

The Death of a World

Physics

Dr. Paul R. Heyl in *The Scientific Monthly* (June, 1928):

Of the vast collection of astronomical photographs at the Harvard Observatory only a fraction has as yet been examined; but the examination has gone far enough to bring out some rather startling facts concerning those bodies known as new stars or novae which appear every now and then. All of us have heard or read of them; some of us may have seen that brilliant one which appeared in Perseus over twenty-five years ago or that other which was visible about seventeen years later. A star previously unnoticed, of telescopic magnitude only, blazes up within a few hours to a brilliance perhaps exceeding Sirius or equal to Venus at her greatest brightness. Then it slowly fades away. Within the last thirty years one or two occurrences of this kind have happened with attendant phenomena which give us an idea of what may have taken place. The star, moving rapidly through space, as all stars do, including our sun, may have encountered something; perhaps one of those patches of dark nebulous matter with which space is strewn here and there, as dangerous as icebergs on steamship lines of travel.

Many of these dark patches can be recognized by their edges, sharply defined against the starry background surrounding them. If a star happens to plow its way through such a patch of material there will be temporarily a great increase in its surface temperature and a consequent disturbance of the star's internal economy, resulting possibly in an explosion. We are not clear as to just what happens, but from whatever cause the records of the Harvard Observatory show that it happens a good deal oftener than we have ever thought or like to think about. While it is not a matter of daily occurrence, it does happen about once in every three weeks; fifteen times a year there is a nova of at least telescopic magnitude; fifteen hundred such occurrences in a century.

We do not need to go farther back than the period of recorded human history to reach a number of such catastrophes as great as the total number of visible stars. The conclusion, as stated by Professor Russell, is that on the average every star in the heavens must suffer this fate more than once in its lifetime!

Now life has been on this earth for at least a million centuries, and in

that time there must have been a staggering number of such calamities; yet our sun has escaped. Did he suffer this fate before life appeared on the earth, or is his turn yet to come?

We do not know. There is nothing in sight to excite alarm. Our sun seems to be moving through an unusually dust-free region of space. Is it permissible for a scientific man to dream that the way has been swept for him?

The mind can not avoid speculating on what might have happened if only one of the many stars which have suffered this fate had a planetary retinue in attendance. What if there had been life on one of those planets?

It might have been. It may be happening somewhere at this moment, and the light-borne news may not reach us for a hundred years. Nature is icily indifferent to such a circumstance. It is of no moment whatever to her that there may be a planet attached to that sun which suffers his baptism of fire. There might even have been on such a planet sentient beings who lived and loved and liked life well, as we do.

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The Irrigation Fallacy

Agriculture

ISAIAH BOWMAN, Director of the American Geological Society, in *Foreign Affairs*:

One commonly held economic fallacy which ought to be destroyed in order to clear the way for sounder thinking as to the possibilities of development of the pioneer belts of the world relates to the magic of irrigation. The wealth of the irrigated lands of the world—India, Mesopotamia, Egypt, Spain and even of our own country—has been borne in upon us with such insistence that we attribute to engineering skill the ability to transform the deserts of the world into productive gardens. If this were true we should pursue an easier course if we left the mid-zone of the pioneer lands where normal agriculture and grazing may be prosecuted and go at full stride into the desert. Unfortunately, nature takes heavy toll of man's partial or conditional "conquests," so-called, whether it be by desert irrigation or tropical agricul-

ture. Man can throw a railway across the mountain, but every ton of freight that he carries across the mountain takes so much more coal because of the heavy grades; and the price of the coal is the toll that man pays to the mountain. It is the same with irrigation. We have had an admirable laboratory test in the United States. The Reclamation Service has been in existence for twenty-five years. It has done constructive work in providing water for valley floors and benchlands in selected places in the arid West. It has developed irrigation projects where water has been stored and where the settler has been invited to come in under terms regarded as generous. The government has thus tackled directly the problem of the population capacity of the land. Yet what has been the result? In twenty-five years how many people have we actually taken care of? The total farming population upon the twenty-four national irrigation proj-

ects of the West after twenty-five years of government aid and generosity is but 137,000, a population equal to that of the city of Hartford, Conn., or Grand Rapids, Mich. Irrigation alone will not solve questions of general overpopulation or the much deplored cityward movement. It is easy to see that the most trifling improvement of agricultural practice in settled communities will accomplish much more in the production of agricultural products and the growth of population than all the millions that have been poured out upon the irrigation projects of the West in a quarter of a century.

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Archæologists have been working in Cyprus for more than 50 years, but it has remained for a peasant to discover broken fragments of a bronze statue which, when reassembled, promises to be the finest single work of art found on the island.