that evolution is true, and so, based on the false notion that humans must have evolved from apes, the fossil record is interpreted to support this erroneous framework. Hence, by definition, if fossil scraps with even the minutest indication of bipedal capability are found in the right locality and time zone, then it is an apeman; if not, it is an ape. It becomes akin to self-fulfilling prophecy, and hence it is no surprise that 'apemen' contenders from Africa will soon probably outnumber living apes there. In another tactic evolutionists construct a 'straw-man' of how, to them, God must have designed animals if He indeed was the Creator. This conveniently allows them to debunk their own 'created god', and then use this as 'further' proof of evolution. However, there is no logical reason why God could not have created different *kinds* of apes; and that these originally created ape *kinds* and their offspring possessed variation in anatomical and physiological features, including locomotion methods and abilities.

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## World record enzymes

*Jonathan Sarfati*

One vital class of proteins is enzymes, which are *catalysts*, i.e. they speed up chemical reactions without being consumed in the process. Without them, many reactions essential for life would be far too slow for life to exist. Catalysts do not affect the equilibrium of reactions, only the rate at which equilibrium is reached. They work by lowering the activation energy, which means decreasing the energy of a transitional state or reaction intermediate.

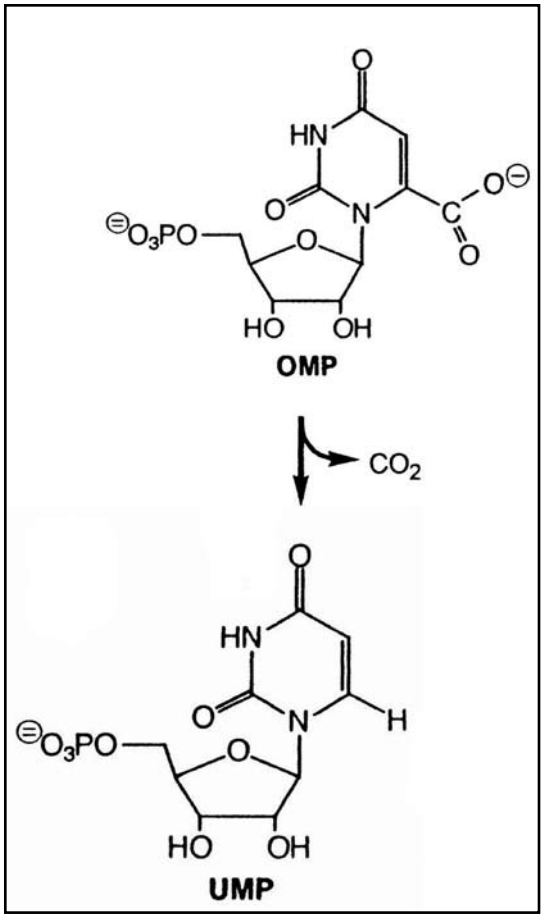
### Rate enhancement by $10^{18}$

Enzyme expert Dr Richard Wolfenden, of the University of North Carolina, showed in 1998 that a reaction '"absolutely essential" in creating the building blocks of DNA and RNA would take 78 million years in water', but was speeded up $10^{18}$ times by an enzyme.[1] This was orotidine 5′-monophosphate decarboxylase, responsible for *de novo* synthesis of uridine 5′-phosphate, an essential precursor of RNA and DNA, by decarboxylating orotidine 5′-monophosphate (OMP).[2]

The enzyme has a special shape, a *TIM-barrel*. This binds the substrate at the open end of the barrel, while protein loop movements almost totally surround the substrate. The enzyme has amino acid residues in just the right places to interact with the functional groups on the substrate. One lysine provides a positive charge to interact with the increasing negative charge as the substrate reacts, and provides a proton which replaces the carboxylate group at C-6 of the product. And the enzyme is structured so that some hydrogen bonds form and delocalize negative charge in the transition state, lowering the energy. Interactions between the enzyme and the phosphoribosyl group anchor the pyrimidine within the active site, helping to explain the phosphoribosyl group's remarkably large contribution to catalysis, despite its distance from the site of decarboxylation. Still other interactions hold the pyrimidine within the active site, which also contributes greatly to the catalysis, although it is far from the site of decarboxylation.

### Rate enhancement by $10^{21}$

In 2003, Wolfenden found another enzyme that exceeded even this vast




*Decarboxylation of orotidine 5′-monophosphate (OMP) to uridine 5′-phosphate (UMP), an essential precursor of RNA and DNA, by the enzyme 5′-monophosphate decarboxylase.*

rate enhancement. A *phosphatase*, which catalyzes the hydrolysis of phosphate dianions, magnified the reaction rate by a thousand times more than even that previous enzyme—$10^{21}$ times. That is, the phosphatase allows reactions vital for cell signalling and regulation to take place in a hundredth of a second. Without the enzyme, this essential reaction would take a trillion years—almost a hundred times even the supposed evolutionary age of the universe (about 15 billion years)![3]

### Implications

Wolfenden said:

'Without catalysts, there would be no life at all, from microbes to humans. It makes you wonder how natural selection operated in such a way as to produce a protein that got off the ground as a primitive catalyst for such an extraordinarily slow reaction.'[1]

Actually, it should make one wonder about the faith commitment to evolution from goo to you via the zoo, in the face of such amazingly fine-tuned enzymes vital for even the simplest life! And natural selection can't operate until there are *already* living organisms to pass on the information coding for the enzymes, so it cannot explain the *origin* of these enzymes.

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# A new candidate for Leviathan?

*Peter Booker*

Chapter 41 of the book of Job in the Bible describes a creature called Leviathan. Leviathan was massive and terrifying, and apparently could breathe fire. God describes Leviathan to Job, as an example of something which He created which is beyond mankind's ability to compete with.[1] A number of creatures have been proposed as candidates for Leviathan.

### Leviathan—*Tyrannosaurus rex*?

The massive size and terrifying teeth described in Job could lead one to propose that Leviathan may have been a theropod (flesh-eating) dinosaur such as *Tyrannosaurus rex*. However, verses 31–32 say of Leviathan:

> 31 'He makes the depths churn like a boiling caldron and stirs up the sea like a pot of ointment.
> 32 'Behind him he leaves a glistening wake; one would think the deep had white hair.'

This clearly describes an aquatic creature. Psalm 104:25–26 also confirms that Leviathan lived in the sea:

> 25 'There is the sea, vast and spacious, teeming with creatures beyond number—living things both large and small.
> 26 'There the ships go to and fro, And the leviathan, which you formed to frolic there.'

Clearly *T. rex,* which was land-dwelling, cannot have been Leviathan.

### Leviathan—*Kronosaurus*?

The book *The Great Dinosaur Mystery Solved*![2] suggests that Leviathan may have been something like *Kronosaurus queenslandicus*. However, there are problems with *Kronosaurus* (or its larger pliosaur kin, such as *Mosasaurus*) being the Leviathan of Job.

These extinct creatures were all wholly marine reptiles. Due to their great size, they would have lived in the deep ocean. They would not have been opponents for land-dwelling humans armed with swords, spears, darts, arrows and slingstones, which Leviathan was.

Verse 30 says of Leviathan:

> 30 'His undersides are jagged potsherds [broken, generally sharp, pottery fragments], leaving a trail in the mud like a threshing sledge.'

Pliosaurs like *Kronosaurus* had flippers and not legs, so they could not stand or move along on the land, and could not leave trails in the mud at the water's edge, as would, say, a crocodile.

### Leviathan—the crocodile?

Long-agers are offended by the notion that the Bible might be describing creatures which, according to their belief system, died millions of years before people appeared on the scene. So the identification of Leviathan as a still-living creature suits modern long-age tastes. (This probably also helps drive the common [mis]identification of Behemoth as an elephant or hippopotamus, rather than a dinosaur. However, the tail of these extant creatures can scarcely be compared to a cedar tree, as is the tail of Behemoth.)

The NIV has a footnote to Job 41:1 suggesting Leviathan is 'possibly the crocodile'. Crocodiles are normally associated with rivers and lakes, not the sea, as Leviathan is. However, some crocodiles (e.g. Australia's estuarine or saltwater crocodile, *Crocodylus porosus*) do spend time in the sea.

Like crocodiles, Leviathan had scales. Verses 15–17 in the KJV read:

> 15 'His scales are his pride, shut up together as with a close seal.
> 16 'One is so near to another, that no air can come between them.
> 17 'They are joined one to another, they stick together, that they cannot be sundered.'