SCIENCE AND THE BIBLE: A REVIEW OF "THE SIX DAYS OF CREATION" OF PROF. TAYLER LEWIS, PP. 80 - 129

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A REVIEW OF

"THE SIX DAYS OF CREATION" OF PROF. TAYLER LEWIS.

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ARTICLE III.

SCIENCE AND THE BIBLE.

A REVIEW OF "THE SIX DAYS OF CREATION" OF PROF. TAYLER LEWIS.1

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"The heavens declare the glory of God, and the firmament showeth his handiwork." Thus spake the Psalmist in view of the revelation which God had made of himself in his works. With deeper emphasis may we now utter the same ascription of praise; for that revelation, as its records have been unfolded in these later days, has opened more and more glorious thoughts of the Almighty Architect, and appears as unfathomable in its truths, as God himself is infinite. The world in general is satisfied to see this glory as exhibited in form, color, magnitude, and other outside quali-

¹ The Six Dayş of Creation, or the Scriptural Cosmology, with the Ancient Idea of Time-Worlds in distinction from Worlds in Space. By Tayler Lewis, Professor of Greek in Union College. 12mo. pp. 407. Schenectady, 1855.

ties. The external attributes of existences have indeed been graciously made so transcendent in beauty and full of harmonies, that "he may run that readeth." But there are also revelations below the surface, open to those who will earnestly look for them. For God's hand was never outstretched to create, but beauty and wisdom appeared in every tracing; and, if seemingly wanting in the outer vestments, they are still profoundly exhibited through the structure beneath, in the ordering of the parts from which the externals are educed, and in the universal laws there contained; these are literally secrets of the Almighty, to be diligently "sought out of all them that have pleasure therein."

Who are they that are trying to open this book of revelation? 'Men of Science' they are sometimes called; 'Students of Nature' is their true position. Nearly all the world besides pass the revelation by unheeded, almost as if God were only the God of external nature, a maker of pretty forms, colors, and fragrances on a grand scale. Many even speak contemptuously of him, who, in the study of stones, insects, or worms, busies himself with endeavors to read those records of God's wisdom. In the style and spirit of the Atheist, they decry his pursuits, and strive to throw opprobrium on all of the sect. They may think better of some, who deal with worlds, and mountains, and large quadrupeds, perhaps; as if material size were a measure of truth with God. They seem not to know that the minutest living being is as much above a universe of dead worlds as life is superior to matter.

This unworthy spirit is mainly due to prejudice and ignorance. They say that science, after all its claims, is no nearer to explaining the ultimate nature of matter or of life, than centuries ago, and at the same time decry its "boasted" laws. And here is a fatal misconception of science. Has metaphysical or sacred Science yet explained the nature of God or spirit? or has any mind yet measured eternity? The ultimate nature of matter or of life is as much beyond all investigation. Science claims not to fathom it; is not so presumptuous as to hope for success, although examples are

at hand of this prying into mysteries among many writers on the second revelation. These subjects are neither within its bounds or aims. It seeks only to ascertain the laws which God has established in nature, or rather, the methods in which he is constantly working in the universe, his plan or system, ordained in infinite wisdom and sustained in infinite power. Man were presumptuous in his searchings, were he not made in the image of God. Thus endowed, if also teachable in spirit, he may read and understand, and reach onward in his knowledge to brighter and brighter revelations.

Newton, by a flash of his intellect, conceived of the law of gravitation; and as he, inquiringly, looked around and above, he everywhere found testimony that the conception was a fact, a comprehensive truth. At once, cycles and epicycles, and all the cobwebs of past ages vanished, and our planetary system and the vast universe stood forth in its majestic extent, the whole like a vision from on high. After the thousands of years that the world had existed, there was, at last, a correct apprehension of the actual relations in space of the heavenly bodies. He announced the law of attraction and its ratio, called it, for convenience, the law of gravitation; and by it, the great highways in the heavens have been traced. What before had been thought out, and thereupon received as true, proved to be wrong in fact and principle. But who will say that we do not now know the relations of the heavenly bodies, and the law of their motions? This law is as immutable as God's will, for it is his ordinance. Newton did not dream about the cause or nature of gravitation; he had read the law, and rejoiced in the revealed truth.

Crystallization opens to us other laws, no less comprehensive. All are familiar with the pretty geometrical forms of some crystals. But the observing eye sees the world full of crystals. When it snows, the heavens are showering down crystals, for every flake is a congeries of crystalline grains, and they are often in elegant symmetrical forms. When the waters freeze, they become a mass of crystals, only so

blended that we distinguish not their outlines. When seawater evaporates, it drops crystals freely; for every grain of salt that goes down, is itself a gem. A bar of iron is broken, and its whole texture proves to be an aggregation of crystal particles, showing the angular lines and cleavage of true crystallization. The granite of the hills is but a mountain of crystals; and every pudding-stone, although made of pebbles, has myriads of crystalline grains or fragments of crystals in and among those pebbles. Finally, the special fact first noted, develops into a general truth or law, that cohesion in the inorganic kingdom producing solidification, is actually crystallization; that we not merely see nature geometrizing, but matter in its profoundest quality governed by geometrical principles; and therefore that cohesion in solidification is not a sort of agglutination acting in all directions alike, which would be well enough for making spheres, but an axial or polar attraction, bringing out symmetrical forms according to fixed laws.

Examining further, more definite laws come out: each species or kind of substance, wherever found or however made, proves to have its distinct and constant fundamental crystalline form, so unvarying in angles and structure, although admitting of modifications by simple ratios, that it may be as easily known by it, as an animal by its form. These crystalline forms are cubes, square prisms, rhombic prisms either right or oblique, etc.; and in each case, the axes of the prisms, that is, their relative dimensions, admit of mathematical calculation.

Thus by widening our field of vision from the single fact to universal nature, we learn that molecules have their specific forms or dimensions, and cohesion in solids its mathematical basis. This fundamental quality of cohesion is sustained by every other characteristic of crystals: the hardness is different in the direction of unequal axes; so also the transparency, elasticity, conduction of heat, and refraction of light; and all in exact accordance with the law of symmetry in the crystal. Do we not see, here, that the very molecules, of which the universe is built, were modelled variously and

with precision by the hand of Deity? Looking deeper still, we learn that these molecules are not, like the blocks of an architect, squared and cornered for one place alone, but have their laws according to which they are adapted to numberless forms and structures. Gaining entrance to these inner temples of nature, we recognize, everywhere, the appointments of Him whose glories are infinite.

The chemist reads Nature in another of her departments: he watches the changes going on around him, and the changes which Nature, in her work, passes through in his laboratory. He thence learns not merely the absurdity of the ancient fancy that water, air, earth, and fire are elements, and not only that these are true elements, and that water is made of two, oxygen and hydrogen, and so each substance has its elemental constitution; but he goes further: he discovers, as his facts accumulate, that there is a law in these combinations; that oxygen and hydrogen, for example, unite only in certain ratios; that they exist in water in the ratio of 8 to 1 by weight; that, in another compound containing oxygen and iron, the ratio is 8 to 28; in another, containing oxygen and nitrogen, the ratio is 8 (oxygen) to 14 (nitrogen). or else, 8 to 28, 8 to 42, 8 to 56, 8 to 70, equivalent, in parts, to 1:1, 1:2, 1:3, 1:4, 1:5 parts; and so, throughout Nature, in compounds of all kinds, he ascertains that the elements have their definite combining ratios, and combining weights; and thence he learns to calculate, with the utmost precision, the constitutions of compounds.

Here then is a fundamental law of attraction, at the basis of chemistry, and upon it the science rests. It is a law of numbers and harmonic relations—the ordained will of God, which the chemical student has been enabled to apprehend, and is now endeavoring to follow out into all of its beautiful developments. No future research can revoke that will. The supposed elements may be resolved into others; but all matter, organic and inorganic, is constituted upon this law; and the law must stand, until the Being who said, "So let it be," reverses all Nature and his own enactment.

In the study of Light, the division of the beam into its

component colored rays, was a first fact; the different refrangibilities of those rays, a second. Then eame the law that each color corresponds to a specific rate of vibration or of wave motion: the vibrations were measured; and finally, whatever the freaks of light, they were found to be explainable by the interferences and other inter-actions of just such rays with these specific rates of vibration. This established, science says: "sic Deus vult," and pays Him the homage due.

Thus we might go on with the departments of physical science, heat, magnetism, electricity, and others; and in all, it would appear, that science has reached immutable laws, simply by comparing one tracing in nature with another, and thus reading the hand-writing of God in his works. The attraction of gravitation, chemical attraction, cohesive attraction, light, heat, electricity, may yet be referred to some higher laws: they may be found to be but the workings of a common law, embracing the whole; and to this, science is tending. But in so doing, what are now laws will stand firm as laws under a more general law; what is knowledge will be knowledge still.

The laws in the kingdoms of life are of similar import, equally intelligible to the humble pupil of nature, and, if possible, more grand in their scope and relations.

The great universal law for all life Moses announced when speaking of the institution of the first life-kingdom, in the words: "which has seed in itself;" for this is the fundamental characteristic of living beings, as distinct from inorganic existence.

The evolution of the germ — in its essence, a simple memberless cellule — resulting in a successive individualization of parts: the more fundamental first; then, by degrees, leading on to the completed complex organism in all its details, is an exhibition of another grand law of the highest significance; one, in an important sense, typical of all progress.

The spiral line of development as the initial in evolution, and retained in its perfection in the spiral arrangement of leaves in plants, as well as in the parts of some animals, is Vol. XIII. No. 49.