

DISCUSSION

WATER RADIOLYSIS, A POSSIBLE SOURCE OF ATMOSPHERIC OXYGEN

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The paper deals with the radiolysis of World-ocean water and underground water as a possible source of molecular oxygen emission into the Earth's atmosphere. Empirical facts proving this concept are reported. A suggestion is made that in the early stages of the Earth's development when its radioactivity was almost two orders of magnitude higher than at present, radiolysis could be the principal source of atmospheric oxygen, which ensured the conditions for the origin and development of life on our globe. The authors do not rule out the supposition that radiolytic oxygen may support primitive life forms on Jupiter's satellites: Europa, Io, and Ganymede. It was suggested that it is necessary to investigate water and ice radiolysis both under natural conditions and in a series of laboratory experiments, and to consider the expediency of choosing the deposits of radioactive Dictyonema shales and waters of Cambrian-Wendian water-bearing horizon in northern Estonia and in Leningrad District, as well as dumps of radioactive waste of "Silmet" metal works in Estonia as a ground for natural on-site observation.

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