the WINNOWER

REDDIT

PLOS Science Wednesday: Hi reddit, my name is Stefan Bengston and I recently found the world's oldest plant-like fossil, which suggests multicellular life evolved much earlier than we previously thought – Ask Me Anything!

PLOSSCIENCEWEDNESDAY R/SCIENCE

[removed]

READ REVIEWS

WRITE A REVIEW

CORRESPONDENCE:

DATE RECEIVED:
April 06, 2017

DOI:
10.15200/winn.149139.93038

ARCHIVED:
April 05, 2017

CITATION:
PLOSScienceWednesday , r/Science , PLOS Science Wednesday: Hi reddit, my name is Stefan Bengston and I recently found the world's oldest plant-like fossil, which suggests multicellular life evolved much earlier than we previously thought – Ask Me Anything!, *The Winnower* 4:e149139.93038 , 2017 , DOI: 10.15200/winn.149139.93038

Could you comment on the state of the preservation of sub-cellular structures: In your paper, you attempt to identify a number of these structures, I wonder if these ancient cells had novel structures that do not resemble modern cellular structures. Is the preservation of these cells sufficient for you to rule such novel sub-cellular structures out?

Lucretius

Although the fossils are exquisitely preserved as fossils go, they are still fossils. This means that a lot of the original biological structure is not preserved. In morphologically simple forms, convergence is also a factor to be taken into account.

How can we use this to date the actual start of multicellular life? There is a population sampling issue going on here.

(All the multicellular life ever) > (all the multicellular life preserved in fossils) > (all the multicellular fossils found)

So, we know what that last group looks like, and currently its oldest member is 1.6billion years old. Can we, from the distribution of ages in already-found fossils, guess as to what else there is to be found (i.e., how old is the oldest yet-to-be-found fossil), and from there, guess at the age of that first group?

oldbel

Yes, we can make such guesses, and there are methods of quantifying them. But fossils are crucial for the calibration, and new fossil finds may well falsify our earlier predictions, which is how science progresses.

What are your thoughts, if any, on the implications that your discovery may have on the likelihood of panspermia, rather than abiogenisis, being the correct explanation for life on Earth?

CorpusCallosum

No implications, I'm afraid. 1.6 billion years may sound old, but it's much too young to have bearing on panspermia.