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ART. I.—EVOLUTION: THE LIFE ASPECT.

ORIGIN AND ACTION, FORMATION OF THE BODY,
NATURAL HISTORY.

THE former article in THE CHURCHMAN of May, "Evolution: A Research in Amendment," was favourably noticed by not a few of the most eminent scientific men. Their remarks and criticisms are reserved for some more comprehensive work. Only a little need now be stated concerning that article.

The remark concerning matter is accepted: matter seems due to pressure; take away the atomic and molecular forces, then every known substance will cease as to any known or visible form.

Forces are probably reducible to one, "Push." Professor Hull, F.R.S., prefers calling it "Pull."

A correspondent remarks that Evolution not only means to roll out, roll forth, unroll, unfold, but to draw forth, bring out; indeed, everything that advanced use of the word and necessities of the theory require. We are to accept it as containing all that not only Evolutionists but Christians put in. It may be the mode which believers regard as the intelligible work of God, or that natural process which atheists assert renders any thought as to a Divine Being not only useless but hurtful: such a nose of wax cannot be accepted as a scientific theory.

We are asked to receive it, not as an unfolding or revelation of the work of God, but as showing how Nature is Nature, apart from God, and does all things of herself. We have to conceive, with Herbert Spencer, that "every kind of being is a product of modifications wrought by insensible gradations on a pre-existing kind of being." This means—The beginning

was as from nothing by a development of things so slow that no advance could be perceived. We have no proof, nor is any proof possible. Professor Huxley asserts—"The whole world, living and unliving, is the result of the mutual interaction, according to laws, of the forces possessed by the molecules of which the primitive nebulosity of the universe was composed." Put it this way—The molecules were made up of atoms—how made up is a mystery—and then they became the constituents of all material forms, and the physical basis of life. For a scientific man to assert that the atoms contained all the forces exhibited by the molecules, and the molecules possessed all the forces, living and unliving, which are now displayed in a state of things wholly different from that in which it originated, is to speak without warrant. No one is able, with accurate science, to explain in terms of chemical and physical forces one single phenomenon of life in one day's growth of the meanest fungus. It is a shame to juggle, to make us believe that everything which is now was in some shape and somehow in the primitive nebulosity, and that God never did, and never will, differentiate, intensify, or weaken the primal forces; would not and could not either create or destroy. It is like saying "God did all His work at once." The Rev. Thomas Penyngton Kirkman, F.R.S., aptly calls such philosophy "a mess of dark clouds and chopped moonshine."

One correspondent thought that the previous article was too greatly metaphysical, and that as Evolution is mainly supported by arguments drawn from biology, correction should be given by facts derived from organic research. This we now undertake.

LIFE: ITS ORIGIN AND ACTION.

The essential principle of the theory of Evolution is that all organized beings were evolved from inferior forms. Physicists and astronomers show this to be impossible; that for untold ages the earth was in a molten incandescent state, during which no life—with which we are acquainted—could exist. It is certain that the first life in our planet was not evolved from any inferior form in the planet.

Bioplasm, or protoplasm, is the fluid substance in which living particles exist. It does not evolve life as from an inner potentiality; you may have bioplasm, but be as far from life as from the moon. The living particle does not evolve nor create new life nor new substance; but the forces of the universe combine in making the surrounding dead bioplasm tend to the living particle. This dead substance enters the living, and when the mass attains about $\frac{1}{1000}$ of an inch in diameter

it separates into two or more parts. The microscopic mass is not full of germs; not like a Chinese box, full of other little boxes; nor the source of life and power to all other life and power. The life-power began by an entrance, probably sudden and abrupt, of some special force into the already existing bioplasm. Clothing itself, generally as a nucleus with an outer film, the nucleus contains an inner centre. The process has nothing to do with Evolution. The bioplasm did not make itself, the life-power did not make itself. They are due to something not less essential to the living creature than are the arrangements of metals and solutions in a voltaic cell for establishment of a current. The Eternal Power, Who is behind all things, the Power recognised by all men of science, differentiated the operation of force; gave it a new form, effected a novel distribution of matter; and thus the life-power, clad with a garment, became a visible living thing.

We are not to think of the primeval life as itself from a little strength making the great strength of all life; nor of one sort of matter making all matter; nor of one star making all the stars; nor of one universe making other universes. Eternity and infinitude, in their finite aspects, are represented by the movable figures of time and space. Science and philosophy regard eternity and infinitude as the only and transcendental measure and habitation of Eternal Power. This Eternal Power so occupies all space, all time, that there never was, nor is, nor will be, any time or space without Him. Time reaches back and advances to the future, only limited by the embrace of Eternity. Space extends on every side, containing all depths and heights, with no other surrounding or restriction—if it be restriction—than girdling by Infinitude. Manifestations of force, of matter, of life, of intelligence, in things and localities, are not limitations separating, as by deprivation of other time, of other space, rendering them empty; but a bringing into definite and special operation that force, that matter, that life, that intelligence, which not less have their habitation in immeasurable expanse, where nought is felt or seen, than in the splendour of Sirius, the sweet influences of the Pleiades, and the warm sensibilities of our earth. This manifestation of force, of matter, of life, is not an evolution of finite things by the finite; it is that differentiation of operation by the Eternal Power, which from time to time, from space to space, by re-distribution of matter, made all worlds the expression of God's thought. We ought not to allow incapacity for higher scientific and philosophical research to conjure up the demon of unbelief, and be chilled to death by his embrace. Those who habituate themselves to the dark base things of a false and godless denial of true science,

consent never again to be wholly reconciled to honour. Scientific men, rightly so called, deserve highest reverence. They add many graces, and take not one enjoyment away from life. They endeavour to counteract all that is pernicious in our daily work; and, when they discern the snake in our Garden of Faith, kill the snake—not uproot the flowers, nor destroy the fruit.

FORMATION OF THE BODY

is due to changes, wrought in the bioplasm, before the various characteristics of the body are manifested. Life-power takes plastic substance, it seems all of one kind, differentiates it to form the different tissues, and with it constructs every organ. This differentiating formative power is not so much controlled by the surroundings, as controls them; and is not subject to but rules the chemical composition of every part in the organism. In some creatures it serves apparently trivial and temporary purposes; in man, unless aborted, it becomes that which accomplishes the longings of a pure heart, and the enlightened aims of a true intellect. As a differentiating formative principle it constitutes all that is so various in the tiny moss and noble cedar, in the crawling worm and the flying bird, in the mouse and the man. It builds up that which ministers to the sensational, the intellectual, the emotional, whether humorous or pathetic; and we see its work in those sundry satirical devices which exhibit life in quaint arabesques of joy and sorrow. Cupid, trundling a wheelbarrow, selling feminine hearts to Plutus, a rich crabbed old fellow; Diogenes, with light of lantern, searching human haunts in clearest sunshine to find an honest man; a lion in fox's hide; a wolf in lamb's skin; and man as pilgrim bound to the earth with many ligaments, while the nobler part of him, like an angel, hastens onward and upward. The mystery of the body—whether we think of physical characteristics exhibited in stately natural manners, or of that, more profound and strange, which constitutes the inner peculiarity and excellence of every man—is found most divine in the power of human life.

There is no reason why we should account the first Adam as an unnatural natural progeny from a meaner creature. We cannot rid ourselves of the miracle by assuming a sort of transcendental birth for Adam to match the Romish invention of an immaculate conception of the Virgin Mary. Neither biology nor theology is made more reasonable by assuming that Nature and God always begin with little things.

Viewing the body in parts, we find a development of tissues preceding the temporary tooth; followed not by conversion of

that, but of new bioplasm, into the permanent tooth's substance. The eye, as a whole and as to every one of its tissues, say the nerve-fibres of a nerve plexus, is not by evolution of one substance into another, but by weaving of newly-quickenened bioplasm into the special matter of which the several parts are formed. The construction of cartilage, bone, nerve-tissue, glandular and other organs illustrates this fact. The characteristics of every part and of the whole are prepared for and arranged by life-power in the bioplasm; the brain and the heart, a crab and a whale, a butterfly and a tortoise, an oak-tree and a man. Life, as Balfour Stewart, F.R.S., wrote, is a commander who, say from the mysterious, well-guarded brain-chamber, gives that delicate directive touch which determines our formation and every movement. The differences in the parts Lionel S. Beale, F.R.S., finds not due to complexity of the bioplasmic substance, but to degrees of power in that form of vital energy which obtains noblest manifestation in intellectual and moral rule. The bioplasm used in highest mental acts of the brain is not more elaborated than the lymph corpuscle or white blood corpuscle.

Credulous idolaters of enlightenment forget that Nature, whether viewed physically or spiritually, has always had times of refreshment, when, old animals becoming extinct, others were new born. Individuals make advances, and some men emerge as intellectual and moral giants. These forgetful ones do not take due nutriment from the heart while building up the mind. Abiding by the graves of dead animals, whom they call fathers, their flesh and sensual intellect are from the charnels whence they profess to have been bred. The intellect thus attained, stripped of beneficence, of reverence to God, of hope and sentiment as to immortality, resembles, as Lord Lytton said, "only one being—the Principle of Evil." At best, considering the little good they do, and being neither Jews nor Christians, they are—we use Sheridan's simile—as the blank page between the Old and the New Testament. They have very much in common with the insane: over-cunning and irritable restlessness. Under profession of very refined intellect, they disown the nature God gave them, use unnatural, far-fetched arguments which end in atheism, talk of their origin as monads, until their poor little souls, not half souls, are unable to see the splendours of the Infinite, and, if they arrive at thoughts of the stars, find no vocation there. Why, those brilliant butterflies, unseen in summer, coming in autumnal days to sport around us, when we step on to winter, may be taken truly—we are told it in romance—for types of the bright thoughts which seem as messages from the sun to tell of life that succeeds the winter. Those flowers, on the surface of

the earth, dropping seeds that sink out of sight below, come again beautiful and new. We have not yet heard all the great hymn chanted by Nature; but the long centuries of patient waiting enabled our great men, our good men, to know that the strains are part of a wonderful harmony yet to come, in which everything, and specially the human race, will possess delight beyond all present thought.

NATURAL HISTORY ASPECT.

Man is not altogether an example as to survival of the fittest. His muscular movements are not so varied, nor so powerful, nor so rapid, as those of many of the lower animals. The gannet has in its body the most perfect aeronautic machinery we can conceive. Man's senses of touch, of sight, of hearing, of smell, of instinct, are vastly inferior to those of many other creatures—rather a descent than an ascent—he is helpless for many years, and of insufficient clothing. Men who tell us “they have smelt out the true scent of the ape,” and know how the tract was lost more and more, are instructed by Professor Virchow that the old troglodytes, pile villagers, bog people, had heads so large that many living people would be glad to possess their like. Among living individuals is a greater number with relatively inferior type of head than has hitherto been found amongst the fossils: yet no discovered skull of an anthropoid ape could have belonged to a human being. The savage may become a philosopher; the ape never becomes even a savage; nor, from the beginning of the world, did one of them light a fire, cook its food, or make a bow and arrow. Foxes become more wary where they are greatly hunted, the chimpanzee cracks nuts with a stone, some apes build temporary platforms, and birds construct nests; but only man calculates an eclipse, and measures his distance from the stars. Ruskin says of those who know all this, and yet will have it man is a beast, they are “like a dim comet wagging its useless trail of phosphorescent nothing across the steadfast stars.” Again, he says: “If you fasten a hair-brush to a mill-wheel with the handle forward, so as to develop itself by moving always in the same direction, and within continual hearing of a steam-whistle, after a certain number of revolutions the hair-brush will fall in love with the whistle; they will marry, lay an egg, and the produce will be a nightingale.”

Professor Phillips has stated: “The human mind could not, even with the materials, have predicted the complete arrangements we find in such adaptations as the various kinds of tails we find in the falcons and the swallows, the woodpeckers and the divers;” yet, we must add, the capability for development

of all rests in the life-force of these creatures. It is not heredity merely, or how could things once the same develop into a crab, a butterfly, a tortoise, a man; male or female, from that which was not one nor the other? To talk of "potentiality" is really to say, "I don't know." In no family is strength, beauty, talent unfaithfully perpetuated. Shakespeares and Newtons do not run in one line, so how comes a well-developed tail from an ancestor without a tail?—a fish without a tail is a queer fish. If tails are a product of the needing to turn, why does the hare double well enough with hardly any tail? If tails are wrought in hot countries by the need for fly-flappers, how is it that sheep, whose heads are greatly attacked by flies, have tails which cannot be used for any such purpose? If the drooping of ears in domestic animals is due to disuse of the muscles, not being aroused by danger, why is the horse with erect ears, and the hare and rabbit with ears very drooping? If monkeys could speak, they would not say sillier things than do some men who would look very wise.

A few birds lay their eggs in other birds' nests. An Irishman said, "Why don't they all do it?" If advance is the rule for all creatures, and only the fittest survive, how did the rule become the exception, seeing that far the greater number of organisms have made no progress at all? If every monad was adventurous, or ought to have been, why were so many without adventure—did not become fish, nor amphibian, nor thence ascend to be reptile, bird, and man? Natural selection was very unnatural, and divergence of character irrational, or why was there not a general levelling up, rendering the world very wonderful? The extinct rhinoceros and many others of his day were better than the existing ones. If the strong survive and the weak go to the wall, why do the weak push them over the wall, and herrings survive in countless numbers? If one or two bears—strange fishes—became whales, why did they not all learn? Would it not advantage the worm to become more highly organized, and the camel to find rich pasture and be a horse? Gorgeous colouring, pleasant sounds, sweet scents are for ornament and delight, not because some chose to be fair: no he or she would prefer to be uncomely. It was not because a new feather was greatly attractive to the lady bird that the egg she laid contained an improved peacock. If by choice the donkey chose his song, and pussy her caterwaul, was bad taste their disqualification for high mental and moral qualifications? The sterility of hybrids, a well-known fact, is no advantage, but a great hindrance. By the theory of evolution they ought to be most fertile of all, for the combination of many advantages is surely a certain gain. Why does not the ostrich lengthen its wings by use, hunted as it is? and how

did the birds which get their living by flying manage without wings, as we are told "once they did"? If the spider was not a spider, why should he spin? and could he wish for a web fashion its wonderful weaving apparatus? If species are comparatively fixed, and animals placed in the Pyramids thousands of years ago were precisely as those of to-day, how many millions of years were occupied in making any change at all? Some men believe so many strange things that charity even cannot wish their faith to be increased.

There are living creatures with eyes of some 4,000, 12,000, 17,000, 24,000 lenses: did cleverness enable these creatures to grow, use, perfect them out of some transparent tissue which did not see? Did the nerve sensitive to light place itself by natural selection in the right place to turn the light into sight? The trilobite long ago had a perfect eye: did he very early make millions and millions of experiments without knowing how or why, and direct them, without direction, to a good result? How did he compute the true distances of the refracting surfaces, assign their proper density, and precisely fix the required mechanism for instantaneous adjustments to changes of form and distance? Had he naturally, without anyone to give it, or did he obtain without any learning, a power of mathematical analysis never yet possessed by any human mathematician? If so, men have evolved the wrong way.

Why talk of bees and birds, or of the ten thousand times more marvellous things than they? "We know nothing, or next to nothing, of the ultimate structure and properties of any one thing, whether organic or inorganic;" yet these "know-nothings" would dethrone God and make religion impossible. They say, "There is a transparent absurdity in the thought that a man may be able to calculate his own movements, or even those of his fellow," and so they refuse all prophecy; yet profess to explain all the movements of the universe. They solemnly declare, "Physical science cannot inform us what must have been before the beginning, nor what will take place after the end;" yet declare that before the beginning was a something, like nothing at all, out of which "what is was made of what was then." They cannot tell us what life is, nor what an atom is, nor why one differs from another; nor why stars seeming alike are not alike; nor why there are great mysteries in the little things you cannot see; nor why the motions of the planets are what they are, there being, if we take the universe as a whole, more probabilities than a finite mind can reckon against their present arrangement apart from a First Great Cause. It is time to refuse the cant words that confuse knowledge. The features

of a beast are not writings on the rocks to tell of Israel passing by. There is a musing do-nothingness that dawdles, and then, tempted by the devil, is active with a sort of have-at-everythingness, to the neglect of noble duties and toils.

He who has true genius, enthusiasm for self-improvement, discerns in the organs and functions of the lower animals, in forest sounds and wave music, that preparation by the Almighty Father which pointed onward to human life. He will recognise that past and present melodies are preludes to a greater harmony, and not one note but is a preparation for the Great Peacemaker Who opens wide the gates of heaven. Like can only come from like, and evens from evens; but everything is so different that no two things are quite the same. Yet all are so related that the far-off and near, the similar and the diverse, are in such degree akin that everywhere is the inscription, "One Mind contrived, one Hand did the work." There was a vast previous work of God amongst lower creatures in arranging for Adam the first. There was a more wonderful preparation amongst men for Adam the Second. Now the fulness of time is being occupied in making the descendants of the first Adam brothers and sisters of the Second Adam, that they may dwell above the stars in the nearer glory of God for ever.

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ART. II.—THE ORIGIN AND MEANING OF 'ΕΠΙΟΥΣΙΟΣ IN THE LORD'S PRAYER.

A DEEPLY interesting paper by the Rev. A. H. Wratislaw appeared in the pages of THE CHURCHMAN of July on ἐπιούσιος, which produced further evidence in support of the view maintained by the learned Bishop of Durham in his well-known essay on the passage. Feeling sure that all true students of Scripture always welcome the *audi alteram partem*, I venture, with all respect for the learning and painstaking investigations of the great scholars who support the derivation of ἐπιούσιος from εἶναι, to advance some arguments in behalf of the alternative derivation from εἶναι (οὐσία).

The preliminaries of the discussion are already before our readers, and need not be repeated; it will be enough to recapitulate for the sake of perspicuity the cardinal points on which the question hinges, and then submit them to a fair examination.

The word ἐπιούσιος stands in utter solitude. It is nowhere else found, either in classical or Hellenistic usage, except in the