

V.I. Vernadsky's Comments, Of Sorts, on NAWAPA

In his 1926 The Biosphere, Russian biogeochemist Vladimir Vernadsky wrote about the distinguishing characteristics of living matter and the Biosphere:

“As a result of these radiations, the substance of the Biosphere is penetrated by energy—it becomes active, it gathers and distributes the energy received in the form of radiation, and eventually turns it, in terrestrial organisms, into free energy capable of performing work....

“Terrestrial creatures are the products of a complicated cosmic process—they constitute a regular and necessary part of a harmonious cosmic mechanism in which, as we know, there is no place for chance....

“There is not a single considerable balance in the Earth's crust uninfluenced by this life, which leaves ineffaceable traces on the whole chemistry of the Earth's crust. Life therefore, is not an accidental phenomenon, exterior to the Earth's crust. It is part of the structure and the mechanism of the terrestrial crust in which it fulfills functions of primary significance necessary for that mechanism to exist....

“A living organism of the Biosphere must now be empirically studied as a special body that cannot be

completely reduced to physical and chemical systems we know.... This very task, which has been posed by many scientists, may turn out to be as illusory as the problem of squaring the circle. In the sphere of biology, we have come across such problems more than once....

“Life transferred to the abstract time and abstract space of mathematics is a fiction, a creation of our intellect, which does not correspond to reality.”

Vernadsky turned to the unique role played by Man and the Noösphere, in the concluding section of the book, under the heading “A few words about the Noösphere”:

“In particular, a person of reason and skillfully directed resolution can reach, directly or indirectly, fields inaccessible to any other living being.... Such a property of *Homo sapiens* cannot be thought of as accidental....

“There is not a single corner of the Earth where Man could not survive if necessary.... Mankind's power is connected not with its matter, but with its brain, its thoughts, and its work, guided by its mind. In the geological history of the Biosphere, a great future is opened to Man if he realizes it, and does not direct his mind and work to self-destruction.

“Man is striving to go beyond the limits of his planet—to space. And he will probably succeed.... The ideals of our democracy correspond to a spontaneous geological process, to natural laws—to the Noösphere. So we can look at the future with confidence. It is in our hands. We shall not let it go.”