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LETTER TO THE EDITOR

The value of life's diversity

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Earth may be the only planet to shelter life in the entire observable universe. This fact is sufficient to show that the value of life is immeasurable. Perhaps it took millions of spontaneous chemical combinations and some collisions of asteroids rich in organic molecules, during some consecutive million years, until *bingo*. A combination of self-replicating molecules protected by a lipoprotein layer starts the life race on Earth (Menck et al. 2012). Since the emergence of life on our planet, diversity has been the rule. And it is not just any diversity. It is the diversity of life, that is, biodiversity (Wilson 2012).

The big issue is that the diversity of life is threatened. We have prioritized technological advancement in favor of an idea of continuous progress in the last years of our species' history. But we overlook the fact that we are products of nature. We forget that we are part of the diversity of life. And yet, we do not understand how our actions may be changing the complexity of interactions and the balance of life on the planet. We know that the irrational exploitation of natural resources can lead humanity and our planet to a critical limit that we would hardly be able to overcome. It is more than urgent the need to intensify our efforts to understand the role of the diversity of life in the dynamic balance of our planet.

For the moment, we recognize that biodiversity provides an infinity of ecosystem services and represents an important reservoir of genes and molecules that can be used in genetic engineering or in the production of drugs. In the soil of forests there is a hidden biodiversity of microorganisms to which we are largely unaware of their interactions with plants. Highly complex biomes, such as the Amazon, are regulating points of the hydrological cycle on our planet. Other biomes are hotspots of biodiversity and shelter a diversity of endemic life that does not exist anywhere else. It is also recognized that the conservation and sustainable use of biodiversity can be the core for the socioeconomic development process of our nations (PBMC/BPBES 2018).

We know that biodiversity also has its hidden risks. Human interaction with unknown biodiversity can make it easier for diseases caused by bacteria, fungi, and viruses to jump to humans (Val 2020). And this is evident in the contemporary world, where the unprecedented rates of biodiversity loss caused by the expansion of anthropogenic activities are the main causes of outbreaks of infectious

diseases (for example, Ebola virus, Nipah virus, arbovirus) (Andreazzi et al. 2020). This is also true for the recent SARS-CoV-2, the virus which causes COVID-19, and that jumped from bats to humans (Burki 2020). After this event, the fear of future outbreaks caused by unknown microorganisms will be present in our minds and in future generations (Kellner 2020). But there are ways to prevent further outbreaks. Knowing biodiversity and its interactions, combined with biodiversity conservation, can help us prevent risks from future epidemics and pandemics.

But we must think beyond the material utility of biodiversity. We must think beyond the value of using natural resources. Soils, forests and seas hide many secrets that are waiting to be unveiled. The value of the diversity of life must go beyond the potential gains that we can obtain through its exploration. We must remember that life is resilient, but we humans are also persistent in taking life on the planet to its critical limit. Because of this, it is necessary to act, now.

But, after all, what can we do? One possible way would be to invest a part of our time in the communication and popularization of science to increase the awareness of society, since science is the most parsimonious and reliable strategy to promote the needed changes in the world (Andreote 2018). It is also important to understand that nature is unpredictable and to understand life holistically, multidisciplinary approaches are required (Prigogine & Stengers 1991). Finally, as Edward Wilson (2006) advises, the biological diversity of the planet has an intrinsic value that is beyond its economic value, and an alliance for life will be needed to save biodiversity on planet Earth.

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