

system were formed by the condensation of a mighty hot nebula under a circular motion, which threw off the cooled outer circles as planets, and they revolving threw or left behind them their moons.

Now, urges our friend, what began in gas must end in gas, the solar system not excepted. But does this follow? Things may grow stronger as they grow older, and that indefinitely. The notion that the sun cannot, is a biological analogy from plants and animals which does not apply at all to the universe or to solar systems. It does not even apply to Humanity or its great Peoples; even Prof. Draper wrecked his "Intellectual Development of Europe" with the notion that because men die, great societies and civilization must die, too. The fact is, that they have (with scarcely an exception) kept growing from, out of and upon each other, pyramid-like, up to the present time, with its Family of Nations. The DIE idea is absurd, except when used to describe the ceasing of the life-process of some microbe plant or animal. The attempt to biologize the universe so as to "introduce death" into it is simply absurd.

Suppose it proved that our sun did condense from a nebula; it may still go on forever. What had a beginning need not have an end, if the supply equals the loss. It depends upon the profit and loss of the business. Now, under the law of correlation, and the constant falling of matter into the sun, it is plainly not a live coal cooling off and dying out in empty space. It is "a going on," a process, in every sense of the word, and at a most terrible rate. Its "go" is really the correlation of impinging matter and forces which keeps it in astonishing ebullition, and drives it and its system through space at the rate of ten miles a second, i. e., 300 millions of miles a year towards the star Lyra. The sun has not a second of time to stop and get cool, and it never will have until those impelling forces are shut off; and who is to do that, or tell how it is to be done?

The universe has endless resources. What reason have we to suppose that the supply of coarse matter [its coal] to the sun will ever give out, or that the consequent correlate radiation of light, heat, electricity, nebula, etc., FROM the sun will ever cease, or that its two motions, or those of its planets, will ever be arrested, or even vary so as not to soon balance again, as La Place proved they would under the law of gravitation? The evidence is clear that the sun is doing a large, safe and ATTRACTIVE business. No sooner do the comets get up to it, than it sends their tails off into infinite space. Notice how stiff they always stand out

FROM it. Are they going with new light, heat, etc., to form new matter-atoms out of the infinite ether? If our friend would only get seated on one of those tails, or even get his attention seated there, he would give us no more "run down" or cosmic-suicide articles about the sun, but might find out what that noble young star is up to. Under the law of correlation and "supply and demand," we bet on the sun FOREVER, or until it catches the star Lyra, which is also on the fly, being pulled, pushed or floated, and which it may overtake and gradually appropriate by "benevolent assimilation," and thus commence a more wholesale and still grander "forever." [See Prof. Newcomb's article in McClure's Magazine for July, 1899.]

As John Stuart Mill pointed out, if you must have hypotheses, there is no sense in making them pessimistic, especially against the facts. We have only to read "The Earth Not Created, the Fallacy of All Cosmic Theories," by D. K. Tenney (send 15 cents to H. L. Green, editor of the Freethought Magazine, Chicago, for it), to see how utterly premature all of these nebular speculations are, and how weak they are as against the "Meteoritic" or Aggregative Hypotheses of the great astronomer, Lockyer, and his elucidator, Proctor, in the ninth chapter of his "Other Worlds." As to these coelestial fancies, the Astronomer Royal, Ball, uses the word "speculations!" See his "Story of the Heavens," pp. 506, etc., where he says of this Nebular Hypothesis: "Nor can it be ever more than a speculation; it cannot be established by observation, nor can it be proved by calculation. It is merely a conjecture, more or less plausible, but perhaps in some degree necessarily true, if our present laws of heat, as we understand them, admit of the extreme application here required, and if the present order of things has reigned for sufficient time without the intervention of any influence at present unknown to us."

"Such a speculation may captivate the imagination, but it must be carefully distinguished from the truths of Astronomy, properly so called." P. 509.

This seems the healthy position to take; and certainly so, after reading Mr. Tenney's showing that this speculation gets not a particle of encouragement from the vast number of nebulae revealed by telescopes—no such "going on" being really detected, in any of its phases, in any part of the known universe. This speculation was, therefore, healthfully dropping out of the school books, where it had done unspeakable injury as a "Scientific Theory." Thus, although Ball indexes it as a "Theory," he treats it in his book as a "Conjecture," now dying out or being metamorphosed

into "some degree" in which it might seem "necessarily true."

2. But now comes Friend Wettstein with a sensation article of the New York Sunday Journal, which seems to be a digest of a lecture of Prof. Serviss, a popular lecturer on Astronomy, and seeks to galvanize this scientific "conjecture" into a scientific "theory" again. This is done on the strength of observations made by the new telescope at the Lick Observatory. What facts those observations really disclose, and what they are worth on this and other subjects, remains to be known. We would in nowise try to anticipate, much less disparage, them. We would respectfully request Mr. D. K. Tenney to give the truth about them, and their bearings, in an article in the Freethought Magazine at his early convenience, and we shall wait until we get the actual truth from him or Prof. Serviss, or some other source.

We are quite sure that the sober truth does not appear in that singular rhetorical exercitation of the Sunday Journal, which has been going the rounds of the papers, and which our friend has copied in his letter, thus giving it an importance it in nowise deserved. It does not disclose any fact clearly, nor show the intellectual sobriety which can draw a scientific conclusion. Its hue and cry and power of assertion are immense. But just as at the Bar, grandiloquence generally means, "no case." And here it is worse, for if the facts indicated in this article are true, the Nebular Hypothesis is an impossibility. The stars are suns, and the rotation of nebulae with or about them is the necessary condition of this hypothesis in order to account for the formation of planets and solar systems. But here we have "vast spirals, intricate patterns of nebulous traceries, as delicate in structure as the finest lacework BEADED with stars." Then the "rings of light are INTERLINKED;" "orbs of pale fire whose gigantic whirling motion and whose gradual compaction into new suns under the pressure of gravitation ARE ALL BUT visible."

How can "vast spirals" and "nebulous traceries," "bearded with stars" and "interlinked," that is, chained together, "rings of light" REVOLVE so as to work out the Nebular Hypothesis? The beads, that is, the stars, are suns already formed in a vast mass of CONTINUOUS nebulous "tracery." This position utterly negatives the idea of their rotation as a whole. But if each sun-star rotates with its part of the nebula, the nebula would be all broken up and not continuous. This evidently wont work—except to make a sublime chaos.

Next we have, "orbs of pale fire, with a gigantic whirling motion,"

DIAMONDS.

One of the rarest gifts is the talent to judge accurately a diamond in all its various qualities. As genius for music or painting must be inborn to produce the great artist, so the faculty to correctly determine a diamond in all its diversified detail and characteristics can never be acquired, unless by the rare few who are gifted in this direction. A dealer may be a good jeweler, a successful merchant and an honest man, and yet deceive you on a diamond, simply because he himself is deceived. I have been in the business forty years. I could no more be deceived on a diamond than the cashier of the Bank of England could be on a bank note. When buying diamonds I use no glasses, ask no questions except the price; my acute vision instantly detects the slightest difference in color every flaw and imperfection. Your interests will be protected if you buy of me. If you want a Ring, Pin, Stud, etc., for \$10, \$20, \$50, \$100 or up, send to me. I will send you the goods prepaid. Keep them a week or two, and if you are not satisfied that I undersell all competitors, return and get your money.

Send for my price list of Watches, Chains, Jewelry, Silverware, Freethought Badges, Ingersoll Spoon, and my tract, "Theism in the Crucible," free.

Otto Wettstein,
Rochelle, Ill.

SAMPLE copies of 100 different Leading Newspapers and Magazines sent to any address upon receipt of 10 cents to pay for mailing. U. S. SUBSCRIPTION AGENCY, 126 N. Liberty St., Indianapolis, Ind.



The Wiley B. Allen Co.

The Oldest! the Largest! Music Store. Leading Pianos and Organs.
209-211 First St., PORTLAND, OREG.



JUST AS NATURAL as the oldhen and a good deal more reliable. Doesn't break its eggs or make its chicks lousy. Doesn't stay off the nest and allow the eggs to chill but hatches every egg that can be hatched.

PETALUMA INCUBATOR
is absolutely perfect as to incubator essentials—proper application and distribution of heat and moisture, regulation and ventilation. For 50 to 300 eggs. WE PAY FREIGHT ANYWHERE in the U. S. Handsome catalog free. Petaluma Incubator Co., Box 1, Petaluma, Cal.



\$4.00 Worth of MAGAZINES FREE!

"SECULAR SCIENCE AND COMMON SENSE" points the way to the goal of your ambition. A magazine of Advanced Free Thought, Liberal and

Modern Ideas of Reform and Natural Law. Devoted to practical demonstrated truths. Humanity is undergoing important physical, intellectual, and social changes. Progress demands the rending of slavery's chains. This magazine is a stepping-stone to success in all of life's undertakings, as it develops power of intellectual perception so that latent and active energy will be properly directed, insuring a clear head in a sound body. Nothing like it or half so good and practical. This rare treat sent a whole year, together with samples of over 50 other valuable papers and magazines of \$5.00 value, for only \$1.00. Send at once as this offer is limited. Sample copy with an interesting book of over 100 pages free for 12 cents in stamps. Address

SECULAR SCIENCE AND COMMON SENSE
P. E. 532 Atlas Bldg, Chicago, Ill.

The Free Thought Magazine

The ablest publication of the kind in the World. Sixty-four pages. Illustrated. Published Monthly. Price \$1.00 a year. For TWENTY-FIVE CENTS it will be mailed to any address THREE MONTHS. Address FREE THOUGHT MAGAZINE, 213 E. Indiana St., Chicago, Ill.

Continued on 5th page.