Review of "A Brief History of Creation" by Bill Mesler and H James Cleaves II W.W.Norton & Co. New York, 2016

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Abstract:
The review of this interesting book exposes the *ad hominem* attacks on Fred Hoyle and Chandra Wickramasinghe as specious. Indeed the advocacy of the authors for Abiogenesis as an easy and common event in the Universe, in locations like the Earth, is exposed as wishful thinking. It is simply not credible. The general history story of biology, while accurate to a point, stops short about 1970 - it then completely overlooks all the published evidence and analyses for both Panspermia and Lamarckian Inheritance of the past 40-50 years. To quote one of the cited links..."There is a strong *conceptual link* between rapid Lamarckian-based evolutionary processes dependent on reverse transcription-coupled mechanisms among others and the effective cosmic spread of living systems viz. Panspermia. For example, a viable, or cryo-preserved, living system travelling through space in a protective matrix will need to rapidly adapt and proliferate on a landing in a new cosmic niche. Lamarckian mechanisms of environmentally-driven inherited rapid adaptation thus come to the fore and supersede the slow (blind and random) genetic processes expected under a neo-Darwinian evolutionary paradigm."

This is a well written book and an interesting if not easy read. It will definitely educate, up to a point, the general reader interested in the origins of Life. In particular, the history of the main developments dating to the Greek philosophers is well covered. It is also an informative and interesting history of the vigorous pre-modern 17th to 19th century scientific debates and experiments for and against Abiogenesis - " the emergence of life from non-life". There is special emphasis on "Spontaneous Generation". Most of us have been taught this was effectively disproved by the definitive experiments of Louis Pasteur in the 19th Century.

A little known fact, at least to the present writer, was the almost immediate resurrection of Abiogenesis by Thomas Huxley. He qualified Pasteur's result by reasoning that the conditions on the early Earth, in one of "Darwin's warm little ponds" may have offered a favourable window of opportunity for life to emerge from non-life. By this 'political' act, as was his want, Huxley sidelined special creation suggesting *sotto voce* that abiogenesis was no longer active on the present Earth - thus by extension abiogenesis may arise anywhere in the Universe given the right conditions.

This is the central theme of the book. The purpose of this review is to show that there is a clear and less speculative alternative to Abiogenesis - which is actually based on much scientific evidence assembled over the past 40-50 years. Indeed the odds against Abiogenesis for the simplest minimal cell with 256 protein-coding genes capable of independent existence is 10^{5120}. This is a super-astronomical number - the impact of this number should induce sober and quiet reflection in all rational scientists (Hoyle and Wickramasinghe 1999).

So while this book, in my opinion, is one of the more factually accurate books doing the rounds on key issues in the history of biology and origins of life, it also has two big blemishes: one of tone and style, and the other of ablation of appropriate citation of modern scientific developments (based on evidence) since the 1970s.

This ablation of whole tracts of published scientific evidence will be highlighted in this review.

***Ad Hominem* Attacks**

Throughout the book there is an unfortunate use of the "*ad hominem*" weapon - unfortunate for the authors, one a science journalist (Mesler) and the other an active origin of life scientist (Cleaves) as it can rebound in nasty ways (see actual extracts below). To be generous this defect in tone and temper may have been guided primarily by their Publisher and ably assisted by the science journalist co-author, as this type of narrative is thought to be a page turner and sells books. But I actually doubt this happened in the present case - I suspect that this 2016 book was so quickly remaindered because it would have left a sour after taste, dampening the "word of mouth", a tacit long term driver of good books.

Ablation of Scientific Facts: Panspermia and Lamarckian Inheritance 1970->

Two clear lacunae dominate their history of scientific developments, from the 1970s to the present. The reader is thus not brought up to date with key facts which would allow a more balanced appraisal of the current state of play in the science behind 'origin of life' research. They are left to ponder the effectiveness of the expensive research program (mainly by NASA and European Space Agency, ESA) in search of Abiogenetic processes in the laboratory or in our Solar System and wider Universe. So the reader is left with the impression that current Abiogenesis research is *the only scientific game in town*. The two areas not covered are:

• The large body of scientific evidence published by Hoyle-Wickramasinghe strongly supporting Cosmic Panspermia. Exposing this ablation is important given the *ad hominem* dismissive treatment (see key extracts below p.218-220). The Hoyle-Wickramasinghe oevre of published books and peer reviewed papers is covered in our recent review published *after peer review* in *Progress in Biophysics and Molecular Biology* at https://doi.org/10.1016/j.pbiomolbio.2018.03.004

• The multifactorial evidence showing the genetic permeability of *Weisman's Barrier* and thus the reality of Lamarckian Inheritance of acquired characteristics in a range of living systems, particularly in higher vertebrates (a routine phenomenon in plants, where Weismann's soma-to-germline barrier effectively does not exist). This is important. Most of these references are also found below and in in a more succinct discussion on the Demarcation Data set currently under submission in Steele, Gorczynski, Tokoro, Wickramasinghe, Wickramasinghe 2018 at http://viXra.org/abs/1811.0221

***Ad Hominem* Hyperbole**

So my main criticism of this book is the reliance on *ad hominem* hyperbole, not just against Fred Hoyle and Chandra Wickramasinghe but many other pioneering scientists. Indeed the book is encouraging both the language *an*d attitude of extreme disrespect for all serious pioneering scientists for cheap financial gain. Is this the reason it was remaindered?

Of all the theories going around on the origin and further evolution of life on Earth (and the Universe) Hoyle-Wickramasinghe's theory of Panspermic infall is the most pragmatic, scientific and testable (in the Popperian sense). All the other vague Abiogenesis theories, assumed and promulgated by a range of recent science writers are actually unoriginal, derivative and vapid. The claim by Mesler-Cleaves that the work of Hoyle and Wickramasinghe is "wildly speculative" if not "absurd" provokes the obvious re-joiner exposing their own outright delusional thinking - e.g. nowhere have they confronted the reality of the super-astronomical odds against Abiogenesis. McFadden (2016) is one of the few modern Abiogenesis advocates to actually try and build a type of RNA world model for the origin of life that attempts to get around this number. But in our view even McFadden cannot do so without wild leaps of faith, dare we say "intelligent design" or input from the modeler (McFadden, J. Quantum Leap: Could quantum mechanics hold the secret of (Alien) life? In , Ed. Al-Kahalili, J, *Aliens*, Profile Books Ltd, London, 2016).

All the critical analyses, assertions and conclusions published by Fred Hoyle and Chandra Wickramasinghe and their many collaborators since the 1970s are based on hard scientific evidence. The same cannot be said for many of the groups of modern astrophysicists or astrobiologists that advocate for Abiogenesis. Put bluntly and simply - *there is no evidence at all for an abiogenetic event appearing on Earth in a laboratory or naturally, or anywhere in the known Universe.* And there is no accepted critically proposed model (that avoids human assistance or intervention) that logically surmounts the odds against Abiogenesis, despite claims for the "climbing of mount improbable" - an oxymoron if ever there was one.

Thus as with all those other footnotes to Plato we need to acknowledge our *enormous debt* to the assembled data and critical analyses published by Sir Fred Hoyle and Professor N Chandra Wickramasinghe (1970s to the present). That is why some of us have recently condensed and critically reviewed all the main evidence and multi-factorial issues to do with H-W Panspermia/Cosmic Biology in our recent multi-authored peer-reviewed article in *Progress in Biophysics and Molecular Biology* (Steele, Al-Mufti, Augustyn, Chandrajith, Coghlan, Coulson et

al. (2018) "Cause of Cambrian Explosion - Terrestrial or Cosmic?" https://doi.org/10.1016/j.pbiomolbio.2018.03.004)

The Gentle Art of "Blackening" Lamarckian Inheritance

While the authors recount a fairly accurate history re Lamarckian evolution and inheritance of acquired characteristics, there is no mention of the seminal 19th Century figure August Weismann. No mention of his famous soma-germline *Weismann Barrier* nor Darwin's own Lamarckian theory of Pangenesis which would allow penetration of that barrier (Steele et al 1998, Lindley 2010). Why not?

The history via Lysenko in Russia is accurate, but then they blacken the whole scientific effort since 1970s - they *do not discuss* the modern resurrection of Lamarck and Paul Kammerer (no mention of his controversial experiments, Koestler 1971 and now vindication Vargas 2009, Vargas et al 2017).This has to be deliberate. How could the authors miss all these developments in this age of Google Search? This evidence is discussed in both our papers cited, and another list of references is given here (Steele 1979, Gorczynski & Steele 1980, 1981, Gorczynski et al 1983, Steele, Gorczynski and Pollard 1984, Jablonka and Lamb, 1995, Zoraqi and Spadafora 1997, Steele, Lindley & Blanden 1998, Steele and Blanden 2000, Lindley, 2010; Liu, 2007, Spadafora 2008, Vargas 2009, Noble, 2013, Mattick, 2012, Cossetti et al 2014, Dias and Ressler 2014, Skinner 2015, Devanapally et al 2015, Sharma et al 2016, Steele and Lloyd 2015, Liu and Li, 2016a, 2016b, Noble et al 2016, Vargas et al 2017, Noble 2018, Steele and Lindley 2018).

It seems to me only one conclusion can be reached: Google Search was definitely used in the preparation and writing of this book alright. This then allowed very careful, and surgical, *avoidance* of all the scientific evidence gathered since 1970s on Panspermia and Lamarck.

Extracts of Commentary on Hoyle-Wickramasinghe p219-220 In red ink - brief response

Page 218-219 3rd paragraph->

"In the 1960s and 1970s, interest in panspermia was revived first by the paper in *Icarus* written by Francis Crick and Leslie Orgel, and later by the astronomers Fred Hoyle and Chandra Wickramasinghe. Both ideas came to be seen as borderline absurd in the eyes of their scientific peers." (Where is the evidence for this claim?)

"Crick and Orgel had never really treated their model as anything more than fanciful speculation. Hoyle and Wickramasinghe , however, were deadly serious. They proposed that viruses were constantly being delivered to Earth on meteorites. Such viruses, they said, could have been responsible for the flu pandemic that killed between 50 million and 100 million people in 1918. Certain outbreaks of mad cow disease, polio, SARS, and even AIDS might have

originated off-world." (The only answer here is for the reader to confront the body of evidence published by Hoyle-Wickramasinghe and judge for themselves, see a recent multifactorial summary in Steele et al 2018 Cause of Cambrian Explosion - Terrestrial or Cosmic ? Progress in Biophysics and Molecular Biology 136: 3-23 https://doi.org/10.1016/j.pbiomolbio.2018.03.004)

"Hoyle was best known as the scientist who, during a 1949 interview on the BBC, had coined the term " Big Bang" to describe what would become the dominant theory of the origin of the universe. Yet by the time of his work on panspermia, he had become nearly as famous for being one of the last holdouts against the Big Bang theory, even though in the years since he had given it a name, overwhelming observational evidence had made the theory a cornerstone of modern cosmology (This rests on shaky grounds. This conclusion is based on actual evidence from the perspective of the origin of life and expected pervasive nature of life in the Universe, see Steele et al 2018 Appendix Ahttps://doi.org/10.1016/j.pbiomolbio.2018.03.004). Nor was Hoyle's cause helped by the fact that he was also a popular science fiction writer in his spare time. Some called his "viruses from space" idea northing more than an extension of the plot of his 1957 novel *The Black Cloud*. (How low can these *ad hominem* attacks go ! Hoyle is one of the most creative and insightful scientists who ever lived- it was a travesty that after doing all the hard original work on nucleosyntheis in the Sun his collaborator Willy Fowler was awarded the Nobel for that work in 1984! - indeed 1984 marks the decline of the Nobel as a credible human institution) Given the abundance of competing and far more plausible hypotheses about the origin of viruses, Hoyle and Wickramasinghe's ideas were largely ignored." (What are these plausible hypotheses? We have shown there are no credible plausible hypotheses- that is a bootstrap delusion).

Then on p.219-220

"Regardless of whether life exists on other planets, scientists are completely convinced the universe is rife with organic material . "(First shown by Hoyle-Wickramasinghe- not cited or acknowledged- Wickramasinghe, 1974, Hoyle and Wickramasinghe 1976, 1977a, 1977b, 1978) . - then the next sentence is outrageous- "Outlandish theories like those of Hoyle and Wickramasinghe and the controversial nature of claims like this made about past meteorites have tended to obscure the fact that organic molecules are indeed present in outer space" (H-W were first to publish these claims) - "and present in vast quantities." The possibility that the first organic molecules on Earth originated in space, even it it seems outlandish to most people, has become very real to the majority of scientists studying the origin of life."..." the vast expanses of space are not empty, but filled with cosmic clouds of gas and dust. The collapse of some types of cosmic clouds is thought to give rise to the formation of solar systems throughout the universe. ...the clouds themselves are filed with organic molecules..."

" ..p.221. More ad hominem " ..the widely speculative theories of scientists like Fred Hoyle..."

Ad Hominem General Tone (p.257)

• Particularly illuminating to the present writer are these statements, reflective of the basic motivating 'historical' philosophy of Science held by Mesler-Cleaves, which the current writer

disagrees. I find it disturbing because believing in such views can have a malign influence on the growth of scientific knowledge. e.g. p.257

> " The history of Science is filled with "losers" who clung to a conclusion despite the rejection of their peers. They all possessed a stubbornness that, for some, led to professional disgrace. Nevertheless, they took that road. On the surface, their inability to simply abandon their positions in the face of intense criticism or even contrary evidence smacks of hubris."
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> " Their doggedness may serve a purpose. The naturalist Alexander von Humbolt once remarked that there are three phases of scientific discovery. The first is denial. The second is denial of importance. The third is crediting the wrong person. It takes a certain type of fortitude to overcome the first step. Truly novel thinkers are often treated as crackpots. When proved wrong, history decrees they remain crackpots. When proved right, history recasts them as visionary geniuses. The crackpots of the past may become the visionaries of the future."

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