HOW PLANETS AND MOONS WERE MADE

PRICE ONE DOLLAR

By PAUL G. LEWIS

> "* * * it seems unlikely that the ultimate verdict will be adverse to the preponderating influence of the tide in the evolution of our planet." Page 285, The Tides, by George Howard Darwin, son of celebrated naturalist, Charles Robert Darwin.

When scientists directed their investigations to the "tides," meteorological as well as astronomical, they were entering upon that path which leads directly to the solution of how plannets and their respective moons were formed. However, these investigations, even though thorough as far as carried on, were not extended beyond what I call the "standard" tide. The very next step forward opens the gateway wide into what has been classed a secret or mystery. All scientific researches and investigations seemed to have stopped at the very door of this fountain of knowledge in spite of the fact that no one could fail to see or pass by this door. This door opens that very moment the mind understands what its eyes see when these behold the frothy and foamy waves in rivers, lakes and seas. All have seen these capping waves; and it will be surprising to realize what a new radiance of light these waves will shed upon the darkened pages of astronomy, when we unfold the structure and functions of what I have called the "reproductive" tide.

The Laplacean ring theory, the theory of accretion, the theory of fission—all these were laid aside each time they were put through the separator of modern thought, for these contain no cream of useful knowledge.

In times past, knowledge consisted largely of the acquisition of facts existing in nature; in time to come the bulk of knowledge will be that product which the power of

man's reason will work out from known facts—the present has already entered upon this "era of reason."

It has been well stated that matter is indestructible, but such does not relate to combinations of matter, for these have each their beginning as well as their necesary end. The sun and all of the planets with their respective moons are combinations of matter wherein each is a most highly organized body; and this is well attested to by the orderly conduct of orbital movements of planets, interrupted only by polite and mathematical recognitions (perturbations) as these come into closer contact with each other through their powers of gravitation.

The solar system being occupied by organized bodies, had therefore its definite beginning and such will likewise have its definite end. It might be said that the solar system was born, now lives and at some time in the far future will die—but not its matter. This principle may be more easily understood if we were to let solid rocks or hard bricks represent matter as being indestructible, whereas houses, barns, chimneys, wells, sidewalks and fences constructed out of these would in such instances represent the sun and the various planets and satellites. Solid rocks or hard bricks may be so organized as to bring forth the structures mentioned above; and it is these structures which have each their definite beginning, whereas the subsequent end of each merely replaces such rocks and bricks back again into that pile from which these may again be retaken for similar usefulness in upbuilding other structures. Every structure has its beginning and its end, but the rocks or bricks remain the same throughout the many changes which combinations and destructions of combinations effect.

All human experiences demonstrate that rocks or bricks are by no means in themselves able to create or organize into such structures, but that energy, outside energy is required to place the rocks or bricks into harmonious relationship with the existing laws of nature in order to insure stability for at least that length of time for which such structures were erected. And so the energy which brought forth the planets from Neptune to Mercury and all of the

moons, was far from being such as was inherent within the matter and space of our solar system. The early evolution of our solar system and the incident powers of planetary procreation had passed forever from actual view even before the era of life on earth.

It is energy in actual operation which produces changes; and this rule is not altered whether such changes relate to the upbuilding or the destrutcion of combinations. A structure is merely the result or answer or effect of energy applied to rocks or bricks wherein each was placed into a certain mathematical relationship with reference to all others. In a finished structure we perceive only a final product, but we do not observe the process which was in operation. This is the case with our solar system, for all planets and all moons were finished long before the inquiring mind of man asserted itself upon earth. It is therefore a useless task to gaze skyward.

If energy made matter do work, then let us study energy and not the finished product which years ago spent a portion of its energy and thereby and with it forever hid from our eyes the exact process of planetary procreation. It takes energy (centrifugal force) for the earth to circumscribe her path annually around the sun; it takes energy to cause vibrations or oscillations of matter to become visible to the eye; it takes energy to cause vibrations from wind and string instruments to bring forth musical sounds; it takes energy to form light and heat from and with matter; it takes energy to disturb the atmosphere and it takes energy to disturb water. Without energy there would be no motion, no vibration, no oscillation—all matter would be quiet, dead in rest and silence.

In the common parlance of the street, everybody avoids a "dead" one, but all are looking for the "live" ones, and such is right because the latter only are interesting for prospective gain or profit, intellectually or otherwise.

Having thus pointed out the supreme importance of the "invisible" energy, whereas matter might be called the inno-

cent "visible" victim, I shall here proceed to consider only so much relating to energy as applies to the tides.

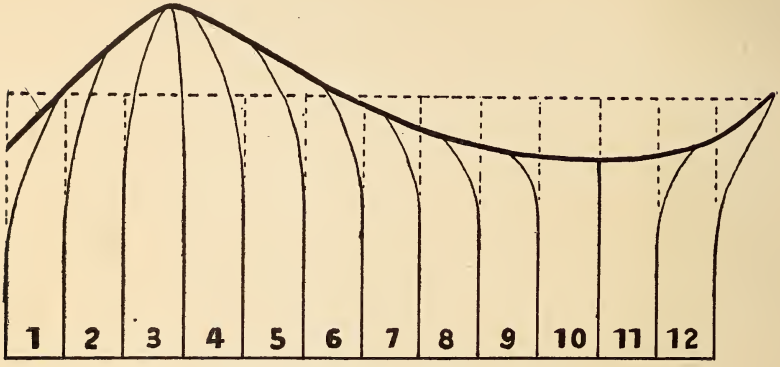

FIGURE 1—STANDARD TIDES

A standard tide, as represented by Figure 1, consists of twelve volumes of water whereof six volumes have been forced to occupy only five spaces at the horizontal dotted line representing water at the level of rest. This reduction of space for six volumes of water causes a portion thereof to rise above the level of rest and form what is known as the crest, leaving seven spaces at the level of rest to be occupied by the remaining six volumes of water, and in consequence thereof the latter body of six volumes falls below the level of rest and is known as the hollow of the wave.

It will be observed in the passing of a tide through a body of water that each particle of such water on the surface will at one time occupy a place in the crest, while at another such particle will be found in the lowest portion of the hollow of that same tide.

This furnishes evidence that such particle oscillates upward and downward between the crest and the hollow. However, such is not the only oscillation to which a particle is put, for such particle when within the crest has left its former place of rest and moved into five spaces, while thereafter that same particle moved into the seven spaces occupied by the hollow; in other words, each particle oscillates from left to right between five spaces and seven spaces, or

a distance of two spaces from left to right. This complex oscillation has been described in many books treating upon the tides, and I am here presenting a drawing of the same which shows this combined perpendicular and horizontal oscillation. A wave passing from right to left causes each particle on the surface to oscillate from left to right in the manner indicated by the figure drawn above the hollow and by the several approaching waves represented by the dotted waves.

It has taken astronomers thousands of years to formulate Kepler's celebrated law, that planets (objects) sweep over equal areas in the same time with reference to their common centre of attraction; or the speed of a planet (object) sweeping over equal areas, varies as the distance to be travelled (the radius vector drawn from the sun to the planet sweeps over equal areas in equal times.—Kepler's second law.)

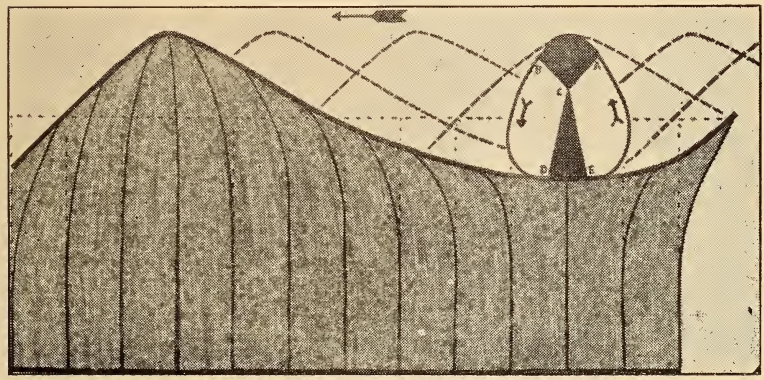

FIGURE 2—OSCILLATIONS OF STANDARD TIDES

I will now direct the reader's attention to the figure drawn above the hollow of the wave and there present the same law in a most comprehensive manner. In that figure the areas within A, B, C, and C, D, E, are presumed to be the same, but it will be noticed that the distance between A and B is about twice as great as that between D and E.

Suppose the distance between D and E is one mile, and that the distance between A and B is two miles, then if it took one minute to travel from D to E, such must be the same time when traveling from A to B. But the distance between A and B being twice as great as that between D and E, will require a speed twice as great between A and B than such needed in traveling from D to E. The smallest fish pond clothed in little riplets presents to us a physical manifestation of that great law whenever we observe the quick bobbing of a cork or boat as the same rides each and every crest, as distinguished from that longer time needed when in the hollow of a wave.

It is for this very reason that the earth, which is three million miles nearer the sun in the winter time than she is during the summer months, travels with increased speed. It is not only because the earth is closer to the sun, but because the distance to be travelled by the earth in winter is greater for that same area which the earth covers during the summer time.

This law of oscillation, whether relating to the smallest particle of water or whether applied to the largest orbit of our solar system does not permit a different rule simply because a particle of water is different from Neptune. The methods employed are, of course, as different as such particle differs from Neptune, but the principle that is involved does not vary even in the slightest degree. This also is well illustrated by the swing of a pendulum; thus, it matters little whether a pendulum one meter in length oscillates to the fullest capacity or whether its oscillations are so slight as only to be revealed by the aid of a most powerful microscope, for in either instance it requires one second of time at sea level to complete each oscillation. The areas in the case of a swinging pendulum are always the same, the time for each certain length of a swinging pendulum is likewise always the same, but the speed and that alone will vary as the distance to be traveled. The greater the distance covered by the pendulum in its swing the greater will be the speed, but the time will be the same as if such pendulum covered only the smallest possible distance.

In fact, the revolutions of the planets around their common center of attraction are merely oscillations on the grandest and largest scales possible within a solar system. We have noted that it takes a standard tide to produce an oscillation. The tide travels in a certain straight-line direction according to the energy imparted, but the oscillations resulting from such passing of a tide, are local and in form elliptical. This we have seen is true of the standard tide in water, and such must also be true of the standard tide in either air or ether.

The largest standard tide of water known to us is the one which results jointly from the moon's corporate attraction (gravitation) and the earth's rotation, while the sun's corporate attraction with reference to such tide is of little importance here. The corporate attraction of the moon has the tendency to merely distort the surface of the earth to the extent of its power, while the rotation of the earth furnishes the energy to this distortion so that the same assumes the figure of a traveling tide.

The tide of the moon is, therefore, only a traveling distortion.

When we consider the small size of the moon with that of the sun, it becomes at once apparent that it is due to its nearness to the earth which causes its tide to be of such greater mass than that produced by the sun.

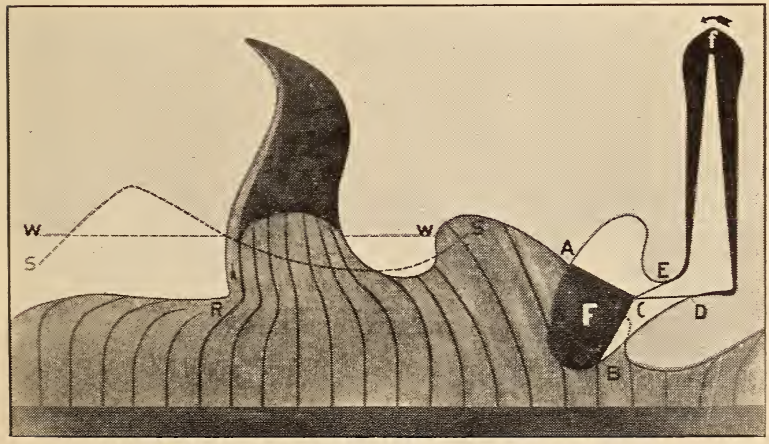

FIGURE 3—REPRODUCTIVE TIDE

The reader's attention is now directed to that tide which I have called the "reproductive" tide, such as is found in operation in a medium of water and here represented by Figure 3. Most adults of our nation have seen the capping waves, and these have noticed the concave curvature of that mass of water leading to the crest—the great force with which a portion of water is projected forward, commonly called the breaker—the great swell which usually follows the passing of such wave as well as the hollow thereof.

A tide in water is due to energy imparted to such water. Water is not able to leave its level of rest unless forced to by extrinsic powers. The reproductive tides are the results of energy imparted to water by means of winds (tides in air). I am not here considering the effect of volcanic or subterranean disturbances.

Every particle of water which is not projected forward in the passing of a reproductive tide oscillates in the manner shown from A to B to D to E and returning again to A. The areas within A, B, C, (marked F) and C, D, E, (marked f) are presumed to be the same, so that the time of oscillations allowed for each particle of water will be the same for each of these areas, regardless of their surface distances. In other words, a particle of water which requires one second to travel from A to B will have the same time limit of one second wherein to travel from D to E. But it must be noticed that the distance from D to E is approximately five times greater than that between A and B; consequently the speed will vary accordingly, or the speed required in traveling from D to E will be five times greater than that between A and B. This maximum speed is developed in the tide at that place which in the figure is represented by the zone R.

In the open sea reproductive tides generally run in series of three tides whereof the middle one is the most highly developed, consequently the most dangerous one to ships. To the observer it would seem as though the mass projected came from the mass behind in a manner as though such tide became top heavy and fell forward; but such is

not the case, for the main body of a traveling tide is made up of oscillations of particles or volumes of water which are supplied by the neutral mass lying immediately in front of such tide. It is not the water which travels but the tide; and even where shallow water abounds the principle is no different even though modified by such conditions. No difficulty ought to arise in appreciating the great velocity required in the zone "R" for the building up of such a massive tide from the apparently neutral waters, and such zone practically sucks up the water which thereupon is backed by a mountain of other water behind, so that a discharge at the proper time is therefore not only imminent, but unavoidable.

The earth today presents her mass in a great form of concentration; even the water which is projected forward from the zone R at the crest of this reproductive tide is concentrated with reference to its component elements. It is for this reason that the corporate attractive power of the earth, known as "gravity" with reference to her own matter, has been increased to the maximum degree of efficiency. This principle is better understood when we consider the power of 250 million dollars spread over and among one million persons, each having $250.00, and then ponder over the terrific power which those same 250 million dollars are able to exert when concentrated through the interest and profit system into the hands of a few men. In the former instance the power is the same, but it is spread over such an enormous space (number) that in its local operations it amounts to almost nothing with reference to its whole power, whereas in the latter each one deals with the concentrated or whole power directly. Gravity acts upon the same principle because in the case of a nebular planet the distance from its surface to its center of attraction is far greater than such would be if that same planet had become a rigid mass.

The breakers of waves are not dealing with the attractive powers of merely those portions of the physical earth which lie nearest such waves, but these breakers are dealing with the concentrated powers whereof each and every particle of the earth has so organized its individual and inherent power of attraction that these have become a corporate unit to the same extent that the earth presents to us a unit as

distinguished from an aggregation of disconnected and unrelated parts or portions.

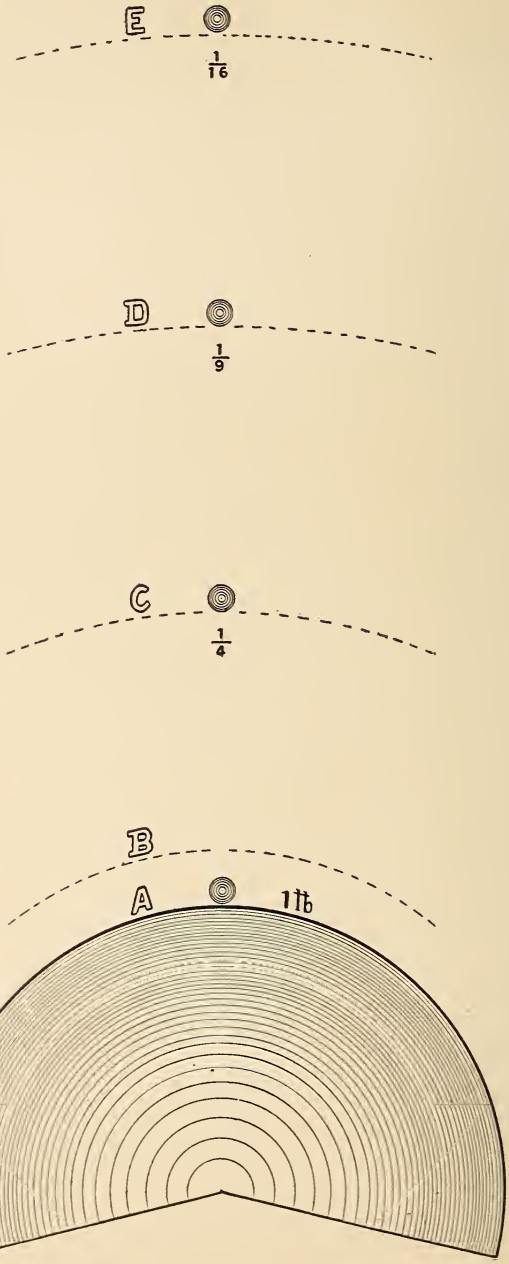

FIGURE 4—THE LAW OF ATTRACTION AT PRESENT

In Figure 4, "A" represents the surface of a planet; "B" represents the extreme limits or the outer boundary line to which particles or objects may be brought against the power of gravity by any form of energy generated but domiciled within the solar system. "C" represents a distance of twice the radius of such planet; "D" represents three times such distance, while "E" equals it four times. A particle or object weighing 1 pound at the surface would when removed to "C" weigh approximately 1/4 pound according to our present knowledge of the law of gravitation. This particle at "D" would weigh approximately 1-9 pound, whereas at "E" such particle or object would weigh 1-16 pound. To bring a particle or object to distances indicated by "C," "D" and "E," it would require outside energy—I repeat, OUTSIDE energy. This last statement is so very important that I desire the reader to embrace that principle fully as much as he himself is conscious of his own limited strength. Our industrial progress is wholly due to outside strength furnished by the inorganic forces of nature, such as steam and electricity and gasses.

As long as man relied and depended upon his own physical strength and energy he was a barbarian, but as soon as he called upon outside energy and made such render service for his own benefit, then did he ascend to the loftier realms of reason. And so we need not be surprised when we learn that a planet of and in and by itself was incapable of giving birth to a moon, but that it took OUTSIDE energy to do that work and furnish that power together with such co-operation afforded by such planet under such circumstances as was needed to populate the solar space with smaller luminous bodies for our admiration.

In considering the creation of the planets of our solar system I will begin at that point at which the sun was the only inhabitant therein.

At such early period of her existnce the sun possessed all energy and all matter contained within the limits of our solar system. Under such conditions it was as much impossible for the sun to raise or create a tide of even the smallest dimensions upon her surface as it is impossible for a man to raise himself up by his boot straps. The entire mass

of the sun at that period of her existence was in nebular form, but nevertheless constitued a unit, such as I would call a "corporate" unit. Another, more concentrated (older) corporate unit belonging regularly outside of the solar system, but a member of that innumerable constellation which adorns the heavens in the sidereal realm, entered our system and attracted the mass of our nebular sun and by reason of its nearness created a distortion which on account of the rotation of the sun upon her axis caused such distortion to assume the character and nature of a tide. In other words, an older mass of concentrated matter impregnated the sun with its attractive power so as to distort her surface, while her inherent energy was of sufficient force to combine with this distortion and present a new phenomenon, that of reproducing a new and independent body of like matter and form, but inferior in size.

There is not a single law in operation or existence in all the universe whereof there is not also a material and physical demonstration to be found on earth. As long and as often as the frothy and foamy waves adorned the surface of the sea, so often has the earth declared in physical form and manner the entire process which was in operation from the time of the sun's conception to the delivery of an inorganic offspring, a planet.

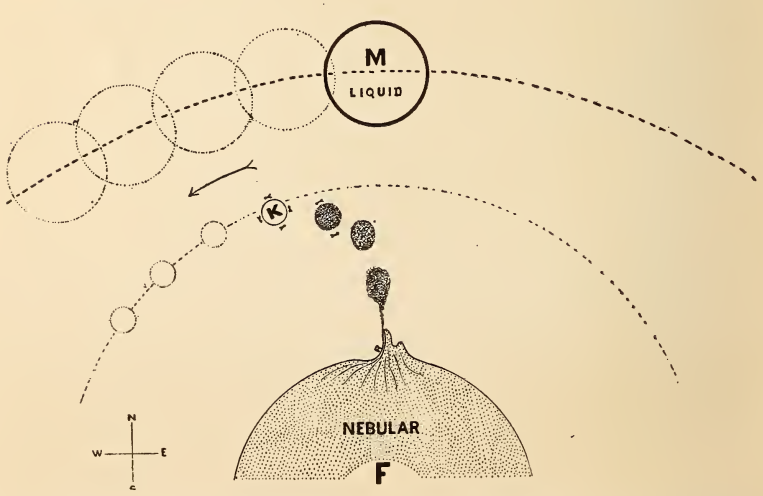

FIGURE 5 - THE CONCEPTION AND DELIVERY OF A PLANET

Figure 5 is almost self explanatory. We have just read something about the reproductive tide as the same operates in a medium of water; here, however, this tide is constructed through and by means of gravitation which has a tendency to distort the surface of a rotating attracted body from which latter a discharge is effected by means of a traveling tide. The particles discharged from the zone R constitute a homogeneous mass of independent, unorganized and unrelated matter. This matter is discharged with energy imparted by the oscillations developed in such reproductive tide together with that further power added through gravitation exercised by M, both of which remove such mass beyond the boundary line of F's gravity.

It is to be noticed that M is traveling in an orbit around F in a manner as to describe a "crest of a standard tide." This causes M to acquire its maximum speed in its orbit. The projected mass K is caused to be carired from a straight course toward the crest to a curved one in the proportion that the powers of gravitation among these three bodies shift from the vertical direction of the crest to an angle of about 45 degrees with reference to F. The body M in its tide-line orbit thereafter recedes rapidly from F, and to a much greater extent than K is able to follow in its effort to overcome the power of gravitation now subsisting and exercised betwen it and F. This turning of K from the vertical direction of the crest of M's orbit toward one which eventually will be at right angle to the line of F's gravitation, causes a rolling from west to east and a rounding up of the mass of K, and at the same time imparts increased energy through M's gravitation which thereafter inures to the benefit of the propelling power (centrifugal force) of K. This rolling of K results also in an organization of its mass, facilitated to a large extent by easy radiation of heat; and such rolling constitutes the beginning of the rotation of K upon an axis. Thereafter K is ingeniously (scientifically and mathematically) abandoned by M; (strange that inorganic nature compels its mothers to raise their own children?). Under the continued power of F's gravitation, K describes a circle around F which varies in form as the distances from their centers.

The whole process of planetary reproduction may be stated in popular language to consist of a standard tide-crest invading the domain of F (female) upon which M (male) is traveling, and brought sufficiently close to F as to impregnate her with his gravitating power, causing a reproductive tide upon her surface with sufficient force to cut the inorganic umbilical cord (line of gravity) and expel K (kid) into the realm of ether as an infant inorganic offspring.

The mathematical requirements of gravitation between M and F to result in the production of K, in my opinion, must be that M possesses a greater mass and a far greater degree of concentration than such constituting F. The mass of F to be productive must be nebular to a large and definite extent, even though possessing a nucleus of molten matter, whereas the mass of M may have been cooled in toto to a molten mass emitting a dark red glow or none whatever from its surface. Although the volume of M may be considerably smaller than that of F, yet with a greater mass highly concentrated into a molten or liquid substance, the power of gravitation exercised by M may be infinitely greater than that of F. In this way every planet was born; and in like manner every moon and satellite was delivered into the solar realm of ether by its inorganic mother planet. The rings of Saturn are the result of an unsuccessful attempt to have brought forth an inorganic offspring. The gravitating powers in that case produced a continuous discharge of a homogeneous mass of nebulae from the resultant distortion into the near space beyond so that by reason of Saturn's rotation such mass encircled the entire surface in the direct line of gravitation.

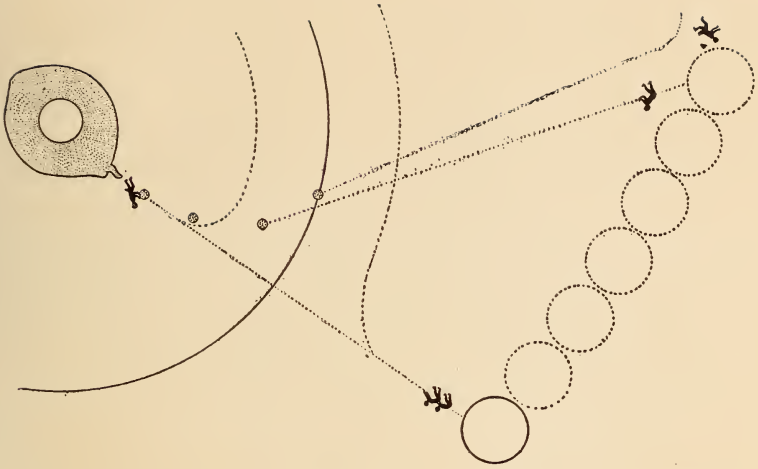

FIGURE 6—PICTORIAL VIEW OF INORGANIC CORPORATE PROCREATION

In Figure 6 the man moving and rolling the newly delivered mass represents that oscillating power which a reproductive tide develops at its maturity, thus forcing all matter in the zone "R" to be expelled. The zone "R" is the vent for surplus energy which can not take part in the formation of such tide. Every structure whether of man or nature has its definite capacity as well as its definite time of duration. A storm has not the ability to build up a mountain of water proportionate to its moving power, but such structure of water is a scientific structure which takes care of its surplus energy in a mathematical manner whenever the full limit of growth has been reached. When a tide has reached its maximum heighth and dimensions then a greater amount of energy will not increase such tide, but merely hasten discharges through greater tidal speed. Nature's waste is a most scientific waste because it is mathematical. Particular notice is directed to that power developed in the zone "R," which thrusts out and attempts to release all that mass which cannot participate in the building up of its tide. The two men stationed near the upper left hand corner represent that greater power exerted by the comet-body in attracting the offspring to itself, whereas the lower man fleeing from the offspring and its inorganic mother represents the final de-

crease in the power of gravitation becoming less and less as such comet-body nears the outer limits of our solar system.

All scientific researches have shown that an astronomical standard tide is destructive, because through tidal friction it retards the rotation (upon the axis) of a planet or satellite.

If such a standard tide is destructive then a reproductive tide due to greater energy must be more destructive. A standard tide does in no way destroy the organization of its mass, but only attacks the operation thereof, whereas a reproductive tide assails and attacks the very organization of such mass by destroying it in part.

Each planet merely represents the physical result of a special destruction of the organized mass of the sun to the extent of such planet, while each satellite represents the physical result of a special destruction of the organized mass of its respective primary to the extent of such satellite. Like the power of the astronomical standard tide known to be destructive only in a most mathematical manner—so the power of an astronomical reproductive tide operates only pursuant to the most mathematical calculations in tearing off and thrusting a portion of its mass into space to assume henceforth an independence for a long time, so far at least, as mass is concerned.

In conclusion, let me call the reader's attention to the following facts. The law governing the revolutions of planets and the law of oscillations of particles of water are the same in so far as we have noticed that in both instances these travel over equal areas in the same time—or their speeds vary as the distances to be traveled.

There is no complete law to be found in operation in the solar realm which could give us the process of planetary procreation (for that age in evolution is gone), but there are two splendid fragments of that law which when put together furnish strong evidence in favor of the theory I expound. Thus, we know that the moon produces a standard tide of enormous dimensions; in other words, we know that the moon possesses the power of attraction which pro-

duces such tide. We know that if such moon were many thousand times greater in mass, that then a tide of greater dimensions would be experienced on earth, but just what that tide would be cannot be ascertained from the solar realm, so that it will become necessary to enter such other realm wherein we may find the principle thereof in operation.

We know that a gentle breeze causes a standard tide in water; we know that a strong wind will cause a reproductive tide in water; in other words, a certain amount of energy will produce one kind of a tide whereas a greater amount of energy will produce a different kind of a tide.

It is here on earth that the entire principle of planetary procreation is to be found in full operation, although the methods of execution vary even as the strong wind upon the medium of water differs from a strong power of attraction (gravitation) acting upon a nebular mass.

If a definite amount of energy whether through the power of attraction such as the moon's, or through wind, produces a standard tide, then a greater amount of energy must produce a greater effect whether through the power of attraction such as exercised by a mass many thousand times that of the moon's, or whether through the power of wind many thousand times greater than that of the gentle breeze, there cannot possibly be two different results where the increase is proportional in both; both must produce the same kind of a tide, a reproductive tide. If, therefore, the principle of procreation is to be found in operation in the medium of water, then we have also found that principle which applies to nebula for planetary procreation. The law of gravitation corroborates my theory with reference to the power of attraction which was needed for the production of a reproductive tide composed of nebular matter situated within our solar system, while the comets in describing elliptical orbits (wherein, according to our observations the sun was one of the focci,) furnish further corroborative proof.

Put these two fragmentary laws of nature together and you have reasonably well established the cosmogony of our solar system.

Again, our whole solar system is not an independent part or portion of the universe, but by comparison represents less than a drop of water with reference to our mighty oceans. Our solar system is merely a very small and insignificant wheel in that vast machinery constituting the universe. All inherent energy operating within our solar system came from and still is a part of the energy of the universe, so that its orderly relationship connecting it with that universe need not be viewed with surprise when it becomes necessary to include also other products (suns) and their energies as necessary factors and actors in the erection and construction of planets and moons within such solar system.

It would indeed be contrary to the mathematical construction of the universe to have a dependent part thereof possess sole power of performing independent duties; and such would necesarily be required whenever an effort is made to show that something was made out of "nothing"; thus, primitively all energy inherent in our solar system was vested in the sun; however, at that time it took all of such energy for the conservation of the organization of such nebular unit, and therefore such sun had nothing left in the form of energy wherewith to create other similar bodies out of her own material. For such purposes, therefore, the sun had nothing—yet the planets were made nevertheless; could this "nothing," which the sun had, bring forth this "something" which is known to be planets?

When scientists will consider our solar system as much a dependent part of that great unit—the universe, as these do now recognize the wonderful mechanical system in operation whereby all planets and their respective satellites are firmly bound by the laws of gravitation to their central nucleus, the sun—then will these scientists appreciate that our whole solar system, representing merely an infinitestimal

part, yet having an individuality, nevertheless constitutes an inseparable "organ" belonging to and being a part of that enormous "body," the universe.


SUN
MERCURY
VENUS
EARTH
MARS
JUPITER
SATURN
URANUS
NEPTUNE

New Americanized Encyclopedia Britanica, Volume 1, page 586.

For the purpose of actually picturing the relations of the various members of the solar system to his mind, the reader may conveniently use Sir. J. Hirschel's illustration as follows:

Choose any well-leveled field. On it place a globe two feet in diameter to represent the SUN.

MERCURY will be represented by a grain of mustard seed, on the circumference of a circle 164 feet in diameter for its orbit (82 feet from the two-foot globe).

VENUS, a pea, on a circle 284 feet in diameter (142 feet from the two-foot globe).

EARTH a (somewhat larger) pea, on a circle of 430 feet (215 feet from the two-foot globe).

MARS a rather large pin's head, on a circle of 654 feet (327 feet from the two foot globe).

THE ASTEROIDS grains of sand, in orbits of from 1000 to 1200 feet (500 to 600 feet from the two-foot globe).

JUPITER, a moderate sized orange on a circle of half a mile (1320 feet from the two-foot globe).

SATURN, a small orange on a circle of four-fifths of a mile (2112 feet from the two-foot globe).

URANUS, a full sized cherry, on a circle more than one and a half miles (about 4000 feet from the two-foot globe).

NEPTUNE, an extra sized cherry, on a circle two and a half miles in diameter (6600 feet from the two-foot globe).

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