humanity that they represent. Fully gradual intermediates do not exist between any of the genuinely new creatures on the geologic column and their putative immediate ancestors; genomic research indicates that the reason for this is that species-changing, genera-changing, family-changing, order-changing, class-changing, phylum-changing evolution cannot proceed in gradual steps. It always means a new chromosome pattern, and that is much more drastic than a point mutation in one gene. It is a new body pattern, and it produces an individual who cannot mate with his cousins.

One more thing

I passed rather quickly over the concept of parthenogenesis. I can draw out the semi-meiotic hypothesis for you in more detail, and you can read John Davison online. I recommend you do so. But do you understand the word parthenogenesis? It is a Greek word; it means virgin birth, because it refers to conception without a father.

Now think about this...

Wouldn't it be the last laugh if it turned out that

the engine of evolution,
which has come to a halt,
had been parthenogenesis?

If it turned out that evolution itself, the very progress of the biosphere, and the very hammer of atheism, was a pointer, through virgin birth, to the last Virgin Birth, the one on which true human progress – the New Man and the New Adam – really does depend?

I mean, the Darwinian types are always saying they wonder what the next step in evolution will be. What if, instead of denying evolution, we were to say, "Well, logically, I suppose the answer must be sonship with Mary, the latest Virgin Mother."

