

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

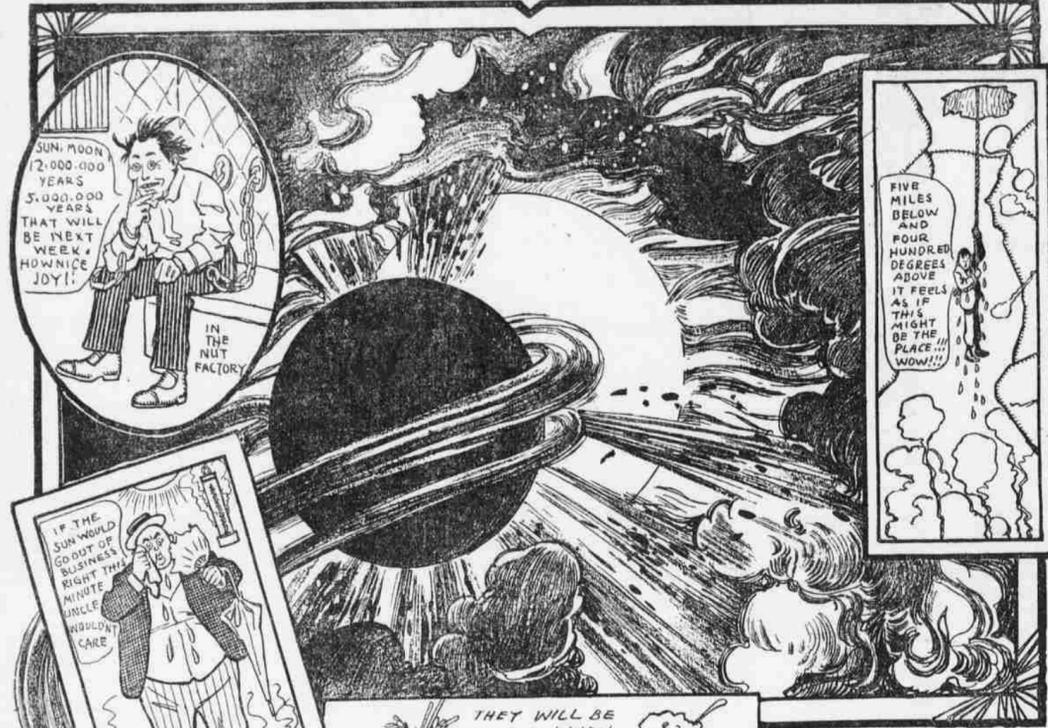
By G. FREDERICK WRIGHT, A. M., LL. D.

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

High Broved 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.

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

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



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 so 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 world's rainless regions of the desert, where the sun shines all day long.

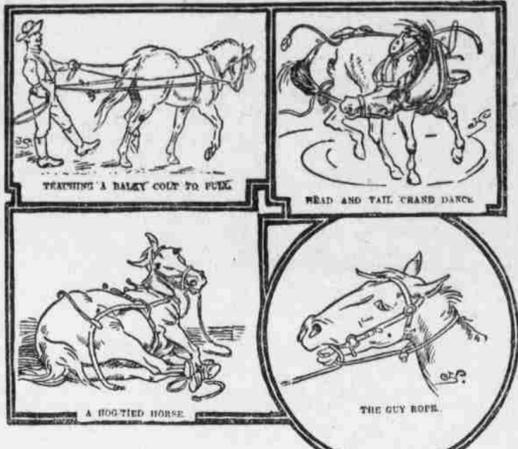
Still another possible source from which we may draw infinite quantities of heat and power is to be found in the heated center of the earth. As we descend below the surface of the earth, the temperature rises on an average of one degree in 60 feet. At a depth of two miles, therefore, the temperature 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.

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BREAKING THE BALKY HORSE

OF ALL THINGS DON'T CLUB THE BRUTE



It would give me as much pleasure as anything I can think of to be able to hand you a "sure cure" for balkers, but I hardly think I have anything new to say on this subject. When we come to the genuine inbred balkers we all have to admit that we are getting pretty close to the high stump. My experience is that the balking vice more than any other requires different handling for each individual case. I have never seen one that could not be started by some means, but when you speak of "cure" I'll go back and sit down. By cure I mean such correction of the fault that anybody can drive the animal. This cannot be done in all cases because, as a famous horse trainer has well put it, "you can't cure all the balky drivers."

For a sulker that will throw himself and refuse to get up, "hog-tying" is as good a remedy to apply as we are likely to find. Tie all four feet together and then go and weed the onions or sit down in the shade and read the news for an hour. Two hours may be necessary in some cases. You can very near tell when he has given up. His eyes will beg when you come near him. It is better, however, not to go near him for three-quarters of an hour. He must have time to gather in the fine points of your argument. He is usually very particular to keep on his feet after one or two applications of this remedy, and the chances are he will not balk at all with you, but the next man that gets him? Who knows?

The "guy rope" works satisfactorily in some cases. Tie the small rope around the animal's neck and take half hitch on lower jaw. Let a good husky man stand by a lunge, and in many cases, especially young horses, will give up the standing habit. When other ideas fail rapid whipping across the nose with a light whip will start him. I have seen

balkers go to work like honest men after being driven a whirl by the head and tail trick. Tie the knot in horse's tail and loop halter rope over this as short as possible. Let him spin until he gets dizzy, unloop halter and turn him the other way. I suppose the point is that anything which will take the animal's attention from his pet idea constitutes a remedy for the time being. I worked one balky on a mower two or three days by tying his tail to the singletree tight enough to take part of the strain. After that he would pull by the tugs without having his tail tied. They certainly tax our inventive faculties, these balkers.

It is easier to say what not to do with a balky. Don't hammer him. As soon as you lose your temper and go to clubbing him you might as well turn him out. The Rural New Yorker says that balky horses are sometimes started by clubbing, but they always balk harder next time; at any rate the majority of them do. I think balkers are always the result of bungling on the trainer's part. There are "natural balkers." I'll admit, but the tendency can be corrected by careful handling in breaking. Such a colt must be gradually worked up to the pulling point. He must learn to stretch a tug on a light rig before he is put on a load of any kind. We have to study the question from his standpoint as it were, sympathize with him, and encourage him instead of trying to force him too fast. You can get better results in less time by putting a collar and tugs and lines on him; for instance, put a rope in the tugs and pull back on it while you drive him around the yard, than you can by hitching him with a strong horse and dragging and slugging him along the road. When they are discouraged and sulky, it is a hard matter to make them see any bright side to life in the harness.

A HORSE WRANGLER.

A SURGICAL OPERATION



If there is any one thing that a woman dreads more than another it is a surgical operation.

We can state without fear of a contradiction that there are hundreds, yes, thousands, of operations performed upon women in our hospitals which are entirely unnecessary and many have been avoided by

LYDIA E. PINKHAM'S VEGETABLE COMPOUND

For proof of this statement read the following letters.

Mrs. Barbara Base, of Kingman, Kansas, writes to Mrs. Pinkham:

"For eight years I suffered from the most severe form of female troubles and was told that an operation was my only hope of recovery. I wrote Mrs. Pinkham for advice, and took Lydia E. Pinkham's Vegetable Compound, and it has saved my life and made me a well woman."

Mrs. Arthur R. House, of Church Road, Moorestown, N. J., writes:

"I feel it is my duty to let people know what Lydia E. Pinkham's Vegetable Compound has done for me. I suffered from female troubles, and last March my physician decided that an operation was necessary. My husband objected, and urged me to try Lydia E. Pinkham's Vegetable Compound, and to-day I am well and strong."

FACTS FOR SICK WOMEN.

For thirty years Lydia E. Pinkham's Vegetable Compound, made from roots and herbs, has been the standard remedy for female ills, and has positively cured thousands of women who have been troubled with displacements, inflammation, ulceration, fibroid tumors, irregularities, periodic pains, and backache.

Mrs. Pinkham invites all sick women to write her for advice. She has guided thousands to health. Address, Lynn, Mass.

THE EFFECT OF WEALTH.



Billie—Who is that awfully freckled girl on the horse?

Tillie—Why, that's Miss Gotrox. She has several millions in her own name.

Billie—So? My! Aren't her freckles becoming?

Pigeon Joins Recessional.

A little fellow who sings in the choir of a Long Island village church is the happy possessor of tame pigeons. One of them follows him to the pretty vine covered place of worship and during the sermon coos and flutters among the crimson rambles at the open window. One recent Sunday when the recessional began the bird flew in and circled about the little fellow's head until he reached the choir room door. It then flew out and waited to escort its small owner home.

But It Was All Right.

The poor but proud duke decided to play a safe game, so instead of bearding the dear girl's father in his lair he wrote as follows: "I want your daughter—the flower of your family."

By return mail came the old man's reply: "Your orthography seems to have a flat wheel. What you want is doubtless the flour in connection with my dough and if my girl wants you I suppose I'll have to give up."

No Running About.

Mrs. Gadder (reading an ad.)—Shopping by mail! How ridiculous!

Mrs. Ascum—Why so?

Mrs. Gadder—Why, how can one shop by mail? You can only buy things by mail.

The eyes of a man looking for a wife rest longer on the girl who can manufacture a pie than on one whose long suit is piano thumping.

HEALTH AND INCOME

Both Kept Up on Scientific Food.

Good sturdy health helps one a lot to make money.

With the loss of health one's income is liable to shrink, if not entirely dwindle away.

When a young lady has to make her own living, good health is her best asset.

"I am alone in the world," writes a Chicago girl, "dependent on my own efforts for my living. I am a clerk, and about two years ago through close application to work and a boarding house diet, I became a nervous invalid, and got so bad off it was almost impossible for me to stay in the office a half day at a time."

"A friend suggested to me the idea of trying Grape-Nuts, which I did, making this food a large part of at least two meals a day."

"Today I am free from brain-tire, dizziness, and all the ills of an overworked and improperly nourished brain and body. To Grape-Nuts I owe the recovery of my health, and the ability to retain my position and income."—There's a Reason.

Name given by Postum Co., Battle Creek, Mich. Read "The Road to Well-Being" in pks.

Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.

RICHES AND TROUBLES.

Advice and Comment on the Subject by Philocheop Uncle Rufus.

"My frens," said Uncle Rufus, as he sat down in a sunny spot on the steps of the grocery, "make no mistake about riches. No man eber gets to be with a millyun dollars dat his troubles don't begin de next day. He's got to git his h'ar cut once a week and agh once a day. He mus keep his shoes blacked day and night, and if

his necktie works around under his left ear he loses his position in society.

"You and me know dat two-shillin' suspenders hold up our trowsers as well as a par costin' six dollars. De millyonaire knows it, too, but he's got to pay out \$5.75 extra cause he's in de swim.

"In our mind's eye we see de rich man seated in a red velvet chair.

"In all de y'ars dat I knowed a sartin rich man sunthin' was allus happenin' to him. While I was gwine on foot his hosses run away and broke his laig. While I was injoyin' my kitchen stove his steam pipes busted and killed his cook. While my cabin was too small game for thunderbolts one cum along and tore half de roof off his house. While men de old woman was grubbin' along by ourselves he had to have 16 of his relations in de house. My dawg wasn't worth 15 cents, but he libed on. His dawg was worth \$250, and he was allus sittin' lost or nized."

"Dat millyonaire had no show to eat onions, make lasses candy or popcorn. He nebber slid down hill, went rabbit huntin' nor drank cider out of a jug. If he eber not down of an evenin' wid his shoes off to take comfort his wife dragged him off to de theater or his barn took fire. While I saved up \$100 in ten years, and am libin' to-day, he spent \$20,000 a year to run his house for de same time and died wishin' he could have had hocks and bacon for breakfast and had de felicity of wearin' a patch on each knee and two behine."