

Other astronomers think Gray's critique of the 51 Pegasi planet deserves at least a hearing, and that oscillations like the ones he is invoking — if they really occur — could be a confounding factor in other planet searches. *'It raises an alarm bell of sorts'*, says Wolszczan of Pennsylvania State University. *'... it sort of suggests an alternative explanation'*, says Cochran of the University of Texas, Austin.

Gray admits that the phenomenon is puzzling.

We don't understand where it

comes from', he says. *'But ignorance is no excuse. Nature does what it does whether we understand it or not'*.

Precisely! In spite of the initial media 'hype', the 51 Pegasi planet could be the planet that never was, and several of the other new planets subsequently 'discovered' could likewise be figments of stellar oscillations. Not only should we remember that appearances can be deceiving, but pronouncements about scientific evidences are never final, because science is subject to change.

REFERENCES

1. Mayor M. and Queloz, D., 1995. A Jupiter-mass companion to a solar-type star. *Nature*, 178:355-359.
2. Walker, G., 1997. One of our planets is missing. *Nature*, 385:775-776.
3. Lin, D. C.N., Bodenheimer, P. and Richardson, D. C, 1996. Orbital migration of the planetary companion of 51 Pegasi to its present location. *Nature*, 380:606-607.
4. Walker, G., 1997. The Pegasi planet that never was ... *New Scientist*, 153(2071):15.
5. Glanz, J., 1997. Is first extrasolar planet a lost world? *Science*, 275:1257-1258.
6. Gray, D.F., 1997. Absence of a planetary signature in the spectra of the star 51 Pegasi. *Nature*, 385:795-796.

A. A. Snelling

Cope's Rule and the Fossil Record

There have been a number of 'laws' concerning evolution and the fossil record, which have been put forward and generally accepted in their time. One of these was Dollo's law, stating that evolution was irreversible.

Creationists would tend to exercise a high index of scepticism towards any law purporting to express a universal tendency in the fossil record, since they do not view it as a progression of vast time sequences, nor a record of biological evolution at all. Thus, it is no surprise to find that it is a long time since Dollo's 'law' was regarded as universally true by palaeontologists.

Cope's Rule (or Cope's Law, as it is sometimes referred to), however, is another matter altogether. Put forward by E. D. Cope in 1871, it states that within any particular lineage, the body size tends to increase with time. I recall being taught it several decades ago, and seeing references to it from time to time in the evolutionist literature. It has been stated authoritatively for more than half a century that it applies to all groupings of organisms — single-celled, multi-celled, invertebrates, vertebrates, marine and terrestrial.¹

It is regarded as one of the indisputable 'givens' of palaeontology, even among those who dispute

evolution. I recall hearing a creationist palaeontologist cite it as factual in the early 1990s. Of course, he would not have not viewed the fossil record as a long-time sequence, but he nevertheless assumed that Cope's Rule was a valid generalisation of the nature of the record. That is, if one viewed the fossil record from bottom to top as a time sequence (though representing rapid sequential deposition during the Flood), then there was a tendency within each grouping of organisms for the body size of the fossils deposited to get bigger in the upper layers, and hence this was something which needed to be explained within a Flood model.

Now it appears that Cope's Rule has failed its first serious test. In a major survey, David Jablonski of the

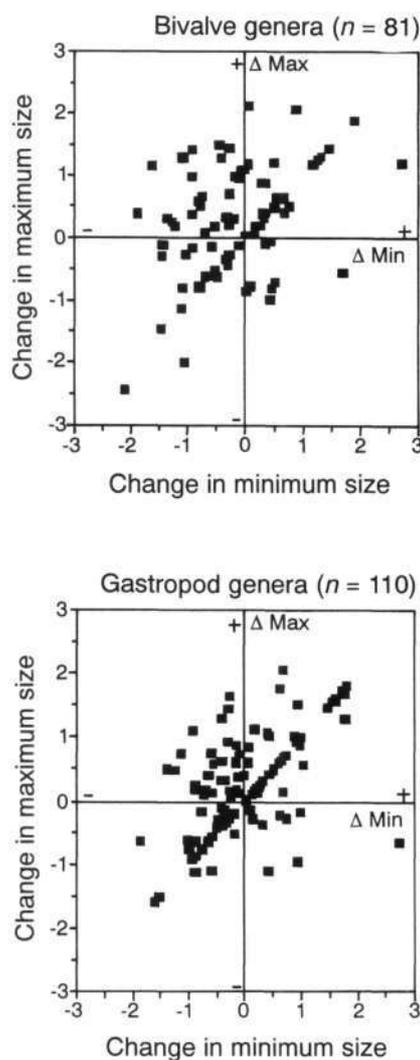


Figure 1. 'Evolutionary' patterns of size change in genera and subgenera of Late Cretaceous bivalves (top) and gastropods (bottom) supposedly over 16 million years. Sizes were \log_2 -transformed, so that, for example, an increase of unit 1 represents a doubling, and a corresponding decrease a halving, of body size. Δ max equals change in upper bound of adult size: Δ min equals change in lower bound of adult size (after Jablonski).²

University of Chicago studied nearly 200 gastropod and bivalve lineages of molluscs in North American Cretaceous rocks representing some 16 million years on the evolutionary time-scale.² Although the number of species was over a thousand, the analysis used assignments given to these organisms of the genus or subgenus category, which is valid since Cope's Rule refers to large-scale patterns.

The result showed that lineages showing a net increase in size (that is, with both the smallest and largest species within the grouping considered) were no more frequent than those showing a net decrease (see Figure 1). In those groupings where the largest species did increase in size, the smallest ones decreased, so that overall there was no tendency to increased size. In other words, overall,

increasing size is no more common than decreasing size.

Stephen Jay Gould, discussing these results in the same issue of **Nature**, refers to Cope's Rule as a 'psychological artefact', the tendency to see data we want to see and overlook contrary facts. He refers to the tendency to see progress where there is none, to see ourselves as the apex of evolutionary progress, and thus people have assumed that, in evolution, 'bigger is better'. (This is a favourite Gouldian theme of late, to emphasise the totally non-progressive, random nature of evolution, and to point out that in an evolutionary 'success' sense, we humans have been radically outcompeted by bacteria and algae.)

Theistic evolutionists should take particular note — leading evolutionary theorists are no longer talking about

trends towards increasing size (or indeed, by way of aside, towards increasing complexity) as demonstrable from the fossil record. Not only does this assist creationist apologetics, it also makes it ever more difficult to portray the evolutionary interpretation of the fossil record as somehow showing us 'God's progressive creative purposes'.

REFERENCES

1. Newell, N. D., 1949. *Evolution*, 3:103-124.
2. Jablonski, D., 1997. Body-size evolution in Cretaceous molluscs and the status of Cope's rule. *Nature*, 385:250-252.
3. Gould, S. J., 1997. Cope's rule as psychological artefact. *Nature*, 385: 199-200.

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Warrior Women and Golden Ants — Herodotus Vindicated?

Creationist literature documenting ancient accounts of encounters with allegedly 'extinct' reptiles has sometimes cited the report of the Greek historian Herodotus, who said he saw 'flying serpents' suggestive of pterosaurs in Egypt.

However, in spite of being called the father of history, some of Herodotus' accounts have seemed easy to dismiss as fanciful. After all, this is the same Herodotus who told the world that he encountered a race of warrior women which he named the Amazons, when he travelled north of the Black Sea in around 450 BC. Herodotus also claimed that there were large, furry ants that enriched the Persian empire by

burrowing for gold! They were '*bigger than foxes, but smaller than dogs*'.

Some recent discoveries suggest, perhaps surprisingly, that both accounts are based on solid truth. An American archaeologist, referring to burial mounds in central Asia associated with cultures dated from 600 to 200 BC, says that about one in six of the graves of women contain the sort of weaponry normally associated with a warrior's grave. The weapons, which had clearly been used, had handgrips smaller than men's weapons.¹

What about the 'gold-digging ants'? A French explorer and a British photographer believe that Herodotus is totally vindicated. They have

discovered marmots, cat-size rodents, burrowing in a shallow stratum of gold-bearing sandy soil on Pakistan's Dansar plain. The confusion likely came about because the ancient Persian word for marmot means 'mountain ant'. Although only recently able to visit the militarily sensitive area, Michel Peissel first heard about them in 1983. Local tribesmen told him that their ancestors extracted gold from the sand which stuck to the marmots' fur and was then deposited on the surface.²

REFERENCES

1. Holmes, B., 1997. Women warriors come back from the grave. *New Scientist*, 153(2068): 17.
2. Sancton, T., 1996. Golden "ants". *Time*, December 9, 1996, p. 70.

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