

Transcription, February 2015:

The Sunday Herald (Boston) (28 June 1908), Magazine Section: 2 (Edmund Noble).

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‘Does the Universe Exist for Man Alone? According to Dr. Wallace, Earth Is Only Inhabited Body in Solar System, and Tracings of Mars Are Not Canals but Marks on Surface.’

In his new book, “Is Mars Habitable?” Dr. Alfred Russel Wallace, the English scientist, joins issue with Prof. Percival Lowell, the American astronomer. The work is the continuation of a theory which gives a new and unexpected turn to astronomical speculation.

For ancient thought, the earth was the centre of the cosmos—the hub of things, around which circled sun, planets and stars in unending procession. This was the geocentric hypothesis. Along with it went the notion that everything, from the flower in the field to the star in the sky, existed for the comfort and advantage of man. Here was the anthropocentric theory.

The one hypothesis survived a little longer than the other. But science demolished, or seemed to demolish both. It made the sun the centre of our planetary family, showed that the stars are also suns and thus filled the universe with solar systems whose satellites, by analogy with the earth, were presumed to be inhabited. By presenting everything, from amoeba to nebula, as carrying on the business of existence for itself, it disentangled nature from the supposed subservience to man. The earth became a mere speck in the maze of worlds; its human inhabitant dwindled in importance until it grew fashionable to compare him with the tiny insect that is born, lives and dies in an hour.

But in these later days the earth has been swung back to its old position in the centre of the universe, and man exalted to a place higher than speculation ever claimed for him in his wildest dreams. It is in the name of science that Alfred Russel Wallace speaks, and his new theory advances propositions of a startling, not to say sensational character. Once the doctrine of the plurality of inhabited worlds held a position of high respectability; today it is in danger of sinking into the realm of myth.

Beginning with our own solar system, Mr. Wallace asserts that, with the exception of the earth, there is not a planet in it, from Mercury to Neptune, which is able to support vitality or form the abode of any grade of intelligent life. In the famous markings on Mars he sees not a gigantic system of artificial irrigation by means of canals, but a mere network of surface cracks running into and out of craters, the whole due to inevitable incidents of planetary formation. As to the other members of our system, Mercury, like Mars, is not large enough to retain water vapor; Venus is roasted on one side and frozen on the other, while Jupiter, Saturn, Uranus and Neptune, being “almost wholly gaseous,” have no solidified surface “or even the elements from which such a surface could be formed.”

The earth, then, according to Dr. Wallace, is the only inhabited body in the solar system. What of the hundreds of millions of suns which make up the material universe? A few years ago the astronomer Gore estimated that of the total number, there are at least 10,000,000 of a type closely resembling our own sun, and that if only one in 10 has a planet revolving around it at the proper distance, possessing the appropriate conditions, there ought to be at least 1,000,000 worlds fitted for the support of animal life.

But we do not know that the stars have planets revolving around them. What astronomers are sure of is that large numbers of stars are “doubles”—made up of two suns closely associated—near which life could not possibly arise. Many of the brightest stars are much larger than our sun, but there are probably ten times as many that, being much smaller, are unsuited to yield adequate light and heat for a sufficient time, and with sufficient uniformity for life-development on planets. In given regions of the universe such as the Milky Way, life is rendered impossible by enormous heat and excessive formative activity. It is only within the star cluster to which our own sun belongs that bodies suitable for habitation can exist, but so scant is the likelihood of the right conditions being present in any except the earth that even for them Dr. Wallace refuses to concede so much as a probability. Indeed, he maintains that the probability is “all the other way.”

What, then, of the element of time? “Life,” says Flammarion, the French astronomer, “is universal and eternal, for time is one of its factors. Yesterday the moon, today the earth, tomorrow Jupiter. In space there are both cradles and tombs.” Some planets are now too hot, others are too cold; some lack water, others have a surfeit of it. Some worlds may have the stage of life behind them; others may be growing toward it. Just at this particular moment in cosmic history the earth happens to be the only inhabited planet, but there was a time when other bodies were peopled, and there will be a time when worlds now young will have become mature enough for life.

Will there? Dr. Wallace does not accept that view. The unfavorable conditions now prevailing on Mercury, Venus and Mars are likely to get worse rather than better, and the sun cannot last long enough to hatch out the germs of vitality claimed to be awaiting development in Jupiter and the planets beyond him. “The whole of the available past life period of the sun,” Dr. Wallace claims, “has been utilized for life development on the earth,” and “the future will not be much more than may be needed for the completion of the grand drama of human history, and the development of the full possibilities of the mental and moral nature of man.” To which is added the argument that also among the stars the chances of life already past or to come are so small as to be completely negligible.

But Dr. Wallace is not satisfied merely to show that the earth is the only planet that ever was or ever will be inhabited. He maintains that it has been especially favored by cosmic arrangements. To the abode of man regularity of heat supply, resulting in a limited range of temperature, has been vouchsafed. We have always had a sufficient amount of solar light and heat. Our exclusive advantages, as compared with the rest of the universe, include water in abundance, universally distributed, and an atmosphere of sufficient density consisting of the gases essential for vegetable and animal life and containing a sufficient amount of dust. Even the alterations of day and night are held to be favoring conditions, and Dr. Wallace does not hesitate to suggest that the stars radiate influences which may help the processes of growth and thus contribute to the development of life on the earth.

The argument culminates in an appeal to location. By being in the plane of the Milky Way, and not far removed from the centre of that plane, the earth occupies a nearly central position in the universe, and will in all probability continue to occupy it. Our sun has been retained here, revolving around the centre of gravity of the special cluster of stars to which it belongs during the whole period of its existence as a sun and of the earth’s existence as a planet. It has therefore been saved, in a region of comparatively small gravitational force, “from the possibility—perhaps even the certainty—of disastrous collisions or

disruptive approaches to which suns in or near the Milky Way, and to a less extent elsewhere, are or have been exposed.”

The ancient geocentric theory thus returns to us in a completely up to date scientific dress. We also get the anthropocentric theory elaborately modernized. And along with these two, in Dr. Wallace’s theory, goes a frank appeal to the necessity of design in nature. The earth is central not by accident, but because an original plan required its centrality, and man is the central and only intelligence in the cosmos, not by mere incident, but by virtue of a purpose which contemplated his appearance from the very beginning.

A marvellous command of scientific facts is seen in this presentation of man as “the unique and supreme product of this vast universe,” and of the universe as “actually brought into existence” for the production of human beings. But it is a thesis which confines nature to a single cast of her many-faceted die. It subordinates a hundred million suns to merely human interests. It devotes the whole ether, whose wonderful properties science is only gradually discovering, to the evolution of a single set of intelligent beings.

It may turn out that life is possible under conditions altogether other than those to which life on the earth has accustomed and adapted itself. A reasonable fish would be likely to deny the power of any animal to live on land, and the micro organism which oxygen kills could make a strenuous argument against incautious air-breathing. A theory of human development might be formulated which would lift man to the heights without making him feel lonely, and there is an explanation of human origins conceivable that would not call for the waste of nature’s resources on a colossal scale.

Dr. Wallace’s theory, entitled “Man’s Place in the Universe,” has favorably impressed many scientific men. Conclusive evidence of life elsewhere in our solar system, were it forthcoming, would leave much of his general argument untouched. But his account of man as “the unique and supreme product of this vast universe” is irreconcilable with Prof. Lowell’s claim for the presence of life on the planet Mars. The theories are here squarely arrayed against each other, and each must decide between them for himself.

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The Alfred Russel Wallace Page, Charles H. Smith, 2015.