

BEWARE! END OF THE WORLD ONLY 12,000,000 YEARS AWAY!

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Then the Sun Will Shrink, Lose Its Heat and Inhabitants of the Earth Will Freeze and Starve to Death.

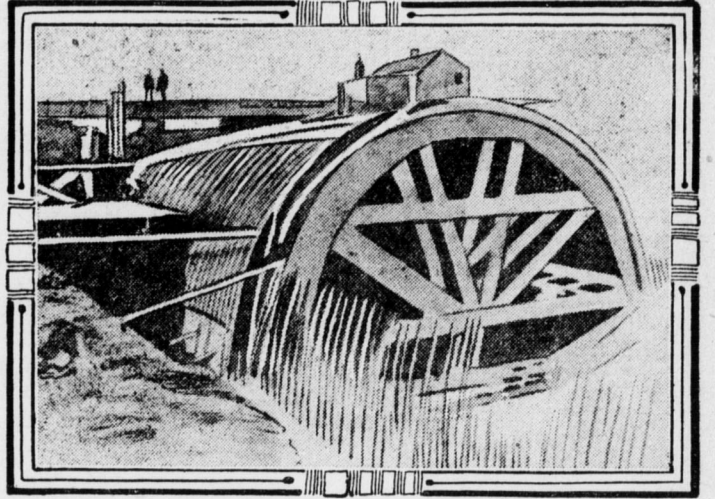
High Brovved Scientists Have It All Worked Out—"Things Are in a Bad Way." Warns Adherent of Nebular Hypothesis—World's Center Giving Forth Warmth May Save Us for a Time, But Ultimate Destruction Is Inevitable, Wise Ones Say.

sun will have become so far cooled off that we shall be indifferent to everything else that happens. Another limit to the future of the habitable portion of the earth is brought to light by the rapid progress of erosion that is going on all over the land surface of the world. Wallace estimates that one foot of

REASONING from the principles of the pretty generally accepted nebular hypothesis the end of the world is to be reached very gradually through the increasing reign of cold and the lengthening of the earth's day. For it is evident that the sun cannot keep on radiating heat at

BIGGEST SEWER IN WORLD IN WORLD

ST LOUIS BUILDING AN IMMENSE DRAINAGE SYSTEM



The big sewers of Paris have gained a world-wide notoriety; sewers in which the criminal classes could hide and escape detection, and big enough to permit fair-sized boats sailing through them. But now one American city at least has, or rather has in the course of construction, a sewer which far exceeds in size anything which Paris possesses, or any other city of the world, for that matter. It is big enough to permit a big tug to steam through its bricked and cemented walls. It is known as the Harlem Creek sewer and will be 29 feet in diameter in its largest section and from 27 feet to 18 feet in the smaller sections, the main section and the two branches measuring over four miles in extent and the whole draining more than 6,000 acres of land. There are longer sewers than this, and there are drainage systems, not sewers, which drain much larger tracts of land, but there is no sewer in the world that combines such great size with extent of area drained, and there is no city drainage system in the world that in any way compares with it.

To the average person a 20-foot sewer means nothing at all, because the usual man or woman knows little about sewers; but to engineers and contractors it means something stupendous in sewer construction. Sixteen feet has heretofore been the extreme size for city sewers, and most sewers are from 10 to 12 feet in diameter, with branch lines very much smaller, in some cases only a foot or 18 inches in diameter. When these figures are considered and compared with the dimensions of the Harlem Creek sewer, even the uninitiated cannot fail to see what an enormous work the city of St. Louis has in hand in its new sewer. The Harlem Creek sewer is nearly twice as large in its internal diameter as any other sewer yet built. From its lowest point to the top of the arch it is more than twice the height of a high-ceilinged room and almost three times the height of the ordinary modern ceilings. From the surface of the water when the sewer runs at ordinary capacity to the top of the arch is 19 feet 6 inches, or half again the height of the ordinary room. Gasoline launches could sail up this sewer without difficulty at any stage of water, and when the flow is low a tugboat would have no trouble in steaming from one end of the large section to the other. If the bottom of the sewer were level, a loaded van could drive through it and still have room to spare at the top.

The Harlem Creek sewer was begun July 13, 1906, and Sewer Commissioner Fardwell expects to have the public section, or that section running from Florissant avenue to the river, completed within another year. The entire system will probably not be finished for three or four years more, and all the connecting lines will not be laid till the section drained becomes more thickly populated.

The popular idea of large sewers has been gained from the lurid pictures which Victor Hugo and Eugene Sue have drawn of the sewers of Paris, and from what the many less illustrious writers have said of the sewers of London and other European cities.

London has the most complicated and longest sewer system owing to its great extent and enormous population, but there is no city in Europe, as there are none of any size in America except St. Louis which does not have to treat the sewage before disposing of it.

The elaborate pumping stations which the sewer departments of New York and Chicago are obliged to maintain for sanitary reasons cost those cities thousands of dollars every year, while the treating plants in European sewer systems are the most important and expensive parts of the systems. St. Louis has none of this to contend with, having unexcelled natural drainage with a river into which to empty its sewage, which is of such a character that it purifies itself without artificial assistance. The sewage problem is, say engineers, one of the simplest with which St. Louis has to deal, for it practically solves itself. Therefore it is all the more remarkable that that city should be able to boast of the largest sewer in existence. In most instances great difficulties to be overcome give rise to great results, but here is a case of a great result without the stimulus of a great difficulty, and the city should take all the

more credit for its enterprise on that account.

The sewer question is a wonderfully interesting one from other standpoints than that of sanitation. Though supposed to be absolutely a modern subject, it is one of the most ancient of problems and was studied as long ago as the time of Solomon. The oldest sewer in the world was built by King Solomon and extended from within the walls of Jerusalem to a point outside the walls, where the waste which it carried was used to fertilize the vineyards and gardens of the farmers of the immediate neighborhood. According to recent discoveries made in the vicinity, it is believed that this sewer, which was a tunnel 7½ feet in diameter, built of masonry, was abandoned because a spring which supplied water to a portion of the city was diverted from its course when the sewer was constructed. The pool of Bethesda, the healing waters of which were eagerly sought by the ill and infirm in Biblical times, is believed to be the inside terminus of this old sewer, and the "troubling of the waters" which was the signal for those who watched to descend into the pool is supposed to be due to the periodical bubbling of the spring beneath.

In ancient Rome sewers were considered of as much importance as aqueducts. The oldest sewers, or cloacae, were built by Tarquinius Priscus, about 200 B. C., while the largest, the Cloaca Maxima, was in use 26 centuries, and was only abandoned within the last ten years. The Cloaca Maxima was ten feet six inches wide and 14 feet high in the interior, with a solid masonry wall on all sides. The intercepting sewers were open channels five feet wide, and are described as large enough for a loaded hay cart to drive through without difficulty. These channels were paved throughout with slabs of stone, like those used in the Roman streets.

In ancient Rome only the streets and the public buildings were connected with the sewers, and householders had, therefore, to carry waste water and garbage into the street and throw it into the open sewers. In recent years the municipality of Rome has installed a fine modern sewer system, and the abundant supply of water which the aqueducts of the ancient Romans have provided renders the flushing of the sewers an easy matter, and gives the city one of the most satisfactory drainage systems in Europe.

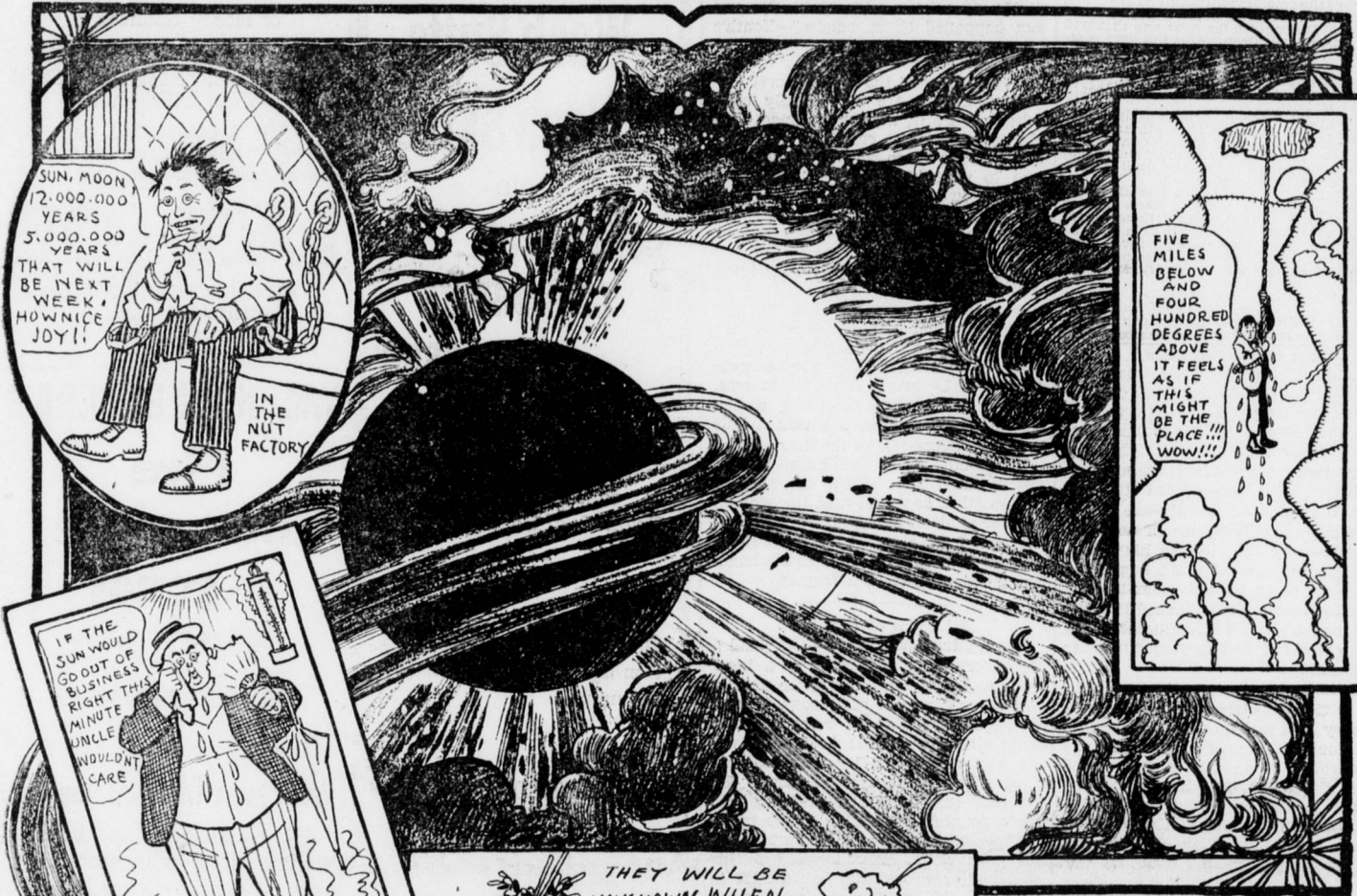
When the United States consul at Marseilles wrote to the mayor of the city for permission to make investigations with regard to the disposal of garbage, sewage and other city waste, for his government, he was answered in this wise:

"Garbage is one of the finest dishes of the place. Well cooked and nicely prepared, as they do it in the country, it is something exquisite."

As an example of Gallicizing of the "American" language, this is a gem. As a hint to American sanitary officers, it is more, it is sublime. With its new garbage reduction plant and its splendid new sewers, St. Louis bids fair to soon dispose of its offensive refuse so effectively that the people of the city will be like the mayor of Marseilles, unable to distinguish between the thing, garbage, and another thing the name of which it resembles, cabbage, and in another quarter of a century may make the same reply if asked the same question.

Indian Followers of Solomon. There is a custom, which embodies the wisdom of Solomon, observed by the Pueblo Indians. Once a year, an Indian, garbed in the skin of a mountain lion, which represents his god, whips such of the children of the community as are between the ages of four and ten, both for the wrong they have done and the wrong they are going to do. The happiness of these children, who have paid the penalty of their misdoings for a year in advance, is difficult to estimate. The respect of the Indian boy for his elders, and his obedience to his parents, testifies to the efficacy of this treatment and suggests the wisdom of its introduction to the gilded youth of the metropolis. —Outing Magazine.

Take Much Wealth Into Canada. It has been stated on British authority that American immigrants into Canada are taking \$50,000,000 worth of property into that country each year.



SUN, MOON 12,000,000 YEARS 5,000,000 YEARS THAT WILL BE NEXT WEEK. HOW NICE JOY!!

IN THE NUT FACTORY

IF THE SUN WOULD GO OUT OF BUSINESS RIGHT THIS MINUTE UNCLE WOULDNT CARE

FIVE MILES BELOW AND FOUR HUNDRED DEGREES ABOVE IT FEELS AS IF THIS MIGHT BE THE PLACE!!! WOW!!!

THEY WILL BE UNKNOWN WHEN

REPORTER—HAVE BEEN REQUESTED TO INTERVIEW YOU WHETHER IT IS TRUE YOU ARE GOING OUT OF BUSINESS IN 12,000,000 YEARS

NOTHING FOR PUBLICATION AT THIS TIME

IT WILL NOT ALWAYS BE THUS!!

the present rate, or, indeed, at any rate, forever. As Lord Kelvin has well said, we know that the sun is cooling off just as certainly as we should know that a hot stone which we encountered in a field was cooling off, though we had not seen it long enough to measure the rate of its cooling. Heat is not a permanent quality of any known object. The sun must be losing its heat, and hence in time will become a cold and lifeless object.

If things continue to go on as they now do, astronomers tell us, the sun will lose its life-giving heat long before 12,000,000 years have elapsed. Like all other cooling bodies, the sun must be diminishing in size. Its diameter must be contracting. Newcomb estimates that in less than 5,000,000 years the sun's diameter will contract to one-half its present length, so that the sun will occupy only one-eighth of the space it now occupies. It is hardly possible for it after that to continue to furnish as much heat as it does now, but it must then cool off with great rapidity.

This reasoning is based on the supposition that the sun is not yet a solid body, but is so hot that its mass is still in a gaseous state. But the force of gravity upon the sun is so great that the gas is compressed into a much smaller proportionate compass than it is on the earth. The force of gravity on the surface of the sun is 27 times that on the earth, so that a man weighing 150 pounds on the earth would weigh nearly two tons on the sun. So great is this pressure of gravity on the gases of the sun that are they reduced to one-quarter the density of the solid nucleus of the earth. But so long as the nucleus of the sun continues to be gaseous it will continue to grow hotter as it diminishes in size. So soon, however, as it loses sufficient heat to allow the material to take on the solid form, a crust will be formed and the radiating heat will rapidly diminish. Probably, also, the heat radiated will diminish long before that time, even though the sun is growing hotter, because of the diminishing size of the globe.

The only way that the astronomers can see to avoid this slow paralysis of the sun, and so of the whole solar system, is that lately proposed by Prof. Langley in a sensational article depicting what would happen if a dark world moving at an incredible speed in space should come so near our sun that the two would collide. In this case the original heat of the sun might be restored, but the catastrophe would practically produce such an expansion of its volume and such an increase of its radiating power that everything on the earth would be burned up, producing about such phenomena as are described by the Apostle Peter. Indeed, the resemblance between the words of the apostle and the theory of the Washington astronomer was as striking as it was unexpected, so much so that some readers may not know from which source the following quotation is taken:

"The heavens shall pass away with a great noise, and the elements shall be dissolved with fervent heat, and the earth and the works therein shall be burned up."

But the suggestion of the astronomer was pure speculation. There are no apparent signs of any such approaching catastrophe as Dr. Langley suggests as possible. At any rate, we may settle down to the conclusion that so far as astronomical forces are concerned the present order of things will not be disturbed for three or four million years.

But an equally gloomy prospect is before the world in the distant future from another cause which is in slow operation. The length of the earth's day is slowly increasing through the retarding influence of the tides produced by the moon. To be sure, this effect is so slight that it has not been directly perceptible since accurate methods of measuring the time of the earth's revolution on its axis have been observed. But that it must be taking place is as sure as that friction will stop a railroad train when the steam is turned off.

The tides raised by the moon's attraction are distributed by the continents so as to present many anomalies, but when considered in themselves they act the same as a wave three feet high constantly running in an opposite direction to the revolution of the earth, and so by friction retarding its motion. Astronomers are agreed that similar tides produced on the moon have reduced her revolution on her axis to a period of 28 days. Eventually the revolution of the earth will be reduced so that our day will be several times longer than now. When that time comes the nights will be so cold that nothing can stand it, and if they could the days will be so hot that what was left by the cold would be destroyed by the heat. But that time, also, is so far in the future that the present generation may put it out of their minds. This catastrophe will not arrive for many million years yet. Indeed, before that time arrives the

earth's surface is, on the average, washed away by the streams every 3,000 years and deposited at the bottom of the ocean. This amounts to more than 300 feet in a million years. As the main elevation of North America is 748 feet, and that of Europe 671 feet, it follows that by the operation of present forces Europe will be washed into the sea in 2,000,000 years, and America in 3,000,000 years. What providence has in store for us after that, no man knows. If the sunken portion shall rise at the end of that period, as it did at the end of the coal period, there will be dry land to live on, but it is doubtful if it have such stores of iron and coal as have blessed the present race of human beings.

There are two other sources of heat to which we may look with much confidence and hope. It was more than a dream of Ericsson to invent an engine which could be run by collecting the direct rays of the sun through immense sun-dials, thus generating the heat necessary to set in motion the wheels of industry. But the successful carrying out of his plans would necessitate the transfer of our great manufacturing centers to the rainless regions of the world where perpetual sunshine prevails. It, therefore, will not be impossible that the desert of Sahara and the sandy wastes of Central Asia shall in the future usurp the place now assumed by the localities in proximity to the great coal fields of the world, while the latter become overgrown with briars and brambles like the mounds of many an ancient center of civilization.

Still another possible source from which we may draw infinite quantities of heat and power is to be found in the heated center of the earth. As we descend below the surface of the earth, the temperature rises on an average of one degree in 60 feet. At a depth of two miles, therefore, the temperature of boiling water would be reached, and at a depth of five miles a temperature of more than 400 degrees. It would, therefore, not seem by any means impossible to bore into the earth deep enough to make a portion of its heat available for all ordinary purposes.

The world, however, is concerned with impending catastrophes nearer at hand. The prosperity of the present time is largely due to the rapidity with which we are using up the reserved stores of nature upon or near the surface of the earth. Thus geology, while it opens up to mankind the stores of good that are buried for safekeeping in the depths of the earth, points to their limited quantity, and calls upon men to use them economically and leave as much as possible for future generations. Wastefulness of these limited stores is a sin. At the same time it gives the philosophical student of history a sobering view of the destiny of man. Nothing is more certain than that man has not been always on the earth, and that he is not always to stay here. The world is like a transcontinental railroad train and the human race like a passenger who gets on at one end and has to get off at the other. Out of mystery man came and into mystery he goes. The visible world is a passing show. All that is unchangeable lies in the world of the unseen.