

THE MIRACLE OF LIFE.

Of all Miracles, the most wonderful is that of Life—the common, daily life which we carry about with us, and which every where surrounds us. The sun and stars, the blue firmament, day and night, the tides and seasons, are as nothing compared with it.—Life—the soul of the world, but for which creation were not!

It is our daily familiarity with Life, which obscures its wonders from us. We live, yet remember it not. Other wonders attract our attention, and excite our surprise; but this, the great wonder of the world, which includes all others, is little regarded. We have grown up alongside of Life, with Life within us and about us; and there is never any point in our existence, at which its phenomena arrest our curiosity and attention. The miracle is hid from us by familiarity, and we see it not.

Fancy the earth without Life!—its skeleton ribs of rock and mountain unclothed by verdure, without soil, without flesh! What a naked, desolate spectacle—and how unlike the beautiful aspect of external nature in all lands! Nature, ever-varied and ever-changing—coming with the spring, and going to sleep with the winter—in constant rotation. The flower springs up, blooms, withers, and falls, returning to the earth from whence it sprung, leaving behind it the germs of future being; for nothing dies; not even Life, which only gives up one form to assume another. Organization is traveling in an unending circle.

The trees in summer put on their verdure; they blossom; their fruit ripens—falls; what the roots gathered up out of the earth returns to earth again; the leaves drop one by one, and decay, resolving themselves into new forms, to enter into other organizations; the sap flows back to the trunk; and the forest, wood, field, and brake compose themselves to their annual winter's sleep. In spring and summer the birds sang in the boughs, and tended their young brood; the whole animal kingdom rejoiced in their full bounding life; the sun shone warm, and nature rejoiced in greenness. Winter lays its cold chill upon this scene; but the same scene comes round again, and another spring recommences the same 'never-ending, still beginning' succession of vital changes. We learn to expect all this, and become so familiar with it, that it seldom occurs to us to reflect how much harmony and adaptation there is in the arrangement—how much of beauty and glory there is everywhere, above, around and beneath us.

But were it possible to conceive an intelligent being, abstracted from our humanity, endowed with the full possession of mind and reason, all at once set down on the earth's surface—how many objects of surpassing interest and wonder would at once force themselves on his attention. The verdant earth, covered with its endless profusion of forms of vegetable life, from the delicate moss to the oak which survives the revolutions of centuries; the insect and animal kingdom, from the gnat which dances in the summer sunbeams, up to the higher forms of sentient being; birds, beasts of endless diversity of form, instinct and color, and, above all, Man—'Lord of the lion heart and eagle eye';—these would, to such an intelligence, be a source of almost endless interest.

It is life which is the grand glory of the world; it was the consummation of creative power, at which the morning stars sang together for joy. Is not the sun glorious because there are living eyes to be gladdened by his beams? Is not the fresh air delicious, because there are living creatures to inhale and enjoy it? Are not odors fragrant, and sounds sweet, and colors gorgeous, because there is the living sensation to appreciate them? Without Life, what were they all? What were a Creator himself, without life, intelligence, understanding, to know and adore Him, and to trace His finger in the works that He hath made?

Boundless variety and perpetual change are exhibited in the living beings around us. Take the class of insects alone: of these, not fewer than 100,000 distinct species are already known and described; and every day is adding to the catalogue. Wherever you penetrate, that life can be sustained, you find living beings to exist; in the depths of ocean, in the arid desert, or at the icy polar regions. The air teems with life. The soil which clothes the earth all round, is swarming with life, vegetable and animal.—Take a drop of water, and examine it with a microscope: lo! it is swarming with living creatures. Within Life, exists other life, until it recedes before the powers of human vision. The parasitic animalculæ, which preys upon or within the body of a larger

animal, is itself preyed upon by parasites peculiar to itself. So minute are living animalcules, that Ehrenberg has computed that not fewer than five hundred millions can subsist in a single drop of water, and each of these monads is endowed with its appropriate organs, possesses spontaneous power of motion, and enjoys an independent vitality.

In the very ocean deeps, insects, by the labor of ages, are enabled to construct islands, and lay the foundations of future continents. The coral insect is the great architect of the southern ocean. First a reef is formed; seeds are wafted to it, vegetation springs up, a verdant island exists; then man takes possession, and a colony is formed.

Dig down into the earth, and from a hundred yards deep, throw up a portion of soil—cover it so that no communication can take place between that earth and the surrounding air. Soon you will observe vegetation springing up—perhaps new plants, altogether unlike anything heretofore grown in that neighborhood. During how many thousands of years has the vitality of these seeds been preserved deep in the earth's bosom! Not less wonderful is the fact stated by Lord Lindsay, who took from the hand of an Egyptian mummy a tuber, which must have been wrapped up there more than 2,000 years before. It was planted, was raised and dewed upon, the sun shone on it again, and the root grew, bursting forth and blooming into a beautiful Dahlia!

At the North Pole, where you would expect life to become extinct, the snow is sometimes found of a bright red color. Examine it by the microscope, and, lo! it is covered with mushrooms, growing on the surface of the snow as their natural abode.

A philosopher distills a portion of pure water, secludes it from the air, and then places it under the influence of a powerful electric current. Living beings are stimulated into existence, the *acari Crossii* appear in numbers! Here we touch on the borders of a great mystery; but it is not at all more mysterious than the fact of Life itself. Philosophers know nothing about it, further than it is. The attempt to discover its cause, inevitably throws them back upon the Great First Cause. Philosophy takes refuge in religion.

Yet man is never at rest in his speculations as to causes; and he contrives all manner of theories to satisfy his demands for them. A favorite theory now-a-days is what is called the Development theory, which proceeds on the assumption, that one germ of being was originally planted on the earth, and that from this germ, by the wondrous power of Life, all forms of vegetable and animal life have progressively been developed. Unquestionably, all living beings are organized on one grand plan, and the higher forms of living beings, in the process of their growth, successively pass through the lower organized forms. Thus, the human being is successively a monad, an a-vertebrated animal, an osseous fish, a turtle, a bird, a ruminant, a mammal, and lastly an infant Man.—Through all these types of organization, Tiedemann has shown that the brain of man passes.

This theory, however, does nothing to explain the causes of life, or the strikingly diversified, and yet determinate characters of living beings; why some so far transcend others in the stages of development to which they ascend, and how it is that they stop there—how it is that animals succeed each other in right lines, the offspring inheriting the physical structure and the moral disposition of their parents, and never, by any chance, stopping short at any other stage of being—man, for instance, never issuing in a lion, a fish, or a polypus. We can scarcely conceive it possible that, had merely the Germ of Being been planted on the earth, and 'set a-going,' anything like the beautiful harmony and extraordinary adaptation which is every where observable throughout the animated kingdoms of Nature, would have been secured. That there has been a grand plan of organization, on which all living beings have been formed, seems obvious enough; but to account for the diversity of being, by the theory that plants and animals have gradually advanced from lower to higher stages of being by an inherent power of self-development, is at variance with known facts, and is only an attempt to get rid of one difficulty by creating another far greater.

Chemists are equally at fault, in endeavoring to unveil the mysterious processes of Life. Before its power they stand abashed. For Life controls matter, and to a great extent overrides its combinations. An organized being is not held together by ordinary chemical affinity; nor can chemistry do any

thing toward compounding organized tissues. The principles which enter into the composition of the organized being are few, the chief being charcoal and water, but into what wondrous forms does Life mould these common elements! The chemist can tell you what these elements are, and how they are combined, when dead; but when living, they resist all his power of analysis. Rudolphi confesses that chemistry is able to investigate only the lifeless remains of organized beings.

There are some remarkable facts connected with Animal Chemistry—if we may employ the term—which show how superior is the principle of Life to all known methods of synthesis and analysis. For example, much more carbon or charcoal is regularly voided from the respiratory organs alone, of all living beings—not to speak of its ejection in many other ways—than can be accounted for, as having in any way entered the system. They also produce and eject much more nitrogen than they inhale. The mushroom and mustard plant, though nourished by pure water containing no nitrogen, give it off abundantly; the same is the case with zoophytes attached to rocks at the bottom of the sea; and reptiles and fishes contain it in abundance, though living and growing in pure water only. Again, plants which grow on sand containing not a particle of lime, are found to contain as much of this mineral as those which grow in a calcareous soil; and the bones of animals in New South Wales, and other districts where not an atom of lime is to be found in the soil, or in the plants from which they gather their food, contain the usual proportion of lime, though it remains an entire mystery to the chemist where they can have obtained it.—The same fact is observable in the egg-shells of hens, where lime is produced in quantities for which the kind of food taken is altogether inadequate to account; as well as in the enormous deposits of coral-rock, consisting of almost pure lime, without any manifest supply of that ingredient. Chemistry fails to unravel these mysterious facts; nor can it account for the abundant production of soda, by plants growing on a soil containing not an atom of soda in any form: nor of gold in bezards; nor of copper in some descriptions of shell-fish. These extraordinary facts seem to point to this—that many, if not most, of the elements which chemists have set down as simple, because they have failed to reduce them further, are in reality compound; and that what we regard as Elements, do not signify matters that are undecomposable, but which are merely undecomposed by chemical processes. Life, however, which is superior to human powers of analysis, resolves and composes the ultimate atoms of things after methods of its own, but which to chemists will probably ever remain involved in mystery.

The last mystery of Life is Death. Such is the economy of living beings, that the very actions which are subservient to their preservation, tend to exhaust and destroy them. Each being has its definite term of life, and on attaining its acme of perfection, it begins to decay, and at length ceases to exist. This is alike true of the insect which perishes within the hour, and of the octogenarian who falls in a ripe old age. Love provides for the perpetuation of the species. 'We love,' says Virey, 'because we do not live forever: we purchase love at the expense of our life.' To die, is as characteristic of organized beings as to live. The one condition is necessary to the other.—Death is the last of life's functions. And no sooner has the mysterious principle of vitality departed, than the laws of matter assert their power over the organized frame.

'Universal experience teaches us,' says Liebig, 'that all organized beings, after death, suffer a change, in consequence of which their bodies gradually vanish from the surface of the earth. The mightiest tree, after it is cut down, disappears, with the exception, perhaps, of the bark, when exposed to the action of the air for thirty or forty years. Leaves, young twigs, the straw which is added to the soil as manure, juicy fruits, etc., disappear much more quickly.—In a still shorter time, animal matters lose their cohesion; they are dissipated into the air, leaving only the mineral elements which they had derived from the soil.

'This grand natural process of the dissolution of all compounds formed in living organizations, begins immediately after death, when the manifold causes no longer act under the influence of which they were produced. The compounds formed in the bodies of animals and of plants, undergo, in the air, and with the aid of moisture, a series of changes, the last of which are, the conversion of their carbon into carbonic acid, of their hydrogen into water, of their

nitrogen into ammonia, of their sulphur into sulphuric acid. Thus their elements resume the forms in which they can again serve as food to a new generation of plants and animals. Those elements which had been derived from the atmosphere take the gaseous form and return to the air; those which the earth had yielded, return to the soil. Death, followed by the dissolution of the dead generation, is the source of life for a new one. The same atom of carbon which, as a constituent of a muscular fibre in the heart of a man, assists to propel the blood through his frame, was perhaps a constituent of the heart of one of his ancestors; and any atom of nitrogen in our brain has perhaps been a part of the brain of an Egyptian or of a negro. As the intellect of the men of this generation draws the food required for its development and cultivation from the products of the intellectual activity of former times, so may the constituents or elements of the bodies of a former generation pass into, and become parts of our own frames.

The greatest mystery of all remains.—What of the Spirit—the Soul? The vital principle which bound the frame together has been dissolved; what of the Man, the being of high aspirations, 'looking before and after,' and whose 'thoughts wandered through eternity?' The material elements have not died, but merely assumed new forms. Does not the spirit of man, which is ever at enmity with nothingness and dissolution, live too? Religion in all ages has dealt with this great mystery, and here we leave it with confidence in the solution which it offers.

THE BEST WEALTH.—The great struggle with civilized men in this world is for wealth. This is called the prime good, the one thing needful, the great desideratum of life. So men toil for it; sacrifice ease, comfort, health, for it; deceive, cheat, defraud for it; give time, strength, and too often good character for it. The truth is, the estimate put upon wealth is too high. Its value, its good, is over-rated. It is not the great good. It is not the pearl of great price. It is not the best thing man can have. It does not confer peace of mind, nor purity of heart, heartfelt happiness, nor contentment, nor home joy, nor social blessedness, nor any of the solid and enduring enjoyments. Wealthy homes are not often happier than those of the poor and comfortable lives. Poverty is always an evil; but a fair supply of the necessaries and comforts of life is quite as apt to confer real peace as great wealth. It is not gold nor goods, therefore, that makes men really wealthy. The best wealth is of the heart, an enlightened mind, a loyal conscience, pure affections. He is wealthiest who has the largest stock of wisdom, virtue, and love—whose heart beats with warm sympathies for his fellow-men, who finds good in all seasons, all providences, and all men. The generous man who pities the unfortunate; the poor man who resists temptation; the wise man who orders well his life; the studious man who seeks instruction in all things, are the truly wealthy men.

SAGACITY OF THE BEAR.—That wild beasts are scared away by fire is a well known fact, but the hungry bear is of so cunning a nature that it even sets at defiance the flaming circle, which would at other times afford a secure protection to the sleeping traveler. It is true that the bear does not venture to cross the firey barrier, but contrives to avoid the difficulty in a most ingenious manner.—Going to the nearest stream, it immerses itself in the water so as to saturate its fur with moisture, and then returning to the spot where the intended prey lies asleep, the animal rolls over the flaming embers, quenching the fire, and then makes its attack upon the sleeper. This curious fact is well known among the natives of Siberia, so that they have good grounds for the respect in which they hold the bear's intellectual powers.

TO TAKE IMPRESSIONS OF PLANTS.—Burn a common cork, till reduced to powder, and make into a thick paste with olive oil. With this plant the veiny side of a leaf (a sage leaf is a desirable one) with a camel-hair pencil, lay the leaf carefully on clean paper, painted side down, and place it in a book, under pressure. In a quarter of an hour, remove the leaf carefully from the paper, and you will find an exact impression left.

The scales of iron that accumulate around the anvil of a blacksmith's shop are more valuable than manure for peach trees. A shovelful put around a healthy peach tree will be very likely to keep it in good condition; and it is said that trees already diseased have recovered by the application of these scales. Iron in any form will answer a good purpose.