

Cause of accelerated evolution of Earth's life; four-layered underground robust bio-communities played a critical role for the accelerated genome evolution as a response of mass extinction

*Shigenori Maruyama¹, Akio Kanai², Issay Narumi³

1. Earth-Life Science Institute, Tokyo Institute of Technology, 2. Keio University, 3. Toyo University

It has long been recognized the concept of five kingdom or six kingdom model which shows the life with difference of function and size. If believing Darwinian Evolution, how can we interpret the diversified distribution with primitive small microbes to the most evolved types of large life. If we consider the most evolved metazoans such as human being to be the result of increased free oxygen in atmosphere, why do the anoxic microbes remain on the surface.

We have engaged in the decoding Earth history Program over 30 years, and obtained the following six results, (1) Since the birth of life until 4.0Ga, three times of Great Evolution of Life (GEL) occurred, (2) Those evolutions were predominantly controlled by the pO_2 increase in the environments, (3) Underground bio-communities are present forming 4-layers with boundary layers, (4) Each layer corresponds to different pO_2 levels; the older the lower pO_2 , (5) In between the two, where two-way genome biomes are present, although speculative, and (6) These four layers could have been formed during the 3 GEL times, accompanying many mass extinctions. Those were remained as fossil environments where evolution stopped, because of no significant environmental changes, in spite of extremely severe surface environments with frequent mass extinction and resultant accelerated evolution of life.

The result corresponds to the concept of 5-6 Kingdom which suggests the preservation of biological communities with different level of pO_2 in environments. Through the Earth history, new GEL occurred with great change of pO_2 , the advanced life on the surface suffered mass extinctions due to exponentially decreased pO_2 , instead the underground microbes invaded to the surface, and evolved there again. This is the entity of evolution of life on the earth. Therefore, the presence of robust 4 layered underground biological communities must have contributed to evolving life on this planet, in spite of severe environmental change of planets over 4.0 billion of years in the Universe, not by death, but evolved thorough GEL at 4.0Ga, 2.2Ga and 0.6Ga.

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