Why does life start, what does it do, where will it be?

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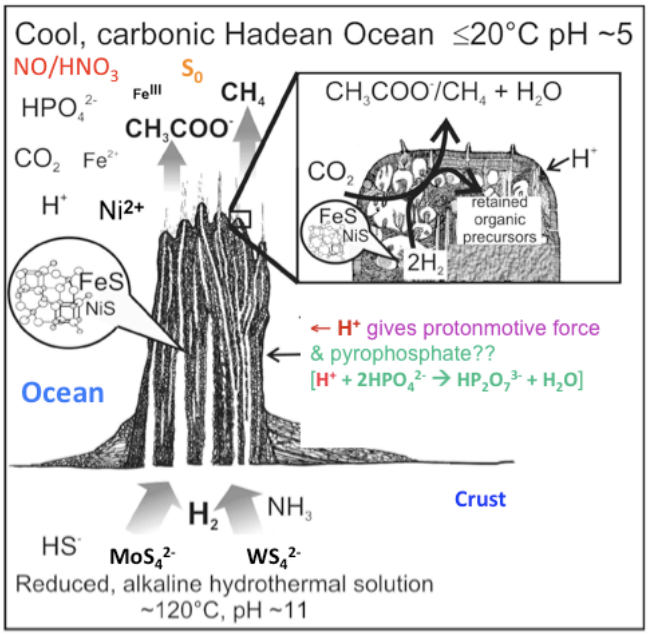
Energised by protons ("proticity") from the carbonic Hadean Ocean, life was forced into being to hydrogenate carbon dioxide of volcanic derivation on the tempestuous water-world that was our planet 4 billion years ago. The hatchery of life was a compartmentalized submarine hydrothermal mound comprising silica and clay precipitates interspersed with transition metal sulfide clusters and phosphate/pyrophosphate. It was fed from an alkaline hydrothermal solution bearing hydrogen gas derived through serpentinization of the ocean crust. The metal sulfides acted as hydrogenation, reduction, transfer and assembly catalysts, while the pyrophosphate polymerized amino acids to peptides (uncoded proteins). The phosphate was recharged to pyrophosphate by the proton gradient acting across the inorganic compartment walls separating the carbonic (pH 5-6) oceans from the alkaline (pH 10-12) hydrothermal (~100°C) solutions exhaling from the ocean floor. The peptides wrapped around, and stabilized the pyrophosphate and metal sulfide complexes with the overall effect of *quickening* the hydrogenation of CO_2. Once the metabolic engine was running, biosynthesizing and producing effluent of acetate or methane, then virus-like self-replicating RNAs infected contiguous compartments and encoded the proteins that ushered in Darwinian evolution—synthesizing enzymes that constituted a critical and irreversible improvement on the random associations between the peptide "nests" and their inorganic "eggs". Eventually, through the use of a calcium manganese cluster similar in structure to hollandite, hydrogen was split off from water through photosynthesis to hydrogenate CO_2 in a process that evolved to produce oxygen as a waste gas to our ultimate advantage. Evolution then, is a search engine for energies and nutrients commensurate with those of the hydrothermal mound—evolution as "the survival of the most fitting" on this, or any other wet, rocky and sunlit planet of sufficient mass to support mantle convection and hold a CO_2/N_2 atmosphere



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