New data for the Wollemi pine

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New data have changed our understanding of the Wollemi pine, so, is it still considered a 'living fossil'?

Fossilized plants and creatures were buried recently (thousands of years ago) rather than millions of years ago, so we expect to see little difference between creatures alive today and their fossil representatives. That is exactly what we have seen in the Wollemi pine. Originally the Wollemi pine was only linked to some fossils from the supposed Jurassic period,[1] but since then more fossils have been linked with the Wollemi pine.

Refresher on the Wollemi pine

The Wollemi pine tree was discovered in 1994 in New South Wales, Australia. While exploring canyons in the Wollemi National Park (figure 1), David Noble and his team found a stand of trees in a deep sandstone gorge.[2] To date, a few more stands of trees have been identified, but, in total, there are less than 100 adult wild Wollemi pines and about 200–300 wild juveniles/seedlings. Wollemi pines have since been propagated and grown all around the world (figure 2), but wild trees have only been found growing in sandstone canyons within the Wollemi National Park.

The Wollemi pine belongs to the coniferous tree family Araucariaceae and represents one of three genera of the family: *Wollemia*, *Araucaria*, and *Agathis*. Before the discovery of the Wollemi pine tree, many fossils were identified as extinct species of *Araucaria* or *Agathis* genera. This discovery was exciting because the fossils could now be matched to the newly named genus and species: *Wollemia nobilis* (the Wollemi pine) due to clear similarities.

In a previous article,[1] *Agathis jurassica* leaf fossils from the Jurassic were found to match the leaves of the Wollemi pine,[3] which led to the tree being called the 'dinosaur tree'. This evidence originally "support[ed] the creation model by showing that things either have not evolved (despite the alleged vast ages separating the fossil from its living representative), or the vast ages are not real—or both." Since then, *Agathis jurassica* has been shown to be most likely not a fossil of the Wollemi pine.[4] However, the Wollemi pine has been matched to many other fossils of pollen, and more leaf and cone fossils, both from different geological layers and locations than *Agathis jurassica*. The new findings reveal more lines of evidence that fit well with a creation model; conversely, also raising questions for an evolutionary model.

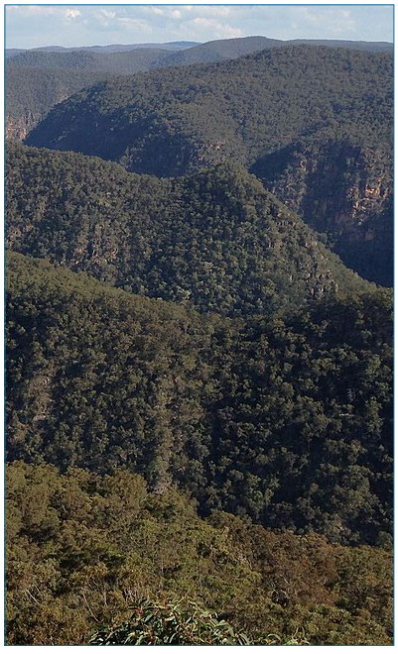

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Figure 1. Wollemi National Park gorge

Figure 2: Juvenile Wollemi pine planted in my garden

New data

Research has shown that pollen fossils of *Dilwynites sp.* closely resemble the pollen of the living Wollemi pine. These fossils have been found in multiple places around Australia and in New Zealand, Patagonia, and Antarctica.[5] The pollen fossils have been dated by evolutionists at 91 and 2 Ma.

After further analysis in the academic community, *Agathis jurassica* is not now regarded as a good match for Wollemi pine,[4] but several other fossils of leaves and cones are. One of the best matches has been *Araucaria* sp. cf. *A. mesozoica,* which includes a variety of leaf and cone fossils from the Winton Formation in Queensland,[6,7] dated by evolutionists at 100–94 Ma.

In the Otway Group of Victoria, Australia, leaf fossils named *Podozamites taenioides,* dated by evolutionists at 113–100 Ma, have been found to have similarities with the Wollemi pine.[8] Additionally, leaf and cone fossils assigned to *Araucarioides linearis* have been found to possibly match the Wollemi pine;[9] these were dated by evolutionists at 53–50 Ma. *Dilwynites* pollen fossils were also found dispersed amongst the leaf fossils of *Araucarioides linearis*.[10]

These fossil finds are shown on evolutionary and biblical Flood[11] geological timelines in figure 3.

The timeline in figure 3 shows that very similar fossils are seen from 91–2 Ma through pollen fossils, and leaf and cone fossils from 113–94 Ma (assuming *Araucarioides linearis* and *Agathis jurassica* are not matches—coloured red in figure 3). This means that the Wollemi pine has been in evolutionary stasis for about 100 Myr! Is evolutionary stasis for that long reasonable? It also rasies the question, if the Wollemi pine survived for over 100 Myr across many different regions (Australia, New Zealand, Patagonia, Antarctica), why are there only about 300 trees alive today in only one tiny area of a national park? Is it possible for the tree to have survived millions of years, given its vulnerability today? These questions are discussed further below.

Note that the timeline shows leaf and cone fossils within the rising floodwaters period, whereas pollen fossils are found only in the latter parts of the rising and falling periods (assuming *Araucarioides linearis* and *Agathis jurassica* are not matches). Why? It's difficult to see an explanation in the evolutionary timeframe—how could the pollen get separated from the cones and leaves? However, differences in floatation and propensity for getting caught in sediment could explain this using a Flood model. The dry, wind-blown pollen of this family probably resists wetting (hydrophobic), which would cause it to float and get separated from the leaves and cones. These are possible questions for future research.[12]

Why has pollen remained unchanged for over 91 million years?

The first issue for the evolutionists is that there would be evolutionary stasis for at least 91 Myr, according to the *Dilwynites* pollen fossils. There are some small differences between the living Wollemi pine pollen and *Dilwynites* pollen fossils,[10] but not enough to suggest any major evolutionary change, as is claimed for many creatures and plants over such a long time, according to evolutionary theory (such as the evolution of all primates, including humans, the diversification of mammals, as well as most flowering plants). Leaf and cone fossils, supposedly dating back to 113–100 Ma, also matched well with the Wollemi pine. Therefore, we are left with a strong example of 'evolutionary stasis' for at least 91 Myr, likely up to 113 Myr. There are many such examples of apparent 'evolutionary stasis', often called 'living fossils',[13] which bring into question the evolutionary model.

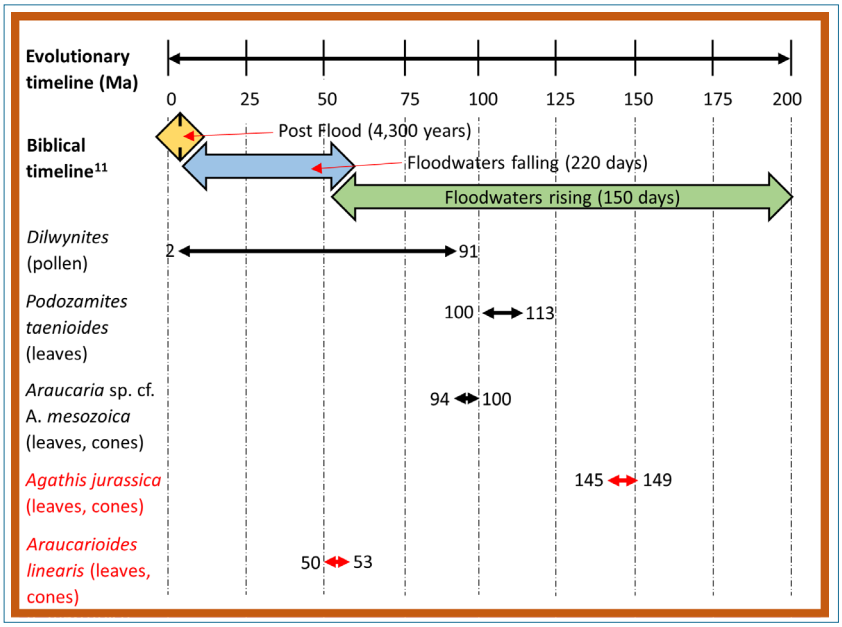

Figure 3: Timeline of fossils relating to the Wollemi pine. Red refers to fossils that are similar but unlikely to be matches to the Wollemi pine.

Could the Wollemi pine survive millions of years?

It is interesting to consider the survival of the Wollemi pine. Much work has been done recently to protect the wild Wollemi pine population from bushfires. In 2019–2020 there were bushfires that hit the Wollemi National Park. During the fires, most of the adult trees survived (>10 m tall). But "juvenile trees ≥2m tall sustained significant damage with two-thirds topkilled and only half of these resprouting to date" and "Up to 95 % of the pre-fire juvenile bank (plants <2 m tall) is yet to resprout and has likely been eliminated."[5] Fortunately, the surviving adult trees produce seeds, but production of a new reproducing adult generation takes a long time. The replacement of some of these destroyed trees may take 20–30 years. There are growing concerns that the trees may not survive further bushfires and droughts in years ahead.

From an evolutionary perspective, the climate has varied significantly, even within the last 2 Myr, according to ice core data. Of course the evolutionary interpretation of the ice core data has many flaws,[14] but let's suppose it was true for the purpose of investigating the survivability of the Wollemi pine. According to an evolutionary interpretation of ice core data, within just 800 kyr the global average temperature has varied up to 16°C (including multiple times with the average temperature warmer than today by more than 1°C, figure 4).[15] It looks very unlikely that the 'extremely

vulnerable' Wollemi pine could survive such supposed climate variation over 2 Myr, given that it is on the brink of extinction in today's climate. This perspective puts a question mark over the evolutionary perspective of history.

Biblical creation model interpretation of Wollemi pine data

The biblical creation model makes much more sense of the Wollemi pine fossil data than does an evolutionary model. Here is a likely scenario based on the data available. The Wollemi pine tree species was alive before the great Flood, evidenced by the many fossils found. The great Flood fossilized leaves, cones, and pollen of the Wollemi pine. These fossils are found in many places around the southern hemisphere due to the Flood being global rather than a local (small) event. The Wollemi pine species likely survived the Flood through seeds that were deposited in many regions; however, they only survived until now in the safe sandstone gorges of the Blue Mountains. The seeds were likely carried by receding floodwater, caught in animal fur, or on vegetation rafts.[16] Since the great Flood, the sandstone gorges have kept the remnant safe from bushfires and droughts, allowing us to appreciate them today.

The Wollemi pine is an example of a tree that looks almost as it would have looked 4.5 kyr ago. A true time capsule from the time of Noah!

Conclusion

The new *Dilwynites* pollen fossil evidence, and other leaf and cone fossils, show further problems with the evolutionary model. The pollen from today's Wollemi pine shows consistency with the *Dilwynites* pollen fossils from supposedly 91–2 Ma ago. Additionally, the leaves and cones from today's Wollemi pine show consistency with fossils from supposedly 113–94 Ma ago. This means somewhere between 91 and 113 Myr of evolutionary stasis, yet another problem for the evolutionary model. Also, the evolutionary perspective of climate change over the last two million years suggests that the Wollemi pine would not have survived even this period, given that it is said to be critically endangered due to bushfires and droughts.

These recent data make sense within a biblical creation model. The Wollemi pine species likely survived the Flood through seeds that were possibly deposited more widely but the trees are now surviving only in the safe gorges of the Blue Mountains. Thanks to their discovery in 1994, and many conservation efforts, we can now enjoy this 'living fossil' even in our own gardens.

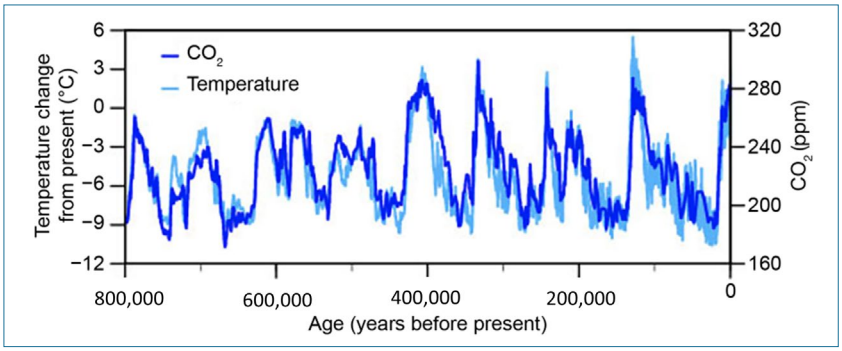

Figure 4. Supposed average global temperature record from EPICA ice cores.[14] Caption from source: "Temperature change (light blue) and carbon dioxide change (dark blue) measured from the EPICA Dome C ice core in Antarctica (Jouzel *et al.*, 2007; Luthi *et al.*, 2008)."

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