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ARTICLE V.

SCIENCE AND CHRIST.

BY WILLIAM W. KINSLEY, WASHINGTON, D. C., AUTHOR OF "VIEWS ON VEXED QUESTIONS."

SCEPTICS of to-day take issue with Christian thinkers, not as to the fact of an historic Christ, but as to his nature, contending that he is nothing more than one of the world's great original geniuses who attained eminence in the department of religious thought, and whose fortune it was to flourish in an age naturally superstitious because antedating scientific inquiry, an age in which popular reverence enveloped the heads of its heroes in a halo of divine light and taxed the credulity of after centuries by myths and traditions of their marvellous miracle-working.

They do not hesitate to concede that he was a man of excellent spirit, profound wisdom, exceptionally pure life, that his discourses abound in most praiseworthy sentiment. Neither do they hesitate to affirm that to account him divine is a notion excusable it may be in some confiding childage of the world, awed by mystery and ridden by priests, but ill-beseeming the bold, investigating spirit of the nineteenth century.

As this opinion widely prevails in learned and especially scientific circles, and is gaining ground so rapidly that we meet it everywhere in books, in the columns of the press, on the platform, and in the thoughtful social circle, every earnest truth-seeker feels impelled to thoroughly re-examine this the most vital and vexed of all the questions that have come up for settlement, "What think ye of Christ? whose son is

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he?" and to decide whether the answer given by infidel or Christian best bears the crucial test of modern thought.

We find on reflection that this question naturally resolves itself into these three:—

1st. Is man of sufficient worth to warrant such condescension and sacrifice on God's part as were displayed in Christ?

2d. Is such earthly mission absolutely necessary to free man from the guilt of sin and the power of it?

3d. Are there in the characteristics and career of Christ convincing evidences that he was that Divine Visitant engaged in this most astounding mission of mercy?

1st. Is man a being of such transcendent worth that the great God of the universe, in order to reclaim him from sin, would leave the throne of his glory, dwell inside a frail human body, live a life of extremest poverty, and suffer himself to be humiliated, scoffed at, traduced, forsaken of friends, and finally put to a cruel and shameful death by the hands of hate?

When we view the vast world-peopled heavens through the tubes of our telescopes, and reflect that our little earth is but a single grain of sand on the measureless shores of immensity; that the solar system, of which our globe is but a very inconspicuous member, is only one of millions of similar systems that compose the galaxy or Milky Way whose luminous band encircles the heavens; and that this mighty nebula is but one out of thousands of sun-clusters already uncovered by the searching eyes of science, we are overwhelmed with the vastness of God's plans and cares, and instinctively feel that it would be the height of presumption to suppose that he has given any special attention to the welfare of this single race of beings that inhabit this little satellite, much more that he has laid aside for them his robes of royalty, dismissed his brilliant retinue of angels, become a

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member of an obscure peasant family of Jews, and permitted himself to be despised, afflicted, and smitten of men.

If we confine our minds to these lines of thought solely, the upas-tree of unbelief will soon cast its baleful shadow over us. But, happily, science has carried the torch of knowledge far down the corridors of forgotten time and disclosed a well-nigh infinite patience and painstaking on the part of the Almighty in incarnating right here, by successive acts of creation, his conception of life. The earth is small indeed, being twelve hundred thousand times less in bulk than the sun it circles. But the microscope tells us that God does not need vast stellar spaces and ponderous masses of matter in which to work his wonders; that he can embody his choicest thoughts, if he chooses, as readily within the infinitesimal boundaries of atoms as within the wide circumferences of suns; that with him bulk or avoirdupois is not the unit of worth; that the germ-force lodged inside every minute sphere of fish-spawn exhibits in its work the same divine depth of wisdom and perfection of skill that characterize the operations of those mighty organizing forces that convert amorphic vapor-banks into million-sphered sun-clusters. The spectroscope tells us that other worlds are constituted like our own, that the processes of planet-making are still going on, and that marks of incompleteness and evidences of continued evolution are clearly traceable; and the idea naturally suggests itself, that it is by no means improbable that many yet incomplete and uninhabited worlds are to be peopled from this very globe of ours. Certain it is, through the gates of death have passed out somewhere, age after age, countless multitudes of disembodied spirits; and who can tell when this mysterious procession of thronging souls shall cease to come and go across this narrow stage of being? For aught we know, earth is the nursery of the universe, the great training-school of the stars.

The very scientists who decry Christianity have by their

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researches unwittingly so exalted our conceptions of man's place in nature as to silence all questioning whether in order to effect his salvation God would consent to such a sacrifice as that claimed, provided this end could in no other way be secured. Most abundant and convincing evidences have been unearthed of the fact that God after hundreds of thousands of years of patient progressive work reached in man the full and final expression, the *ultima Thule* of creative thought on this planet.

Would that somehow we might be lifted in contemplation to some far height, where with sweeping glance we could note as mapped out beneath us over the populous periods of the past those majestic outlines of divine purpose which found in man, in his gifts and destiny, its long-awaited consummation!

In our geological researches we find that God revealed almost at the outset his full ground-plan of vital organization, the fossil records of the rocks declaring that mollusks, radiates, articulates, and vertibrates—the four cardinal characteristics, the set patterns after which all bodily forms have since been built—appeared on the earth nearly at the same epoch; and the fact that around these primal conceptions all other creative thoughts have clustered and have served simply to unfold their well-nigh inexhaustible possibilities of adaption to the demands of an ever-varying environment; and the further fact that not one of them has fallen into disuse, but is as distinct and dominant to-day as at their first appearing, that they have survived all changes, withstood climates and cataclysms, have neither increased nor diminished, were clearly marked at the first, are clearly marked now, may be taken as a sure token that God's ultimate purpose as to the framework of living organisms has been reached.

After the highest, most complex of these four types, the vertebrates, the human body has been fashioned, and in this

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subkingdom it ranks among the *Mammalia*, the highest of the five classes, and in this class among the *Primates*, the highest of the twelve orders, being considered by scientists the last term of an organic series. And it not only far surpasses all other organisms as a physical instrument of the mind, but bears upon it such marks of divine completeness, such absolute competency to perform the most complicated and the most exalted tasks to which pieces of mechanism can possibly be assigned, we may safely affirm that in it the full divine ideal has been attained.

Let us consider this a little in detail. Hugh Miller has called attention to the fact that in man alone the body assumes an ideal position. No other vertibrate stands erect. Between the horizontal fish and the partially stooping ape, spinal columns may be found at every degree of the quadrant.

In organs of sense-perception and in powers of manipulation, man's body furnishes to his intellect an equipment so admirable in its completeness, that nothing further can reasonably be desired or can be used to advantage, and in the well-nigh universal range of its capacities is immeasurably superior to that of any other animal. It is true that a dog's scent, a gorilla's hand, an eagle's eye, a horse's neck, in some points surpass our own. Many animals have been better clad by nature for warmth and beauty than we, have more impenetrable armor, sharper claws and teeth, easier and swifter locomotion, greater powers of endurance. Many have their limbs terminated in most cunningly fashioned tools, which from the first they know precisely how to use most effectively. But though we can point to this one or that which in some respects has an organ more perfect, or more perfectly under control, yet through the sovereignty of our intellects, through their power of inventive and adaptive thought, we are able to bring our bodies into such

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development and training, and to fashion and place in our hands such tools, and so to supplement our organs by those of the animals below us, which we domesticate, and also so to utilize nature's forces, that our minds have at last at their disposal the acutest senses and the strongest muscles in the world. We make our own the scent of the dog, the wing power of the bird, the strength of the horse, the sight of the cat, the instinct of the bee.

The camel, that living ship of the desert, with its great store of fat on its back, thick sole on its foot, long lash of its eye, its self-closing nostril, capacious honeycombed water-bags, wondrously acute sight and smell, its almost exhaustless endurance of muscular fibre, is especially fitted to withstand the privations and the blinding, suffocating siroccos of the desert. Man has long since so thoroughly domesticated the only two known species of this animal, that not a single individual now exists in a wild state. It has become so emphatically the servant of man that the earth's widest sand-wastes have been turned into highways of commerce, across which richly laden caravans are constantly threading their way.

We not only develop our own organs into marvellous capacity by patient training, and supplement them by appropriating those of the brutes, but we vastly multiply their original resources by ingenious seizure of nature's elemental forces, so that we speak with telephones, look through the tubes of great refractors, add to our detective sense of taste and touch and smell by chemical tests, multiply our muscular powers by applying steam, wind, electric energies, until we can lift mountains, walk over seas or under them, send our voices across continents, transport our bodies to the clouds or burrow them thousands of feet under ground, brave the suns of tropics and the frozen breath of arctic zones. From the shorn lamb's fleece and the worm's spun shroud we weave our woolen and silken fabrics. The furry skins of

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the seal and the otter and the mink protect our hairless backs, the brilliant feathers of birds grace our persons, the skilled industries of all the instinct-guided creatures below us contribute to the cheer and beauty of our homes. Were our bodies more fully equipped, our minds would have less stimulus for development. Just enough of bodily endowment has been granted to show us what we lack and how to get it, to create in us a desire and a purpose to add to our store, the effect being not to discourage, but to awaken and incite. No animal has any natural bodily advantage that is not in our reach to acquire or use; so that all the marvellous gifts of all the species of sentient life we have a right to regard as parts of our own fleshly furnishing, and we have a reason to believe that for the housing of the human mind all nature has been commissioned by the Almighty to pay bountiful tribute. In this element of universality lie the insignia of royalty. The bee steps out from its cradle most admirably equipped with tools for a specified work and with all the unerring skill of an expert, but its sphere is an extremely narrow one. It has no reaching out of desire or of power, except for the smallest part of this broad heritage. To drink from the nectar cup of flowers, to fill its pollen basket and wax pouches, to build its cells and store them with honey or eggs,—these are to it the sum total of life, its utmost longing, its unchangeable destiny. So with every other one of God's creatures. In marked contrast to man, most circumscribed spheres and subordinate positions are assigned them.

Furthermore, man's bodily organs, even when taken apart by themselves, unsupplemented, are, if considered each in the entirety of its powers, in its flexibility and range, immeasurably superior to those of all other animals, even the most gifted.

Man's hand, which is far in the lead of all his other organs as a serviceable implement of the mind, though in gen-

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eral structure and characteristics resembling that of the ape or of the lemuroid, is vastly superior as to both the variety, delicacy, precision, and swiftness of its movements. Only man's hand is fully and permanently lifted from the ground, and relieved from the task of assisting in locomotion and support,—tasks which greatly tend to lessen its suppleness and to blunt its finer sensibilities. It alone can with readiness oppose the thumb to the fingers for the purposes of seizure, or is capable of pronation and supination, that is, of so rolling itself that the back or the palm shall at will lie uppermost. The gorilla's hand has greater grasping power, but in this its superiority ceases; for, being designed only for coarse and menial offices, as the servant of a sluggish, shallow, and wholly brutish mind, every finer quality either was at the first denied it, or has through neglect been long since withdrawn.

It is in the hand that our sense of touch is most acute. We feel by means of papillae—rod-like bodies about one hundredth of an inch long, coming up out of the lowest part of the cuticle, and composed of nerves, blood-vessels, and fibrous tissue,—and it is right at the tips of our fingers that these are the most abundant, though they may be found scattered everywhere over the surface of the body, and the extent to which the revealing power of the fingers through this sense has been carried by careful culture may well fill us with most profound amazement. Experts among the world's workers sometimes seem gifted with magical insight. The silk thowsters of Bengal for instance, can by the touch alone distinguish twenty different degrees of fineness in cocoons, even before they are unwound. The achievements of the blind, who have been forced to make their fingers supply in part their loss of sight, show us how almost limitless are our possibilities in this direction, for they have gone so far as to determine even differences of color, so we are informed by Dr. Kitto in his work on "The Lost Senses." This expert-

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ness is attained by constantly recalling former experiences, instituting comparisons, and completely absorbing the attention. Dr. Carpenter assures us that we can by persistently willing it increase the flow of the nourishing blood to any point in the body, and thereby perceptibly increase the vigor and activity, and promote the growth, of any organ or sense. Even these minute papillae can thus be reached and rendered more effective. Indeed, no limit has yet been found to their attainment, when a capacious, aspiring, dominant mind insists upon increased facilities of outlook. The body is under the plastic power of the mind far more than we are apt to think. How the musician adds by patient drill to the strength, celerity, and precision of his finger touch! His hands at last fly over the keyboard of the piano like fairy sprites, executing with lightning speed and delicate nicety the most difficult commands of their master. He has, it is true, found one impediment in the way of the perfection of his art, but he has also found that that impediment can be removed by the skill of the surgeon. There is a certain cord, a relic from our brute ancestry, so scientists tell us, that partially binds the third finger. The lancet sets it free.

It is deeply interesting to note the various partial embodiments of the divine ideal in this portion of the body's furnishing, to see in how many ways the hand may be modified to suit the different needs of different modes of life, answering as a paddle to the whale, its digits without claws or nails being so connected and covered with integument as to have their individuality well-nigh obscured; serving as a wing to the bat, its elongated fingers glued fast to broad pieces of skin to be spread or furled at the pleasure of this little flying mouse; or serving as a grasping hook to the sloth, with which to hang in mid-air hour after hour from some branch in its forest home, its slender fingers, lying side by side, always curved and ending in curved claws; or, still further,

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being used as a nut-pick by the aye-aye, with its single bony finger stretched out to an abnormal length.

But, while we note how each brute's hand is admirably fitted for some specific work, we note also, how specific that work is, how extremely limited the sphere of action, how forever precluded, by the peculiarity of its structure and the hopelessly menial character of its tasks, from any further enlargement or refinement of power. As we study the achievements of the human hand, and observe how the human mind can, seemingly without limit, multiply and exalt its powers, we feel warranted in regarding this most wonderful combination of bone and horny plate, muscle and tendon and cartilage, ligament, cuticle, blood-vessel and nerve fibre, as the final and full embodiment of God's ideal, as in this direction the *ultima Thule* of his thought.

This is equally true of the mind's other fleshly furnishings. Anatomists astonish us with the statement, that, in providing a window through which man may look out on earth and sky, there has been effected a combination of eight hundred different complemental contrivances. The structure of the eye is essentially the same in all the mammalian genera. There are, it is true, some animals of peculiar needs which have had their eyes correspondingly modified. Amphibious mammals, as the whale and seal, have eyes built, like the fish, without tear glands, with spherical lenses, and with thickened rear walls for pushing forward the retinae, and thus securing great refractive and microscopic power, in order that they may thus more readily find their way and procure their food in the dense salt seas.

In some genera the shape of the pupil is varied, and in some the eye's interior chamber, instead of being painted black, fitted for absorbing light, is covered with a pigment of brilliant metallic lustre, fitted for reflecting it on the retina, and thus rendering it possible for the animal to see and seize its prey in the darkest hours of night. The birds, a lower

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order of creation, have eyes which, to suit the demands of swifter locomotion, can adjust the focus for different distances more rapidly than mammals. They also have a third eyelid which, when not in use, lies folded at the inner corner, ready to be spread by two little muscles which have it in charge, like a thin gauze veil, to temper the sun's glare, which otherwise would blind them. Insects' eyes are made stationary; and, to enable these Lilliputians to see in every direction, each one has been furnished with two clusters, each cluster numbering, in some cases as of beetles, as high as twenty thousand, each eye set in a different direction, and having a separate optic nerve, lens, iris, and pupil. But these variations are simply offsets to disadvantages belonging to the habitat, or ways of making good some defect inherent in the eye itself. Man's eye, with its power to roll in the socket, lubricate the parts, enlarge the pupil, adjust the focus, and avoid spherical aberration, seems to lack in nothing essential to perfect vision. It has power to see a particle measuring but one five hundredth of an inch on a side, and a thread but one forty-nine hundredth of an inch in thickness. Whatever its limitations and defects, the mind has found it quite possible to fully make them good, not only by artificial aids the results of its ingenious contriving, but by sheer force of will, compelling the blood to strengthen it and enlarge its varied parts, as already alluded to. But, more especially, it can by rigidly fixing the attention, constantly striving after closer observation, cultivating its æsthetic tastes, contrasting and comparing, finally, in a most marked degree, increase the sensitiveness of the retina so that the most delicate lines in the sunbeam-painted pictures shall stand out distinctly without blur or defacement, and the impression in all its fulness shall be carried over the optic nerve to the brain. Just here lies the eye's chief capacity for improvement and enlargement of power, and, as in the case of the hand, there has as yet been found no limit

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to the mind's plastic influence over it. The experiences of artisans, and artists, and star-gazers, and all trained observers abundantly corroborate this statement.

Very few of the objects that come within the brute's range of vision ever make an impression on the brute's brain. No cognizance is taken. Sunbeams may paint their pictures never so deftly, they fade unnoticed from the canvas. Here has been provided an apparatus whose possibilities of achievement lie all undiscovered until the advent of man, and that too of the most gifted and cultured man,—possibilities which are still unexhausted and even undetermined, notwithstanding so many centuries of civilization. There is certainly every indication that God here contemplates no improvement which use cannot develop, that he has given to this organ its stamp of divine completeness.

The human ear is a marvel and a mystery,—a marvel in the scope and perfection of its interpretive power, a mystery in the modes of its working. Scientists with all their tireless research confess that in many very important particulars it still baffles their efforts to unlock its secrets. The anatomist with his dissecting knife, his microscope, his chemical tests, his delicate scales, and his minute measuring lines, has been enabled to present to us a passably clear conception of the different parts of this piece of matchless mechanism. With his help we note first the auricle, or outer ear, with its peculiarly grooved framework of cartilage to serve as a sounding board. The pulses of the air, we find, are gathered and guided by this into a narrow, winding passage, called the auditory canal, along which they beat until they strike the membrane of the tympanum. Behind this lies a little chamber, known as the middle ear, across which is hung an irregular chain of bones,—the first link shaped like a mallet, the second like an anvil, the third as round and small as the head of a pin, the fourth bearing the familiar form of a stirrup. These are supposed, though not known, to carry along

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their line the vibratory movements of the tympanic membrane to the inner ear, in which lie peripheral end organs of the minutely subdivided auditory nerve. Here, in this so-called labyrinth, are the vestibule, the semicircular canals, and the cochlea. Here the outer world's messages of sound are in some mysterious way sent flashing over the wires until they end in molecular changes of the brain.

There are three characteristics of musical sounds which by this instrument we are able to distinguish, the pitch, the intensity, and the timbre of the tone. In what this last consists, in the determining of which the other two play no part, or in what way it is communicated, are matters of still grave dispute. But what puzzles scientists most, and piques their curiosity, is the ear's achievement of taking in and communicating not only melody, but harmony of sound, and at the same time keeping separate the individual notes which are used in each combination. Whether the fibres which are stretched across the central coat of the membrane of the tympanum, and radiate from the attached handle of the mallet bone, can, by means of their difference in length, size, and tension, sympathetically respond to the different waves of sound, if sound is propagated by waves, which some dispute; or whether the three thousand rods of the organ of Corti to be found floating in the fluid that fills the winding chambers of the cochlea constitute a keyboard to answer the air wave's finger touch; or whether the end is attained through some yet undiscovered process, is a matter still to be determined.

We have by our training brought this wonderful instrument to such a degree of perfection that we have succeeded in taking cognizance of sounds so low as to be formed from as few as thirty vibrations per second, so advocates of the undulatory theory tell us, and so high as to come from as many as thirty thousand, so flexible is it, so capable of enlargement of capacity, so responsive to the behests of the

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aggressive human will behind it. Practical musicians have at last reached such keen discrimination that they perceive a difference of pitch amounting to no more than one sixty-fourth of a semi-tone. Does it not seem that in this bodily sense also, as in the others considered, the Creator's grand ideal has been fully realized?

Our olfactory nerves, though in some cases less acute than those of brutes, are evidently of far wider range and suited to and designed for nobler service, being something more than grimly utilitarian, to be employed as aids in procuring and selecting food, and in sounding alarm when dangers impend. These sets of nerves in man, not only subserve these lower ends, but are also sources of exquisite pleasure and æsthetic refinement, and enter in as most important factors in the great scheme of the world's intellectual development. The arts and sciences with rarely an exception place them under tribute. We gain some conception of the well-nigh preternatural sensitiveness of the ends of these minute nerve-fibres, as well as of the almost infinite divisibility of matter, when we reflect that one-thousandth of a milligram of mercaptan when mixed with two hundred and thirty cubic metres of air will give out an odor clearly perceptible to us. The scientists, who recently demonstrated this fact by experiment, estimate that it is only one fourteen hundred and sixty millionth part of a milligram of this substance that comes in contact with the nerves of the nose at any one time, yet they can detect its presence. But the fact that it lies within reach of the human will to indefinitely increase the range and power of this interpretative organ should be especially noted, for in it lies the revelation that upon this subtile sense also has been affixed the seal of divine completeness.

Had we space we might cite analogous facts pertaining to our powers of taste.

That which has been found true with reference to those

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gifts of body that disclose what lies without, that unlock the doors opening into nature's vast arena, may be equally affirmed of those that reveal what lies within; such as articulate speech, facial expression, gestures and pose of body, and peculiarities of gait and intonations of voice. Our bodies have here very marked original versatility of utterance, far transcending the bodies of brutes. Indeed, they have been utterly denied articulate speech, and laughter, and tears, and the tell-tale blush that mantles brow and cheek. For proofs of the almost limitless plastic power of the will over these thought-transmitting capacities of the body, we have the confessions of noted conversationalists and orators and actors and rapture-thrilling vocalists, disclosing to us how, through persistent, painstaking drill, they have finally attained this their most wonderfully complete mastery.

Wallace speaking of the power, range, flexibility, and sweetness of the musical sounds producible by the human larynx, adds that the habits of savages give no indication of how this faculty could have been developed, as the singing of savages is a more or less monotonous howling, and the females seldom sing at all. It seems as if the organ had been prepared in anticipation of the future progress of man, since it contains latent capacities which are useless to him in his earlier condition.

Actors, to render more certain and telling their triumphs by kindling the imaginations of their audiences, surround themselves with the accessories of stage scenery; and for the voice of the singer the sounding pipes of the organ, and the notes of all manner of metal and reed and stringed instruments, are called in as accompaniments, though that voice soars over all in the grand crescendo passages of the hallelujah chorus.

And then, too, what charm of form, grace of motion, delicate tint and rapturous glow of beauty are reached at

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times by these gifted organized bodies of living dust. To add still further to the inherent powers of fascination of the body, the restless spirit that dwells within it, and seeks through it æsthetic expression, decks it with flowers and plumes, gems and gold, and dyed garments of gracefully flowing folds, and, when possible, places it within a marble palace where electrically lighted apartments are rendered rich with works of decorative art.

But the foremost of all the organs of the human body, that which lifts man as to all other orders of creation into unapproachable pre-eminence, is the brain, whose massive lobes of convoluted grey matter constitute, as is supposed, the seat of the soul. It certainly is the central office from which radiates that complicated system of nerve lines over which are ever flashing night and day, waking and sleeping, telegrams of conscious and unconscious thought. The brain of the fish bears an average proportion to its spine of not more than two to one; of the reptile, two and a half to one; of the bird, three to one; of the mammal, four to one; while that of man bears an average of twenty-three to one. What a leap! How significant! Here surely is a great gulf fixed. Man is thus at a single bound placed at an almost infinite remove from all sentient life about him in point of thought-capacity; and in the already completed centuries of his history he has shown that while there are some resemblances there are not only vastly increased mental acumen and breadth, but also absolutely radical differences of mental structure, for while with the lower animals instinct is at the front, with man reason, the insect and the brute following blindly a course marked out by another, man deliberately determining on a course for himself; while one is confined to a narrow sphere and to temporary dominion having no desire for or prospect of progress, the other ever restless and dissatisfied at his present status, is driven on by an insatiable longing from conquest to conquest until to every thoughtful student of

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individual and national history comes the grand conception that man has been created for universal dominion and for endless growth, that he was the long-expected guest towards whom all the prophecies in nature have been pointing through the long geologic ages, that into his hands have been entrusted all the wonder-working forces with which nature abounds, the keys that unlock all the secret storehouses of material wealth, the art galleries, the conservatories of music, all the treasuries of suggestive thought; that it surely was for him who has shown himself capable of utilizing her riches, developing her possibilities, perfecting her incompleteness, training her forces, interpreting her hieroglyphs written on rock and sky, on sea and land, this wide world of wonders was being moulded by the Creative Hand; that it was for man the crystalline forces in some long ago gathered the sediment of the primal seas into rock quarries and salt beds, the vegetive forces produced the dense conifer growths of the carboniferous era and volcanic fires buried and baked them into beds of coal, that for him the waters swarmed with fish, the fields were white with cotton, the long-fibred fleece grew on the back of the sheep, even the lowly worm spun and wove its silken shroud, the forest oak buried its great roots in the soil, threw out its banners of leaves and with its mighty arms grappled with the fierce storms of centuries in order that he might from its tough and sinewy stem fashion ribs for his ships and build a sheltering home for his little ones.

The fact that the earth had for ages been a vast reservoir of minerals lying idle till man's advent and that those qualities which render them fusible, malleable, ductile, soluble, sealed secrets to all but him, have rendered them through his inventions conducive to his comfort and culture, is proof positive that it was for these very ends of use and for this very being of marvellous gifts God fashioned them at the first.

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The fact that electricty which for ages simply hung across the northern skies its mysterious banners of light and now and then crashed down from the clouds in death-dealing thunder-bolts, now man's tamed Titan, lights the streets of his cities, his workshops and his marble halls, drives his machinery, draws his carriages and flashes his thought over the everywhere interlacing telegraphic highways of modern life, is proof positive that it was for these very ends of use and for this wondrous being God fashioned at the first this most astonishing of all the forms of elemental force.

The fact that man has shown himself capable by following out the suggestions of nature, of becoming a sort of sub-creator, a finisher of God's work, developing new and improved varieties of fruit and vegetables and exercising a plastic power even in the charmed circle of animal life, reclaiming the desert and morass, adding new tints to the rose, new lines of symmetry to the tree, new grace of curve to the river, new and fuller combination of charms to the landscape beauties with which earth abounds, is proof positive that it was in anticipation of man's coming God left his work thus incomplete, and that it is to man's hand God at the first determined to entrust the finishing.

The fact that man has proved himself able to thrive in all climes, on all foods, to build for himself homes out of all materials, to make the whole world his habitat, all animal species, all kinds of force his docile household servants, his winged messengers, clothiers, purveyors, architects, even artists, and, when occasion fits, his grand orchestral choir, is proof positive that it was pre-eminently for man God thus exercised his almost infinitely provident thought on this planet.

The fact that man is thus a microcosm, all types of living organisms centring in him and becoming perfected; that he is fast reaching universal sovereignty through his ever-widening knowledge, stretching out his sceptre over the three

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great kingdoms of the world, the mineral, the vegetable, and the animal, and leaving the imprint of his personality everywhere; that he is the great, the only cosmopolite at home on sand wastes or on tossing seas, in sheltered nooks or wind-swept mountain summits, under blazing equatorial skies or amid the brooding stillness and desolation of the land of the iceberg and the creeping glacier; that he can by a plastic, an almost creative, touch round out the partially finished designs of nature into full completeness; that he can hold converse through nature with nature's God, interpreting the thoughts embodied in earth's phenomena, deciphering the handwriting on the leaves of the rock-records of vast geologic periods and thus tracing the ongoings and noting the trend of the divine purposes as from age to age they have found embodiment, and discovering in this history of earth's evolution evidences of the soundness of his own scientific classifications and thereby the striking likeness of his own thought to that of the Divine, threading his way through the labyrinthine mazes of the star-peopled heavens, determining the mechanism of the universe, calculating eclipses, weighing and analyzing suns; the fact that he can thus through his susceptibilities, his faculties of memory, of perception, of reasoning, of conceptive imagination, transmute into a populous world of thought within this populous world of fact without, furnishes proof positive that it was for this very end of use, the surrounding of man's spirit with a fitting environment, this planet has under the creative and directive power of God been undergoing processes of evolution that extend back over a period so vastly remote it completely transcends our utmost reach of thought.

When we contemplate how inconceivably many have been the centuries consumed by God in his patient painstaking preparation for man's coming, what astounding riches of invention he has lavished upon it, what mighty and subtile secondary causes have been commissioned to forward the

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work, when with the help of science we trace the mighty evolution of the ages and learn at last that man is the grand goal of creative purpose, the supreme consummation, the *ultima Thule* of Divine thought on this planet, how strikingly inadequate seem to us all the current estimates placed upon human life and human destiny.

And yet I have directed attention only to the less important of God's preparations for man's coming and to the less valuable of his bestowments upon this most favored child of his choice. To this complicate world-environment, to this subtile, organized body, to this interpretive and sceptre-winning faculty of deliberative thought, were added what far transcend them all and to which they were evidently designed but as accessories, the gifts of moral discernment and of responsible free choice. From their exercise, character, that which lifts us from brute being into Divine likeness, is finally evolved. This from the very nature of the case God could not directly create, but that this was a consummation which ever lay uppermost in all his thought through all the ages, to which he made every other consideration bend, there is now no shadow of doubt. His entire endeavor was directed to the making ready the conditions out of which character might be the final fruitage. To this end he not only bestowed upon man this gift of sovereignty, of absolute freedom of choice and gave him capacity for moral motive and for judicial insight, but he absolutely atmosphered him with multiform disciplinary influences, and to this end established as a universal law of life, growth from germs through struggle. As I have elsewhere in a paper entitled "Satan Anticipated" described at length the operations of this law I will here only very briefly outline the workings of this perhaps the most marvellous and deeply laid of all the plans of God.

We note that plant life has germinal beginnings and a history of development, and the vegetive force, in its efforts

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to embody in material organic form the ideal given it, finds itself confronted every step of the way by persistently opposing forces with which it has to strenuously and successfully contend or be itself defeated. It meets the force of gravity at the very outset of its career and lifts its masses of matter, in some instances amounting to several tons, right against the steady antagonism of that force. It wrestles with the winds again and again, every contest resulting in tightening its root-grasp on the soil and toughening and compacting its fibred stem. It is compelled to tear asunder atoms which chemical forces are holding together with all their might, to actually drag these forces into its service and to fight unremittingly their disintegrating tendencies, reenforced as they often are with the weakening depredations of hungry parasites, until worn out with the struggle it at last succumbs and disappears forever, leaving its palace of wonders to become shapeless and drifting dust again.

Those mysteriously commissioned forces that build up and maintain animal organisms have closely corresponding battle-histories ending at last in correspondingly fatal defeats. These histories are made up of like rendings asunder of chemical compounds, impressment into service of unwilling chemic forces, fierce fights with swarming parasitic foes, and at last the like endless leaden sleep of death.

This was God's established order long before sin came. Man's moral fall has unquestionably multiplied diseases and hastened death, but it cannot be charged with having first introduced them to this sorrow-burdened earth. Long before Adam there were sand wastes and pitfalls and cyclones and thunder-bursts and poisonous airs and ravenous beasts. Bodies were made of perishable clay and environed with adverse influences. Life would have been a fierce contest even if sin had never come. Rare indeed are the paradisiacal spots where fruits grow with luxuriant spontaneity, where the

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air is soft and odor-laden, where the rays of the sun are always tempered and golden and full of balm, where the life of the flesh is a careless cloudless holiday. Even if sin had not come, disease would have paled the cheeks of loved ones and home circles would not be without some vacant chairs. Anxieties, forebodings, care burdens, disappointed hopes, scalding tears would have been accompaniments of human life even if that life had been kept pure. This world as now constituted was evidently designed as a means not an end, as disciplinary and developing, as a great training-school for some higher form of existence.

If death ends all, this present order of nature, however full of matchless mechanism, of astounding achievement, however stamped with profoundest inventive thought, may be rightly counted a most lamentable failure; but if God designed this life and this world as means for developing virtue, the present order of things is not only a marked success but it takes on new and deeper meanings, it displays on God's part an infinitely greater caretaking than scientists have as yet discovered in all their investigations.

Virtue being beyond the range of God's creative power, being the result of the choices of a responsibly free will, as we have already stated, God was necessitated from the very nature of the case to pass man through some probationary period, make him amenable to systems of law, place him inside a body easily deranged, full of appetites and passions and desires, susceptible of over indulgence, place him amid opportunities for gratification left open to abuse that thereby he might learn self-mastery, amid dangers to prove and develop his courage, amid trials and disappointments to test his fortitude, amid objects of need to appeal to his better sympathies, amid hindrances by the surmounting of which to toughen the fibre of his spirit, to make him nobly, grandly aggressive.

This preparation of untold centuries to secure a suitable

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habitat and housing for human souls, this well-nigh infinite painstaking and deliberate incurring of most fearful risks to school those souls into virtue, gives us some intimation of God's high estimate of the possibilities of spiritual attainment concealed within these yet closely folded buds of promise. When we contemplate the great mass of mankind, study the dark history of the ages, when we realize to our thought how that myriads in every generation have come and gone revealing only narrow, sluggish, brutish minds, the slaves of appetite, victims of multiform tyrannizing forces, cowed by superstitious fears and consumed by greed, we are apt in our haste despairingly to conclude that the risks were too great and have proved fatal. But a more thoughtful study will convince us that the race is surely moving toward light and love. It sometimes seems very strange to us that God saw fit to wait through vast geologic periods for his delegated mechanic and chemic forces to convert a shapeless bank of cosmic vapor into a planet fit for peopling, then to wait through other periods still whose lengthened lapse we have no means of measuring, for earth in its physical features and in its lower sentient life to become a place habitable to man. Had he so chosen he could have called this globe into being in all the perfection of its latest age by the instant flash of his thought. All we can say is he preferred to wait and to wait long. Think you his patience tires as the slow centuries of human progress wear away, that his courage fails, that his hope is growing dim? He knows how long he can afford to wait. A thousand years in his sight are but as yesterday when it is past and as a watch in the night.

But we anxiously ask what becomes of those countless throngs of sin-distorted souls which hear death's summons unprepared and pass within the shadow. This much I think we can safely say, not until God has fully compassed the resources of his infinite love to win back the erring and has

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finally lost all hope of their return will his striving cease and his sustaining presence be withdrawn. Yet when the last ray of hope is quenched in the great yearning heart of God, then, but not till then, will the hardened ingrate rebel be forever banished from his presence. That men, if they choose, can, despite all God's striving, sink down to devils we must concede, and also that at the last this appalling fate of banishment so long impending, prophesied in the immutable laws of life as well as in God's written revelation, may become at last the dreaded doom of devils.

But again we tremblingly inquire what is to be the future of those who before death have indeed become repentant and believing and had aspirations after better things and yet have been summoned hence while passing through perhaps the very first stages of moral development, or at best before discipline has ripened their powers or unfolded and confirmed their virtues. It cannot be that their growth is thus arrested and they thus doomed to remain forever incomplete, yet further development can be effected only under disciplinary agencies similar to those now at work in this world.

> "Heaven is not reached at a single bound;
> But we build the ladder on which we rise
> From the lowly earth to the vaulted skies,
> And we mount to its summit round by round."

Where they are to finish their training is not revealed, and it is of little moment inasmuch as the further atmosphering of these souls must remain essentially the same. Every human spirit comes gifted with a divine ideal to grow to and germinal impulses for growing, and he who made and gave will supply the environment of implements and influences and afford the time requisite for the full fashioning even though centuries or millenniums must be consumed in opening those closely folded buds of promise into bloom. Not those who through life

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have been fortune's apparent favorites, who have escaped the baptism of fire, who never, or rarely, have had their manhood tried, should be tendered our congratulations, but rather those battle-scarred heroes who have come up through much tribulation, for "whom the Lord loveth he chasteneth," as only such can yet possibly be prepared to enter through the gates into the city.

Have we been left to vague conjecture as to the nature and extent of each spirit-germ's divine commission, as to what, if any, are the impassable barriers to its capacities for growing, or has there appeared in the centuries a Shining One in the serene majesty of whose perfect consecration we find brought out at last in its completeness the grand ideal God has set and made possible for each created soul to grow to under the uplifting power of his presence? It is now universally conceded that there has visited the earth a personage called Christ, and that, whatever else he was, he was a created human soul housed in a human body, hemmed in by precisely the same human limitations and rising at the last to no greater height of moral excellence than is possible to be attained by any of his disciples. The Sacred Record assures us that he was tempted in all points as we are. The same sustaining grace given him is offered us. To the same sublime height of loving self-sacrifice which he reached we may climb, for in the words of the command, "Love one-another as I have loved you," there is the promise of the power. But to reach this fulness of Christ's stature will doubtless require on the part of most a longer schooling than this short life can give. But the schooling will certainly come. Full opportunity will be afforded. We are the sons of God, joint heirs with Christ. So far then as we can picture in our thought this transcendent personage whose life and teachings have stood the test of the world's keenest scrutiny for now nearly two thousand years, so far we can conceive what we, if lovingly obedient, are under the mould-

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ing power of the divine presence destined to become at some time during that far-off by-and-by. The day may be distant but it is coming; the standard high but we may attain to it. The flesh is weak, is worn with pain, is full of importunate pleadings, but we may become its master. The world offers glittering prizes, but we may overcome the world. Perils impend, but leaping thunderbolts may not swerve us from our purpose. Calumnies darken the air, but with an all-conquering calm we can wait the uncurtaining of God's to-morrow.

When will the battle-period end? To one class at the recall of the despised gift; to the other, at the perfecting of the divine image. The final outcome of God's creative work on this planet I believe will be a host, which no one can number, of glorified spirits who through suffering and struggle under the immutable laws of spiritual growth have attained unto the stature of the fulness of Christ. Not until we have ourselves entered into the "silent vastnesses of eternity" can we form any adequate conception of the glory yet to be revealed in this creation's masterpiece.

[*To be continued.*]

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