

Petroleum systems do not require millions of years

By virtue of working in the upstream petroleum industry for over 30 years, I am interested in the origin of petroleum. When training for this career I was subjected to uniformitarian teaching and thinking in all matters geological. That suited me because I was then a theistic evolutionist, and it provided me with a way to beat creationists. But after a few years I was deeply aware that all was not right with uniformitarianism. There were too many unjustified assumptions. Eventually I became a young-earth creationist, though the process was slow.¹ May I therefore comment respectfully on Dickens' perspective?²

Now, Froede and Akridge³ explain that there are two significantly different philosophical approaches creationists use to develop geological models of the Flood. The first group start with uniformitarian interpretations of geological observations (naturalism) and try to compress these interpretations (with perhaps some other, smaller, adjustments) into short timescales to align with the biblical story of the one-year Flood. For example, plate tectonics is 'rushed' into Catastrophic Plate Tectonics even though uniformitarians already find many significant difficulties with this theory.⁴ Putting a biblical timescale on plate tectonics causes further difficulties in providing good explanations for observations.⁵

Also, the geological column is often used by creationists with a simply very much shortened timescale. But that ignores some crippling problems with the uniformitarian geological column.^{6,7} As far as the origin of

petroleum products is concerned, most of the attempts to explain such hydrocarbons on a shortened biblical-Flood timescale take uniformitarian ideas of kitchen/source rocks and migration and offer evidence that they can be speeded up. But in these three examples of contrasting approaches, the data and inferences used by them have already been through the uniformitarian mill, which specifically excludes the possibility of a recent global Flood. In other words, 'data' are pretainted with an antibiblical agenda.

If, instead of this 'naturalistic approach', creationists proceed with the other philosophy identified by Froede and Akridge (which they call the 'Bible-based outline'), then no uniformitarian concept or explanation is used as a starting point to develop a Flood model. In particular, there are six statements in the Bible which, though not couched in modern geological terminology, nevertheless are geological pointers which must be the foundation of any credible Flood model.⁸

Where I am left disappointed is that Dickens' perspective² starts with a uniformitarian assumption: "A petroleum system is characterized by a genetic relationship connecting a source rock to all the oil and gas it has generated." Fifteen years ago, in a major article I identified seven fundamental flaws with this assumption.⁹ While I understand that the author is starting in this basic framework of naturalism, the fact that a 'Bible-based outline' has been in the literature since 2008 and is not acknowledged leaves me expressing this disappointment.

More recently, Klevberg¹⁰ discussed oil in the Williston Basin and referred to my 2008 paper. We did have a brief discussion with letters to the editor where Klevberg¹¹ suggested that because it was not easy from his perspective to accept my 'theobaric' model of oil, he, Richard Bruce (see

Klevberg's double reference to his work which Dickens also uses) and I should team together with others who have offered contributions openly or privately on the subject, sharing data that they have that have not currently been published on hydrocarbon characterization and pyrolysis. We would also need to see international contributions on the hypothesis that faults can be channels of migration and impediments to flow rather than relying solely on examples for the Danish, Norwegian, and UK sectors of the North Sea data as I did. These are relevant because only such information could challenge another key point in my thesis; that is that we cannot get oil into sediment deposits *unless the oil existed* before such sediments formed.

As yet, we have not heard from Bruce, but we could, in the meantime, include Dickens (as there seems to be an overlap in their approaches) either as an alternative or supplement if Bruce should now decide to join. Can it be done so that the subject can be moved forward, please? For too long anxious creationists have noted that it is easier to "talk past one another"¹² than open up on difficult issues.

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» **Harry Dickens responds:**

Most of my professional background is in petroleum exploration. I commenced employment in this area in 1977, and currently work in a petroleum basin studies team. I have worked at petroleum wellsites in the North Sea, around Asia, and around Australia, and have delivered petroleum exploration presentations in North America, UK, Asia, and Australia.

Usefulness of petroleum systems

Exxon geologist Peter Vail and others pioneered seismic stratigraphy, using interpretation of seismic sections to determine the extent of coastal onlap evident from strata in sedimentary basins around the world, and so estimate sea level changes.^{1,2} Ross³ and others use the geologic column as a reference tool. Unfortunately, Matthews seems to continue to deny the geologic column. As far as I am aware, Matthews has yet to make any attempt to provide an alternative explanation for how these mappable sequences may be understood within a young-earth creationist framework. To deny the usefulness of the geologic column as a tool in stratigraphic studies would be a giant step backwards in our global creationist research.

Clarey and co-workers have done commendable work mapping megasequences around the world. Correlation of basal megasequence units, and other unique lithologies (i.e., salt and chert layers) within

the megasequences, confirms the validity of the geologic column on a global scale.

“The observable pattern in the fossil record further confirms these findings. Indeed, a global Flood could produce globally extensive, stacked lithologic units on an intercontinental scale. Creationists should not be critical of the geologic column, but embrace it as evidence of a global Flood event.”⁴

A significant and basic point of disagreement between Matthews’s two ‘camps’ is whether long-distance correlations (based on biostratigraphy, physical stratigraphy, radioisotopic data, etc.) are valid, for it is on these correlations that the geological column is established.⁵

Genetic relationship connecting a source rock to an oil accumulation

Oil companies consider the chemistry of specific source rocks and that of specific oil deposits. When there is great similarity between the two it may be inferred that the oil was derived from the source rock. This is like a fingerprinting exercise for particular crudes. Thus, inferences can be made on the migration path from source kitchen to an oil accumulation, and so give clues to where other accumulations may be found. This is not uniformitarianism or antibiblical. It can be done by a YEC scientist. It is just good predictive science.

In laboratory experiments today, land plants can be heated under reducing conditions to form a type of hydrocarbon. Similar experiments on algae produce another type of hydrocarbon. This does not require deep time!

Hydraulic fracture stimulation (fracking) of petroleum source rocks to liberate hydrocarbons has been so successful that the US has become

a major exporter of hydrocarbons in recent years.

Theobaric idea lacks both explanatory and predictive power

Matthews’ ‘theobaric oil’ idea is that the oil existed in pristine state before the Flood, and it moved during the Flood into the (huge petroleum) reservoirs where we now find it. This is not consistent with the vast amount of literature on the formation and occurrence⁴ of various petroleum types and the practical application in finding petroleum deposits used by oil companies around the world.

I don’t know how the theobaric idea can have any useful predictive value for petroleum explorationists. This is unlike petroleum system elements, seismic stratigraphy, well post-mortems and hydraulic fracturing used by oil exploration companies.

I wish John Matthews all the best for his future endeavours.

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