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The mechanism that had formed the oldest organic carbon with the banded ironstone formations

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The band iron layers were formed about 3.8 billion years ago. M. T. Rosing reported that the oldest organic carbon was found in the sedimentary rock from west Greenland that formed at the same period [1]. That is, the value of carbon isotope ratio ($^{12}C/^{13}C$) on 2- to 5-micrometers graphite globules in the rock is larger than that of inorganic carbon. Since photosynthesis is realized by a system of molecules with chain of reactions, the production of that carbon by the photosythesis is difficult. The author proposes the mechanism that a slightly large amount of ^{12}C was incorporated in the floating substances which were produced with the banded ironstone formations (BIF).

We can observe the phenomena by adding fine iron particles in carbonated water as shown in the [photograph 1]. Bubbles were produced at the surface of iron in the bottom of water. The bubbles transfer the fine particles of iron from the bottom to the surface. Since the electronegativity of carbon is larger than that of hydrogen, the carbon atom released from carbonated water by oxidation of iron was adhered to iron particle. The intermolecular bonding of iron with carbon beomes floating substance. The iron atom will be released from the floating substance as the form of iron oxide. So, the carbon atom that was released from the iron will constitute the floating substances [2].

At about 3.8 billions years ago, earth's surface was covered with compounds such as oxides, sulfides and carbonates. Although there were carbon dioxide gasses in the atmosphere, the seawater at mild temperature became dissolve the carbon dioxide. There occurred volcanic eruptions frequently. Iron particles were emitted by the volcanic eruption and the iron oxides were deposited at the bottom on the sea. that is the process of BIF. On the other hand, the carbn dioxide molecules in the syk smashed into surface of the sea water frequently. It is possible to produce an organization of molecules from the floating substance of intermolecular bonds by the energy that comes from outer world such as ultraviolet ray. The floating substances will accuulate at surface of water. At last, the substances deposited at bottom of the sea. That is, the carbon atoms those were included in sedmentary rocks fromk west Greenland had come from the sky.

[**References**]

[1] Rosing M. T. (1999). ^{13}C-Dpleted Carbon Microparticles in >3700-Ma Sea -Floor Sedimentary Rocks from West Greenland, *Science* Vol.283 No.5402 pp.674-676.

[2] karasawa S. (2010). Inorganic production of membranes together with iron carbide via oxidization of iron in the water that includes carbon dioxide plentifully, *AbSciCon* 2010, #5168

[**Photograph 1**]

Accumulation of the floating substances those are produced by adding fine iron particles in carbonated water (Left: old #300 meshed fine particles, Center: new #300meshed fine particles, right: #200 meshed particles)

Keywords: 3.8 billion years ago, Banded iron formation, Organic carbon, Carbon dioxide, Carbon isotope ratio