

A route to co-existence and co-prosperity with microbial power

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Abstract—During the past few decades, we noticed an explosive population growth and corresponding increase of farmlands and residential area all over the world. What is more, the ever-developing industrial activity that excretes various wastes and chemicals continues to pollute the environment. These circumstances are in combination seriously wreaking havoc on nature. As a result, not only many species of wild life have become extinct leading to loss of life's diversity but also we are facing with even a threat to our health. The logical extension of this situation is human extinction. In order to find a way out of this critical situation, we have to sincerely appreciate the significance and importance of biological evolution and biodiversity. In addition, we must face the fact that the Earth is a planet of microorganisms and that all life forms are living in close association with them.

The DNA and RNA that govern the vital function of all life forms on Earth are composed of several bases common to all life forms ranging from viruses to microbes to humans. We call these life forms terrestrial organisms. From evolutionary point of view, the process leading to biodiversity could be described as follows. Life that started with a simple molecule called RNA became viruses, gained DNA function, evolved to various forms of microbes, then continued to evolve through phases of fungi and primeval plants and animals, and to more diverse higher plants and animals, mammals, finally branching out to primates and humans.

So, we consider ourselves at the top of the current stage of this evolutionary history. Viewed from another side, however, it implies that all other life forms have been obliged to support human evolution. All other life forms would have liked to evolve to our advanced state, but for various reasons were not able to make it this far, and were destined to support our development instead. We, human beings, that evolved along different evolutionary route and reached the top of all living species, should have a new standpoint and way of thinking. That is, “We have the responsibility to protect all life forms that supported our evolutionary processes.”

Human evolution has won us victories over the battles against the natural law of predator-prey ecological system and natural disaster; the victories that far outweigh our losses. We are now faced with a structural dilemma, i.e. a seemingly prosperous population growth and the path to self-destruction resulting from accompanying environmental breakdown. The

solution to these problems appears extremely challenging. In reality, however, we are simply too lazy to acknowledge our duty to evolution. We have reached intellectually, spiritually and supernaturally, to the level where there is no problem we cannot solve. What we must do, with flexible mind and firm determination, is to use competition principle in a more constructive way, and to explore the avenue towards co-existence and co-prosperity.

In order to preserve biodiversity by protecting other life forms that have consistently supported human evolution and development, we must start by creating and enforcing strict nature reserves and restrict as severely as possible the use of environmentally detrimental chemicals and other pesticides.

As concerns the population issue, it is urgently needed that we must help developing countries achieve economical prosperity, increase participation in academics, entertainment and art, thus promoting a systemic population decline as seen in today's developed nations. Further countermeasures include food production methods that promise increased yield while preserving natural environment, improved efficiency in the way we use underground resources, technological advances in exploiting sustainable energies such as solar, wind and tide power. Only through establishment of these social systems, we can conquer the principle of competition and build up the future path towards co-existence and co-prosperity.

I firmly believe, with educated use of microbial power, that we can convert today's global environment that is destined to deterioration with entropy increase, to the direction of revival along with the increase of “syntropy” that is the antithesis to entropy.

The first step towards Earth's revival is to appreciate the significance of existence of microorganisms that are found in every terrestrial environment. The whole collection of microorganisms is termed microbiome, e.g. Earth microbiome or human microbiome. It is crucial to understand the significance of existence of these microbiomes, and to instruct them towards the direction of revival. To be more concrete, it is recommended to use EM (Effective Microorganisms), which is composed of beneficial microorganisms, as liberally as air or water all over the planet. More specifically, by changing the microbial flora, the basis of the ecological pyramid, to better microbiome composed of beneficial microorganisms, it is possible to activate all life in the direction of revival.

Through 30 years of our research works and worldwide application of EM in various fields, we have demonstrated that it is possible to convert the microbiome to the direction of revival. By extensive application of EM in agriculture, animal husbandry and fishery, increasing yields manyfold, we will no longer need to destroy nature such as tropical rainforest. Even farmland unfit for agriculture due to salt damage can be made to working condition with EM. Also, EM is effective in removing detrimental chemicals and heavy metals accumulated in environment as well as in disposing radioactive wastes. EM can also be unlimitedly applied in the fields of environmental conservation, civil and construction engineering, medical and health care and energy production. Thus, we can take advantage of the law of syntropy that states that safety, comfort, low cost and high quality will create a virtuous cycle the longer it continues. Once we reach this level, all of humanity's current problems and issues could be worked out without much difficulty.