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The
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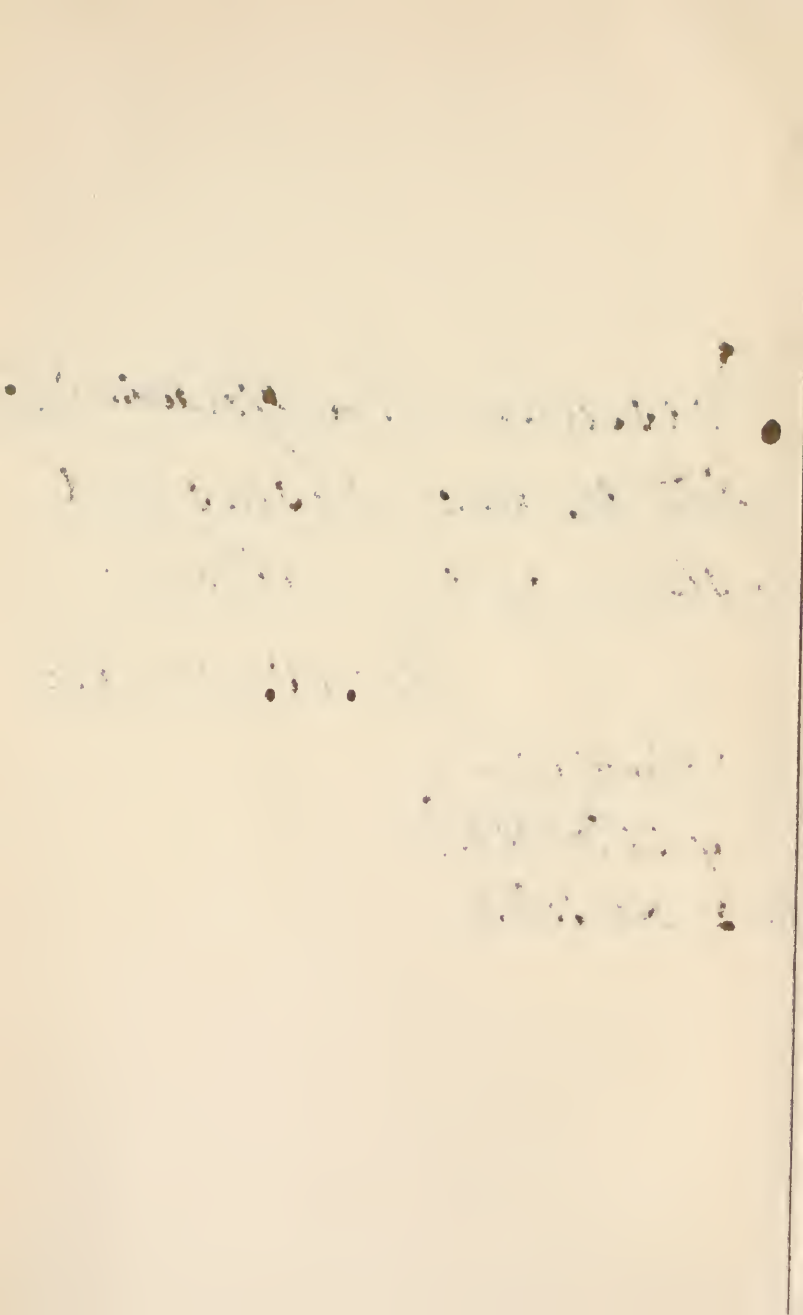
GEORGE·WOODWARD·WARDER



Presented to Prof. Goldwin Smith
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Geo. W. Warder

New York City
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The
Cities of the Sun

BY
GEORGE WOODWARD WARDER

AUTHOR OF
"INVISIBLE LIGHT; OR, THE ELECTRIC
THEORY OF CREATION"



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"Ignorance is the curse of God, but knowledge is the
wing wherewith we fly to heaven."—*Shakespeare.*

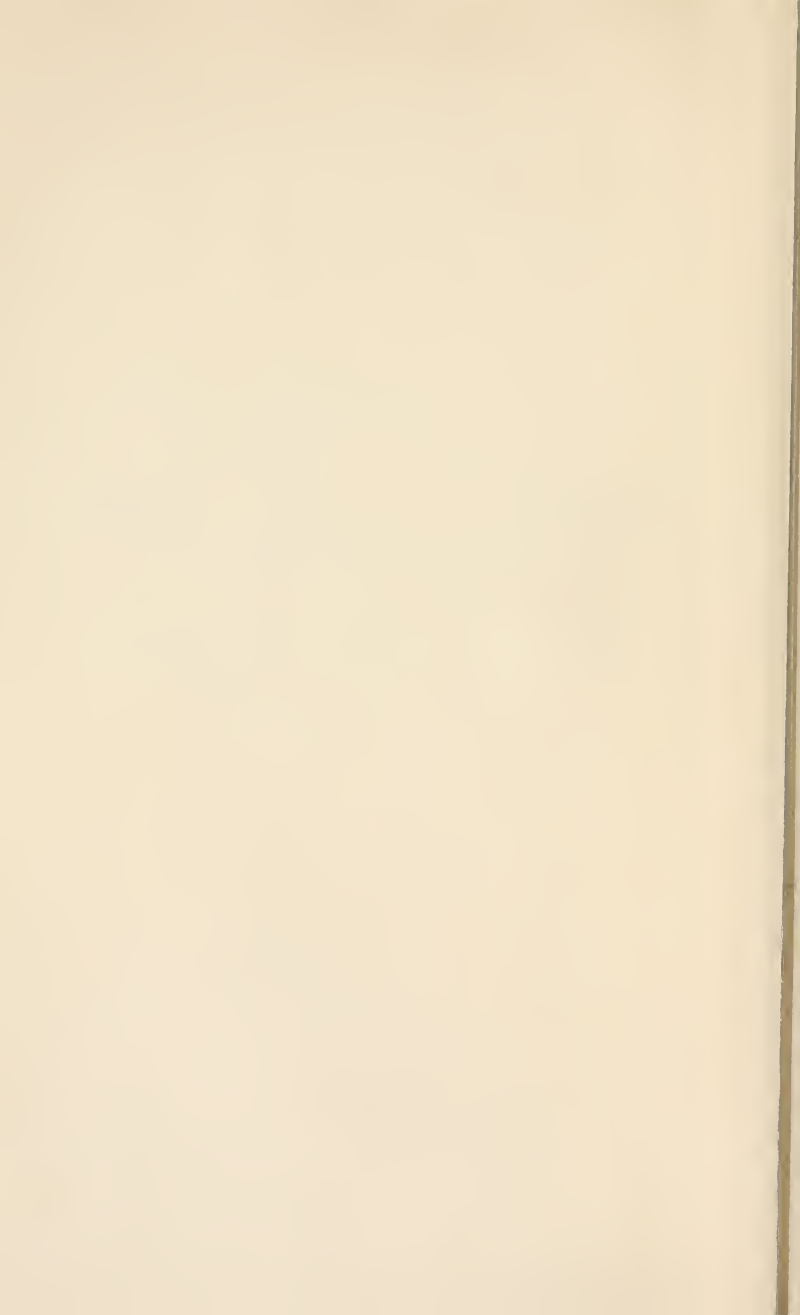
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Dedicated to
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HIS NOBLE EXAMPLE IN THE DISTRIBUTION OF HIS VAST WEALTH FOR THE
BENEFIT OF MANKIND HAS FIXED A NEW AND EXALTED STANDARD
FOR MEN OF WEALTH THROUGH ALL COMING AGES; AND
REARED IN THE MEMORY OF ALL HUMANITY AN
IMPERISHABLE MONUMENT OF GRATITUDE
TO HIS NOBLE NATURE AND GEN-
EROUS HEART



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PREFACE

In this volume I have endeavored by scientific deductions to create new ideals of man's future life, and give it a habitation and a place.

It is said, "Spirits are not finely touched but to fine issues," and the human being is primarily as well as potentially the spiritual being even in this part of life. Hope, that springs eternal in the human breast, and faith, are the guides and evidence of another life.

He that makes us believe, does not play false with us in our nature. His inspiration is our conviction, stronger than verbal declaration, ghostly apparition, or bodily resurrection.

Channing said: "The only argument against a future life is the greatness of the conception—it is too wonderful." Ah! but to live at all—this is the marvel, the strange and impossible, the greatest wonder and surprise of all. After this there are no wonders, no more impossibilities. To live one day is as great a miracle as to live an eternity.

"I look to see science prove immortality," said a great modern thinker. "This is the message it will bring to-day, and if not to-day to-morrow. For there is a distinct approach of the two worlds, the seen and the unseen; each of which is flashing its signals to the other."

This seems prophetic, for in the higher spiritualization of human life will be developed spiritual

truth, and the true conditions for a knowledge of the life beyond.

Huxley touched a high point of truth when he said, "Science is not Christianity or anti-Christianity. It is *extra Christianity*." It is, I contend, supplemental Christianity: nature testifying to natural law, and nature's lawmaker. There is no atheism in nature. Atheism is universal anarchy in both the natural and the spiritual world; while God is a scientific necessity in both. Science shows that the normal condition of all matter is invisible. Its elemental substance is the viewless atom. All physical science is founded on the atomic theory of invisible particles, or spirit of matter, a thousand times more transparent and invisible than the air we breathe—as invisible as soul, as viewless as mind, as intangible as thought, and as imperceptible as Deity. Science asserts that this invisible matter comes from the sun freely, swiftly, and imperceptibly; and much of it returns again; and, according to the electric theory, the sun is not hot.

If invisible matter does these things, why not the invisible soul? If the sun is the centre of all life and light to the material world, why not to the spiritual world? If matter in its elemental form is indestructible and eternal, why is not man's soul, which commands and controls it, indestructible and immortal?

It is a scientific fact that elemental matter is as far from our microscopic reach as the sun is from our telescopic reach; and we know as much about our souls as we do about the matter that composes our body, or the sunlight that makes our day. Huxley says, "We know more of mind than we do of matter."

May not the mind or soul in time learn a new telegraphy and send wireless messages to our loved and lost in the all-life-giving sun, and feel their responses coming back throbbing with glad tidings of their glorious and happy life?

I do not despair of the inhabitants of this sphere getting in touch with those of the origin of light and life, or with Mars or some of the other planets. If the telephone and the telectroscope can render audible and visible to the human ear and eye of this age the voice and person of another a thousand miles distant, will not this same invisible force render audible and visible to the more refined and tutored sense and spirit of future generations the wonders and harmonies of the universe?

Again, if the genius of man can invent a simple instrument like the spectroscope that can register the elements of the distant sun and stars, will not that same genius in time catch the whisperings of the spheres, the hum of the cities of the sun, and the language of the divines of heaven? May not a whisper be heard to the bounds of the universe if the ear is properly attuned? Has not man discovered in the last half-century an invisible electric force that ignores time and space, and, like Deity, has no limitations? And may not the coming ages make such discoveries that a man in the proper condition can see the air filled with spiritual beings that walk the earth unseen as did the seers and prophets of old? All scientific analogy teaches that the sun is not only the physical and electric, but also the spiritual, centre of our solar system; that all things come from and all things must return to the sun, which is the earth's physical creator, and the spiritual headquarters of Deity. The beauty and mag-

nificance of the Cities of the Sun cannot be described by human imagination or analytic science.

The scientific proof of the immortality of matter and of the sun as its past and future home is strong collateral proof of the immortality of the soul and the sun as its future abode. If the "soul shall return to the God who gave it," and the sun is His visible dwelling-place, then the sun is man's future perennial residence. And its cities are marvels of beauty and perfection where dwell the happy denizens that once trod the solar planets.

The march of science will soon produce a universal Christianity without dogmas or ecclesiasticism. It is in the nature of human progress. All fruitless wrangles over texts and creeds will be deemed barbaric nonsense. But the essential truths of Christianity—universal love; the immortality of man, as well as the immortality of matter; the existence of Deity as well as that of His universe; His personal residence as man's future heaven; His spiritual fatherhood, and man's eternal brotherhood—will be everywhere recognized. These will be accepted as the basis of all future civilization, human law, and civil and divine government.

In my former book, "Invisible Light, or The Electric Theory of Creation," I endeavored to formulate a new theory of creation. In the present volume I have endeavored to carry the theory a step further, and to show that the suns are not only not hot, or burning globes, but are the self-luminous perfected worlds of the universe, the personal residence of Deity, and the future abode of man; that housed in the heavenly mansions and beautiful Cities of the Sun are the former citizens of the solar planets, including earth's mighty host of departed spirits.

New York City, May, 1901.

THE AUTHOR.

THE CITIES OF THE SUN

CHAPTER I

THE SUNS ARE THE SELF-LUMINOUS PERFECTED WORLDS OF THE UNIVERSE

I hold that the suns are not hot, nor burning gaseous spheres, but are the self-luminous perfected worlds of the universe and the future abode of man. I claim that man is the product of planetary forces, and the planets are the hatcheries of human souls, and the suns the places of their development and growth to perfection. These are questions of paramount importance, profoundly interesting and intensely practical.

They are profoundly interesting because they affect the scope and foundations of human life. They are intensely practical because they create our ideals of present and future existence, and make or mar our realities of character and conduct.

Our ideals mould our character, control our actions, and make us what we are. To believe in this life and this world as our only sphere of being dwarfs our aspirations, our ideals, and our actions, and makes us but a reasoning atom built of dust, soon to sink back to its mother dust in endless silence and oblivion.

But to regard this life and this world as but one of many spheres of destiny is to rouse us to broader

realms of thought, nobler conceptions of the universe, and to invest our lives here and all moral distinctions with immensity and eternity, and lift them from the stage of mere human society to the imperishable theatre of all life and being.

So important is it for man to have ideals that Ruskin affirms that the man born into the world without an ideal, and without the necessity of labor, is the most unfortunate animal in creation, and is already on the road to hopeless ruin. Realizing this, I desire to fix such ideals in the mind that it may blend with the tragic incidents and personalities of this human life, the anticipations of a future life of loftier possibilities and attainments.

Are all these important questions of man's future existence and place of abode, merely matters of conjecture? Have we sufficient facts, reasoning from the known to the unknown, to justify positive conclusions from scientific deductions? I am impelled without dogmatic assumption to believe we have. But I do not contend that they are susceptible of absolute demonstration like a problem in geometry or mathematics.

This would be asking too much, since all the foundations of the so-called exact sciences are assumed; and all mathematics have unknown quantities, and are founded on universal assumption.

Most of the accepted truths of science are still unproven, and rest, as the Copernican theory did for centuries, upon mere probability. If so important a truth as the revolution of the earth upon its axis could for centuries find no better proof than mere probability, what may we expect of scientific truths more complex and more difficult of solution?

Copernicus reasoned thus, Which is more likely to

be in motion, the earth or the whole universe outside of it? In whatever proportion the heavens are greater than the earth, in the same proportion must their motion be more rapid to carry them round in twenty-four hours.

Ptolemy showed that the heavens were so immense that the earth was but a point in comparison, and they might extend into infinity. Then it would require an infinite velocity of revolution.

Therefore it is far more likely that it is this comparative point, the earth, that turns, and that the universe is fixed, than the reverse.

Reasoning from this standpoint of probability, may we not reach a reasonable scientific hypothesis as to the immortality and future abode of man, the inhabitability of the sun and its fitness for the soul's perennial dwelling-place?

As the marvellous advance of science has surpassed all human expectation, may it not continue until ultimate and perfect knowledge is attained? It would not be more marvellous than the progress of the nineteenth century. Conte said there were problems in astronomical science which were beyond the reach of our powers. We might find out, he said, the movements of the heavenly bodies, survey their distances and appraise their weight; but to find out their material composition and chemical elements was impossible.

But this rash assertion was soon disproved, and the spectrum demonstrated that our central luminary, the sun, possessed iron and all the known metals of the earth. The elements comprising the sun, moon, stars, and planets were as absolutely unknown up to that time as aluminum and helium to Aristotle and the ancients; and we knew nothing

of the composition or substance of the globes external to the earth.

Then Dr. Huggins showed that the actual spectrum of the object demonstrated that the cause of the color in each star arose from the absorption of its peculiar atmosphere and registered the elements of its composition.

The spectrum also discovered the movements of the approach or recession in the object from which the light emanates, and measured the speed to within a mile per second.

And soon the elements, motion, and direction of many stars were measured, including suns so remote it took two hundred years for their light to reach the earth.

Humboldt stated a fundamental truth when he said that, "Belief in the discord of the elements gradually vanishes in proportion as science extends her empire, and the most important result of a rational inquiry into nature is to establish the unity and harmony of this stupendous mass of force and matter."

Thus reasoning I have sought through the electric theory of creation,* set forth in my book "Invisible Light," to simplify and unify all scientific truth. Not the truth established by scientific authority, for we must not rely on authority for truth, but on *truth for authority*. To get at the truth we must unlearn all present scientific theories. We must reverse our conceptions of creation. We must cease to regard matter as dead and inert, or the visible world as all that exists. The universe of invisible matter and electricity far surpasses the visible world. We must look upon the universe as a vast electric organism,

* "Invisible Light," G. W. Dillingham Co., New York.

where all things vibrate to the touch of electric energy—the cosmic creative force of the universe; the invisible force by which the Creator spoke all things into existence. That all things, from atoms to worlds and suns, are electro-magnets thrilling with intense motion and magnetic power. That Omnipotent Deity impresses His laws upon nature, and controls the universe by this invisible potential agency. That the soul, an atom of Deity, by electric energy controls its mortal body; and when it shall step out of it, can command the electric energy of space to bear it to its future abode of immortality in the sun or central suns. That man's future heaven must be a place as well as a condition, and must be in the planets or the suns. And conditions seem more favorable for growth and perfection in the suns, since the electric theory shows they are self-luminous perfected worlds, and are not hot. That all heat is produced in but one way, by contact of opposite electrical polarities; electricity being convertible into light, heat, and all vital force, and is only so converted in the atmosphere of suns and planets.

I contend, therefore, that the suns are inhabitable and present the most favorable conditions for the highest development of human life, and the only place in the universe comparable with our ideal of a future perennial residence. The planets are not suitable for man's perennial existence; the suns, barring their supposed heat, are. Besides their scientific fitness they correspond with the Bible requirements, a place "where there is no need of a sun or moon and where there is no night," and "where one day is as a thousand years, and a thousand years as one day." They also give a new meaning to those

mysterious words, "When the morning stars sang together and all the sons of God shouted for joy." They also show that the nations of the past who worshipped the all-dazzling, life-giving sun, obeying the rude instincts of their nature, were wiser than they knew.

If these things seem impossible of proof and too chimerical for belief, remember he who believes nothing without positive proof will have a small stock of knowledge or belief.

And he who believes nothing but what he can understand and explain must deny the existence of light, heat, electricity, and even life; for of all things life is the greatest mystery and least understood.

The whole curriculum of science is a combination of suppositions, most of them impossible of proof; and every theory in science is founded on probability. Butler says, "Probability is the guide of life," and the learned astronomer Simon Newcomb says, "It is a guide in all practical concerns, and the source of the greatest part of human knowledge, and almost the sole method of discovering the truth." Again, he says: "There is hardly an astronomical doctrine, even of the most elementary kind, but depends simply on the fact that its truth is in a high degree more probable than its falsehood."

Like most scientific theories these may be incapable of complete mathematical demonstration. But this weighs nothing against their probability or their truth; for the greatest scientist of the age, Lord Kelvin, says: "Only a small part of human knowledge is exact, the great bulk of its pronouncements are simply speculative, and established by reasonable hypothesis."

Matter, the foundation of all visible things, life,

light, and electricity, are so far unsolvable mysteries, and science only has conjectural hypotheses concerning them, and these have been changing almost every decade for centuries. So it is about as reasonable to conjecture about human souls and the sun as their future abode as about atoms which are the foundation of all physical science. Napoleon, the impersonation of physical energy, said, not force or matter, but "imagination rules the world."

This imagination or ideality is the highest gift of Deity and intended to enable us to reason from the visible to the invisible, from the known to the unknown, and foresee human destiny and comprehend the wonders of the universe.

I contend that the sun is not hot, that its rays are not hot, and do not directly heat the earth. That the sun furnishes the electric power, and the earth heats itself. Its rays are wireless electricity from the sun's photosphere or corona, which is convertible into electric light, heat, and all vital force.

This light, heat, and vital force is generated in the dense atmosphere of the earth near its surface, where it is needed for animal and vegetable life. The sun's electric rays, not heat, come from the sun's photosphere, which is the surplus of its electricity gathered in a brilliant circle of light many miles above its surface. It is then shot by the laws of electrical repulsion from the sun, and drawn by electrical attraction to the earth, where, coming in contact with the earth's opposite electrical polarity and the resistance of its atmosphere, these electric sun currents burst into new-found light and heat down near its surface. This it does in exactly the same manner that two wires oppositely electrified and brought

together produce the arc and incandescent light. The earth and sun have used wireless telegraphy since creation began.

Heat is not from the sun or from space, as is proven by the flight of meteors; for when the meteors strike our atmosphere they have an opposite polarity to the earth, and they create friction and generate heat and soon blaze into white light and heat. Most of them are consumed before they reach the earth, and the remainder are fused into stone and obdurate metals. The electric currents of the sun generate heat in the same way, by contact of opposite polarities, which produces friction and heat.

Heat cannot come to the earth through the intense cold of the upper atmosphere of the earth, which increases with its altitude; nor through the ninety-three million miles of frigid ether, four hundred and sixty degrees colder than ice. No heat could penetrate such cold. It is impossible to force an atom of heat from the sun to the earth, or from one sun or planet to another. All heat must come in the form of electricity which is convertible into heat.

The sun's photosphere, that beautiful circle of rainbow light which shoots forth the electric currents which give light and life to our planet, is like our aurora borealis, which is the earth's surplus of electricity thrown off to our north and south poles. The earth's aurora borealis is the earth's imperfect attempt to form a photosphere like the sun.

But the earth, lacking a sufficient surplus of electricity to extend its beautiful gorgeous rainbow-tinted aurora from the poles to the equator, must content itself with its rich haloes and gorgeous streamers of electric splendors at its frigid poles; occasionally extending them half-way to the equator.

The sun's luminous corona and our brilliant aurora are the same except in degree. All descriptions of them are so similar one might be taken for the other. Our earth is an inferior world, a child of the sun. The sun, which is our mother world, has its family of worlds, consisting of planets and satellites. These are its children and grandchildren. This prolific progenitor is self-supporting and self-luminous, while the planets are not. The earth and planets are dependent on the bounty of our creator and benefactor, the sun, and must accept such electric power as he may bestow. This gives us no sufficient surplus to form a photosphere. The sun draws from his electric field of ether, embracing the solar system of over five billion miles in diameter, the invisible virgin atoms and electricity amply to supply himself with self-luminous light and life, and also a sufficient surplus for his dependent planets and satellites; while these, his children and grandchildren, having no family to support, have less light and heat power.

Now by all the laws of reason and logic, if our earth is a world and the product of the sun, which none can dispute, then the sun is our ancestor and a greater world. In nature hybrids do not generate and cannot produce offsprings, and the father must be like the son, and the son like the father, though different in size and age. And I hold the sun is like the earth, only larger in size, greater in age, and more perfect in all things.

The sun is a self-luminous world because he is the central magnet and electrical dynamo or generator of the solar system, and draws his atoms and electric supplies from the whole of this vast electric field or organism. Thus he draws electric light and

warmth from all sides of him. This makes his whole vast circumference luminous.

While the world and planets are lesser magnets, and by reason of their swift motion are also electric generators, drawing their electric supplies of atoms and electricity from the sun and the intervening space of their smaller orbits. But they receive their chief supply of opposite electricity from the sun, which furnishes it only to one side of the earth at a time, leaving the other side in darkness.

I contend that the Creator, in the simplicity of infinite wisdom, has created all things after but one type—the electro-magnet; controlled by but one force—electricity; and made of but one matter or substance—the invisible atom. That all space or ether is composed of invisible atoms and electricity, or matter in solution. That all atmosphere is compressed ether, and all suns and worlds, man and all animal and vegetable organisms, are partially solidified ether. That there is nothing really solid in the universe; the visible being only the outer shell or scaffolding of the invisible forces that have supreme sovereignty over all matter, motion, and life.

Thus all things are electro-magnets from atoms to suns and worlds, from a molecule to man; and all in a state of intense vibration and magnetic attraction—forever in ceaseless activity and commotion under the laws of electric action and reaction, attraction and repulsion.

Thus the universe is a vast electric organism creating its own cosmic force, lighting and heating itself from its own electric fires, and bound together by invisible electric bands pulling and guiding with the swiftness of lightning and the power and wisdom of Omnipotence.

Let us see what the astronomers say as to the inhabitability of the sun. Sir Robert Ball, of Cambridge, England, in his recent standard work says: "I do not think it at all probable that a man could exist even for five minutes on any other planet or any other body in the universe. There seem to be innumerable difficulties in supposing there can be a residence for man elsewhere than on this earth.

"We need not give many reasons to show that man could not live in the sun. We cannot conceive any organized being which could find a congenial residence in a temperature vastly hotter than the most powerful furnace that has ever been known. Assuredly there can be no life on the sun."

Assuredly not if the sun is hot, which he assumes and I deny. I hold it is only as hot as the heat generated by the contact of its opposite electrical polarities and the density of its atmosphere. This would give it a tropical climate and moderate temperature, which upon its mountain sides, according to their altitudes, would change to a mildly cool temperature.

By assuming with all scientists that the sun is a burning gaseous body, hotter than any known furnace, he and all our astronomers naturally and inevitably make the sun uninhabitable.

But these, I contend, are false premises, and from them they necessarily arrive at false conclusions.

According to Ball, Norton, Young, Herschell, Newton, Proctor, Newcomb, and all our astronomers, the sun is a great gaseous blazing ball of fire eighteen thousand degrees hot, burning up at the rate of about three hundred feet of its vast circumference annually. I do not believe it.

They hold that while the planets are guided and

held in their ever-circling orbits by the attraction of the sun, those near to him get too much of his heat, while those like Uranus and Neptune (which lie on the outer skirts of his system) get too little. They claim the human body would have to be considerably modified to find a congenial residence so near the sun as Mercury or so far from him as Neptune. They affirm that Jupiter is swollen by enormous masses of black clouds and vapors, that make him unfit for habitation; that Mercury and Venus are too hot, and Saturn, Neptune, and the others are either too cold or too unfinished and incomplete for habitation; and that the divine Architect is a great failure, and could only make a little world like our almost insignificant planet suitable for human and organic life. So that eighteen millions of suns and thirty millions of planets belonging to our universe are desert wastes of silence and death.

This is the concrete wisdom of modern astronomy, the shibboleth of presumptive, infallible science. Let who will accept this slander on infinite wisdom, I will repudiate and deny it.

It is not reasonable that the rest of the universe outside of this little earth is a barren waste, tenantless and lifeless.

It is not reasonable that the Creator made millions of vast spheres simply to sparkle as points of light in the starry vault of space to cheer the midnight vigils of a few aspiring souls on this little earth.

Nature is economic of space and power, and there are no waste places in the universe. There are no dead worlds nor dead atoms in nature.

Thus our greatest astronomers give no hope of

human or organic life on any of the eighteen millions of suns and thirty millions of planets, except the earth and perhaps Mars; and then for only a brief period. Is this reasonable or consistent with creative wisdom and perfection to construct this vast system of suns and worlds, including our great central sun, almost a million and a half times larger than our earth, to give life to only these two little worlds?

I do not believe it. I cannot accept their premises or conclusions. They say the earth and all the planets will become dead worlds by losing their atmosphere, and the suns are burning spheres of fire to be finally consumed. Then where can man, or human souls, or angels, or even Deity Himself exist? They leave nothing undestroyed; even the great Creator, like Noah's dove, is left without a spot on which to rest in all the universe. They say our sun is consuming three trillion cubic feet of its surface annually, and eighteen millions of suns are doing the same, making the material of a world consumed every day and a sun burned up every decade. This is appalling!

Now I contend that the universe is a perfectly balanced and adjusted electric organism, self-sustaining and indestructible; that it creates its own light, heat, and force; that its rolling suns and planets shoot with inconceivable velocity along evenly balanced lines of force without friction or resistance; that their nearness to or distance from the sun has nothing to do with their supply of heat; that the sun furnishes each and all with the electric power it needs; which is measured by its attracting force; and every sun and planet creates its own heat, light, and vital force in its own atmospheric

cushion. This is in accordance with the law of electric action and reaction, attraction and repulsion; which is the perpetual motion and cosmic life force of the universe. And when Deity said, "Let there be light," He sent forth electro-magnetism to possess invisible matter, and space, and evolve them into a universe.

But the great astronomers who are groping after truth are frank enough to admit they know nothing positively, and all is but hypothesis and conjecture.

Professor Langley, a distinguished authority, says: "No theory of the solar constitution which is free from some objection has yet been proposed. The most important statement we can make with reference to the sun is a negative."

Professor Newcomb says: "Any one sceptical of the sufficiency of science to account for the present state of things, science can furnish no evidence strong enough to overthrow his doubts." He says again: "Until the sun shall be found growing smaller by actual measurement, or the nebula be actually seen to condense into stars and systems, our present solar theories can have no sufficient proof."

As to life in other worlds, he says: "The scientists know no more than any one else, and have no data to reason from. The attainment of any direct evidence of that life seems entirely hopeless. We see moving around our sun eight large planets, on one of which we live. Our telescope shows us other millions of suns and planets, many larger than our own. Are these suns, like our own, centres of planetary systems, and are their planets inhabited like our earth? Observation can afford us no information on the subject. We can only reason cosmologically."

Thus reasoning he contends, like all the others, that

only the earth and possibly Mars are inhabited. While I contend, reasoning cosmologically, that all or most all of the suns and planets are peopled, and many of them with beings much higher than ourselves in the intellectual scale; and that the sun contains a thousandfold more of the elements of life and growth than the earth and planets, and should be man's perennial abode. This accords with the universal dreams of humanity, and with the cosmology of our earth and its organic intelligent creations.

By reasoning cosmologically I claim we must take the earth on which we live and its characteristics, and inhabitants, as a sample and pattern of all suns and worlds, globes and spheres of this universe.

This the ancient scientists, philosophers, and poets of all the past did. Only since the modern scientists went into the subtleties of the elements of the air and earth and what kind of atmosphere we could breathe were doubts raised; as if nature could not easily modify our forms and breathing apparatus to correspond to changed conditions. This she has been doing on this earth through all the ages.

Aristotle argued that: "As one heavenly body is spherical, so also must all the others be spherical." He also contended that: "A spherical form is appropriate to bodies moving through space as the heavenly bodies appear to do." This was the only argument that could be deduced for centuries to prove the earth was round, and yet it was rejected by the scientists of that day, who held the earth to be flat. And it was held to be flat until in very recent times, when it was disproved by modern discoveries, and the earth was shown to be round or spherical, like all suns and planets.

Now all suns and planets have similar forms and similar atmospheric and external conditions. Why should they not have similar forms and conditions of organic life? The same laws, elements, and forces are at work there as here, and only scientific quibbles or theories prevent this reasonable conclusion.

Why have all bodies in space a spherical form, from suns and worlds to hail and rain and dew-drops? The answer is simple. It is the result of universal electric attraction. All atoms and molecules are tiny electric batteries and form electric centres which draw all atoms around their magnetic core at equal distances from their centre, thus forming circular lines and globular forms. There are no exceptions to this universal law. All magnets draw atoms to their magnetic centre forming a perfect circle, and suns and worlds do the same.

It is imponderable, invisible magnetism and electricity that hold the grand sovereignty of motion, and evolve all creative work. Matter ceases to be "brute matter," and space ceases to be "a vacuum," when it is pervaded with this electric clothing of light, which leaps into power from the throne of invisible Omnipotence. Its birth is in the eternities and its home is in universal space. Yet with all its measureless power and grand velocities it has neither hand, nor brain, nor form, nor weight. It is the invisible word of power from the invisible Source of all power.

CHAPTER II

OUR SUN IS LIKE OUR WORLD, ONLY A GREATER WORLD
OF PROLIFIC LIFE AND POWER.

Reasoning by analogy the sun is like the earth, only a vastly greater world, having the same elements as our earth, with mountains, lakes, and rivers, rich valleys, luxurious vegetation, luscious fruit, and precious gems and metals.

The earth has two hundred miles of atmosphere surrounding it as ascertained by the flight of meteors. The sun has one hundred and eight times the diameter of the earth, and by the law of analogy and proportion should have an atmospheric cushion at least twenty thousand miles in thickness surrounding it. In this atmospheric belt and near the ether of space is nature's reservoir for the surplus electricity of suns and planets. Here shines and glows the sun's rainbow-tinted photosphere or corona, with vast openings at intervals through which its inhabitants gaze out on the wonders of creation.

The physical aspect of the sun's surface is similar to that of the earth in the tropics, only vastly more gorgeous and beautiful. And the physical aspect of the bending auroral sky of luminous coronal grandeur and brilliancy must surpass all powers of imagination or description. There is nothing on our earth to compare with it except the luminous arches and flaming banners of streaming rainbow colors

sweeping and flaring out into space from our glorious aurora borealis.

I contend that to reason cosmologically is to reason from the laws, elements, and organic forms of our earth: to regard it as a duplicate and example of all world creations.

Reasoning thus I claim the sun is only a greater world or earth, because:

First—the fact that the same creative forces are at work in the sun as on the earth proves that the sun is only a greater earth.

Second—the fact that in the sun these forces are at work with greater power, and in a broader field of action, is substantial proof that the results they produce there are vastly greater and more perfect than on the earth or planets.

Third—the fact that all the elements of the earth, its atoms and electricity, and all visible and invisible substances, came from the sun originally, clearly proves by the law of descent and heredity that the sun is the august progenitor of the earth, and similar in form, material, and natural characteristics to our world, and is therefore only a greater, more complete, and perfect world.

Fourth—the results here from all these forces and elements from the sun is life, animal and vegetable life, with growth and progress, crowned with spiritual beings with reasoning powers and aspiring souls. On the vast bosom of the all-glorious sun they must produce equal or greater results of organic life and power.

Fifth—as all earth elements have come from the sun, the sun in its munificence must have an abundance and to spare, for it would supply itself first, and give only its surplus to the earth and planets.

This is the law of self-preservation, evolution, and self-development.

Sixth—as the sun is the source of all life and light and heat on this earth, he must have the most perfect forms of life and light and heat for himself. The creator must be greater than the created. And if all good comes from the sun and all good is from God, the sun must be God's headquarters; and they must be intimately related in character and locality.

Seventh—our planetary system owes its existence and life to this self-luminous sun-world, which is the great electric heart of this gigantic organism we call the solar system. His electric light spreads the splendors of the day over the transparent atmosphere, forms the shifting clouds and wind tides in the air, the twilight breezes on the shore, and the ocean currents on the trackless seas.

The sun's magnetic force creates and sustains the vital elements of the air we breathe, the circulation of life in all organic forms, and preserves the stability of the world. It can therefore do no less for itself and the organic forms on the vast surface of its own mighty circumference.

Eighth—to the electric, all-life-giving sun we owe the intellectual life and collective being of all humanity, and the daily food necessary to its growth and preservation. These cannot come from a burning globe or a mighty blazing ball of fire?

And if the sun produces such results ninety-three million miles away from where he generates such marvellous power, he must produce greater results where such power is generated. This accords with the law of the conservation of energy and the eternal fitness of things.

Ninth—but the sun does more than all this: it pro-

duces by its electric energy the wonderful activity of the brain which clothes our thoughts in words, and transmits them in the brilliant intercourse of intelligent thought and language. If it does this for the inhabitants of earth it will do more wonderful things for the intellectual beings of its own sphere, and for man when transplanted to its celestial bosom?

Tenth—the sun is, therefore, not a hot and burning sphere, but the physical electric and intellectual centre of our sun system and world system and a greater and more perfect world; and being seven hundred and fort-five times larger than all the planets combined, and commanding the electric life and energy of the solar system, by all the laws of analogy in the distribution of life and development he should be more highly endowed with all the elements of growth, living forms, and intellectual organisms than the aggregate of all the planetary worlds.

Nature is universal in her laws, and economic of space and power, and there are no waste places in the universe; and in the sun where there is so much light and energy by all the laws of nature and the universe there are and must be equivalent results of life and being upon its vast circumference.

It is reasonable, therefore, to conjecture that our sun is one of the visible abodes of Deity or an arch-angel; that it is the spiritual centre as well as the material and electric centre of our system of worlds. Deity has a dwelling-place in the centre of all light and life and power. Why should we ignore this fact and dream of Him as only an august shadow hid in dim eternal mists? He is a reality, as real as man, and earth, and sun, and sea and land, and far more enduring. He is the eternal verity of life

and truth and power; the *summum bonum* of all things. Why make man's future abode a myth of the imagination, a shadowy dream, when its existence is as real as Deity; for if there is a God, He has a dwelling-place which is the future abode of man. And the only suitable perennial abode for either God or man is in the self-luminous perfected worlds—the suns of the universe. It cannot be on the planets, they are too variable and swept by storm and cyclone, and full of vicissitudes.

Eleventh—all scientists admit the sun is self-luminous, but say it is because he is burning up with excessive heat beyond that of the hottest terrestrial furnace. If this is not true, as I contend, and the sun is not hot, and yet is self-luminous, then he must be self-luminous because he has a greater abundance of light than the earth and planets. If he has a greater abundance of light, he must also have a greater abundance of warmth and vital force; for they are interchangeable and all come from the same electric energy of which they are but different manifestations. Then the sun must also have myriad forms of more perfect life and growth and development, clothed with the highest qualities of intellectual and spiritual existence, because these are the natural and inevitable results of these enlarged powers and resources.

Proctor says the moon is a dead world having lost its atmosphere, and that the earth will be a dead world for the same reason in a few million years, and that the sun will burn out in a few more million years. Newcomb, Young, and Norton say substantially the same, and that the sun will burn out and lose his heat in five to ten million years, and the solar system, including our earth, will then disappear in darkness.

Twelfth—I contend there is no such thing as “a dead world” or a dead atom or a dead anything else in this electric universe. That there are no burning worlds and no such thing as the burning up of a sun, or planet, or satellite.

Every atom is full of electric energy that can never be destroyed; every world, sun, and planet is indestructible, and all intelligent life is imperishable. Every sun, planet, and satellite has a magnet centre and an atmospheric cushion surrounding it in the exact proportion to the electric attraction of its atoms. These are balancing powers and indestructible forces which will preserve its equilibrium and existence.

The moon is not a *dead world*; it has a thin or attenuated atmosphere because of its small size and the greater attracting power of the earth, which would rob it of any great density of atmosphere. And the thinness of its atmosphere prevents the electric rays of the sun from bursting into warmth and heat on its exterior surface. Therefore much of the coldness of the outer ether of space prevails, and ice and snow cover most of its surface.

At night, when we look upon the pale face of the moon, we see its cold, white, icy mountains and snow-enshrouded valleys, and the dark shadows the ice-clad mountains throw upon the deep encircled valleys, and we know the moon is in its glacial period.

We also know, if we reason cosmologically, that there may be human and organic beings similar to ourselves who are so constituted that they may live and even enjoy life in the severe cold and attenuated atmosphere of the moon. It is reasonable to believe the moon is inhabited as well as the

sun. In fact, we must conclude as a scientific deduction that there are no rolling orbs swung in the immensity of space but such as are inhabited with intelligent and organic forms suited to the sphere on which they live and the environments that surround them; that every sphere in the broad expanse of the heavens is a magnetic, life-giving world, upon whose hospitable bosom varied and wonderful organic creatures "live, move, and have their being." It is also reasonable to believe that the inferior worlds, the planets, are the nurseries of human life and organisms, and when they attain their growth and experience there, they are translated by the same electric energy by which they grew and thrived to the self-luminous perfected worlds, where they may themselves be perfected through ages of higher growth and development.

Thirteenth—the suns are greater worlds and the future abode of man, because they are the only spheres in the universe that conform to the Bible requirements. Which is, first, a place "where there is no need of a sun, and where there is no night." Such the suns are. Their luminous photosphere gives a bright and continuous day with no intermission of night or darkness. Second, because they fulfil that other Bible requirement that where God is, and where man's heaven must be, "one day is as a thousand years, and a thousand years as one day." Such is the case on the broad bosom of the self-luminous sun. Its inhabitants know neither day nor night, weeks, months, seasons, or years.

Protected by its brilliant globe-encircling aurora, they know no winter or summer changes of seasons or flight of years. No corroding touch of time makes furrows in the pallid brow or whitens the glossy

locks of youth; but all is happiness, youth, and perennial joy. And still there is no wearying sameness, for the everchanging corona gives a thousand varying tints and electric forms and figures every hour.

I am aware that the Bible does not teach science or astronomy. But it teaches nothing contrary to either when properly understood. Every fact in the universe is consistent with every other fact; and all truth is harmonious and consistent. Therefore the evidence of the Bible should be considered, and take its place by the side of scientific evidence and have force and weight; just as the universal belief of mankind in all ages should be accepted as evidence of a hereafter which is to be a blissful, unchanging heaven for the longing soul.

Fourteenth—the fact that in all the past ages there have been nations and people who have worshipped the sun as the source of light and life and the creator of all things is proof that their rude instinct and reasoning was not all wrong, and they worshipped more wisely than they knew, and their almost universal and common usage and belief in the earliest nations, and even present ones, should have some weight and evidence in scientific considerations.

The Babylonians, Chaldeans, Medes and Persians, Assyrians, and early Egyptians were all sun worshippers. Abraham was a sun worshipper until he was called from the land of Ur in Chaldea, and so were all his ancestors. The Bible says, "God is a sun." And he may be "a present help in every time of need." As the sun is an ever-present help through its invisible electric rays to our needy earth, so God may be a visible personal God and yet present everywhere in spirit and helping power. Thus

He may have a local habitation, while His spiritual powers fill immensity.

It is not my purpose to endeavor to prove beyond all cavil, doubt, or question the important truths discussed herein, but to prove a reasonable hypothesis that is as strong as or stronger than most of the present accepted theories of science on which our wisest scientists rely. I hold that the great Creator is a great scientist and electrician. That He governs by means, by agencies, and by powers at His command, just as man does. That he is a personal God, as man is a personal and individual man. That as man sees and hears by electric appliances persons who are a thousand miles away, so God, by more wonderful agencies, sees, hears, and knows all things, and like man must have a visible personal residence or headquarters; that that personal residence or headquarters is man's residence after death, and must be a local habitation. And the only reasonable or suitable place for the perennial residence of God or man is in the self-luminous perfected suns.

CHAPTER III

THE SUN IS NOT HOT, NOR A GASEOUS GLOBE, NOR BURNING SPHERE.

According to the electric theory of creation I have endeavored to formulate, the sun is not hot, and its rays do not directly heat the earth; it only furnishes the earth the electric power to heat itself.

This electric power is not wasted in the cold, dark ether between sun and earth. This space is permeated with virgin atoms and electricity, which constitute all space and all ether, and is, as I contend, Herbert Spencer's "matter and persistent force" from which all things have been evolved. The sun, as the central magnet and electric generator of the solar system, attracts and gathers these invisible atoms and electricity, and shoots them in golden currents of electric light, not heat, to the earth and planets.

These currents traverse this space at the rate of 186,000 miles a second, losing no velocity in the 93,000,000 miles, and only after they have passed through the thin rarified air of our mountains and met the full force of the earth's attraction and opposite polarity, and the density of its lower atmosphere, do they burst into warm, generous, glowing heat and thrill all animal and vegetable life with new vitality and growth.

I hold that all light, heat, vital force, and gravitation is electricity; that they are but varied manifestations of the one evolving, creative, governing

force in the physical universe; back of which is the directing intelligent spiritual power of Deity; who has made all things of one matter—invisible atoms; controlled by one invisible power—electricity; after one unchanging pattern—the electro-magnet.

All suns and worlds, man, and all vegetable and animal organisms are electro-magnets. The sun is like the earth, only a larger magnet; the earth is like the sun, only a smaller magnet; and both, by reason of their swift motion, become electrical machines, and generate their own heat and cosmic power.

But to the question why is the sun not hot? I answer:

First—because his rays traverse ninety-three million miles of space between us and the sun that is four hundred and sixty degrees colder than ice, and do not warm an atom.

Second—because all the sunlight that reaches the earth must pass through the intense cold that prevails in the upper atmosphere of the earth increasing with its altitude, but whose temperature it cannot alter. Hence we have at the present time the line of perpetual cold and snow, according to Professor Agassiz at an elevation of 15,000 feet at the equator, 6,000 feet at 45°, and gradually approaching the surface of the earth until it reaches it at 60° of North and South latitude, beyond which snow and ice prevail to the poles.

Third—because aeronauts have found at great altitudes above the earth that the mercury in the thermometer froze and ceased to make any variation of temperature even when exposed to the full force of the sun's rays, and held in the brightest sunshine. Aeronauts ascending in a balloon recently to the alti-

tude of 2,000 feet, the thermometer at the earth's surface marked 40° above zero, and at 2,000 feet above its surface 60° below zero, making a difference of 100° in that altitude.

Fourth—because in every 183 feet upward toward the sun there is a loss not only of atmospheric pressure, but of one degree of heat until absolute zero, or the extreme cold of ether, is attained; and nearness to the sun does not produce heat, but, on the contrary, results in the intensest cold. Not only is this so in the earth's atmosphere, but our severest winters are when we are four million miles nearer the sun.

Fifth—because if there was heat in the sun or the sun's rays there would be no snow on the mountains; it would be melted by the solar heat.

Especially would this occur in the tropical climates, and no snow, ice, or glaciers could long exist anywhere on the earth where the sun shines.

But since the sun does not melt the snow on the mountains even in the tropics and under the equator, where great heat prevails in the valleys below, there can be no heat in the sun. It is a well-known fact that above the snow line the mountains are perpetually covered with snow, and the glaciers have remained from the remotest antiquity. This is proof positive that the snow and glaciers do not absorb heat from the sun's rays, because the sun's rays do not bring any heat from the sun to the earth, and there is no heat in the sun or the sun's rays in themselves. They bring simply electricity, as I contend, which, coming in contact with the dense atmosphere and opposite electrical polarity of the earth, burst into light, heat, and magnetism near its surface.

Sixth—because the sudden and great changes and variations of temperature on the mountains by day, as well as at night, could not result from solar radiations of heat. Often, when the sun is shining with greatest brilliancy and the sky clearest and freest from vapors, the temperature is lowest, and highest when these conditions do not exist. In summer it continues to be wintry in the mountains, and even snows and freezes in midsummer unaffected by the sun. The same sudden and extreme changes of heat and cold occur also on the lower levels of the earth's surface, and cannot be caused by heat coming from the sun.

Seventh—because heavy falls of snow lie on the ground for weeks with the sun unable to make any impression on it, though it is four million miles nearer than in summer. And when the snow does begin to melt it commences with the layers in contact with the earth, and not on the upper surface exposed to the sun.

Eighth—because, as every farmer knows, when their fields in winter are covered with snow their growing crops under it are kept warm though no ray of sunshine could reach them through the snow, and they anticipate a large yield therefrom in the ensuing harvest. If terrestrial heat is derived from the sun how are these facts explained?

From actual experiments the temperature of the earth under the snow has been ascertained, and it was found that the heat increased with the depth of the snow above it. On four successive days in winter, there being four inches of snow on the ground, the average temperature above the snow was 14° below zero, while immediately below the snow in contact with the earth it was 10° above

zero, making 24° difference; and under a snow-drift two feet deep the temperature was 27° above zero, making 41° difference.

Ninth—because if the sun possessed heat and could force it to the earth, all heat would be on the exterior of the earth's surface, and there could be no heat under a snow drift, or in the shade, or at night, and after sundown all heat would cease until sunrise.

Tenth—because if the sun's rays possessed heat there could be no clouds in our atmosphere, as the greatest heat *must* prevail in the atmosphere and increase according to height, as the highest strata would receive the first and greatest volume of heat, and from the absorbing power of gases of heat the clouds would be expanded and absorbed and never could be formed. Clouds would be absolutely unknown and impossible if heat came from the sun. Greater heat above the cloud level would prevent their formation and forever banish them from our skies.

Eleventh—because heat by the law of its nature is diffusive, and quickly dissipates itself in space, and cannot be shot or forced like a leaden ball through atmosphere or space. And especially it cannot be forced downward from a light ether or rarified air through a dense atmosphere to the earth or planets. It is well known there is very little heat under a red-hot stove; and twenty-eight barrels of naphtha, burned on a narrow ice gorge, made very little impression, because heat cannot be forced downward through a denser atmosphere.

Twelfth—because the actual loss of heat in its descent from the sun through frigid space to the earth would be too immense to be possible. The

rate of radiation of such intense heat from the sun would be too great to enable the sun to exist an hour, and transmit any degree of heat 93,000,000 miles through a temperature 460° colder than ice to this earth in a column of heat 8,000 miles in diameter.

Thirteenth—because no power in nature can force or drive an unconfined atom of heat or a billion of them down from the sun to the earth, or from one sun or planet to another, without reversing all the laws of nature. It would be not only a miracle, but an impossibility beyond the power of miracles. It would destroy almost instantly any sun or planet that undertook to supply such heat.

To illustrate, at the siege of Santiago, heavy cannon threw enormous shells into the city seven miles distant. While the expansion of the powder in the chamber of these guns evolved a power to throw shells weighing three hundred and fifty pounds so great a distance, it was totally inadequate to drive the heat disengaged in the propelling gases to a greater distance than twenty to thirty feet from the muzzle of the guns. The heat then ascended instantly and was lost in space. This shows the impossibility of driving heat any great distance from where it is generated. Experiments show that five feet from a red-hot stove the thermometer marked 60° , while ten feet from the same stove it marked 12° , being a loss of 48° in five feet of distance.

Fourteenth—because every country becomes colder in proportion to the height of the land above the sea, and in tropical regions there is an arctic climate at 12,000 to 15,000 feet nearer to the sun, which does not increase heat but has the opposite effect. In ascending a mountain or the altitudes of air we pass through the same gradations of climate

as occur between the equator and the poles. This could not be possible if heat came directly from the sun or the sun's rays.

Fifteenth—the sun is not hot because we get our nocturnal light from the moon, but no heat. And if heat came from the sun the moon would reflect a soft, mild heat as well as light; but it does not, therefore there can be no heat in the sun or the sun's rays. If we get our nocturnal light from the moon without heat, why should we insist on violating the laws of heat and declare the sun to be an incandescent body in active combustion, requiring impossible masses of fuel, surrounded by an immensity of ice-cold ether which would necessarily absorb all its radiation as soon as it left the body of the sun? Such a position seems beyond the scope of sanity and reason.

Sixteenth—because the heat of the equatorial and tropical oceans is not derived from the sun. We do not heat our houses by building fires at the top of our chimneys, or boil our water from above. We descend into our cellars and make our fires for that purpose in the furnaces constructed there. The flame of a candle burns vertically upward, and little heat ever comes from above to the object heated, but from beneath it. The ocean heat in the tropics that finds vent in the Arctic and Antarctic regions through the Gulf stream of the Atlantic, and the Japan stream of Northwestern Asia, and the warm current along the southwestern coast of South America to the Antarctic seas, do not get their heat from the sun, but from the interior of the earth—from the great fires that engender gases and vapors and upheave volcanic mountains and islands, and belch out superfluous heat.

The great ocean currents of heated water must be channels of radiation of heat from below for climatic purposes to distribute the interior heat over the surface of the planet. And the frigid zones north and south seem to furnish the cold cushions of water and ice for the purpose of preventing the great interior heat of the earth from being wasted.

Seventeenth—the sun is not hot because heat destroys so-called gravitation and cohesion.

Our astronomers assert that the luminous matter in the sun's photosphere is composed of incandescent metallic gases whose bases are the heaviest matter in the crust of our earth. These heavy metallic vapors must be supported by a photosphere of much greater specific gravity and density, otherwise they could not float in the photosphere; and this theory of our astronomers destroys the law of gravitation in the sun. The whole theory of Newton, including his centripetal and centrifugal forces, has no existence there. On earth heat destroys gravitation and cohesion, as is proven by the volcanic action in the interior of the earth upheaving islands, mountain ranges, and even continents; and such heat as is ascribed to the sun would dissolve our earth and vaporize the sun into invisible ether. Therefore these heavy metallic vapors do not float in the photosphere any more than they do in our aurora borealis.

Eighteenth—the sun is not hot because heat is not from the sun, but is generated in the earth's atmosphere, as is proven by the flight of meteors, for when they strike our atmosphere one or two hundred miles above the earth's surface, they soon blaze into a white heat and the great mass of them are consumed—literally burned up before they reach the

earth. Their swift motion and that of the earth and the resistance of the atmosphere create friction and opposite polarity which produce intense heat, either consuming or fusing their metals before they reach the earth's surface. The sun's flood of electric rays generates the same kind of heat in the same way, by friction and opposite polarities in the earth's atmosphere, and creates the most heat at the earth's surface.

Nineteenth—because brilliant illuminations and dazzling light do not come from heat alone, and may be produced in extremest cold, with little or no apparent heat, as in our aurora borealis and northern lights, which is the earth's imperfect photosphere, and which creates beautiful and brilliant electric illuminations in the extreme cold of the earth's frigid poles.

Here, in the earth's aurora borealis, are exact literal imitations in brightness and color of the sun's luminous photosphere and flaming corona. These occur one or two hundred miles above our earth at its frozen poles, where there exists the intensest possible cold. If it contains any heat it would be destroyed in an instant by the frigid ether surrounding it; and the same is true of the corona of the sun.

Comets whose luminous tails sweep for millions of miles through the awful depths of frigid space possess luminosity but no heat, for they could not possess a particle of heat a second without it being lost in the extreme cold of limitless ether. The same is true of nebula; it is luminous, but must be without heat. The same is true of phosphorus, of the swamp-light or Jack-o'-lantern, and of the zodiacal lights. Heat cannot exist where often the greatest

luminosity prevails. Therefore heat and light may and do exist separately, and though interchangeable, are independent of each other.

But our bewildered astronomers assume that where there is light there is heat and fire, therefore the suns are in a great conflagration. Eighteen millions of them, they contend, are burning up, consuming a mass equal to our earth every day and the mass of a sun every decade. It appals the imagination and refutes the colossal blunder it attempts to perpetrate.

Twentieth—because heat by the law of its nature must be generated where it is needed and used, or it is quickly lost in the cold, dark void of space. If heat exists on the earth it must be generated on the earth, and not on another globe or planet millions of miles distant. Heat cannot come from the sun to the earth, but must come from electric conditions furnished by the earth.

Twenty-first—because the heat of the sun is generated on the sun by electricity according to its electro-magnet generating power and the density of its atmosphere and its electric attraction, and is never in excess of its own needs. The surplus of its electricity is not converted into more heat, but is thrown off to its photosphere, from whence it is shot by the law of repulsion from the sun, and drawn by electric attraction to the earth, not as heat but as a part of the sun's surplus of electricity, which the earth converts by reason of possessing an opposite electricity into heat, force, and all terrestrial life.

Twenty-second—the sun is not hot because heat destroys magnetism and dissolves all solid substances, and the sun could not attract and control

the planets of the solar system if it was 18,000° hot, as our astronomers claim. But it would dissolve in space. Heat is governed by the law of repulsion, and in excess would destroy the sun and planets and dissolve them into their invisible elements, as it does iron and all visible matter.

Twenty-third—because electricity is convertible into heat, and in nature is only so converted when and where needed, and anything else would be folly and wastefulness, which nature never allows. Heat in the sun and planets is produced in only one way, by contact of opposite electrical polarities.

Twenty-fourth—because an opposite electricity to that of the sun exists on the earth and the solar planets, and the conjunction of these opposite electricities in the earth's atmosphere develops electromagnetism, which seizes on matter and imparts to it the attractive and repellant qualities it possesses, and enables it to create its own heat.

Twenty-fifth—because chemical changes and actions are the same as electrical, and all tend to produce heat, and in the animal body from its birth to its dissolution there are electric currents producing magnetism, vitality, and animal heat. This occurs in the act of breathing, in the action of the heart, in digestion and assimilation of food; and in every act and function of the body the same heat and vital force is thus produced as in the sun and earth, and in the same manner.

Twenty-sixth—because the same heat as sun and earth heat may be produced by muscular exercise, or by rubbing two dry sticks together, or by striking two flints or pieces of iron, or any kind of metals, together; by rubbing a cat's back, or by a thousand different ways too tedious to mention. All produce

the same kind of heat in the same way the sun and the earth produce it. Man can create heat like the sun and earth. Thus, a man on the coldest day can produce heat like the sun by violent exercise. The exercise of the muscles excites the activity of the molecules of the body and brings together the opposite electric polarities, and warms him as well as the sun or a fire.

Twenty-seventh—because there is the same latent heat which exists in the sun and the sun's rays in everything that exists, and certain electrical conditions bring it forth. The contact of opposite electricities produces heat everywhere and in everything.

Twenty-eighth—because if the evidence of Sacred Writ is to be regarded, God made the sun as "a great light to rule the day," not a burning globe or furnace to heat the earth or the frigid ether of space. The astonishment of Moses must have been great at the revealed attributes of the sun, for living in the hot climate of Egypt and the desert, "whose soil is fire, and whose wind is flame," and having no knowledge of electricity, to what other source could he refer this terrible heat but to the sun. Yet he says God created the sun as "a great light to rule the day," not to heat the earth.

Twenty-ninth—because the spectroscope, on which our astronomers rely, gives no evidence of heat in the sun, and the supposed heavy metallic vapors which are supposed to indicate extreme heat, I contend, are simply electric colors like our rainbow, northern lights, and zodiacal lights. They are produced by the same infinitesimal solution of iron and other metals that creates the gorgeous colors of the setting sun in our atmosphere, the red color in the arterial blood, and the rosy hues in the ruddy cheeks of

health. The astronomers have over-valued and misinterpreted the evidence of the spectroscope.

Thirtieth—the sun is not hot because the simplicity of truth would teach that if man can create light and heat from electricity by his little dynamos and insignificant wires, God by His great electric dynamos, His suns and worlds, and His wireless communication between them, ought to supply the universe with abundance of heat, without burning up His suns or forcing heat from one sun or planet to another, and wasting it in the cold ether of space. Nature never commits such folly, though scientists affirm and reiterate it.

The sun and planets, I contend, are electro-magnets, and by reason of their swift motion become electric generators, each producing its own light and heat.

Thus the universe is a vast electrical machine or organism creating its own cosmic force, lighting and heating itself from its own latent electric fires, and bound together by invisible electric bands pulling and guiding with the swiftness of lightning and the power and wisdom of Omnipotence.

I believe with Professor See that the universe began in extreme cold, and not in extreme heat; but I do not deem contraction from gravitation a sufficient cause for the generation of heat on the sun or earth. It is too irregular and uncertain, as we know from the spasmodic outbursts of earthquakes and volcanoes, and could not be relied on for external heat in sun or planets.

For these reasons, and a multitude of others it would take a volume to set forth, I contend the sun is not hot, but has all the climates the earth has except the frigid, and that Omnipotent Wisdom

does not light and heat His little worlds by burning up His large and glorious one.

There is a conflict between the mathematicians and the geologists as to the heat of the sun and the age of the earth. Lord Kelvin and Helmholtz estimate that the heat from the sun has been sufficient to maintain life on the earth ten to twenty millions of years, while Lyell and the geologists maintain from one hundred to two hundred millions of years are necessary to account for geological formations since life began.

Herschel says the amount of heat received on the earth's surface with the sun in the zenith would melt a crust of ice an inch in thickness in two hours. Where this heat comes from and how the supply is kept up uniformly for millions of years the scientists have been unable to answer. They say the law of the conservation of energy affirms that something cannot be made out of nothing; and all special forms of energy, such as heat, light, and mechanical power, are transformations of one original fund of energy. This original fund of energy, I claim, is electricity. The sun's heat, they say, must be kept up by energy transformed into heat from some other form. I say the energy transformed into heat is electricity; they say they do not know what it is. They say there are only two ways to furnish this energy; one is by combustion, the other is by mechanical force. Mechanical force may be caused by impact of aerolites, or by shrinkage of the sun as it contracts under the attraction of gravity. By one or both of these ways, they say, the sun's energy may be maintained; but it is all conjecture.

I claim this original fund of energy is the dual forces of electricity which is convertible into light,

heat, and all vital force, and is so converted only in the atmosphere of suns and worlds. That this electric original fund of energy comes from the vast electric field of invisible ether embracing the entire solar system—over five billions of miles in diameter. That the law of electric attraction and repulsion is the conservation of all energy, and the transforming force in nature; and the cosmic power of the universe.

Prof. Samuel Laing says: "The theory of meteorites accounts for a large part of solar heat, but hardly accounts for the uniformity of the supply. It does not supersede the older theory that the main source of the sun's heat is in the transformation of the mechanical energy of gravity as the sun's volume contracts. To explain the sun's heat, we must have a cause that is not only sufficient to generate the sun's total amount of heat, but also one that generates it uniformly." He admits no present scientific theory does this. I contend the electric theory I have endeavored to formulate does, and accounts for both the vast supply and the uniformity of the supply. He says further: "These theories of the sun's shrinkage, and the falling of meteors into its surface, do not really solve the problem, but only remove it one step farther back. Heat, they say, is transformed mechanical power; but where does this mechanical power come from? From gravity. And where does the gravity come from? They cannot tell. It is the old Hindoo cosmogony over again. The world rests on an elephant; the elephant on a tortoise. But what does the tortoise rest on?"

Professor Laing, like all the recent scientists, does not accept the law of gravitation. He says: "We

are accustomed to speak of gravity as the one well-known and established fact of the universe. And so it is as regards the various motions which result from it, and the fact of its being an attribute of all matter from atoms to stars. But of its real essence and *modus operandi* we know nothing; less even than in the other forms of energy into which it can be transformed. Of light, we know that it is caused by waves or vibrations of ether diffused through space. We can measure and count these; know their velocity and trace their effects from impact on the eye through the retina and optic nerve up to the cells of the brain. But of gravity we know none of these things, and cannot even form a conception of how one mass of matter can act upon another, without connection and without requiring time for the transmission of the impulse. Is it a pulling or a pushing force? We do not know even this, and are not one whit advanced beyond the saying of Newton, 'I cannot conceive how one body can act on another without some physical connection between them.'"

I contend it can do it only by the law of electric attraction and repulsion; and that which is called gravitation is really electro-magnetism, and should be so denominated. This I have set forth fully in my book, entitled "Invisible Light, or the Electric Theory of Creation."

The same scientist says: "Sir W. Thompson starts from the *assumption* that gravity is the one fundamental form of energy from which all other forms such as light and heat are derived by transformation. But what a mere drop in the ocean is the energy of gravity compared with the atomic and molecular energies, which now in a latent and now

in an active form build up the universe of matter? How incalculably small must the gravity of the sun be, compared with the sum of the energies of the atoms of which its mass is composed." So say I, and without knowing it he has made a strong argument in favor of the electric theory, and of electricity as the invisible energy of atoms and suns, and the original primary energy from which all energy is derived. And he conjectures that "gravity will turn out to be only one of the manifestations of the primitive fund of energy which underlies the atoms of which all matter is composed." In this he is correct. Gravity so called is only a manifestation of the primitive, original energy of electric attraction inherent in all matter and space, and the creative force of the universe. La Place said: "We are as yet far from knowing all the agencies of nature."

Many ingenious attempts have been made to explain the cause of gravity as that of stress or strain of some intervening medium, or space-filling incomprehensible fluid, or Le Sage's impact of corpuscles; but Maxwell and Tait sum up the latest results almost in the identical words of Newton in his letter to Bentley: "In fact, the cause of gravitation remains undiscovered."

Many scientists have shown that the law of gravitation is not universal, and have pointed out numerous instances of its violation. Over two hundred have been designated by one scientist alone in the motion of the stars and comets, such as the repulsion of the comets from the sun; the flight of the "runaway stars," whose motions are apparently in straight lines in a variety of directions, and whose velocities are such as to be impossible to be accounted for by the force of gravity.

Professor Newcomb has shown by mathematical calculation that the gravity of the whole universe, assuming it to contain one hundred millions of stars each on the average five times greater than our sun, would require to be sixty-four times greater to have given one star known as "1830 Groombridge" the velocity of two hundred miles per second which it actually possesses, or to be able to arrest its flight through space. And a star like Arcturus, moving with a velocity of four hundred miles per second, must be enormously greater, and far beyond any energy possible to be exerted in the form of gravitation. And if its motion were arrested the heat engendered, he says, must be far greater than any heat supplied by its gradual contraction. We know from the outbursts of volcanoes and the eruptions of earthquakes on this earth, by reason of its supposed shrinkage, how irregular and uncertain is the heat thus engendered, and it seems marvellously absurd that any scientist should ascribe the heat of the sun to any such an irregular and inadequate cause.

The sun is not shrinking because he is not hot, and never was excessively hot; and for the same reason he is not cooling off. And if he were, he could not shrink uniformly, and could not give a uniform heat supply from any such source; besides, the heat engendered in this way would be insufficient to heat himself, and could furnish no heat to any of the planets.

There is no reasonable solution of these questions by any other hypothesis than to regard the sun as a great electric generator drawing his electricity from his vast electric field embracing all the solar system, every atom of which is a tiny electric bat-

tery. That heat comes to the planets from the sun not as heat but as electricity, which is converted into heat in the atmosphere of the planets. This accounts for the brilliancy and seeming heat manifestations, and makes it a cool and habitable world like our own, but vastly greater in size and power.

That the sun is not hot is further corroborated by Prof. C. G. Abbott, of the Smithsonian Institute, in his observations on the recent June, 1900, eclipse of the sun. He says in his report of this eclipse: "My experiments showed the corona of the sun was actually cooler than the gray card which had been used at the room temperature." He says again: "The corona gave a positive indication of heat as compared with the moon. The heat, though certain, was, however, too slight to be subdivided by the dispersion of the prism with the means at hand."

This is the latest evidence of high scientific value that the sun is not hot. It is certain that if we get any heat from the sun we get it from the corona of the sun and not from its surface. And if the sun's corona is not hot, the sun is not hot. And I contend, the sun's corona is not hot any more than our aurora borealis, which is the earth's corona, and which is seen at our eternally frozen poles, where no heat could exist.

CHAPTER IV

THE UNIVERSE BEGAN IN EXTREME COLD, NOT HEAT

My theory of electrical creation does not necessarily conflict with many phases of the nebular hypothesis; but I insist that if the universe began in nebula, electricity gathered it, and the nebula was extremely cold, instead of being "a fiery mist, or intensely heated gas." The electric theory does not conflict with the supposed law of gravitation, which, I contend, is electro-magnetism or universal electric attraction. And it accepts the law of evolution by electric development, and shows how all things came from atoms and electricity.

But the electric theory does not need the nebular hypothesis to explain the formation of the solar system, and is just as good without it. I deem the Newton—La Place theories unscientific and obsolete, and they should be supplanted by the electric theory as the most rational and in accord with the latest advancements of science. The discovery of electricity opened a new and marvellous field of investigation unknown to Newton and La Place, and has revolutionized all modern scientific theories. Its invisible, magic-like potency has been the wonder and glory of the nineteenth century.

As all the sciences have changed and advanced in the last two hundred years, why should not cosmogony? The world has long been waiting for a better theory to accord with our advanced civili-

zation, and grander conception of the universe, and of man's future destiny. La Place's theory of the spontaneous generation of planet worlds and burning stars seems a plan to account for the formation of the universe without the intelligent design of a Creator. But if so intended it is a great failure, for there is such a complex variety and perfect harmony as shows infinite design and omnipotent wisdom. Newton accepted it, but he believed in a divine power that created and preserves all things.

The earth shows evidence of great heat by the rocks and minerals that have been in a molten state at some period in its history; yet this heat was more or less local and periodic, and it does not show that the universe began in white heat.

On the contrary, all evidence of great heat on the earth can be accounted for in two ways: first, by local volcanoes and earthquakes, which have been numerous in all parts of the earth; second, by burning meteors from space shot through our atmosphere and lodged in our earth by the millions. Flamarion says: "The mass of the earth increased from age to age by the meteoric stone and shooting stars, which continually fall upon it—more than one hundred billions annually." Millions of these are consumed in our atmosphere, and fall upon the earth in showers of ashes or molecules. Other millions, in the form of molten rock and obdurate metals, are buried in the earth and mixed in volcanic formations. It is believed that all diamonds, rubies, and precious stones were thus distributed over the earth, and formed by meteors of hot carbonaceous rocks and metals falling into water and being suddenly cooled.

I cannot accept the popular theory among scien-

tists that the earth was once a burning mass, now extinguished on its surface, but still burning in its interior, while its centre is even now a molten mass. I do not believe it was ever a molten mass, or any considerable part of it excessively hot or in a molten state. There are local volcanic eruptions and earthquakes which are the result of local and temporary causes, and constitute escape valves for internal electrical disturbances; but the great mass of the earth is solid, and its rock-ribbed foundations are unchangeable and enduring.

Flamarion says: "The earth was first in the condition of the sun, hot, luminous, and incandescent." Goodwin says: "The early condition of the earth presents to us a ball of molten fluid with intense heat, spinning on its axis, and revolving around the sun." Campbell says: "The world was once a globe of liquid fire. It is like a deep lake frozen over; and we build our cities on the ice crust as it were." Dana says: "There must have been a first era after that of the original nebula, *if such there was*, in which the earth was a globe of molten rock. A second era, in which cooling went forward until the exterior became solid from cooling."

These theories, I believe, are disproved by the geological formations of the earth, which is an orderly structure, built layer upon layer of stratified rocks, each differing in some respects from the others, and all encircling the globe everywhere in the same order. And wherever a break in this sure foundation of orderly construction, stone upon stone and brick upon brick, as we build the foundations of a house or temple, occurs, it is the result of some local volcanic disturbance, and does not affect the orderly processes of nature.

Electric energy, which is the right hand of Omnipotence, created this earth a great electric magnet, formed its magnetic centre, and built around it the rock-ribbed foundations in regular and orderly perfection. It did the same for all the globes of our solar system, and for the universe. It shaped them all in the same regular spherical form and general contour by the law of electrical attraction, which creates circles by drawing all growing forms in circular lines around their magnetic centre, and thus fixed the electro-magnetic law of organic growth and formation in circles and globes, from dewdrops to worlds, and from pebbles to suns.

The nebular hypothesis, that the universe began in a white heat, is purely speculative and fallacious. There is no considerable heat in the universe except in the atmosphere of suns and worlds, and that only a few miles above their surface.

The heat of the earth at the equator reaches upward only fifteen thousand feet, which is less than three miles, and is the highest point of heat on earth; then extreme cold gradually approaches the earth's surface until it reaches it at 60° of north and south latitude. I believe the heat extends above the sun's surface but a few thousand miles. By the law of proportion its heat would extend less than three thousand miles up into its atmosphere around the sun's surface, and its photosphere would be from ten thousand to twenty thousand miles above, near the frigid cold of space, just as our aurora borealis is in the upper regions of frigid space at our poles. However, the sun's photosphere might cause the heat to extend much higher. Electricity is convertible into heat, but is only so converted where needed. Heat is needed only in the atmosphere of suns and

planets near their surface, where it is necessary to sustain animal and vegetable life. It is not needed in space, and nature does no useless and nugatory things; and therefore there is no considerable heat in space, and never was; and the universe did not begin in nebulous heat.

On the contrary, the universe began in supreme cold. All ether and space is at absolute zero, being four hundred and sixty degrees colder than crystal ice, and has always been so. All the energy of the universe could not heat to white heat a nebulous mass the width of the solar system (six billions of miles) and the thickness of the diameter of the sun (eight hundred and sixty-five thousand miles). Even if it were possible, the heat would disappear in frigid space so quickly it would not last an hour. It needs no mathematics to demonstrate this fact.

Electricity, the cosmic protean force of the universe, has its dwelling-place and home in the dark, cold ether of space. There it gathers its virgin radiate atoms for world-building and sun-feeding, and for the growth of all organic life forms. Cold, in the formation of suns and worlds, is more important than heat, for cold is a centralizing, cohesive, sphere-moulding force, while heat is repulsion, diffusion, dissolution, and ruin. Heat is needed only for animal and vegetable life, and then only in moderation. Excess of heat means decay and death. All animal and vegetable life exists and flourishes only on the surface of suns and planets, in a magnetic atmosphere that produces moderate heat. There alone is heat needed, and there alone is heat found, including heat engendered in local volcanic action in the crust of their surface. And there excessive heat destroys all animal and vegetable life.

Nebular light in space may be produced, as Lockyer says, by meteorites bombarding each other; but I contend, there is little or no heat in nebula. It is nebulous luminosity we see, or reflected light; but nebula is without heat, for no heat could exist in the severe cold of the attenuated ether of space.

Heat can exist only where there is an atmosphere, and then it must be constantly supplied with fuel to overcome the law of constant repulsion and diffusion. Cold is the absence of heat and exists everywhere. It overcomes disintegration and preserves the universe. It enforces the universal law of the electric attraction and cohesion of atoms and worlds.

Cold must predominate to preserve the universe. There is a billion times a billion more cold in the universe than heat. There always has been and there always will be. The Creator so constituted creation when He made it an electric organism. The heat of the sun, compared with the cold that surrounds it, is as a mustard seed to Jupiter. The earth's heat, in comparison to the cold that surrounds it, is as an orange to the solar system.

Then what folly to talk of the universe having begun in white heat, and the earth having been a molten world, and the suns great burning spheres. There were periods when the earth had greater internal convulsions, caused by electrical conditions adjusting themselves to permanent spherical solidity. These were largely local and temporary convulsions. All parts of the earth have also been subjected to the torrid heat of the tropics on account of the earth shifting its poles slowly and gradually through the past ages. All parts of its surface have been covered with water many times by the shifting of its land and sea surface. Especially was this the

case while it was settling down to its present density under the law of electrical attraction, and before it attained its present specific gravity.

As a student of nature, and not as a professional scientist, I published "The New Cosmogony" over three years ago, and no less an authority than Prof. T. J. J. See, the eminent scientist, has since discarded the nebulous *heat theory*, established by La Place and Newton, that our solar system was originally a *heated* mass of nebula, or *fiery* mist.

Professor See, in an article in *McClure's Magazine*, holds that in the beginning, "there was no heat, but a cold so intense that it reached 273° below zero centigrade—cold enough to make liquid air and freeze it into ice air. The sun was a nebulous mass filling all the space now occupied by the solar system—a formless swarm of ice masses floating like some great flock of birds in blue space. Heat began to develop with the compression of the gaseous bodies in response to the law of gravitation. Instead of the sun growing colder, it is constantly growing hotter by reason of a steady process of shrinking, and this is a condition that applied for a long time to the stars and planets. Instead of the earth making its first appearance as a white, hot body, it really appeared as a vague mass of gas frightfully cold. As it gradually took to itself form and motion, it began to shrink and generate heat. The cold nebula of our globe, after taking on motion, probably threw off the moon, as it had itself been thrown off from the sun. Being comparatively small, the earth nebula shrank rapidly and generated heat quickly; but never grew hot enough to vaporize iron."

I agree fully with Professor See when he says that in the beginning "the earth was intensely cold."

But when he says, "It grew hot by compression," I cannot fully agree with him. I do not accept the theory that the heat of suns and planets is created by contraction. This heat is too uncertain and irregular in quantity, and too local and spasmodic as to time, to be relied on. A constant as well as a sufficient supply of heat energy must be provided in order to account for the sun's and earth's heat supply. Compression is only a small factor in heat production. This is apparent from the volcanic eruptions on our earth, which are uncertain as to time and locality, as well as to the supply of heat generated, and indicate the irregularity of internal compression and its lack of reliability for sun heat or earth heat. Compression creates solidity, and solid things can never be very hot. If the sun obtained heat from compression, he would soon lose it by becoming too solid for further compression, and his heat would long ago have disappeared. Extreme cold shows many wonderful properties and results, as is proven by the discovery of liquid air. It is said extremes meet, and extreme cold produces almost as many marvellous transformations as extreme heat, and is nature's original normal condition of matter.

When the divine fiat "Let there be light" was pronounced, the dual forces of electricity began their creative work of sun-building and world-building under the law of attraction and repulsion. Thus under the divine decree and impulse electro-magnetism took possession of matter and began forming magnetic sun centres and earth centres in the pliable mass of stellar nebula floating as frozen air in the solar expanse. It began forming circular lines of spiral nebula around condensing magnetic centres.

And the sun grew, and the planets grew, fed by incoming tides of visible nebula and invisible atoms drawn by electric force, and laid by magnetic energy in orderly layers of condensing matter in the sun's centre and the earth's centre. All were built out of the same material, the invisible atoms, or matter in solution, diffused through all space. Thus were the foundations of the worlds laid. And the law of evolution under the guiding force of electricity, in the course of ages, developed and perfected suns and worlds and all organic life forms. But the law of evolution is the law of Deity, and electricity is "the word of His power," the creative energy of the universe. And by all the force of law and logic, the act of the agent is the act of the principal, and infinite wisdom laid the foundations of the sun and world and built the organic forms of human life, and upholds the universe. This He does by His electric machinery and directing power.

He upholds the universe by His invisible electric word and by His far-reaching arm of magnetic power. And without His magnetic touch our bodies would crumble to dust. Without His creative intelligent design, there would have been no universe. And without His magnetic grasp the universe would dissolve into invisible atoms as at the beginning, and the electric light of the suns expire. He touched the electric button that gave impulse to all atoms, created all suns, evolved all worlds, and sent them singing in harmonious motion through all space, for all eternities. God is a great electrician. In His divine simplicity He made but one matter, the atom; but one force, electricity; and but one type of creative existence, the electro-magnet. Thus He created the "matter and persistent force," which Herbert

Spencer says has produced all things. He scattered these atoms as invisible star dust through all space; so that wherever He blew His breath or sent a wireless telegram, a new world sprang into existence, or the nucleus of a sun became luminous.

God is a great inventor, and man gets his inventive genius by parental inheritance from God. It came by the law of heredity, and man himself is becoming a great inventive electrician. He handles a ship, blows up a mine, and transports millions of human beings by electricity. God does better. He handles a world, throws off a planet, or hurls a self-luminous sun through space by electric energy.

Then do I believe in a personal God? Certainly I do. A personal God is impersonal in the laws that govern His universe; but personal in His government and intercourse with His spiritual children. Man is personal with his fellow-man, but impersonal in the means and rules of conducting his business. He uses servants and agents to represent him, steam to propel his cars, electricity to telegraph, and machinery to run his factories. He does wonders by merely pressing a button or sending a telegram.

God does likewise. He makes a thought, an unspoken word, an invisible force, as intangible as air and as viewless as a soul, create and control all the varied and complex creations of the universe. He does not need to be large in person; He is large and infinite in wisdom and power.

The pressure of a child's finger only strong enough to lift a kitten blew up Hell Gate, and started the mammoth wheels of the Columbian Exposition.

God does not need to be so large or grand as to be impersonal or invisible to be the Ruler of the universe. We are told in Sacred Writ that "man was

made in the image of God"; this has been construed as made in His spiritual image, but he may be made also in His personal image, and Christ may be the exact personal image of His Father.

Astronomy, by the law of gravitation so called, won its crowning distinction by the discovery of Neptune. Adams and Leverrier ascertained its location because of its disturbing effects; and Galle, of Berlin, by Leverrier's direction found it. This afforded the first instance of a body made known as an unseen power previously to its being discovered. But we should not, on account of this, accept gravitation as answering all astronomical conditions, for it does not. The electric attraction of matter would answer the same purpose, and explain the presence and disturbing effects of an unknown body much better than gravity.

Many stellar systems have since been found to include members whose presence only can be *felt*, owing to their partial obscurity, on account of their revolving so close to primary orbs of greater brilliancy. And it is said, "One of the greatest triumphs of modern science is the establishment of an astronomy of the invisible." It is the discovery of invisible matter, invisible worlds, and invisible electricity that has produced all modern progress and revolutionized all modern science.

Occasionally new and hitherto unknown stars flash into view, and grow in brilliancy with startling rapidity. The first recorded was in 134 B.C. by Hipparchus. The next in 389 A.D. Then in 1572 the one which Tycho Brahé saw, and Kepler's in 1604. The recent one discovered by Anderson this year (1901) is of the first magnitude, and is said to be as large as our sun, and to have increased

two hundred times in three nights. The scientists say it was the result of a collision of two stars or planets, and all life was swept from them with a breath of fire in an instant; and it shows the perils of space to our sun carrying the planets. But they admit the collision theory has not yet been demonstrated, and this phenomena may arise from a cause not yet discovered. I cannot accept the collision theory, or that there is any danger to suns or worlds in space. The electric machine of the universe is so beautifully adjusted as to right itself automatically; and the force that perturbs will eventually restore harmony.

As the planets all revolve around the sun in the same direction, and on the same plane, which is the same on which the sun turns, it is clear that the sun does not throw out any electric currents, except in the direct line of his family of planets. Thus, his rays follow the plane of the ecliptic, and need not waste any electric energy in any direction, either above or below the line of the planetary orbits. This greatly reduces the demand on the sun's energy, which is still more greatly reduced by the electric theory, which demands nothing from the sun but that which the attracting energy of each planet requires. Thus the sun gives up only the currents of electricity drawn from him by each planet's attraction, which currents from the sun's eight hundred and sixty-five thousand miles of diameter converge to the smaller diameter of the planets, which in the case of the earth would be eight thousand miles.

By this wise arrangement of the electric machinery of the solar system, the sun's rays are focussed and centred on each planet, and the electric heating and lighting capacity of the sun current is increased a

thousand-fold without any loss of power—just as a thousand square feet of polished mirror could focus and concentrate light and heat on an eight-foot circle.

This is a wonderful saving, and a wise and economical provision in nature. Far-off Uranus and Neptune, and little Mars and Mercury have each the electric currents from the sun doubled and concentrated a thousand times, so that the light and heat supply of the sun is never wasted, and will never be exhausted.

Size does not count: it is electric energy which draws and attracts the sun's electric rays, which are convertible into light and heat. And they are so converted in the atmosphere of planets when they come in contact with their negative electricity. So it is not weight or gravity that attracts, as those who accept gravitation assume, but electrical conditions. As we have seen, a pound of iron unmagnetized has no attracting power, but when magnetized it will lift or attract double its weight. It is so with the heavenly bodies: their electrical condition and attracting force is the measure of their electric supplies from the sun. This enables Uranus and Neptune, which are the farthest from the sun, to have as great a supply of electricity for light and warmth as Venus and Mercury, which are nearer the source of supply.

The same force that attracts the sun's electric substance enables the sun to attract and control the planets in their orbits, and is called gravitation. But gravitation is only a name that Newton invented to describe an invisible, mysterious force he acknowledged he knew nothing about. And all the scientists, including Lord Kelvin, say we still "know

absolutely nothing" about it, and have learned nothing in two hundred years.

Well, we do know something about electricity and its dual force, magnetism; all of which we have learned in the last half-century. Now the question is, Shall we reject new light, like they did in the days of Galileo, and say: "The world does not move"? Newton gave the best name obtainable in his day. Shall we do likewise, and designate the true mysterious force, electricity?

I have said that gravitation won its crowning distinction in the discovery of Neptune, and gave it more credit than it deserves. It is true Galle found Neptune under the direction of Leverrier; but he found it eight astronomical units from where Leverrier's elaborate calculations instructed him it was. As an astronomical unit is the distance of the sun from the earth, Leverrier missed by over seven hundred millions of miles, and declared that Neptune was not the star he was looking for.

There is an unanswerable fact that proves the sun's corona is cold, like our aurora, and that is the unquestioned fact that comets have passed through it three hundred thousand miles without being affected in the slightest. These comets were excessively cold, and the corona must have been cold, or there would have been a disastrous explosion.

CHAPTER V

THE NEBULAR HYPOTHESIS AND GRAVITATION ARE UN-SCIENTIFIC

The Newton—La Place theory of creation, known as the “nebular hypothesis,” was formulated about two hundred years ago. Then there were few scientists and not a million of educated people in the world. Now we have thousands of scientists and over forty millions of educated people in the United States. Then railroads, steamships, telegraphs, telephones, and even steam and electricity, were unknown. The nebular hypothesis was then the best explanation and the most reasonable that these ingenious scientists could devise. But since then electricity has been discovered, and many new facts of science have come to light which reveal the inconsistencies of this fallacious haphazard theory. Many scientists have been waiting for a more rational and consistent theory.

Newton, who discovered the law of gravitation, admitted he could not understand or explain it, and said: “The motion of the sun and planets cannot be produced by any natural cause alone, but they are impressed by an agent or divine power.” That “agent or divine power,” I contend, is electricity, which is also a natural cause. And all power and causes are natural, whether human, mechanical, or divine. And God is in nature and uses natural

means and agencies, and there is nothing supernatural in the universe.

The nebular theory does not explain the origin of this vast mass of nebula, or how nebula is accumulated, or how motion was imparted to it. The electric theory does all these by insisting that all ether and space is matter in solution, consisting of invisible atoms and electricity, one being force and the other matter. And wherever there is, from any cause, an excess of electricity, there will be a thickening of matter, forming nebulous ether. And if the supply of electric energy continues and increases, the nebula will form the nucleus and magnetic centre of a comet, a sun, a world, a planet, or a satellite

It does not require the vast nebula of the solar system to be one great revolving mass to explain the formation of the solar system. Wherever the viewless breath of electricity blew, there was the shining centre of a new planet. All the primary elements of earth and suns were in the flying wings of invisible atoms, for every atom was an electric battery and every molecule a miniature world.

The nebular theory says rings were thrown off from the solar nebula, which afterward condensed into planets. This is not required by the electric theory and complicates the situation. How much easier to form a new electric centre for each planet.

When Neptune was thrown off, by this theory, it was as a great ring six billion miles in diameter and sixteen billions in circumference. Now, is this reasonable? Let us see. A fast revolving body, whenever it throws off any loose substance, throws it off in flying particles and never in circles. This is true of water from a wheel, of sparks from a wheel, or of any revolving substance.

The force that would be sufficient to throw the material of Neptune from the sun's nebula would throw it in flying molecules into unlimited space, and they would never be gathered together until an electric centre would form, according to the electric theory, and condense them into a globe. Under natural law, no such nebulous rings could be formed, as the nebular theory claims was done in forming the planets. Besides, under the supposed law of gravitation, all particles thrown off would of necessity return to the larger body, as a cannon ball shot from the earth returns to it. So the nebular theory of rings is contrary not only to natural law, but to gravitation, and is absolutely untenable. Whatever is thrown off must return, unless there is a magnetic centre formed strong enough to gather and hold it, and electro-magnetism is necessary to do this and to account for the origin of suns and planets. There are many reasons why the sun and all the planets were not formed from one vast circling nebula, such as: their great variations in distance from the sun and from each other; their great difference in diameter, in density, or specific gravity; and above all, their great difference in diurnal motion, or revolution on their axis; and especially the reverse diurnal motion of Uranus and Neptune, which destroys the entire theory.

It is a law of motion that anything thrown off from a body in motion retains the motion of that body. But Jupiter is eighty-eight thousand miles in diameter and revolves on its axis in ten hours, while our earth, only one-tenth in diameter, takes twenty-four; and Venus is said by some observers not to rotate at all, but always presents the same side to the sun. No two planets have the same

density. Mercury is sixteen times heavier than Saturn, and the earth's density is four times that of Jupiter, and eight times that of the sun; and while the earth at the equator revolves one thousand miles an hour, and the sun forty-three hundred miles an hour, Jupiter revolves about nine thousand miles an hour.

No two of the planets have the same inclination of equator toward orbit, or the same number of moons, or the same flattening at the poles; and Saturn has rings unlike any of the others. And it was, we are told, the ring of Saturn that caused La Place to establish the nebular ring theory, he supposing it to be a solid ring of matter, when it is a cloud of many small moons, or meteors, circling round Saturn. But why these remarkable differences and contradictory conditions in the solar planets, if they all came from the same vast mother nebula?

If the great mother nebula of the solar system at the beginning turned on its axis once in one hundred and sixty-five years, as Neptune now does, and thus moving at its circumference eleven thousand miles per hour, could throw off immense rings that finally formed all the planets, why does not Jupiter, going at a rate two and a half times faster, throw off vast quantities of his material globe? Surely Jupiter ought to do this if the same laws still prevail, for the attraction of gravitation on the nebulous sun was far greater than Jupiter with its light density.

The sun has less density than any of the planets. Mercury, the last planet supposed to be thrown off, has fifty times the density of the sun, and moves twenty-five times faster through space than the sun

turns, all showing that the planets never belonged to the same nebulous mass as the sun. And the Newton-La Place theories of the nebular formation of the solar system are haphazard, fallacious, and unscientific.

Young says: "Our planetary system is clearly no accidental aggregation of bodies; but the nebular hypothesis and gravitation do not satisfactorily explain it. Numerous relations exist in the planetary system for which gravitation does not account."

He mentioned among them "the retrograde motion of Uranus and Neptune" on their axes, it being the reverse motion of the other planets, which, he says, "cannot be explained by the nebular hypothesis alone." He further says, "It is questionable whether these outer planets are so much older than the inner one, as that theory would indicate," and thinks "they may even be younger." He says: "It is more likely the original nebula was a cloud of ice-cold meteoric dust, than an incandescent gas or fire-mist. And likely the planets were separated from their mother otherwise than as rings." This is high authority, and shows the general dissatisfaction with all the Newton—La Place theories which have had their day of usefulness.

Because of the defects in these theories, Norman Lockyer has revived the theory that "all the heavenly bodies in their present state are mere clouds of meteors, or have been formed by the aggregation of such clouds."

This accords more with the electric theory, which holds all suns and planets are electro-magnets having electric centres, and drawing all matter, atoms, molecules, and meteorites from their electric field of space toward their magnetic centres in working

lines of magnetic force; and thus all globes are created or evolved.

Again, the reason assigned why the planets do not leave their orbits and fly into the sun, present science says, is because the other planets are a balancing force drawing them away from the sun. This was the best reason that could be assigned before the discovery of electricity. But every one must know this reason is not sufficient. Some accept authority without reason. Those who always accept authority for a guide would stop the progress of the world, and would still believe the world was flat if the authorities still promulgated it.

This balancing force of the planets is not a sufficient cause for their continuing in their orbits, for one of them, Neptune, has all the balancing force of the planets against it, and continually drawing it toward the sun; Uranus has all but one of the smaller planets using all their gravity and attracting power to draw it into the sun. These two planets utterly destroy the entire theory of gravity, and they were unknown when gravity was established, just as the cause of Saturn's rings was unknown when the nebula ring theory was formulated. But take Mercury, the planet nearest to the sun, only about thirty million miles from it, with twice the density of any other planet, and only three thousand miles in diameter, and moving with the incredible velocity of one hundred thousand miles an hour. Can any one believe that the attraction of gravity of the distant planets multiplied a thousand times could keep it from falling into the sun? If the balancing power of the other planets keeps each planet in its orbit, what keeps our moon and the moons of Jupiter in their orbits? Why do

they not fall into their respective worlds? What keeps the shooting stars and runaway stars in their courses?—no balancing power can do that.

I answer, the same electric force that started them on their grand velocities fixed their orbits. Electricity is not only an attracting force, but is also a repelling force. God is a great electrician, and man is learning to be. Tell an electrician the sun and planets are electro-magnets, and he will tell you why they keep their places and do not fall together. In electricity oppositely electrified bodies attract, and like repel.

An electrician will take two horseshoe magnets and place their positive and negative poles together, and they will draw each other and cling together until a superior force overcomes their mutual attraction. He will then take the same magnets and reverse them and place their like poles together, and they will not cling, but will repulse each other. Suns and worlds do the same. Positive and negative poles cling together. In chemistry, molecules of opposite polarity unite, and this is called chemical affinity; molecules of like polarity will not unite, and this is called chemical repulsion. Magnets attract only when their poles are reversed, and suns and worlds do the same.

Now the sun, as a great central magnet or electric generator, has the power both to attract and to repel. The planets are kept in their orbits by both the sun's attraction and its repulsion. In the summer, when the earth gets four million miles nearer the sun, there is a repelling force from the sun that sends it off again, or it would continue to approach the sun until it would fall into its spacious bosom. No balancing force of planets could do this. The sun

has an electric propelling force by which it throws off comets which approach it. This is well known and has been proven in many instances. By this same propelling force it holds off the swift, leaden planet Mercury. And by this same electric repulsion the planets prevent their moons from falling back on to their surface. These moons are of the same material and electric composition as the worlds from which they come, and as like polarity repels, they are thus kept in their orbits. There are eighteen millions of solar systems in our universe; can any one believe they are kept in their places by a mere balancing force? They are held by electrical repulsion as well as by attraction. There may also be belts of ether with the proper electrical vibration or condition in the orbit of each planet, that holds it with giant grasp in its allotted place. And every sun system may have its own peculiar electricity which has a repulsion for all other systems and holds each in its place.

All these things are possible and probable under the theory of electrical creation. As twenty-eight currents of electricity can pass over the same wire at the same time, fourteen each way, how many kinds of currents may the universe possess? Yet even electricity itself was unknown in the days of Newton and La Place. But I wish to touch only a few of the high points, and prefer to build up rather than to tear down.

While each sun system with its revolving planets is held together by mutual electric attraction, the eighteen millions of sun systems of this universe are prevented from coming in collision with each other by the law of electric repulsion. This would prevent any one system from trespassing upon the

domain or territory of another, and permit each and all to move freely among themselves and change places without danger of trespass or conflict. In case of too near an approach to each other, the law of repulsion would drive them off. This would avoid the necessity of a central sun, which probably does not exist or it would be visible. If all these systems were positively magnetized, or all negatively magnetized, they would repel each other. This law of electric repulsion would increase the nearer these systems approached each other, and this increasing power would send them farther away and forever prevent discord and collision. This is why there is no discord in the fields of heaven, and harmony reigns triumphant.

Electric repulsion is all that prevents these almost infinite sun systems from coming into conflict with one another and ending in aggregate and ruinous collision, and reducing the universe to one heterogeneous mass of broken, blighted, discordant spheres. No law of gravitation could prevent such a wreck and ruin of the universe. On the contrary, the size and weight of every sun and star that floats in the broad expanse of ether would, under the law of gravity, tend to bring about just such a universal catastrophe. If the boasted law of gravitation prevailed to-day, or ever did prevail, such would be the disastrous result. The law of gravitation tends to aggregate all bodies into one. If the universe was under the dominion of gravity, there would be but one vast globe in all the universe, and if there was a man on it there would be but one enormous giant. Newton's law of gravitation is "large bodies attract small ones." If that is true, then all the small bodies would fly into the arms of the larger ones,

and the process would continue until the largest body had them all, and there would be no smaller ones to be attracted. This is a fair analysis of the law of gravitation.

I know the rule, "material particles and worlds attract each other directly as to mass, and inversely to the square of the distance." This may be very near the law by which matter falls toward the sun by electric attraction, but not the law of orbital energy by which planets are kept out of the sun. And these two forces must be balanced forces. If only the supposed law of gravitation existed, all the planets of the solar system would fall into the sun.

The repellant energy in atoms and space is revealed in all chemical and mechanical unions as equal to attractions, so that matter is changed by heat and material agencies from solid to liquid, from liquid to gaseous, and from gaseous to electro-magnetic. The weight that falls to the earth by attraction may be lifted by dynamic repulsion. Therefore the law of repulsion is as necessary as the law of attraction or gravity. With gravity only, all spheres would fall together in a common ruin; with repulsion only, they would dissolve into ether; and both of these forces evenly balanced are necessary to preserve the universe. But so-called gravitation, with the divine attributes thrown around it, ignores its twin brother and dual force, electric repulsion.

This law of electric repulsion keeps all satellites from falling into the planets around which they revolve. They have like polarities, and are positive or negative like their primaries, and thus repulse each other. Jupiter has five moons, is eighty-seven thousand miles in diameter, and revolves on its axis in about ten hours. One satellite revolves around it in

forty-three hours, another in eighty-five hours, another in seven days, and another in seventeen hours. Professor Hall recently discovered the two satellites of Mars. The largest is twenty-two miles in diameter and sixteen thousand miles distant from the planet; the other eighteen miles in diameter and only four thousand miles away. The first completes its orbit in thirty hours, and the other in about seven hours, going around the planet three times while Mars revolves once. Saturn has eight moons, Uranus four, and Neptune one; and the five moons of Uranus and Neptune revolve backward. Now where is the law of gravitation that can account for these conditions, or could keep these or any satellite from falling into its primary planet? No balancing force could do this, and gravity alone is ruin.

All suns and planets revolve on their axes under the law of electro-magnetism, by which electric currents of force pass through their centres at their poles, and magnetic currents of equal force pass one way around them, creating their diurnal motion. This law is briefly stated by a standard work on electricity: "A wire or any conductor having a current of electricity passing through it has lines of magnetic force passing one way around it, and the number is in direct ratio to the quantity of current passing through the wire. This magnetic effect is strongest close to the wire and decreases inversely as the square of the distance." This is a marvellous combination of these dual forces, which, with their harmonious union and combined energy seem a wonderful mechanical contrivance to spin the heavenly orbs on their poles like a top is spun by a string or band around it, or like the cylinder of a dynamo is revolved by its leather bands.

This electro-magnetic force spins the air and the storm clouds around in circling waves, and produces the whirlwind and the cyclone, forms the ringlets of smoke from a cigar and a chimney, and is the foundation of the vortex theory advanced by Lord Kelvin.

But Lord Kelvin, in his vortex theory, was not aware that he was making an argument for electro-magnetism, and that it was the only force in nature that could create a vortex, a whirlpool, or a cyclone, and all that kind of natural phenomena; or that it was the only force known that could cause suns and worlds to revolve on their axes, and is unanswerable proof that they are magnets revolving on their magnetic centres. Nothing but magnets with circular magnetic lines and central electric poles could revolve in space with speed and regularity.

There may be many kinds or qualities of electricity yet unclassified. It is not positively known whether the sun's electricity is positive or negative; and the terms positive and negative are names little understood but to indicate opposite electric polarities. The sun may send a different kind of electricity to each of the planets, and each of the planets may return a different kind of electricity to the sun. Thus, these electric currents may pass and repass between sun and planets and be used over and over again: just as the atoms of our body are used over and over again, having been in the bodies of millions of men, and animals, plants, and vegetables, before we used them, and will be in millions of bodies yet uncreated.

Nature's curriculum of eternal processes is continuous change and evolution by the perpetual motion of electric energy in atoms and worlds. And

her processes of renewal and purification are so perfect that our most luscious fruits and vegetables, and our most beautiful and fragrant flowers, come from the rank manure of the farmer's stable. Hence no one should call earth dust dirty or mud impurity. Every atom is clothed with the electric garments of light and life, and are the same as make all human forms, with all their fascinations of beauty and loveliness. And Shakespeare's hypothesis is true, "It is the mind that makes the body rich."

Therefore it may be that the sun renews and returns the electric energy of the earth and planets, as nature renews and purifies her ever-changing molecules, but changeless atoms; and there is *no loss of energy*, as well as *no loss of atoms*, in this vast electric universe.

As the nebular hypothesis and gravitation explain nothing, and show neither the primary elements nor the primary energy of the universe, we should go to the dual forces of electricity which do. As we have learned but a little more than a name from either, I think it is time to try another hypothesis. Walking single file in dead men's shoes for two hundred years is quite long enough.

I am willing to submit this hypothesis:

First—creation was wrought out by the agency of electrical forces operating on invisible elementary matter, controlled by the intellectual impulse of an infinite power.

Second—these creative cosmic forces, by condensing the suns and planets into vast magnets, revolving in a sea of electro-magnetic forces, evolved the marvellous machinery of the universe.

Third—this machinery of the universe became self-

propelling and self-sustaining by reason of the laws of motion, growth, and evolution impressed upon it, or by the joint sovereignty of two equal correlative forces: magnetism, a form of electricity, maintains the sovereignty of attraction over matter in body, while electricity, another phase of the same force, maintains the sovereignty of repulsion over matter in space.

Fourth—for these reasons electricity is a universal power joining together the two kingdoms of the heavens and the earth—of matter in body and matter in space. And these forces in their unity of harmonious work can suffer no disturbance equal to “the dust of the balance.”

Fifth—these floods of electricity and magnetism affect the least and the greatest “directly as to mass, and inversely to the square of the distance.”

Sixth—the suns and planets are vast magnets because they are held in charge of electro-magnetic forces in an immense magnetic field. These forces are not from these bodies originally, but these bodies are from these forces; and these forces antedate all forms of visible matter.

Seventh—the primary state of matter is the diffused etheric invisible state, and the building of matter into body is the work of these forces when in charge of matter under organic affinities. Magnetic lines of force fix centres, and build around such centres by drawing elemental matter from the radiant sea of space, by magnetic energy, into globular forms that become growing worlds, drawing their power and increase of form from the sea of invisible matter in which they are fixed by their axis and orbit lines of motion and force, constituting them working electro-magnets.

Eighth—these electro-magnetic forces are the eternal cosmic forces of perpetual motion, ever working by the law of action and reaction, attraction and repulsion, and evolving world forms and animal and vegetable forms.

Ninth—the sun, having grown from the sea of invisible etheric and nebulous matter by reason of these wonderful electro-magnetic forces into an immense magnet larger than all the lesser magnets or planets of the solar system combined, holds them in the magnetic field of his sovereign power, and is, through the flowing currents of electricity, the creating, governing force in the solar system.

Tenth—these same electric forces are condensed into smaller magnets, and electric organisms or machines, which form electric centres, and build up all tangible forms of matter, human, animal, and vegetable. And all visible matter is but the outer shell and visible garment of these invisible forces.

Eleventh—without the floods of electric substance or power that come to us in the electric currents of the sun, that flow in currents of strength through our bodies as they propel the inflowing and outflowing floods of atomic elements of matter, that are laden with incoming supplies of daily life and outgoing wastes by attraction and repulsion, assimilation of food, respiration and perspiration, our bodily forms would perish or be wholly unfit for the dwelling-place of our spirits.

Twelfth—our five senses, seeing, hearing, tasting, smelling, feeling, that connect us with the world of matter, are entirely dependent on electricity and the invisible etheric forms of matter that surround us everywhere, and constitute the connecting ties, the

invisible ligaments that pervade and bind all forms of life in nature's wondrous harmony.

Thirteenth—the boundless fountains of infinite energy in atoms in body and atoms through measureless space are superior to any mere sun form or world form of visible expression of such energy. The floods of radiant electrical energy that enwrap the sun and planets in orbital lines of omnipotent strength are to these bodies the everlasting fountains from which flow their upholding and evolving power, and the conservation of force in their transforming energy.

Fourteenth—as all visible forms of matter are built from invisible elementary atoms, so the most efficient display of electrical power finds its expression and source in the same elementary atoms. This electrical power, working in all atoms of matter gathered in planetary form, saturates such planetary bodies with electric energy, as the steel of the magnet is saturated with such forces; and reveals in the sun currents the source of all terrestrial power and organic life.

Fifteenth—the chemists claim to have discovered about seventy different elementary substances in matter; but they are not primary elemental substances, they are secondary, and caused by the marvellous electrical combinations of the two primary elements, atoms and electricity, and are what Herschel said they looked to be, “manufactured articles.”

Sixteenth—the laws of magnetic attraction teach us that positive and negative polar forces, flowing oppositely between sun and earth, establish the bond of union between them, and the transmission of electric energy must be equal between them, and

the flow through space at the low level of latent energy. These two oppositely flowing floods of electric energy, under the great law of electro-magnetic attraction, pass through ninety-three million miles of radiant matter in eight minutes of time, and enter the resisting atmosphere of sun and earth, their currents thrilling with energy at the high tension of opposite polarities beneath their atmospheric envelope. Thus, the attraction known as gravitation, but which is electro-magnetism, pours a constant flood of light and heat upon both sun and planets, and thus the electric light and heat of the sun and planets evolved from their resisting atmosphere, and the contact of their positive and negative electricity, become creative potencies, deriving their vast power from each other, and from their environing space of virgin, imponderable matter, and thereby give life, motion, and utility to all visible created things.

Thus we find that all heat, light, and vital force is created by the contact of positive and negative electricity, in the magnetic atmosphere of suns and worlds. That the electric affinities in matter proclaim an electric origin, and the invisible atom as the material basis of all material life; and by tracing their source to electrical and magnetic energy, we have reached the foundation upon which is built the eternal structures of the universe, and the bounds of all creation.

CHAPTER VI

THE SUN'S PHOTOSPHERE IS A BRILLIANT ENCIRCLING
AURORA BOREALIS CREATED BY ITS SURPLUS
ELECTRICITY.

The opinion of astronomers, including Wilson and Herschel, is that the sun consists of a comparatively dark globe, either solid or liquid, surrounded by one or more luminous envelopes in a vaporous or nebulous condition, and some thousands of miles in total height. This exterior region is pervaded by the medium which is the great source of the sun's light, and is called the photosphere of the sun. This luminous medium, they claim, is in an aeriform state, or in the condition of cloudy masses floating in a gaseous medium. Professor Norton says: "The temperature of the photosphere and the dark body of the sun is unknown, but a considerable fraction of the heat radiated from the latter is intercepted by the sun's atmosphere below the level of the luminous surface. Secche estimates the depth of the photosphere at thirteen hundred miles, and M. Fraye at four thousand, which seems to agree with Wilson and Herschell. The dark spots on the sun are its dark surface seen through its photosphere.

Herschell says: "*The corona is a ring or halo of white light encircling the sun*, which becomes visible in an eclipse." The corona has been known, as in the eclipse of September 7th, 1858, to exceed the sun's diameter of eight hundred and sixty-five thousand

miles, and the luminous streamers to extend beyond the sun's photosphere to twice the distance of its diameter, or one million seven hundred thousand miles. Professor Norton says: "Observations with the polariscope establish that the light of the corona and streamers is in part reflected light." The rose-colored protuberances are regarded as the most remarkable and beautiful when witnessed in total solar eclipses. Professor Norton says: "The corona consists of apparent cloudy masses lined with red light, and have no necessary connection with the sun spots. They are believed to be luminous masses connected with the sun, and elevated above the photosphere. Some observed in the eclipse of 1860 had an apparent height of seventy thousand miles. About the middle of the eclipse, ten distinct protuberances were counted, which were about regularly distributed around the disc.

"It is highly probable they were the higher portions of the shining masses that formed, at a lower level, one continuous reddish envelope surrounding the sun, which must extend upward from the sun's photosphere to the height of tens of thousands of miles. The corona consists of luminous matter streaming off from the sun into space, and the distinct radiations arise from an inequality of emanations from different parts of the sun's surface. Unless they are material emanations from the sun, there is a dense mass of meteoric bodies or of cosmic matter revolving around the sun." I agree with Professor Norton that the corona consists of luminous matter streaming off from the sun into space, but contend it is gorgeous electric matter like our aurora borealis and northern lights; and that it is not a mass of

meteoric bodies or heavy metallic gases. Electric attraction or gravitation would instantly draw these to the sun's surface, as the earth draws meteoric showers to its surface.

He further says: "The bright granulations of the sun's disc are regarded as masses rendered intensely luminous by processes of chemical or physical transformation or by electric discharges. The photosphere passes through a vaporous medium called the chromosphere. By careful study of the lines of the chromosphere, spectroscopists have succeeded in detecting in it a number of known terrestrial substances, including hydrogen, sodium, magnesia, calcium, and iron." When this learned astronomer speaks of "chemical transformations and electric discharges" he approaches the truth, but when he blends them with physical masses, he loses the true conception of the corona, and takes electricity with its brilliant colors and luminosity for denser matter.

As to the diffusiveness of metallic and other coloring matter in the sun's photosphere, I quote Faraday, who estimates that "the particles of gold in a ruby-colored liquid did not exceed the five hundred thousandth part of the volume of the liquid." Professor Dolbear says, "One-eighth of a grain of indigo dissolved in sulphuric acid will give a distinctly blue color to two and a half gallons of water, and a grain of musk will keep a room scented for many years. The acute sense of smell of a dog can detect the track of his master by the infinitesimal molecules of his body, which have escaped into the atmosphere long after they are made. The fine film of a soap bubble shows concentric rings of colors as they are seen in the seven colors of the rainbow, begin-

ning with red and ending with violet, until there are ten or more such sets of rainbow tints."

This diffusion of metallic and other coloring matter accounts for the rosy sunset, the crimson sunrise, the ruddy cheeks of health, and the gorgeous-colored rainbows, as well as the sun's marvellous photosphere. The earth's aurora and the sun's corona are created by the same infinitesimal diffusion of color brought forth by the marvellous electric display of nature's wonderful ethereal fireworks. The sun's photosphere is the sun's surplus of electricity displaying the gorgeous glories of its matchless pyrotechnics.

I hold the sun's photosphere is an immense and brilliant reservoir of electric energy. And we not only get all light and heat from its electric sun currents, but all the fuel of the earth, including its coal strata and oil strata, are the embalmed sun currents of former ages.

Each square inch of the sun's corona has been estimated by our scientists to integrate the lustre of twenty-five electric arcs. And Langley says he "proved it to be 5,300 times brighter and 87 times hotter, area for area, than the red-hot pour of iron from a Bessemer converter." Langley, no doubt, believes he proved all this, but he is simply mistaken. He should know that any substance 87 times hotter than molten iron, in the hottest terrestrial furnace, would dissolve into invisible molecules or ether, and the sun would lose its magnetism and attracting power over the earth and planets, and would disappear in space.

Wilson and Gray, in their 1894 estimate, fix the sun's heat at 8,800° C. which is about 16,000° F. "This," says Prof. A. Fowler, in his recent "Astron-

omy," 1898, "in contrast with the fires raging within, may be deemed moderately cool. Its function as a great thermal engine is to produce and diffuse heat. But it is an open question whether the sun is growing hotter or colder. Carbon has been selected as the material of the solar granules, but carbon evaporates at about $4,000^{\circ}$ C." These statements are appalling contradictions, and any thinking mind must admit it. The sun is sixteen thousand to eighteen thousand degrees hot, and carbon, which will stand more heat than any other terrestrial substance, and is used in our electric arc lights, melts at four thousand degrees. Then it is plain if carbon will not stand this supposed excessive heat of the sun without dissolving into ether, no other substance will. Universal chemistry teaches us that all substances and laws are the same in all suns and worlds. Then the whole theory of the sun's excessive heat is a great falsehood.

I hold that the sun is not a thermal or heating engine, but an electric generator. Scientists admit that the excessive heat they claim for the sun would vaporize it but for the pressure of its mass. They hold that the sun must have eighteen thousand degrees of heat in order to radiate heat to the earth ninety-three million miles away, and furnish it in such constant and enormous supplies as it does. This I do not question, and will add that if the sun sent heat to the earth at all, it would have to be eighteen million degrees hot, and then the sun would last only about thirty minutes. We would be without a sun in less time than the scientists could estimate the heat supply.

In their extremity to account for the excessive heat of the sun without vaporizing it, they say the

pressure of its mass toward the centre and the atmospheric pressure surrounding it prevent it from melting, evaporating, and disappearing in space. But I claim this pressure is not sufficient, nor the thousandth part sufficient; and they have only multiplied the difficulty. With such heat as they claim there would be no pressure; all pressure would give way and cease; there would be no atmosphere, and no mass to create pressure; every molecule of the sun's mass and atmosphere would instantly crawl over each other in *hot* haste and disappear in limitless ether. The pressure or gravity of no mass, however great, could prevent any matter known in universal chemistry from vaporizing at $18,000^{\circ}$ F.

Lord Kelvin estimates that the temperature of $5,400^{\circ}$ F. is located not more than fifty miles below the earth's surface. This approaches the temperature of the electric arc, at which there is almost universal evaporation of all material substances. I regret to differ with such eminent authority, but I think he is excessive in his estimates. Basalt rock is completely fluid at $2,200^{\circ}$ F. The pressure fifty miles beneath the earth's surface is very great, and tends to resist the expansive tendency of heat, but not to the extent estimated; and I contend no pressure on earth or sun could overcome $18,000^{\circ}$ F. And if it could not, the advocates of excessive heat in the sun have lost their cause; for if heat comes from the sun, they have fixed the degrees vastly too small rather than too great. It is estimated that heat increases below the earth's surface one degree for every fifty feet, and that below the earth two miles, water can remain liquid only by pressure. These estimates are all excessive and unreasonable,

and would make the earth a molten mass through seven thousand miles of its diameter, and only about one hundred to five hundred miles of crust around its circumference. The results of various lines of inquiry disprove this, and show the earth is effectively as rigid as steel.

The ocean itself disproves this excessive heat, and the assumption that water cannot remain liquid two miles below the earth's surface. The ocean itself is from five to seven miles deep in places, and has an average depth, according to Professor Dana, of thirteen thousand feet, which is close to two miles and a half. And while water is only about one-third as heavy as earth, at the ocean's lowest depth there is no indication of water losing its liquid qualities or even becoming hot. The heat in the earth, I contend, is chiefly local, near the surface, and results from electrical conditions more than from pressure.

We know that a galvanic battery can be made by taking a few pieces of iron, copper, and silver, and laying one on top of the other, with a piece of blotting paper moistened in salt water between each of them. This being true, why may not layers of two or three different kinds of metals in the mines of the earth, with moist clay or substance between them, create a galvanic battery that would engender electric heat and power that would make a break or "fault" in the earth's crust, and open a vent or duct we call a volcano or a geyser, and even create a local earthquake? Surely if a handful of pieces of different metals with a little moist substance between them will create a battery, the earth ought to have them scattered all over its surface.

The whole theory of the earth's contraction, and

with it its interior heat, is called in question by Professor Dana, the eminent geologist. He holds that "the continents were made from the beginning." That "the average elevation of land above water level is one thousand feet; and the average depth of the ocean is thirteen thousand feet." And he says that "no contraction of the earth could have produced such extraordinary results." He makes a square issue with the astronomers on the theory of the shrinkage of the earth originally, or at any time since it attained solidity; and affirms that twelve thousand feet difference in the hollowing out of the beds of the sea and the average elevation of the land cannot be explained by any shrinkage of the earth, and precludes any such a supposition. I am pleased to agree with him because I feel sure he is right, and I hold that neither the sun nor the earth has ever done any great amount of shrinking since they obtained any considerable degree of solidity, and that the scientists are wrong; that no great amount of heat on either has been generated thereby, and that the entire theory is untrue and is an excessive exaggeration. Besides, the heat of the sun comes from its outer rim of atmosphere, where there is little pressure. Our earth loses one-half of its atmospheric pressure every three and one-half miles; and pressure only a thousand miles out from the sun's surface is insignificant in comparison with the heat they ascribe to it, which makes their position entirely untenable.

The aurora borealis seems to belong to all the planets, and our astronomers have observed them on all near their poles, except Mercury. They have supposed they were snow-covered mountain peaks projecting through the atmosphere; or, as in the case

of Jupiter, that they were dark, red, swollen clouds encircling his vast circumference. Which means Jupiter has a photosphere almost covering his entire surface, like the sun's photosphere, but nothing like as brilliant.

The testimony of all the astronomers is that the planets have auroral displays like the earth. Professor Fowler says: "Brilliant projections at the poles of Mars are distinctly seen. They resemble lunar peaks and craters, their height being about ten thousand feet." He also says there are: "White and colored spots on Venus, and lurid spots on Saturn; and red, white, and black bands are seen on the seeming surface of Jupiter, some of which come in crowds like flocks of sheep; he also has red spots near his polar sides."

These red, white, and black bands, which vary in thickness like an advancing flock of sheep, are not far from the equator, and show that Jupiter, because of his great size and more abundance of electricity, has an aurora borealis extending down almost if not quite to the equator. Uranus also has heavy dark bands in colors of red, white, green, and blue.

M. Trouvelot says: "There are on Venus a group of brilliant points which are mountainous formations, penetrating the reflective stratum, and shining lustrous with snow in the clear upper air." These brilliant points, I contend, are not mountain peaks, for such peaks are not brilliant, and snow does not reflect light at a great distance like brilliant electrical colors.

Thus we have the testimony of astronomers that luminous bands, peaks, spots, and colors are seen on Jupiter, Saturn, Uranus, Neptune, Mars, and Venus, leaving only the little planet Mercury with-

out them, Mercury being too near the sun for any such phenomena to be observed. This shows that the aurora borealis is common to all the planets, and in one so large as Jupiter the auroral bands spread from the poles almost down to his equator, making almost a complete photosphere like the sun. And from this aurora our astronomers have said that Jupiter was swollen with black and red clouds. Franklin said the aurora borealis was "due to electric discharges in the upper regions of the air." And I contend that this excellent definition applies to the sun's photosphere, and it is electrical discharges in the upper regions of the sun's atmosphere.

So vast is sidereal space that Herschel estimated that a review of the entire heavens by his forty-foot telescope would take eight hundred years. The spectroscope and photographic camera have aided in widening astronomical observations and endowing man with powers that seemed inaccessible to human faculties, and opened up prospects unlimited and bewildering.

There is an international survey of the heavens now in progress at seventeen observatories scattered over the face of the earth. These observatories are adding all new stars to the fifty millions of suns and planets already observed and classified.

Clerke's "Recent Astronomy," 1898, says: "It has been learned from all observations and sources that the sun and stars are composed of the identical species of matter scattered in the dust of the earth, dug up from its bowels, condensed to make its oceans, and entering into the very framework of our bodies. Universal chemistry is now established. It is based upon the relation of light to material molecules, and of molecules to the ether of space."

Thus these learned astronomers teach the immensity of space and the universal nature of the identical molecules of earth with those of all things constituting the universe, including all suns and worlds and the ether of space.

These invisible molecules, invisible electricity, and invisible laws, being the same everywhere, would make our bodies and our spirits at home in any part of the universe, and enable us here and now to determine the material condition of all worlds. There is no place in all the immensity of boundless creation where we could go and not find the same universal laws, force, and matter that are to be found here within our bodies, and manifested in all things around us. So we may naturally and easily in our minds traverse all space, be familiar with all laws, and hereafter take on and weave around us new bodies of more perfect structure, more enduring beauty, and ethereal and immortal texture. So that our next life will be an imperishable, refined, ennobled, and endless existence. This accords with science and religion.

Professor Young, in his book on the sun, says: "The sun is 866,400 miles in diameter, and the effective temperature of the solar surface is about 10,000° C., or 18,000° F.

"The inner nucleus of the sun is not accessible to observation, its nature and constitution being a mere matter of inference. The white ring surrounding it is the photosphere, or shell of incandescent cloud, which forms the visible surface. The scarlet chromosphere with prominences of various forms and dimensions rises high above the solar surface, and over and embracing all is the corona, the mysterious radiance of clouds, rifts, and streamers. It

seems to be made up, not of overlaying strata of different material, but rather of flames, beams, and streamers, as transient and unstable as those of our own aurora borealis." This confirms my theory that the sun's corona is the same electrical phenomenon as the earth's aurora, only greater and more gorgeous in intensity and degree.

"These prominences are of a delicate, filmy beauty, consisting usually of brilliant spikes or jets, which change their form and brightness rapidly, and attain altitudes of more than thirty thousand miles, and occasionally far higher. Sometimes they look like flames; sometimes like sheaves of grain; sometimes like whirling water spouts, capped with a great cloud; occasionally like jets of liquid fire rising and falling in graceful parabolas; frequently they carry on their edges spirals like the volutes of an Ionic column. There is no end to the number of curious and interesting appearances—the velocity of the motions often exceed a hundred miles a second."

Professor Young continues, "The corona as yet has received no explanation which commands universal consent. Some maintain the corona is a phenomenon of the earth's atmosphere; some that a sufficient explanation is to be found in drifting clouds." Again: "We find close around the luminous photosphere a rose-colored stratum called the chromosphere; . . . where here and there great masses of luminous matter rise high above the general level like clouds of flames, and are then known as prominences or protuberances; and the mysterious corona, an irregular halo of faint, pearly light, streams outward from the sun to an enormous distance, often more than a million miles."

Dr. Peters, of Hamilton College, gives a graphic

account of sun spots observed by him at Naples. He says: "Two notches from opposite sides of the sun spots step forward into the arena, over-roofing even a part of the nucleus, and suddenly, from their prominent points, flashes go out meeting each other on their way, hanging together for a moment, then breaking off and receding to their point of starting. Soon this electric play begins anew and continues for a few minutes, ending finally with the connection of the two notches, thus establishing a bridge and dividing the spot into two parts."

Can any one read these descriptions without recognizing them as electric phenomena, and the sun's corona as a duplicate on a much larger scale of the earth's aurora?

Young says: "When we come to collate aurora observations with those of sun spots, as Loomis has done, we find an almost perfect parallelism between the curves of auroral and sun-spot frequency. The sun spots and the records of our aurora borealis, 'magnetic storms,' and the wild excitement of the compass needle seem to have a connection."

The storms are generally accompanied by an aurora, and an aurora is always accompanied by magnetic disturbances.

"It is very probable that every intense disturbance of the solar surface is propagated to our terrestrial magnetism with the speed of light. The influence of sun spots cannot be in the way of temperature, for we do not get from the sun more than the average amount of heat. Probably magnetic connection is more immediate and correct, and kindred to the action that drives off a comet's tail." He says further: "On September 1st, 1859, an intense

disturbance on the solar surface was followed by a magnetic storm of unusual intensity, the auroral display being most magnificent on both sides of the Atlantic, and even in Australia." This shows clearly that the sun's corona and all its visible phenomena are all simply electrical displays of marvellous beauty and grandeur.

Mr. Evelyn B. Baldwin, who was with Peary's polar expedition in 1893, and Wellman's in 1898, seems to take the same view of the aurora borealis as I do. He had two winters of excellent observation of the auroral displays, and before leaving New York for his third polar explorations, in April, 1901, in his interview in the *New York Journal*, he stated that the discovery of the north pole can be made of practical value. He said:

"From close observation of the aurora borealis, I believe it is a great force which can be placed in control of human ingenuity. This force is electrical, and the polar regions hold great reservoirs of it, which could be utilized in the propulsion of machinery and the working of dynamos.

"Other scientists believe my arguments are right, and should they prove the correctness of my theories, its value to science will be as wonderful as that given by Benjamin Franklin." He exhibited a cut of an ingenious electrical machine, which he claims can draw the electricity from the aurora and utilize it in many ways.

This is not an unreasonable calculation of Mr. Baldwin's; for if our dynamos can draw electricity from the normal electrical air which we breathe in this latitude, it ought not to be difficult by the same or a similar process to draw and utilize it where it is so copious and abundant as to create

auroral displays of great brilliancy and power. The surplus electricity of the earth is thrown off to our poles and settles in the upper regions of the atmosphere, and makes the same kind of display of brilliancy as does the sun's corona, but not so vast and magnificent.

There are, I conceive, three reasons why the earth throws off its surplus electricity toward the poles. First, because the rays of the sun fall more slantingly on the earth near the poles, and it is more difficult for them to penetrate the atmosphere and reach the earth's surface, so that they glance off into the upper atmosphere more readily there than elsewhere. Second, because the diurnal motion of the earth on its axis is much greater at the equator than at the poles, which tends to diffuse the sun's electric rays or currents and throw them off to the poles where there is no motion. Third, because cold is the native home of electricity, and it has an affinity for the frigid poles, which warmer parts of the earth do not possess; and the further fact because of the flattening of the earth at the poles there is a natural reservoir for its reception, and from thence much of it returns to the sun.

These conditions do not apply to the sun. The sun is not flat at the poles, but is a perfect circle. The revolution of the sun on its axis is not so rapid in proportion to size as the earth. Its circumference is two billion seven hundred million, and it turns over at its equator four thousand three hundred miles an hour. The earth is only twenty-five thousand miles in circumference, and turns over at the rate of one thousand miles an hour. The sun, while one million three hundred thousand times larger than the earth, turns over only about four times as

fast as the earth, and being the central electric generator, and receiving its electrical supply from all sides of its electric field, the whole solar system, it has a vast surplus of electricity to form its auroral photosphere, and from thence supply the electric needs of all the planets. There is greater electrical potentiality in the upper atmosphere of the sun as there is on the earth, and hence its electric corona. The atmosphere of the earth increases in electrical power the higher we go into its altitudes. A voltage as high as four thousand has been obtained upon the Washington monument; and as high as ten thousand voltage on the Eiffel Tower. The mountain-tops are noted for their electrical potentiality, and there the lightnings play almost constantly during storms.

There was a distinction in ancient philosophy between the "corruptible" things under our feet, and the "incorruptible" things over our heads. We are told that the most learned people of two or three hundred years ago were greatly astonished when King Sol, the god of day, was accused by the telescope of being constantly covered with dark spots. In their restricted knowledge they could not conceive that the brilliant and all-dazzling orb of day could be aught but pure white, immaculate, unspotted, and unchanging light. Yet these spots exist, and enable us to learn the physical constitution and penetrate the character and nature of the sun.

The school of Aristotle, we are told, were not willing to believe this. The Jesuits replied to Scheiner that Aristotle had proved that all stars were incorruptible, and the sun was the purest light possible. Consequently, the spots were in the glasses

of the telescope, or his eyes, and not in the sun. When Galileo made the same observation, the Peripatetics exerted themselves to prove to him, book in hand, that the purity of the sun was invincible and immaculate.

Scheiner held the sun spots were small planets in the neighborhood of the sun, but this was disproved by Galileo, who showed they were on the sun's surface. The result of the observation of the solar spots was to discover that the sun turns on its axis from east to west in about twenty-five of our days. But the sun's day does not go out, and the twilight of evening does not grow pale and darken. The changing series of phenomena which we experience do not fall to his lot. He is free from counting successive ages, which measure life and overwhelm it in the planetary worlds.

Halley associated auroras with terrestrial magnetism, and divined nebula to be composed of a lucid medium shining with its own proper lustre, and filling space immensely great.

Simon Newcombe says: "Wilson and Herschel developed a theory that the interior of the sun is a cool, dark body surrounded by two layers of clouds. The outer intensely brilliant, forming the visible photosphere, while the inner layer is dark and forms the umbra around the spots; the spots being simply openings through these clouds which occur from time to time, and through which we see the dark body in the interior."

Anxious that this body should serve some special purpose in the economy of creation, they peopled it with intelligent beings, who were protected from the fierce radiation of the photosphere by the layer of cool clouds, but were denied any view of the

universe without, except such glimpses as they might obtain through the occasional openings in the photosphere which we see as spots. He says: "This theory accounted well for appearances, but that the photosphere could not be wholly solid, liquid, or gaseous seemed evident from the nature of the spots. And the only hypothesis left open to Herschel was that the photosphere consisted of clouds floating in an atmosphere. . . . The discovery of the conservation of force and the mutual convertibility of heat and force was fatal to this theory. Such a sun as that of Herschel would have cooled off entirely in a few days."

The elder Herschel contended vigorously that the central globe of the sun is a habitable world, sheltered from the blazing photosphere by a layer of cool luminous clouds. This he soon after denied, holding that the approximate heat of the photosphere rendered it impossible, together with the law of the conservation of energy. He and others believed that "the evolution of the solar heat is essentially a surface action produced by some unexplained process, and only found on the surface. The exterior of the solar orb encounters open space and does not of necessity imply any great heat in the inner depths." This is a sane conclusion, and I agree with Herschel. But I go further and affirm there is nothing in the interior or exterior of the sun that indicates excessive heat. The astronomers, having no conception of electric phenomena, jumped at this conclusion.

Lockyer is disposed to hold that certain of the lines identified as belonging to the spectrum of any given substance, say iron, are due to absorption in upper and cooler regions of the solar atmosphere,

while others are produced lower down. Young adds: "Does each region of the solar atmosphere have its own spectrum peculiar and distinct from other regions above and below, or does the spectrum of the lowest stratum contain everything, while the spectra of the higher regions differ from it merely by defect?" He adds: "Eclipse observations may possibly decide."

This is a difficult question, and shows how easily the astronomers may be mistaken in relying on the spectroscope in affirming there are heavy metallic gases in a state of combustion or white heat in the corona of the sun, when they are electrical displays of her departing sunbeams.

Comets, themselves "mere airy nothings," have several times passed through the corona of the sun without experiencing any sensible disturbance of path or structure. This shows "the attenuated matter" near the sun will bear all the needed stretching without involving any obscurity, just as twenty-eight currents of electricity will pass over a telegraph wire without disturbing each other.

The electric discharges in Crooke's tubes makes it clear a "cloud" with only a single molecule to the cubic foot would answer every luminous condition of the sun's phenomena,—including "all the rifts, streamers, peculiar structure, and curved detail of form." In fact, all of these may be seen in miniature form in an inflated bubble, in a rain or dewdrop, in a roman candle, or in Chinese fireworks. Yet these gorgeous electrical colors and ethereal displays of auroral beauty in the sun's corona have been distorted into "flaming fires, burning gases, and fiery mists."

While it is admitted on all sides that the sun is

the ultimate source of light, Professor Spring, of Liège, Belgium, says recently that "the illumination of the sky proves incontestably that our atmosphere is not optically empty. But what is the nature of the substance that fills it, is an embarrassing question. We cannot admit that solid particles float in the highest regions of the air. The presence of water furnishes a no less objectionable reason, for one of two things must be true: either the water is in a state of vapor or in a state of mist. Then why should the sky be bright above the clouds?"

He concludes that the light of the sun may be reflected by the molecules of the rarefied gases of the upper layers of the atmosphere, and thus cause daylight. I contend the surplus of the earth's electricity goes to the upper layers of the atmosphere which are highly rarefied, and this may produce the light.

This is most likely the cause, for we know that the thinnest, most transparent nebula of space will reflect light; also that the tail of a comet will reflect light when minute objects can be seen through it. Then the true reason, I conceive, of this light in the upper strata of our atmosphere is because the most attenuated atmosphere is composed of electricity, or electric atoms, which are convertible into light; and the outer rim of our atmosphere is nature's reservoir for its surplus electricity, as is shown by our northern lights and aurora; and also by the fact that meteors can be set ablaze up to one hundred and twenty miles above the earth's surface.

If this electricity becomes luminous and causes electric displays in larger quantities at our poles,

why should it not be luminous to some extent in small quantities in our upper atmosphere? Electric potentiality increases in our upper atmosphere. The top of the Washington Monument showed four thousand volts, and the Eiffel Tower a voltage of as high as ten thousand. This, I think, answers this question that has been puzzling our scientists.

A sun spot in 1858 opened to the extent of one hundred and forty-four thousand miles, so that sixteen earths side by side might have been engulfed in it. And in February, 1892, one broke out one hundred and fifty thousand miles by seventy-five thousand miles, and a magnetic storm and auroral display attested the sympathy of the earth with the commotion of the sun. Faculæ are not infrequently associated with these spots, and often throw a bridge across it. These brilliant projections show veritable suspension bridges that float palpably at a high altitude above the gulf they span. The beautiful suspension bridges of gorgeous colors give rainbow-like spectra, and emit light which rolls out into unbroken bands of luminous brilliancy.

Who can read these glowing descriptions of the external envelope of the sun, and its gorgeous electric displays of light and beauty, without realizing the wondrous glory of the god of day and the delights of its glorious inhabitants? Through vast openings in this luminous envelope they can look out upon the wonders of creation, as they float far out on some beautiful suspension bridge of electric light, or sit on some mammoth arch of flaming beauty, and bathe in the electric vitalizing clouds and rainbows, and see through the prismatic beauties of the skies the thousands of waving streamers of auroral splendor that flare a million of miles into space as they

speed on their life-giving errands of mercy to the dim little planets whirling and spinning along in their circling orbits.

The earth's aurora with its sudden, brilliant, and mysterious appearance excited the awe and wonder of the people of all past ages. It was known to the Greeks and Romans, and often seen as far south as the Mediterranean.

Aristotle mentions them in his "Meteorology" as "gulfs of black and blue colors of the sky like brands or torches from the abyss." Cicero mentions them twice as "nocturnal torches flaming in the night." Pliny, the naturalist, says of them: "The sky appears a gulf of blood-colored flames, and nothing is more terrible for trembling mortals. In the third consulate of Marius, the dwellers in Ameria saw in the heavens two armies rushing one against the other from the east and west. That of the west was defeated and the heavens caught fire. This is no extraordinary thing, and it has often been seen."

The popular superstition that the auroras were great armies combating in the sky prevailed down to recent times. Seneca described the aurora minutely, and descriptions of "the heavens afire" are reported by many historians. An aurora caused the Roman cohorts in the time of Tiberius to be hurried to the succor of the colony of Ostia, believing it to be on fire; and the same thing occurred in Copenhagen in 1709, when the army turned out supposing the city was on fire. For many centuries the aurora was a source of terror, people believing they saw armies in conflict, bloody spears, and headless trunks, and many people fainted and went mad.

Auroras are seen simultaneously at each pole, and

average about twenty-eight annually. Argot says: "Venus has been several times illuminated when the earth has had her auroras, notably in 1726, in 1759, in 1865, and in 1871. And we have a right to regard the lights on Venus as true polar auroras."

Young, in his astronomy, says that "the sun spots are unquestionably cavities in the photosphere. Their diameter varies all the way from five hundred to fifty thousand miles. The sun's visible surface, called the photosphere, appears as a disc considerably mottled like 'grains or nodules,' according to Herschel, or 'snow flakes on gray cloth,' according to Langley. These grains or nodules are four hundred to six hundred miles across, and have certain bright streaks called *faculæ*, which are probably luminous clouds floating in a less luminous atmosphere.

"The chromosphere is like a sheet of flame overlaying the photosphere to a depth of five thousand to ten thousand miles, and is described as like a prairie on fire. At solar eclipses protuberances are observed blazing like rubies on the sun's disc. They are quiescent or diffused, and are like immense bright clouds, often fifty thousand to sixty thousand miles high, in the form of arches, spikes, flames, or jets. They are most fascinating effects to watch on account of their rapid changes."

Is it not plain from the description that these are not clouds or heavy metallic gases, but electrical displays?

Young says: "The corona is a halo or glory of light which is the most beautiful of all natural phenomena. It is dazzling bright, with pearly tinge and scarlet prominences, and is most brilliant near the sun." He continues, "Other forces than gravity

are prevalent in the corona, which are not yet explained. They remind us far more of auroral streamers and comets' tails than anything in the lower regions of our atmosphere." Here he touches the truth when he says they are like our auroral streamers. And here is direct proof of their electric or auroral nature when he says: "Comets have been known to pass through the corona, as in 1882, without the slightest disturbance or retardation of their motion."

"The sun's coronal surface is one hundred and ninety thousand times as bright as a candle flame; one hundred and fifty times as bright as the lime of a calcium light; and four times as bright as the brightest part of an electric light, which comes nearest to sunlight." This vast light energy, covering the vast circumference of the sun, is clear proof that the sun is a great dynamo or electric generator; no mechanical force, or fall of meteorites, or shrinking of its circumference could produce such brilliant and prolific light or heat power, or with the needed regularity.

My theory of the sun's outer envelope or photosphere is that it is a bright electric circle or belt many miles in thickness and of varying density, on the outer rim of the sun's atmosphere, and perhaps ten thousand to twenty thousand miles above its surface; that it is composed of the surplus electricity thrown off from the sun after it had used what it needed for its own heat and vitalizing life; or that it is the reservoir of electricity drawn there by the sun's attracting power as a great central magnet, and which the sun draws from, as well as the planets, and which is always stored with an abundant supply for all. That it is beautifully rich and

luminous with all the varied hues of a million rainbows, with mighty arches of flaming light, and sapphire domes, and streaming banners of varying colors of orange and gold and purple, waving and flaring out into space thousands and millions of miles, as the electric currents speed on their life-giving mission to the earth and the planets.

Those far-flaming and ever-changing protuberances that the astronomers marvel at are the swift departing rays of sunlight embracing each other and travelling thousands of miles together as they go on their swift journey of mercy to man and all living things in the solar worlds. They are the emanations of life from the Father of life and spirits. They are the floods of electric atomic energy, that mould our bodies, and build up and preserve all organic forms of life. They come from the great electro-magnetic sea of invisible ether that fills all space, and permeates all suns and worlds and all created things. And they are the electric clothing of life, and light, and warmth to the physical world.

CHAPTER VII

THE PLANETS ARE THE HATCHERIES OF HUMAN
SOULS, THE SUNS THEIR PLACE OF
MATURITY AND PERFECTION.

IF we could tell the story of a flower or a blade of grass we could understand the mystery of atoms of electricity, of life, and follow the existence and movements of that mysterious power which we can neither see, nor touch, nor define, nor measure, nor understand; which lives speechless, noiseless, unseen, yet energetic in every green leaf of opening spring; in every floating cloud in the blue dome, in every throb of life in our sensate souls. There is unity in all nature, and all things come from the same invisible source, the same invisible law, invisible force, and invisible atom. All are alike in nature, similar in form, but various in their offices and activities.

Through the eye of science the shadows that surround the earth fade into the luminous beauties of countless spheres, and we contemplate the wonderful works of the Creator in the serene immensity of a boundless sky. Millions of suns and worlds pass in panoramic review, and creation is ablaze with countless constellations. The poetic sweep of fancy is then surpassed by the magnificence of the reality, whose resplendent beauty hushes our souls to reverent silence. Then we realize that truth and reality are more inspiring and magnificent than all the rainbow sweeps of fancy or the gorgeous flights

of imagination. Truth is superior to fiction; and fancy and imagination, which with reason are the highest gifts of Deity, were meant to lift us up to the altitude of gods and enable us to comprehend the wonders and immensity of the universe.

The heavens and the earth are not two separate creations. The earth is in the heavens, as Flammarion states it. The heavens are infinite space, indefinite expanse, a void without limit. No frontier circumscribes them; they have neither beginning nor end, neither top nor bottom, right nor left. There is an infinity of spaces which succeed each other in every direction. Our earth is a little globe shot like a swift bullet through space, without any support to sustain it in its aerial flight or to guide its destiny, but the invisible power of Deity and His right hand of power, electricity. And its flight is fifty times faster than a leaden ball from a rifle, and seventy-five times faster than a cannon ball. The earth moves forward at every swing of the pendulum 18.91 miles, while a cannon ball moves only two thousand feet in the same time, and the swiftest bullet less than half a mile. And while the earth shoots through space like a swift bullet, the sun shoots through space like a vast cannon ball drawing the earth and planets after it.

The infinite everywhere surrounds us, and we might float for eternity amid countless worlds and glittering suns and constellations without finding a boundary or a limit to creation. This universe with its eighteen millions of suns and over thirty millions of planets, may be but one of millions of universes with millions of suns and planets. All our ideas of space are purely relative. We are situated in the bosom of the infinite. We can neither ascend nor

descend,—there is no above and below. Creation is an expanse without limit, shoreless and boundless, in the bosom of which float suns like that which illumines our path, and planets like that which revolves beneath our feet. We are awed, fascinated, exalted, and at last bow in wonder before the eternal immensity and the measureless eternity, forever growing, expanding, and eternally renewed. We and our earth are a part of this vast and measureless universe, every atom of which is like every other atom, and every sun and world similar in form and substance.

Sir Robert Ball says it is impossible to conceive of any organized being that could live in the intense heat of the sun. Therefore, he says, the sun is uninhabited. Then he says the moon, the next celestial world in importance to the sun, lacking atmosphere and moisture, is surely uninhabited. He says the days and nights there would last for a fortnight, and during the two weeks of day we would be terribly scorched, and during the two weeks of night we would be frozen to death. Then the absence of air and water would prevent respiration, and even if we could bring a supply of oxygen to avoid suffocation, we could hear nothing, for sounds exist not except in air. We could light no fire, feel no wind, and see no clouds. The extraordinary lightness of everything would surprise us. Every object would be reduced in weight to one-sixth. Our bodies would partake of the general buoyancy. Walking and running would be easy, and we could jump a wall of eighteen feet high as easy as one three feet high here. Even taking a header over the bicycle handles would lose its terrors, for the lunar bicyclist would fall gently and softly to his mother

earth. Therefore, he concludes, there can be no life on the moon. This may be true unless the moon is in her glacial period with an imperceptible atmosphere and a low order of human beings, and this is not an unreasonable hypothesis. Its seeming volcanoes may be ice mountains, and its deep gorges sunken valleys, and its sunken surface a mass of snow and ice. Volcanic action requires water.

Could we live on Neptune, which is thirty times farther from the sun than our earth? He concludes not, as it takes one hundred and sixty-five years to complete its orbit, and a man born in mid-winter in Neptune would have reached extreme old age if he survived until the next ensuing mid-summer.

He says there is one body, Mars, which has size, times, and seasons most closely in accord with our earth, and that life of some kind may be found there. The temperature may be endurable, and water appears to be not wanting, but thinks the atmosphere would not suit human beings. Then as to comets, he says they traverse regions where the cold would be absolutely incompatible with human life, and they are not inhabitable.

He says the first qualification for a globe as a possible abode for organic life is the presence of an atmosphere. The atmosphere is of such fundamental importance that it is difficult to imagine what types of life could exist on an airless globe, as the atmosphere mitigates the fierceness of heat during the day and screens from cold and restricts radiation into space at night.

Ball says: "It is well known that the sun is enveloped by an atmosphere remarkable for the prodigious extent that it occupies; while the moon has

the scantiest covering of this nature, if not entirely devoid of it."

He also affirms that no globe smaller than Mars or as small as the moon can long retain its atmosphere. That what we call a gas or element of the atmosphere is a mighty host of molecules far too small to be perceptible by the most powerful microscope, each of which is animated by a rapid movement, which encounters some other molecule, and thus direction and velocity of the molecules are continually changing. For each gas the molecules have a certain average speed, and when two gases are blended as in our atmosphere, then each molecule of the gases continues to move with its own peculiar speed.

The average velocity of the molecules is, oxygen, a quarter of a mile per second; hydrogen, one mile per second; that of hydrogen being four times that of oxygen.

The most powerful artillery can launch a projectile with a speed of only about half a mile per second. If, therefore, a cannon was pointed vertically, and the projectile was discharged with a speed of seven miles per second, as that of Jules Verne's famous projectile, it would soar aloft and never return to the earth. This illustrates the fact that for each globe or planet there is a certain speed with which, if a body leaves the globe, it will never return.

It is a singular fact, he says, that hydrogen in a free state is absent from our atmosphere. Why? Because the continual existence of hydrogen in our atmosphere would seem to be impossible, as every now and then a molecule of hydrogen succeeds in bolting away from the earth, when it reaches the uppermost strata of air, and in the course of ages

all particles would effect their departure. Thus the fact that there is at present no free hydrogen in the air over our heads may be accounted for, and explains the absence of an atmosphere in the moon. None of the gases of the air could possibly exist on a globe of the mass and dimensions of the moon.

There must be for each globe a certain critical velocity represented by the speed a missile projected from it will succeed in escaping altogether. While on the earth this is seven miles per second, on Mars, which is smaller, it is only three miles per second; and Mars must lose its hydrogen molecules more rapidly, and is the smallest world in mass and dimensions on which the continued existence of water could be possible.

But see how these great scientists, barring their belief in the great heat of the sun, make it the most natural, perfect, and perennial abode of man. They mutually agree that "in the case of a globe so mighty as the sun, the attraction which it exerts on its atmosphere is so intense that the molecules of hydrogen never attain speed enough to enable them to escape. Their velocity," Ball says, "would have to be much greater than it ever can be, if they could dart away from the sun as they have done from the earth. It is not surprising to find hydrogen in the solar atmosphere, or that of other massive suns like Sirius or Vega. The attraction of these vast globes is sufficiently potent to retain even an atmosphere solely composed of this subtle element."

Scientists all agree that the earth and the planets are but temporary abodes of life, that they will all in time lose their atmosphere and become dead worlds like the moon. If so, there will be no abid-

ing place for man except in the sun or suns. But they also agree that our sun, and all the vast suns of our universe, will forever retain their vitalizing atmosphere and are suited for the perennial abode of intelligent organic life, *if they are not too hot* or in a state of combustion. This state of combustion I have undertaken to disprove.

Thus, all the greatest modern astronomers give no hope of human or organic life on any of the planets except our earth and perhaps Mars, and then for only a brief period.

Now, I contend that the sun is inhabited because:

First—there are no waste places in the universe, and nature is ever economic of space and power. Nature does not make lean cattle to eat fat ones, as in the parable of a dream foreshadowing famine in a little desert spot fertilized by the Nile. And nature or nature's God never made a sun like ours so large that you could drop the earth into its centre, and our moon—which is two hundred and forty thousand miles from us—would be only half way to its outer circumference, only to light and heat our little planet. God never made His great and brilliant worlds merely to be burned up for the benefit of a few little insignificant worlds, if our astronomers do say so.

Second—because the same creative forces are at work in the sun as on the earth, and only a miracle can keep it from being inhabited. The result here is organic life with continuous growth and development, and the same must occur there.

Third—because as all things on earth have come from the sun, all things there must have very much the same elements, controlled by the same laws, but in larger abundance and perfection.

Fourth—as the creator is always greater than the created, and the sun is our creator and the life-giving source of all earthly life and power, it must be the great reservoir of all the activities of the solar system, and must have space and power for all its organic life.

Fifth—because as all physical and electric elements come from the sun, so also must all spiritual power, for they are inseparable, and must have the same central source and headquarters. The directing force and intelligent purpose must have the same starting-point and centre as all the forces, if there would be harmony and unity, otherwise there are conflict and disaster, and all the machinery is deranged.

Sixth—the fact that our sun is the centre of the solar system and the great electric life-giving centre is strong proof that he is the spiritual centre of his family of worlds, and all things indicate that he has conditions a thousand times more favorable to all life and growth than all the planets combined, and by the law of evolution and proportion should have billions of the highest forms of creative life.

Nature's laws are uniform, and divine wisdom is the perfection of simplicity. The laws that govern an atom of matter are the same that govern all matter, all suns, and all worlds.

An atom, a primordial cell, a protoplasm are tiny magnets or electric batteries; man and animals, suns and worlds, are only magnets and electric batteries of larger size and of varied forms.

In molecules and cells the electric centre is the centre of vitality and growth. It is so in animals, and is also the central point of vital activity and animal intelligence or instinct. The same is true of man: the electrical life-giving centre of his bodily organism

is the brain, and there also is the spiritual and intellectual centre.

Seventh—from this I conclude that as all atoms, worlds and suns, are made after the same pattern, and animal organism after very much the same pattern, and all have their electric, intellectual, and spiritual centres the same, so we may reasonably suppose the same law applies to sun systems and world systems; and the suns are, therefore, the spiritual and intellectual centres as well as the material and electrical centres, and must be utilized and inhabited by spiritual and intelligent creatures.

Nature has given the suns and planets somewhat different but similar forms and activities. The earth is not man's only habitation; there is another beyond this brief abiding place; in fact, there are many others. The planets are human hatcheries, and the suns the places of their maturity and perfection. The worlds are God's human nurseries, and the suns His perennial orchards of eternal life and fruition.

I believe that souls are born in this world, that this is their first theatre of action, and where they take on the habiliments of earth dust or star dust, for all things originally came from the sun and will finally return to the sun. The seed that is planted here will ripen in the brighter realms of the sun. In other words, the earth and planets are the birth-places and nurseries of human souls. They have their origin here in the divine miracle of earth life; they are the product of planetary forces. Any one who thinks he has had a pre-existence in this world or some other world is listening to the unreasoning delusions of fancy. Nature does no irrational things. To have a pre-existence without memory or recollection of it would be useless and nugatory. If it were

a fact, every soul would remember it and be profited by its lessons and experience. And if we have a hereafter, which I firmly believe, we will possess a perfect recollection of this life and all its associations.

As to our natural tendencies and spiritual and intellectual gifts, they are partly inherited from our ancestry, and partly the result of our earthly environments. Nature, ancestry, and environment may do much for a man, but a man must do much for himself in this life and needs no pre-existing life, and his fate or destiny, failure or success, does not come through any Mahatma, demon, or guardian spirit. If there are whispering angels in the air, very few souls will listen to hear them; they are too earthly, stolid, and practical. And as human souls are born here, and this is their first theatre of action, very few when they have gone hence will ever return to earth, or desire to do so. They will go to the realms of higher spheres,—the suns and the central suns. There, in the bright, self-luminous sun worlds, the life hereafter will not be one of idleness and luxurious satiety. There will be everything to enjoy and something to do, and something to learn; and few, if any, will return to the scenes of this earth life.

God reasons as man reasons; both are of the same spiritual entity and mental nature. How does man act when he wants to plant an orchard? He plants the seeds in a small piece of ground, and when they have grown to small trees, he transplants them into the orchard where they are to have their final growth and perfection. God does likewise. He makes the little earth and planets the seed ground and nurseries of human souls, and when they have

grown in life knowledge and experience, He transplants them to the big perennial orchards of the sun, there to attain their maturity and perfection.

How does man raise domestic animals, cattle, sheep, horses? Does he put old and young all in one great pasture together, or does he wait until they have growth and experience? How does man raise his own offspring? Does he not put them in the kindergarten before sending them to the university? God reasons and works on the same principle. He teaches man in the kindergarten of earth, before He translates him into the university of heaven. God is the perfection of wisdom and justice, though many theologians and scientists do not allow Him as much judgment in the government of the universe as men ordinarily exercise in their business.

The theosophists teach that God made a definite number of souls, that can neither be increased nor diminished, and all at the same time, and all to live on this earth in an endless circle of incarnations; that all are of the same age, and some are now incarnated, and others are waiting somewhere in space an opportunity to slip into the embryo or body of some child; that good souls seek to enter the body of a child of good parents, and bad souls seek the child of vicious parents; and that a soul is good or bad according to its previous life. This they call the law of Karma.

Is it reasonable that Deity would create all the souls in the universe at once, and have millions of them floating around in space waiting to be incarnated; and hundreds and perhaps thousands trying to enter the body of the same child? Would God, who is the perfection of wisdom and justice, or even

a rational man perpetrate such a folly? Would man create all his family at once, and keep them in silence and starvation until he could provide homes for them? Would he create twice as many as he could provide for, and keep half of them struggling to supplant the other half? God creates because He is love and must have objects for His affection; man procreates for much the same reason. Is it likely either would restrict this creation and procreation to one day, and have an idle, hollow day for the rest of eternity?

Moses settled this question long ago in the genesis of the world when he said the Lord God made every tree, shrub, animal, and creeping thing to have seed in itself to bring forth of its own kind; and man was no exception. He brings forth of his kind the exact reproduction of soul, electricity, and body.

Strange, wandering souls do not creep into the bodies of born or unborn children. This is not rational or just. Has the child no rights, the parents no claims, and God no conscience? This is the insanity of fatalism, and the destruction of individualism and man's responsibility. It throws all blame and criminality on God, who permits this fateful injustice and obsession; and makes man not man, but a human body possessed of a good or bad demon or soul, which has possessed many other human bodies, and wrought its blessing or curse upon them. If this be true, who can say that the bad and vicious soul may not enter the child of good parents?

Good parents often have bad children, and a soul who has reason and consciousness sufficient to know it has lived a bad life would see perhaps the folly of it, and seek to enter the body of a child of good

parents, and there would be no end to the confusion and conflict. There is no limit to the crime, ruin, and discord of such a system of creation. It is contrary to all rational, moral, or ethical law, and has no foundation or analogy in human or divine government, and could exist only in the illogical brain that conceived it. No law of harmonious reincarnation could exist and maintain the consciousness and choice of souls; it would be the anarchy of conflict and the survival of the fittest.

It is a relic of the old Egyptian transmigration of souls into beasts and reptiles. The poor, deluded Egyptians thought their ancestors passed into the bodies of dogs, cats, lizards, and other animals when they died; and their king's soul passed into the body of a white bull—so they worshipped Apis. They refused to kill these beasts and reptiles for fear they should kill one of their own ancestors. Cambyses took advantage of this superstition, and placed white bulls, dogs, cats, and lizards in front of his army, which the Egyptians refused to kill; and thus he overran Egypt and destroyed Thebes.

Reincarnation requires the creation of many more souls than there are bodies, which is a useless waste of life and power never permitted in nature. Theosophy says the soul of the child is as old as the parents, and having been incarnated many times may be the child's own grandfather or great-grandmother come back. According to them the soul of Cæsar may now be digging in an ash-pile, and Alexander may be a cowboy conquering a "bucking bronco," and Moses a peddler, and Adam a butcher. Such are its absurdities.

Moses four thousand years ago promulgated the only reasonable theory on this question when he

said of the body, "Dust thou art and unto dust shalt thou return"; but "Thy soul shall return to the God who gave it." And Christ expressed in one sentence the whole doctrine of Karma, which is simply the logic of cause and effect, when He said: "God is not mocked, for whatsoever a man soweth that shall he also reap."

God is not mocked; man is not the shuttlecock of fate or the receptacle of roving spirits. He is master of himself and the chooser of his destiny. God does not punish; He is not angry, vengeful, or jealous. He must Himself obey all the laws of love and righteousness He has made for man. Man punishes himself through violation of the immaculate law of justice and moral rectitude.

The law of heredity must exist, and "like beget like" through all the universe. "We do not gather roses from thorn trees or figs from thistles." One of the wisest philosophers when asked when to begin the education of a child, answered, "A hundred years before it is born." We must go first or last to the fundamental truths of the Bible to get a true concept of God's creation, and all science, when understood, sustains Moses and Christ.

Moses is right, and Christianity is right. Every man shall have his own body and his own soul. He shall not steal into the body of another, whether that of a child or man. He shall have but one body in this world, and but one soul in any and all worlds. And this world is not his eternal abiding place. Like his forefathers he is "but a pilgrim and a stranger." And when he has served his earthly probation, and learned the sweet, sad lessons of this life, and the immortality of all life and love, he will depart hence with the swift wings of electric

speed, and pass from the transient school of earth to the graduating university of heaven.

This little earth and the planetary forces are the hatcheries of both his body and his soul. And when God blessed Adam and Ève, and said, "Be fruitful and multiply and replenish the earth," He implanted in them the power to strike off other sparks of spiritual life such as He had imparted to them, together with a bodily organism.

Thus that dual spark of life has brought forth millions and peopled a mighty world. And this earth is the nursery of human souls; but the perfected worlds, the vast and luminous suns are their future perennial residences. Such is the philosophy of science and reason, and the wise economy of God and nature.

That spark of life once struck from Deity—breathed from His breath—that made one living man divisible, yet unimpaired, has thrown off other sparks of vitalizing breath, until that uncreated creating breath has brought forth millions; peopled nations, and the realm of spirits beyond the stream of death.

God made but two; it was enough to people countless worlds never trod by living feet, or swept by wing of soaring spirit, through all the cycles of measureless duration as they ceaseless roll.

CHAPTER VIII

ALL VISIBLE THINGS ARE COMPOSED OF ATOMS AND
ELECTRICITY, WHICH ARE AS INVIS-
IBLE AS THE SOUL

Few people in thinking of this visible universe ever think of it as the thin shell or garment covering the invisible sovereign forces that control it, and that have woven it out of the warp and woof of invisible atoms and molecules, as a deft weaver weaves his silks and tapestries. Yet that is what the potent, invisible forces accomplish with their magnetic fingers.

They convert invisible, insensate matter into living flesh and bone and vitalizing blood. They transform seeming invisible nothings into the beautiful and varied objects that delight our eye and please our fancy. The visible things of the universe are but a handful in comparison with the invisible forces, and invisible matter that permeate them, pass through them, and fill all the seeming void of measureless space.

These viewless, mighty forces are silently and constantly weaving and unweaving, evolving and dissolving the visible into the invisible, and the unseen into the seen. All seemingly solid matter is as transparent as air to these unseen forces. They pass through and through it, and permeate it as water does a sponge. They do the same with our bodies. The magnetism at the core of an iron magnet clothes

it with invisible power; and it does the same for dewdrops, pebbles, suns, and worlds. Through electric repulsion the visible may become invisible in a moment. In Chicago, in a few hours, ten square miles of houses and their contents were converted into invisible ether and a heap of ashes.

Science says a cannon ball is solid matter, and can be shot through the air two thousand feet per second, and penetrate wood, stone, and iron.

If the same cannon ball could be shot seventy-five times faster, or 18.91 miles per second, which is the speed of the earth, it would make a hole through any substance it struck and set it on fire. But if it were sent with the speed of a sunbeam or sun current, which is one hundred and eighty-six thousand miles per second, it would dissolve into invisible atoms and pass through wood, stone, and iron as if they were not there, and not make a hole as large as a pinpoint. Most scientists would recognize the cannon ball before it started as solid matter, but would ignore its existence when it dissolved into invisible matter. They say the dissolved matter of the sun comes to us as heat. I say it comes to us as atoms and electricity, and is not hot, and was not hot when it started. I say that, when it reaches the earth's atmosphere, the earth's electric attraction and opposite polarity imparted heat to it and caused it to burst into light and warmth.

And the same contact of opposite, or positive, and negative electricities on the surface of the sun gives the sun its light and warmth in the same way. And the measure of its light and heat is its attracting and propelling force, and the elements of its atmosphere. After supplying its needs, the sun throws off the remainder to its corona, and from thence to

the earth, just as the earth throws its surplus electricity off to its aurora. Thus the sun showers down upon the earth annually a thousand millions of tons of atoms five hundred times finer than transparent air. They form all animal and vegetable substances and our bodies, and constitute the productive soil of the earth's surface.

Science undertakes to ignore electrical laws, and calls electric attraction gravity, electrical combinations chemical or magic, all force an abstraction, and all spiritual things nonentities. They make nature's simple processes a mystery, and her law of evolution a ruling Deity. But evolution is not God, it is the law He has impressed upon nature. "Nature is the art of God." And the art of God is beautiful, simple, perfect. It destroys nothing; it builds and dissolves, and rebuilds again more perfectly. It has but one force, electricity, with its dual polarities; but one matter, the viewless atom; but one intelligent eternal spirit, of which man's soul is a reasoning spiritual atom.

Spiritual force antedates all matter and force. The electric forces antedate all created forms of matter and reveal the beginning of creative work. The foundations of suns and worlds had their beginning in these creative forces, and they are the beginning and the end of all material measures as applied to the vast infinities of creation. These electric, omnipotent forces hold atoms and worlds within their mighty embrace.

In a single drop of sea water we have all the properties of the sea; in a raindrop the history of the rivers; in a ray of sunshine the elemental substance of suns and worlds; in a falling apple the form and motion of all worlds; and in the un-

folding by electric energy of a single life germ, the boundless story of all organic creation.

Visible and invisible matter by the electric energy they possess are constantly changing places, the invisible becoming visible, and the visible becoming invisible, and the ponderable imponderable, through an endless cycle of perpetual changes.

The electric forces hold in charge the atoms of all substances that appear in organic forms or as visible matter.

The different forms of matter, the solid, liquid, and gaseous, all wait on the electro-magnetic elements of light and heat for their beginning and permanency of structure. Light and heat, electricity, are building forces lifting matter from space into body, and then turning it over to cohesive affinities, which is another form of electricity.

All chemical affinities are under the control of electric energy, and atoms enter into molecular combinations by reason of their positive and negative electrical conditions, which shows that all material and atomic supplies are from electro-magnetic currents. And electric energy is the source of all things.

Matter, I contend, could never have been gathered under any other law than that of electricity and magnetism. Atoms would have responded to no other force than invisible electric affinities; molecules would not have sought each other and clung together under any other law or force than that of cohesive magnetism.

It was the law of atomic electric attraction that fixed the permanent centre of the earth, built its rock-ribbed foundations in orderly strata, prepared its ocean beds and its rolling waters, lifted up its mountains and spread out its continents for the

habitations of man. It was the same electric energy of affinity and attraction that developed the infinite forms of animal and vegetable life that live and flourish upon earth's verdant surface.

All these came from the great invisible electric magnetic sea of balanced forces constituting all ether and all space, in which all suns and planets are balanced on accurately poised centres of equal attraction and repulsion. This sea is as boundless as space, and pervaded by marvellous electric currents of force and power, and imponderable atoms that permeate the universe with their vibrating energy and evolving power.

All worlds, by the law of electric attraction and evolution, shine by their own light, measured by their own electric attracting energy, and warm themselves from their solar centre and space that supplies their ever-growing strength. The power which appears upon the earth as sunlight is awakened into force within the earth's atmosphere by the earth's electric attraction and the resistance of its atmosphere. All friction is caused by opposite electrical conditions, and is one step toward the evolution of heat.

The sun and planets are vast electro-magnets, because they are held in charge of electro-magnetic forces in an immense magnetic field. These forces are not from these bodies originally, but these bodies are from these forces.

The same is true of all organic forms including our bodies. Our bodies are electro-magnets, because electro-magnetic forces have taken matter in its primary form, which is atomic ether, and woven it by accretion and assimilation into our organic forms. Thus we have become visible and tangible

beings, with organic functions and vital energy. All our varied functions and five senses are the result of electric energy manifesting itself by outward communications and internal conditions to our reasoning soul.

There is no other medium of communication between body and soul, between mind and matter, but by the subtle currents of electricity that traverse our nerves as they do electric wires, communicating all physical pleasure or pain, and causing our muscles to respond to the electric impulse of the brain, which is the electric centre and function of the soul.

Thus, in all that constitutes man's physical personality he is an electro-magnet, or an electrical organism in charge of electro-magnetic forces that constitute his physical life and organic existence.

But he has another and invisible spiritual personality which gives spiritual life and activity, and reasoning power to the physical organism, and which controls it, and which is a self-existent atom of Deity. Thus, man's body is the visible manifestations of invisible atoms and forces, woven around an invisible, spiritual body. And when the visible manifestations drop away into their invisible elements, the soul asserts its eternal energy and soars away to the central source of all light and life.

Our scientists teach us that every particle of air, however infinitesimal and minute, seems a homogeneous structure, perfectly quiescent in all its parts. But it is not; for the smallest particle is composed of myriads of still smaller particles, and no matter how quiet they seem, they are all in an intense state of activity and rapid motion. This sustains the electric theory that all atoms are tiny galvanic batteries in a constant state of vibration. These atoms are

so minute it would take fifty millions of them placed side by side to extend over a single inch, and the smallest object which we can discern with a microscope is one-hundred-thousandth of an inch in length. Thus they teach that the little atom or molecule would require a diameter five hundred times greater than it has to admit of inspection by the utmost microscopic power; and be almost a million times greater than it is to be seen by the human eye.

Notwithstanding the infinitesimal smallness of atoms, we are able to reason about their existence, discover many of their properties, and ascertain the laws of their action. They say: "These atoms oscillate and vibrate in continuous motion, and impart vibrations to the surrounding ether, which are thence propagated as radiant light or heat."

These vibrations are not of one type, but as in hydrogen, of many types, which may be regarded as harmonies. Thus do the harmonious movements of suns and worlds not only produce "the music of the spheres," but the vibrations and movements of the atoms of which they are composed make harmonies of sweet sounds unheard by the listening soul of man.

All visible things and substances are composed of atoms or molecules which are too minute to be perceived by our senses, and which cannot be detected by the most potent microscope. We cannot see, taste, or feel them. They must be brought together in clustering myriads where their individuality is lost in infinite numbers before our senses can apprehend them.

As to the ultimate constitution of matter of which our senses can give no testimony, we must rely on

methods more capable of subtle work and indirect processes, which have taught us all we know of the invisible world about us.

In contemplating the heavenly bodies, the mind is taxed to conceive distances so tremendous. Masses so enormous and periods so vast we despair at comprehending their almost boundless magnitudes.

But in contemplating atoms, we appeal to the imagination in a precisely opposite direction, and endeavor to perceive masses so minute, distances so short, and periods so infinitesimal, it is impossible to parallel them with any phenomena known to our senses.

Thus we discern our senses are not always a safe guide to determine truth and facts. Our earth shoots through space fifty times faster than a rifle ball, but our senses do not perceive it; it turns over thirty times faster than the speed of a railroad train, but our senses bear no testimony to the fact. The sun seems to rise and set, but it does not. When we travel on the cars, the trees, houses, and fields seem to pass us by; but they do not, for this is the false testimony of the senses.

Professor Dolbear says: "Molecules, which are a combination of atoms, are known to have their constant state of vibration, and from this and the fact of their perfect transparency, they can no more be seen than the air. They are so minute, so restless, like atoms of hydrogen, that no one can hope to see them, or learn their characteristic properties."

This accords with the electric theory. He continues: "There must be as many different elementary atoms as there are elements, if all the different kinds of elements are formed out of one and the same fundamental substance. Then it is difficult to understand

how difference in size and shape should give such profound differences in quality as the seventy elements possess. One atom of hydrogen is like every other atom, and Herschel likened them to 'manufactured articles,' on account of their exact similarity."

Thus Professor Dolbear, who is a firm believer in the atomic theory, established by all physicists as the foundation stone of all matter and physics, wonders and questions the marvellous fact that seventy distinct elemental molecules are formed "like manufactured articles" from one and the same unchanging atom. The reason is plain: they are not primary but secondary elements, and they are manufactured by the wonderful electric combinations of atoms. He speaks of them as "one atom of hydrogen," but they are not one atom, but a bundle of atoms bound together by a peculiar electrical force that applies to no other kind of molecule. As I have said before, there are only three primal elements or elemental substances or entities in the universe, and they are spirit, electricity, and atoms or matter. And from this one invisible, indestructible atom are created all the varied forms of visible creation. And the only force in nature is electricity, and it works all these wondrous, marvellous changes and transformations in material things and substances. Spirit cannot work upon matter direct, it must have a medium. And electricity is its medium and right hand of power.

It is difficult to conceive of the electric force and power latent and unseen in the air we breathe. The wonders of compressed air force are even supplanting those other forms of electric air force, steam and electricity.

Man has not been content with harnessing steam and compelling electricity to do his bidding; he has even converted the air he breathes into a propelling power to do his work. It is said that this cheapest of nature's product has now become the most useful and valuable in ventilating mines, propelling cars, forwarding mails, drilling holes in diamond mines, ringing chimes in cathedrals, closing doors, sweeping carpets, building bridge foundations, running elevators, churning butter, and even milking cows.

Paris and New York have the most extensive system of compressed-air cars. A steel cylinder under the car is filled from the storage stations with compressed air, and furnishes motive power for each car to travel fifteen miles without recharging. Many cities transfer mail by the pneumatic system by compression of air in pneumatic tubes, which is almost instantaneous. All know the safety and convenience of air brakes on railroads.

Thus we begin to comprehend the wonderful electric elements and power of the invisible air, and to marvel at its unseen energies. It comes with incredible speed from the sun, it encircles the earth with its vitalizing power; it creates the growth and substance of all vegetable and animal organisms. We breathe it into our bodies and it preserves life, it feeds us, works for us, and finally transports us to our future abode of unending life. How wonderful is the invisible air and all the invisible forces.

A few ingenious minds have formed a vibratory theory of creation, in which they hold that the sun is to us the source of all life motion, life energy, and power. They claim the vibratory and atomic theories are intense realities; that spirit and matter are but terms, and in truth are but one. And spirit and

matter are the same, changing in characteristics as the vibratory force changes. That mind and matter are one and not distinct substances. Mind, they claim, is but the higher vibrations of the same order as the lower that produce the body. The higher shapes the lower—the mind dominates the body. That the vibrations from the sun contain the only life we know and the only force we can feel or measure, and that it is the only motive energy centre of this planet.

Growth and life, they claim, are but manifestations of sun and earth vibrations. These vibrations are manifested through creative, mental, or sun power in the realm of mind, and this is called intelligence; in the realm of feeling it is called love.

“The difference,” they say, “between sun and earth vibrations produces the phenomena of life. The sun is the source of life. The sun is the great mind centre of the earth, and all life forms are but manifestations of sun vibrations.” They say: “If we owe our material shape to the sun, why not our finer consciousness? The mental element in all human life is identical with the sun element. Mind and matter are interrelated; the sun and earth are closely related. Consciousness is born where sun and earth, mental and physical vibrations meet. Consciousness is inner and outer forces operating on each other, and these have their origin in sun and earth mass itself. Knowledge is but consciousness of things. Mind can receive vibrations from the sun direct, and the body indirect through food and air. Creative power does not lie in things, but must come from the unseen.”

This theory contains many suggestive truths, but I cannot accept it. It makes the sun a god,

when he is the residence of Deity and an agent of His power. It makes man's soul refined matter, and all things the result of sun and earth vibrations.

All astronomers maintain there is a connection between the magnetic condition of the earth and the state of solar activity; that the climate and sun spots may stand in some relation to each other, and that we have yet much to learn concerning the effect of the sun on things terrestrial. One says: "There are no considerable number of elements present in the sun in addition to those elementary bodies which terrestrial chemistry has made us acquainted with."

Another one says: "We have no reason to believe there is any substantial difference between the materials in the sun and the materials of which the earth is composed. Iron exists in profusion in the sun and in many of the stars, and it also abounds in the deep interior of our earth." And so with every element of the sun, they abound in the earth because the earth was built up by the sun, and received all it has from that great luminary. So that all objects we see, and all living things which grow and multiply on the earth, are brought forth by the mighty electric currents of the sun. Those currents are the elements of the sun in solution, being invisible atoms and electricity, which feed and evolve all life and living organisms.

These living organisms are thus infused with magnetic life, and all things that take on by growth, or add to themselves by accretion or assimilation, do so by the electro-magnetic process. Therefore all atoms must be electro-magnetic, and the sun, from whence they come, must be a vast and mighty electrical generator. No other force can account for

their wonderful properties and transformations. And I hold that all atoms are tiny galvanic batteries, or molecules saturated with electric energy and in charge of magnetic forces.

The law of gravitation is in reality the law of electrical attraction. Newton thought an apple was attracted to the earth because the earth was the larger, and that any body of matter would attract a smaller. But I hold that size is not what controls; it is electrical conditions. As a rule, the larger the body the more electro-magnetism it possesses, and as a rule it attracts a smaller body. But this is not so much from its size as from the electrical energy it possesses: this is the measure of its power. An amount of substance from the sun would naturally have more attracting power than the same amount from the earth or planets, because the sun is more prolific of electric energy.

A piece of iron not magnetized has no electric power; but when magnetized a new force is created, and it draws particles of metal to it, and holds them there with an invisible grasp, and lifts several times its weight with ease. This same fact applies to atoms. All atoms in the atmosphere of suns and worlds are magnetized. They are saturated with electric energy; they are under the control of magnetic forces which give them motion, vibration, and cohesive affinities. We can have no conception of matter independent of these sovereign forces. Our world would be a vast lump of waste matter but for the electric energy and magnetic force that possess it and saturate every atom and fibre of its integral and aggregate mass. The same is true of our bodies: did not electric energy possess their atoms, and the spiritual energy of the soul possess

their physical organism, there could be no life. It is invisible spirit that gives life and vital energy.

Clifford says: "Now there is great reason to believe that every material atom carries upon it a small electric current, if it does not wholly consist of this current. For, in the first place, every particle of a magnet is itself a magnet."

"When a piece of iron is magnetized, either every particle is made into a magnet as it stands, having had no previous magnetism, or else all the particles were originally magnets. The theory of Ampère, confirmed by subsequent experiments, makes all magnetism to depend upon small electric currents. The action of molecules upon one another, the action of transparent bodies on light and gravitation, are still unexplained."

I hold they can be explained only by electro-magnetism. And every atom is a magnet with a working force of electricity, having and receiving electric currents, and in a continuous state of electrical excitement. Clifford says: "We know with great probability that wherever there is an atom, there is a small electric current. We shall say an atom is a small current, or a small current and something else besides." This is strong testimony in favor of my position that atoms are magnets, and it follows that if atoms, then all things of which they are composed, suns and worlds, and all vegetable and animal organisms.

Lord Kelvin says: "The ultimate atom of matter is required to be indestructible, to have a definite mass, and definite rates of vibration. And matter differs from ether only in being another state or mode of motion of the same stuff. The hardness, resistance, or elasticity of solid matter may be ex-

plained by the very rapid motion or lack of motion of something which is infinitely soft and yielding, like the ether." Here Lord Kelvin touches the truth, for ether is composed of atoms and electricity. And our atmosphere is this "yielding" ether compressed and thickened; and visible matter is ether partly solidified.

The same author says "That no new atoms of any kind have been produced or discovered, and even the thousands of meteors that have come to us from space show no element unfamiliar to the chemist. Matter cannot be created or annihilated. The quantity of matter remains constant. All things change and decay, and there appears to be nothing stable but atoms." This is the theory of all modern science.

Now all modern science teaches that all visible things are composed of atoms, which are invisible, intangible, and indestructible. For all we can tell, they are as invisible as man's soul, as unseen and intangible as his spiritual body, and as Deity Himself. Yet all this invisible matter and intangible atoms come from the sun. The soul of man, when it came to Adam and Eve, with its possibility of multiplying souls, came from God, and from out the sun as His personal abiding place and visible residence. And man's soul, when it has thrown off the habiliments of atoms, can fly with the speed of light to the mighty magnetic sun, and find its enduring home there with creative Deity.

If matter is indestructible, surely the soul, which is its master and governs and controls it, is indestructible. If it is indestructible it must have an eternal existence like matter, and must have a place for that existence. What place is more suitable than

that from which the atoms of his body, his ancestral progenitive spirit came, and where the great Father of spirit dwells?

Matter in its native state is as invisible as soul. Life and electricity are as invisible as soul. And all came from and return to the sun. Why should not man's soul return there to the God who gave it?

If his soul is enwrapped in what one scientist calls "luminiferous ether," and another calls "millions of millions of centres of force, which do not touch each other, but revolve around each other," and both the ether and centres of force came from the sun and return to it, surely there is the suitable place for the reasoning power that organized and commanded these organic forces. And clothed in this luminiferous ether and invisible force, which are indestructible, it can defy death and extermination, and soar on electric wings of invisible power to the centre of all life and power, in the all-glorious sun.

And such is destiny. The dominant soul and its faithful servants, invisible atoms and electricity, shall find their fountain of eternal youth in the realms of the self-luminous sun.

CHAPTER IX

THE SOUL IS AN INVISIBLE ATOM OF DEITY, AND,
LIKE INVISIBLE ATOMS AND ELECTRICITY,
CAN PASS TO AND FROM THE SUN.

All the modern sciences teach that all visible things are composed of atoms which are invisible, intangible, and indestructible. That all force or power in nature, whether we call it gravitation or electricity, is invisible, intangible, and indestructible. They hold that both atoms and electricity, which, I contend, must be matter in solution, pass freely and imperceptibly from sun to earth and from earth to sun. That it takes but eight minutes to accomplish this journey of ninety-three million miles, and that there is a constant stream or current of these invisible substances eight thousand miles in diameter pouring on to this earth from our sun, and gradually returning to the sun. They agree that our bodies are made of these substances, and that they are the breath of our life, and that we could not live five minutes without them. That these direct electric atoms, together with the vegetable and animal organisms they have fed and created, have developed and sustained our bodies, and have furnished physical life and food for humanity, and preserved its existence through all time. That these atoms and all things on the earth have come from the sun, and may return to it.

Now these premises are universally admitted by

all modern scientists. What does it prove? I answer, it proves:

First—that all matter came from the sun, and the sun is the world's creator, and the source of all visible things, and all material life.

Second—it proves that our bodies came from the sun, not in organic form, but in invisible matter.

Third—all invisible things, substances, or entities have been deemed and considered through all the ages as spirit, as ghost, or as soul. Spirit means an invisible something. Then matter, in its normal state, is an invisible something, and has a soul or spirit, which is invisible and passes freely through space with incredible velocity, and comes from the sun and goes to the sun.

Fourth—electricity, which is the primary creative force of the universe and the only force in nature, and which controls atoms and worlds, is also invisible, and by all the definitions of science is also a spirit.

Fifth—as these constitute the physical universe, and are immaterial and invisible in their original or atomic forms, and go to and from the sun, it proves that all things and entities are in their normal state invisible, and all invisible things can and do pass freely through space, and to and from the sun.

Sixth—then if this is true, it follows necessarily and logically that man, in his reasoning faculties and moral nature, has an invisible spiritual essence we call the soul. And that invisible essence, when freed from the weight of the myriad atoms that constitute its bodily organism, can assert its natural right and freedom and soar on invisible wings or currents to the sun and stars.

Seventh—if God is a spirit, then man is a spirit, and an atom of the God-spirit or spiritual Father, and Creator of all things. Now, if all matter and electricity come from the sun its creator, in an invisible state, and return to him in an invisible state, then by natural law and analogy man in his invisible state originally came from his Creator, who dwells in the sun or suns, and at death will return to Him. And Moses was right and expressed a scientific truth when he said, “But thy soul shall return to the God who gave it.” And Christ spoke a great truth when he said, “I go to My Father.” Not only Christ, but all men, shall go to their Father, when they step out of this overcoat of atoms we call the body. And we may even take some of these atoms with us as a souvenir to show to the inhabitants of the next world what material enveloped us in this. In fact, in our future existence we will likely take on a body of these same atoms, only more ethereal and incorruptible.

Eighth—when we reason at the foundation of things there is nothing strange or unusual about man having a soul, or being able to transport it with the speed of lightning to the sun and stars. Since the matter of which his body is composed in its normal condition can do this, it would be strange indeed if that which commands, thinks, and reasons for the body could not do it.

The Bible expressed a great scientific truth, but recently discovered by scientists, when it said, “The invisible is greater than the visible, the unseen than the seen,” and, “the things which are seen were not made of the things which do appear.”

All visible things are made of invisible things that do not appear, but are greater than all visible

things. The invisible soul or mind that controls the body and weighs suns and measures worlds is greater than the body.

The invisible atoms and electricity that weave the body as a deft weaver weaves his warp and woof, his silks and tapestries, and give it motion and vital power, are greater than the ever-changing frail drapery of visible matter they weave around the conscious soul.

We speak of solid matter, but there is no solid matter. Our bodies are not solid; iron, steel, lead, marble, granite are not solid. They are the most solid forms of matter we know; but they are full of pores or openings that the microscope reveals. Electricity, atoms, the sun's rays can pass through them. Photographs can be taken through them of objects on the opposite side of them by the Crooke's tube or the Roentgen rays. They can be reduced to a fluid, then a vapor, and breathed into a human body and become a part of it; and a chemist can detect the same molecules in the flesh and blood.

People who do not think scientifically believe their bodies are solid. But they are not. They are almost as porous as a sponge. Atoms and sunshine, air and electricity pass through them as if they were not there. They have a million of air ducts or breathing inlets and outlets to every square inch, and vast systems of sewers for draining off decaying matter. The anatomists tell us we throw off from two to ten pounds daily of waste matter, depending on health, vigor, and exercise..

Seventy-eight per cent of the body, they say, is water, the balance is earthy matter or bone dust. So that man's body, anatomically speaking, is four or five bucketsful of water and a double-handful

of earth dust or star dust; and consists of the food he eats, the water he drinks, and the air or electrical atoms and energy he breathes from the sun. These electrical atoms he gets fresh from the sun every eight minutes, and he could not live without them five minutes. He can do without water several days and without food forty days, but not five minutes can he exist without breathing a part of the sun into his body. Thus, "we live, move, and have our being," our physical being in the sun, as we have our spiritual being in God; and they ought to be very nearly related. Flammarion says what we call "atoms are centres of force that do not touch each other and revolve around one another." He also says: "The immortality of the soul is already demonstrated by philosophy, and will be speedily proven by psychology."

Are our senses a safe guide to determine the nature and character of our physical life, let alone our spiritual life? Let us see. We are breathing into our bodies the dissolved elements of the sun—atoms and electricity. Waste matter and arterial and venous blood are passing and repassing through our bodies, and we are unconscious of it. Our senses take no cognizance of pulse beats, and brain throbs, and the constant and enormous pumping and toiling of our heart valve, if our bodies are in a normal condition.

But the abstruse metaphysicians like Hudson intimate that the subjective or subconscious mind may know these things. But does it? Does the subjective mind know how we digest our food and assimilate it; how our blood circulates; how electricity permeates the system, and the muscles respond to the will? If so it should have revealed it long

ago to our senses and our conscious mind. But the mind is one mind; and subjective mind and objective mind are only abstruse distinctions that are deceptive and unreliable.

And so are our senses deceptive and unreliable in dealing with the fundamental elements of matter and life and force. Our senses say the sun rises and sets; but science demonstrates it does not. Our senses, when we are travelling on a swift train, say the trees, telegraph poles, and solid ground are passing us swiftly; but they are not.

When we look up at the sun on a bright, clear day, there is an ocean of water over our head which electricity could let down in a second and deluge the earth. But we do not see it. And thus our senses do not take cognizance of a thousand things that are as real as our bodies, our hands, our feet, and the sun and earth.

These are the invisible realities that constitute more than ninety-nine per cent of the universe. Invisible matter is more than ninety-nine per cent of all matter, and is the only element of the three primary elements that is ever made visible, or of which any part is made visible on this earth. Electricity, the handling, weighing, moving, controlling force in nature, is always invisible. Yet everything that exists, or lives, and grows and adds to itself by accretion or assimilation, does it by the electro-magnetic process. This is an invisible process, by which insensate matter becomes vital and organic matter.

The only other primary element is invisible, reasoning, directing spirit—the eternal, intelligent, guiding spirit of creative Deity; and man's spirit, which is an atom of Deity. God is a Spirit, and man is a spirit, and spirit can go where it will.

Then I reason firmly that if invisible matter and electricity go everywhere, and pass to and from the sun continually, and exert their power, and do not lose their natural properties or identity, it is clear and overwhelming proof that man's soul, when it steps out of the body, maintains its power and identity, and can fly with the speed of light to the throne of light and life in the luminous bosom of the all-life-giving sun.

The world, from the birth of man to the present hour, has never possessed a reasoning, analytic mind or soul that did not believe in its immortality and a future life. There may have been stupid or ignorant and beastly minds who thought seldom at all, or thought vaguely on this subject. There may have been strong and brilliant minds who have thought superficially, or through prejudice against creeds and priestcraft have ignored or denied man's spiritual existence and immortality; but in their conscious reasoning nature they had a proof of both, though they may have ignored or denied it. Every man has the conscious proof in his own soul of his spiritual being and immortal existence.

All nations and people, in all ages, have in some manner or form recognized a supreme being and a future existence after death; the Asiatic and European by signs and symbols, rites and ceremonies; the American Indian by burying his horse and dog, bow and arrows, venison, bread and water-pot with his dead chief for his journey to the hunting grounds of the Great Spirit.

Flammarion says science can guide and enlighten us on subjects uncertain, fabulous, and imaginary, such as pertain to the land of dreams, the supernatural, and the domain of the marvellous; and

show they are produced by forces yet unknown, which belong to the invisible and natural world. This shows that science is turning her attention to the invisible matter and forces that have been hitherto ignored. His argument against materialism is vigorous and crushing. He says: "Materialism is an hypothesis which cannot be sustained now that we know more about matter. It does not afford us the solid argument it was once supposed to do. Bodies are composed of millions of millions of mobile atoms, which do not even touch one another, and are in perpetual movement around each other. These infinitesimal atoms are now considered centres of force. Where then is matter? It disappeared under dynamism."

Truly, materialism has passed its day and exists only in memory. When the invisible atom and electricity were discovered it perished by annihilation. They spoke peace to its ashes, and recorded its Waterloo.

Flammarion says in answer to Darwinism: "An intellectual law rules the universe. The evolution of Lanark and Darwin is only the recognition of facts and not a cause. The product can never be superior to that which generates it.

"The law of progress which regulates all life; the physical organism itself; the instinctive forethought of plants, insects, birds, and the principal facts in natural history are convincing that there is a spirit in nature. Our daily life shows us no power of thought except in the brain of men and animals. Hence physiologists conclude that thought is the product of the brain.

"But we have no right to deny that thought can exist in space, and that it directs the movements of

vast bodies, as we direct those of our arms or legs. The microbes that inhabit our bodies, and float in the blood of our veins, do not suspect that our bodies like their own are innate organic structures. The instinct which controls human beings, the forces which keep up the beating of our hearts, the circulation of our blood, the respiration of our lungs, and the action of our stomachs, may they not have parallel in the material universe? There exists in our cosmos a dynamic element, imponderable and invisible, diffused through the universe independent of matter, which is ever acting upon it. And in that dynamic element there is an intelligence superior to our own. Yes, doubtless we think *with* our brains, see *with* our eyes, and hear *with* our ears, but it is not our brains that think, nor eyes that see. What would you think of a person that congratulated a telescope on seeing the canals of Mars so well? The eye is an organs and so is the brain." Thus he contends that there is in nature a reasoning directing power, and that nature shows thought, forethought, and intelligence, which almost amounts to pantheism. That all organism and brain are but manifestations of spiritual thought, which uses them as agents or vehicles.

Here is the seeming conflict between science and religion, or human hopes and aspirations. But this conflict arises from a different viewpoint. Science puts the cart before the horse. It says mind is the function or vehicle of the brain, when the brain is the function or vehicle of the mind. This is the terrible vaunted conflict between science and Christianity in a nutshell. Science makes a god out of an organism of bread, water, and air, changing every moment, and dissolving every molecule

ten times in a lifetime. It puts all thought, reason, and power in billions of billions of "atoms which do not even touch each other, and are in perpetual movement around each other." And when it has thus deified the atom it finds it as invisible and intangible as soul or spirit.

To many unthinking persons the proof that matter is invisible and immortal and proves the immortality of the soul; that the sun is not hot, but is the greatest of inhabited worlds, the visible residence of Deity, and the future heaven of man, seems visionary and chimerical. But a learned scientist says three-fourths of mankind are incapable of thinking except superficially. Many take their own horizon to be the whole world. They will admit no truth they do not understand, and never really suspect they understand nothing at all. In their eyes the human race has always been what it is at present. They overlook the stone age, the discovery of fire, the first construction of houses, the building of carts, carriages, and railroads, and all the difficulties man has overcome. They do not know that behind any explanation we can give there is the great unknown. They are satisfied with old formulas. Why does a stone fall? Because it is attracted by the earth. They think they understand an answer that does not answer, and are like ants in a garden conversing about the history of the world or the distance of the earth from the sun. This statement may have been true several decades ago, but knowledge and progress have made wonderful strides in recent years.

It is true that even great minds in the past have opposed truth because it was contrary to their preconceived notions. Pythagoras discovered the di-

urnal motion of the earth, but Plato, Archimedes, and Hipparchus rejected it; and Ptolemy laughed at it. Anaxagoras was persecuted for saying the sun was larger than Peloponnesus, and Galileo for affirming the vastness of the solar system. Galvani was called "the frog dancing master," and Omme was called a madman, and Meyer was ridiculed until he threw himself out of the window. Columbus, and Hudson, and Morse, and Field, and Howe, and Edison and all great discoverers and inventors have had great prejudice and difficulties to overcome. But regardless of trials and opposition every one should maintain the truth as he sees it, and endeavor to elevate the ideals of humanity, and bid them vindicate their high destiny, and while they work with their hands keep their head among the stars.

Henry Frank, in a lecture on the physical basis of the soul, says: "The soul's existence and immortality are scientifically demonstrated through the microscope, and the invisible biological body is revealed." He says: "The desire to live forever is the product of self-consciousness, and the fact that the desire exists prophesies the continued self-consciousness. That out of the invisible microscopic world comes the voice of science to reveal to mankind the very nature, quality, and possibility of their immortal souls." He refers to Beale's microscopic protoplasm and bioplasm, and claims that the bioplasm, the living matter in the body, is something totally different from protoplasm, the formed or non-living matter, which it uses as pabulum and weaves into the structural organism. And that: "The soul is that unknown force which transmutes dead into living matter in an instant, in the twinkling of an

eye; absolutely contradistinguished from any other known activity in nature.

“In short, the living substance we call bioplasm is a direct natural product of the pre-existing spiritual energy we call the soul. As bioplasm is invisible, transparent, and structureless, it abides with the physical body and develops it; but it does not dissolve with the body, but continues to exist after the outer body dies, and is the vital directing force that is a scientific expression for the soul.”

This is something like Joseph Cook's theory that the soul is the invisible, vital force back of the bioplasts, which weaves the visible, bodily flesh and structure into a harmonious human organism. This is not unreasonable, and this deft weaver, the human soul, that weaves the warp and woof of human flesh and blood and bone, will some day be revealed to the microscopic eye of man.

The authors of “The Unseen Universe” claim there is a second ether that fashions the spiritual body. They say: “The world, as we know it, is made up of material molecules and of ether; no room being here found for either ghosts or bogies.” Then they take an hypothesis of Lord Kelvin's about the ultimate form of atoms and their relation to ether, and they claim to find in a second ether the material wherewith to refashion the marvels of man's immortal existence in the borderland between the known and the unknown in physical science. Thus they treat invisible ether as in the domain of physics, and make man's soul the product of this second ether.

They say: “Far greater is the work which the second ether has to perform, being nothing less than the fashioning of a spiritual body. While our

consciousness proceeds *pari passu* with molecular disturbance in our brains, the molecular disturbance agitates the first ether, which transfers a part of its energy to the second." Thus is gradually elaborated, they say, an organism in that second or unseen universe with whose motions our consciousness is as much connected as it is with our material bodies. They say, again, with much force and reason, that: "When the marvellous structure of the brain decays, and it can no more receive or send messages, then the spiritual body is replete with energy, and starts off through the unseen, taking consciousness with it, but leaving its molecules or material, bodily atoms behind." This is a true scientific statement which I approve, whether it is attributed to the ether or not. I hold man's soul is self-existent, and needs no aid to immortality. They add further: "Having grown with the growth of our mortal frame, and preserving in its structure a record of all that has befallen us, it becomes an organ of memory, linking the future with the past, and securing a personal immortality. Thus another body, a spiritual, ethereal, or astral body, avails to stay the hand of death, and the second or spiritual body escapes free from the ruin and dissolution of the first or physical and visible body."

Here we have a concise statement by two logical scientific minds, of the escape or delivery of the invisible, incorruptible spiritual body from its transient tenement of clay. I accept their logic and their clear statement of a psychological fact, but I do not rely on any abstruse and complicated theory as to a second ether existing, or being the cause of the escape and survival of the spiritual body. I put it on a higher and broader ground, holding that

the survival and consciousness of the spiritual body are inherent in itself, and it needs no second ether or aid to escape from the fast dissolving material body.

The material body, all through life, is dissolving and changing in atoms and pounds daily and hourly; it is reduced in sickness to a skeleton; it often has its arms and limbs amputated, and two-thirds of itself decayed or destroyed. The body also changes all its atoms every seven years, so that the body is entirely changed ten times in an ordinary life. Yet the spiritual body retains its life, reason, and integrity. Therefore it needs no helping hand to keep it from destruction. It is a part of Deity, and as indestructible as Deity Himself. If atoms are invisible and indestructible, as all scientists agree, surely there can be no question of the indestructibility of the invisible, spiritual body. If atoms came from and return to the sun, surely the human, spiritual body which God breathed into the first man came from God, and from the sun, which is God's headquarters; and "will return to the God who gave it," in His heavenly abode.

It does not matter whether it goes by electric energy or its own innate force, the fact is, it goes, and no force can restrain it from going. It knows its course and its destiny as the needle knows the pole, as the earth knows its orbit. The conscious soul, when it drops its habiliments of dust, is self-poised and free from the limitations of time and space. Would it stop on this earth and float in air and cloud and mist, and hover around earth's sorrowing loved ones? I think it would find no pleasure in floating in the storm clouds of earth, or hovering around those it could not help; neither would it come and go at the beck and call of self-constituted

mediums. It may have done many foolish things in this life, but in another life it would know better, and do no such unsatisfactory and nugatory things.

If there is a better place to go anywhere in the universe than this earth, it would go there. I think the sun is a better place; and all scientists must admit that if it is not too hot, it is more prolific in life and power, and should be far superior to the earth or planets. And as there is nowhere else to go but to the sun or the planets, it would naturally go to the sun, especially as the sun is the headquarters of all physical and electric power, and must be the residence of its spiritual Father, the creative and ruling Deity. And if the human soul started on its journey to the sun it would go with the speed of light, which takes eight minutes, or the speed of pure electricity, which would take only five minutes to reach the sun. So that before the body could possibly get cold the spirit would pass through the rainbow-tinted corona of the sun and be welcomed into the perennial glory of its Father's house.

Cyrano de Bergerac believed he would go to the moon after death. Others have selected Venus, the beautiful morning and evening star, and others Saturn, because of its wonderful rings, but none of these are likely to be as desirable as our earth, and are not suited for a perennial abode; nor are they self-luminous nor even self-existent without the sun. No spirit would want to dwell in the darkness of space, or in the planets, moons, or asteroids, and only the sun seems suitable or desirable, and fulfils the Bible requirements and those of the soul.

CHAPTER X

MANY THEORIES OF LIFE AND CREATION, BUT CHRISTIANITY SUPERIOR TO ALL. NOTHING UNKNOWN-
ABLE OR UNTHINKABLE

A scientific writer asserts that matter is retarded motion, and that man exists on the roof of the earth as a creeping parasite does on a rind of fruit, exposed to the fury of ever-present earth storms; that he is affected by grievous atmospheric changes and restless physical conditions; that in order to exist he must fortify himself against these at the expense of bodily and mental energy, which encourages the animal at the expense of the spiritual. That the rays of the sun produce aerial convulsions, and the heat of summer and cold of winter follow each other unceasingly, generating winds and storms, while amid such exposures and changes man toils, suffers, and comes to believe that the end, if not the object of life on earth, is the preservation of the earthly body. Thus it is asserted that the fleeting life of man has become a deplorable struggle for physical existence from the cradle to the grave.

But this distressful view of life, emphasizing the purely material, is not so bad as that which makes life a mere delusion.

It is said by a certain class of scientists that existence is a theory, and that man is incapable of demonstrating that he has a being; that all evi-

dences of mortal life are only as the phantoms of hallucination. As a moment in dreamland may span a life of time, the dreamer unconscious that it is a dream, so life itself may be a shadow, the vision of a distempered fancy, the illusion of floating thought. As one of them remarks: "Is there a madman who does not imagine as facts what to others are hallucinations? Is it not, therefore, possible that even self-existence is an illusion? What evidence can any man produce to prove that his idea of life is not a madman's dream?" These claim that mind and not matter is the first and last reality, which is true; but they go further and affirm that matter has no existence, and our bodies, being non-existent, are but a shadow or delusion of mortal mind, and, therefore, there is no pain, sickness, or death. This seems too extremely absurd for comprehension or belief, and yet it is as reasonable as the dogmas of materialism, that only that which is visible and tangible is real; for nothing is more invisible and intangible than matter in its atomic form.

We should not seek for supernatural agencies to account for any phenomena in life, for all that is, is natural. A miracle ceases to be a miracle when we understand the scientific cause. Occultism, hypnotism, clairvoyance, and mind-reading are natural, if they exist, for they must be governed by natural law. Mystery is not mystery if the veil of ignorance that envelops it is lifted. But both matter and spirit exist and are separate entities. They are as necessary to each other as power to machinery, as electricity to motion, as life to the body; and as they are co-working entities here, so will they be in the hereafter.

It is said we know so little about our own world,

we cannot expect to learn much about another. This world of ours is such a temple of many and august mysteries, if we could solve them, we could analyze and comprehend the universe. The sun, because of its size and brilliancy, is only a little greater mystery than the earth, and in both are epitomized the wonders of creation.

On this planet of ours is a conglomerate mass of humanity. In belief they are divided into the optimist, the pessimist, and the agnostic.

The optimist believes in evolution from a lower to a higher order of existence, and the final triumph of truth, beauty, goodness, and love in this world and all future worlds of destiny.

The pessimist believes the golden age is past and the world is retrograding, and all things tend to degeneration, dishonesty, vice, and ruin.

The agnostic says, "I do not know." He believes nothing and accepts nothing; and is virtually a nonentity in the world of science, religion, and ethics. It is his business to create doubt and distrust, to destroy and tear down, but never to strengthen and build up. To him faith is unknown, and belief is a stranger; and he would be the most curious monstrosity on the face of our planet if he really existed. But God never made a real agnostic or a real sceptic. There are those who think they are both, but they are simply mistaken. They know more than they can understand, and believe more than they can explain or will admit. They may not believe in theology, or ecclesiasticism, or priestcraft, or the Bible as they construe it, but they believe in some kind of a Deity and some kind of an existence hereafter. These beliefs are inherent in the human soul, and no man in his inner consciousness can deny

them, though his words may dispute their existence.

Herbert Spencer and other great minds may affirm that the great problems of life and immortality are unknowable and unthinkable; that their exploration is a fruitless journey into a terra incognita, but I do not accept their conclusions. I do not believe there is anything unknowable in this vast universe, and nothing unthinkable in all the realms of truth and reason here or elsewhere. God is the perfection of knowledge, truth, and wisdom, the embodiment of all thought and reason. We are made in His image, and in our spiritual natures think and reason as He does; and as we grow in knowledge and perfection here, we shall know what now seems to be the unknowable, and think what now seems to be the unthinkable. The terms unknowable and unthinkable were invented by Herbert Spencer and others to hide their own ignorance, but should not be applied to all time and all humanity.

It is modest to say "I do not know," for our knowledge is as the rivulet, our ignorance as the sea. But to say "no one knows or can ever know" is a dogmatic assumption, a denial of progress and evolution, and the shibboleth of presumptive ignorance.

If the world should make as great progress in thought and knowledge in the future as it has in the nineteenth century, in less than ten centuries there will not be a real mystery in the universe unsolved by the mind of man.

I believe that when man understands the universe and comprehends its seemingly complex and infinite mysteries, there will be such a simplicity of perfection, and such a perfection of simplicity, that he will marvel at the ease of comprehension, and won-

der why he sought such abstruse and complicated solutions when there was such perfect simplicity, unity, and harmony in all creation.

We know little or nothing of the essential being of God. He is known only by His attributes or manifestations. But we can say the same of electricity, of life, of light, of heat, and of atoms. If we could comprehend God or tell who made Him, we would be infinite, and as wise as He, and know all things.

How is it possible for human language to describe or man to comprehend the infinite, when even the discoveries of science require a language of their own? And we cannot describe accurately a flower or a stone, a ray of sunshine or a floating cloud. We live in a world of many mysteries, and if we cannot explain the growth of the simplest flower, how can we expect to understand the infinite? Yet we feel more than we can explain, and know more than we can understand. And man has within him the conscious proof of a God and a soul. The fact of reason and affection shows there is a reasoning, directing power and a future existence. They are inexplicable without these.

Tyndall says: "When I attempt to give the power which I see manifest in the universe an objective form, personal or otherwise, it slips away from me, declining all intellectual manipulation. I dare not call the pronoun He regarding it; I dare not call it even a cause. Its mystery overshadows me."

Martineau says: "We acknowledge space and silence to be His attributes, and when the evening dew has laid the noonday dust of care, and the vision strained by microscopic anxieties takes the wide sweep of meditation, and earth sleeps as a

desert beneath the starry infinite, the unspeakable Presence wraps us close again, and startles us in the wild night wind, and gazes straight into our eyes from those ancient lights of heaven."

Yet God is not unknown and unknowable. Who studies nature studies God, or the directing intelligence of the universe, whose will is the law of nature, and all things the product of His omnipotent thought and power.

We know God qualitatively but not quantitatively. That is, our knowledge of Him is great but limited—and is not to the full extent of His character and power. We know God, first, as we know the inventor of a machine, by its purpose and workings, and the perfection of its finished products and power.

The universe is God's machine or electric organism, and man His most perfected product, and whenever we study any portion of creation, we study the wisdom and power of Deity. Therefore we know God to the extent that we know His universe, or comprehend His laws and His handiwork.

We know God, secondly, as we know the author of a book. The book is the expression of the author's mind. And this universe is God's book and the expression of His mind. In it He has written His intelligent will, His infinite power and abiding purpose.

We may read them in the rock-ribbed foundations of the globe, in the luxurious vegetation on its surface, in the beauty and fragrance of the flowers, in the balmy zephyrs of the ambient air, in the sublimity of the bending heavens, in the translucent ether and the star-gemmed vault of space.

The Scriptures truthfully proclaim: "The heavens

declare the glory of God, and the firmament showeth his handiwork. Day unto day uttereth speech, and night unto night showeth knowledge."

We know God, thirdly, in all we know of life and the universe, and in every fact and truth we know in nature, for nature is God manifested in His works. And God and nature, science and religion, truth and knowledge, are one and inseparable. There is but one system of creative power and unity, one harmonious whole embracing the universe. Therefore science, religion, and philosophy are woven together in the fabric of the universe as one harmonious whole. Who separates philosophy from science or religion from either separates God from nature and reason from consciousness.

We know God, fourthly, as far and to the same extent as we know ourselves, for "in Him we live, move, and have our being." We are His offsprings, created in His spiritual image. We think in the same way God thinks, and we "think God's thoughts after Him," and every good thought and deed is in one sense inspired, and all life, and light, and love and truth are of God.

We control all physical force and substance in the same way and by the same electric energy that God does, but not to the same extent; and all we know of ourselves is a reflex of the God above and the God that is within us—for we are an atom of creative Deity. And all things that exist are rational and thinkable. They are the product of God's thoughts, and may be comprehended by His thinking offspring.

A certain learned and eloquent divine of "The Church of This World" says he is "not certain that God wants us to know Him, since He has hid Him-

self in impenetrable darkness and august silence." But has He hid Himself? Is not everything we see and know a manifestation of His presence? So we should not unduly magnify the unknowable. He made us imperfect that we might climb to the altitudes of knowledge. He veiled nature's mysteries that, by our God-given reason, we might unriddle the universe.

The future growth of our knowledge will be chiefly in the realm of invisible matter, invisible electricity, and invisible life.

As I contend that all space and ether is invisible atoms and electricity; that atmosphere is compressed ether, and suns and worlds solidified ether; that the atom is the invisible unit of matter, and all visible matter is an aggregation of myriads of atoms—whenever we can perfect a microscope that will magnify five hundred or a thousand times more than they do now, it will reveal the atom as the smallest division of matter, and with the atom, the electric force and substance that permeates and controls it. Then we will have reached the foundation stone of physical science. And the atomic theory, which is universally accepted as the basis of all science, will then be understood. Then, in making visible electricity, we will have found the "eternal energy" of the material universe, and know how it controls all atoms, worlds, and suns, and maintains the perpetual motion and energy of creation.

Then there would be but one other discovery to make or mystery to unfold, and that would be to lay bare to the vision of the senses the intelligent, eternal spirit or soul of man—the God within us—so that we could see it shining through the transparent habiliments of flesh, and photograph it as

we now do a flash of lightning or an aurora. Then we will solve all the problems of mind and matter, and hear "the still, small voice" of physical and electric life and law, and the spiritual power of the soul of man, and of the spirit of God, be made manifest. And we shall also know how the disembodied spirit of man can command electric wings to bear it to the stars and to the far-off throne of Deity.

There are three general theories of man's origin and destiny:

First—the theory of materialism, which holds that man is but a material organism, whose life begins with the birth and ends with the death of the body. That holds man has no soul, and only what is visible and tangible is real.

Second—the theory of reincarnation or transmigration of souls, which holds that man has a soul which existed previously to this life, and passed from one body to another, and will exist after the dissolution of the body, and be reincarnated in a vast curriculum of bodies, passing on to some indefinite evolution and destiny.

Third—the theory of Christianity, that man was created in the spiritual image of His maker, and is an immortal soul which survives the decay of the body, and will return after death to His spiritual Father in His blessed and perennial abode called heaven.

These theories are virtually all that the inventive mind of man has been able to evolve. There is the vortex theory, the nebula theory, the vibratory theory, and now the electric theory; but these apply chiefly to the creation and evolution of the material universe, and belong more particularly to the broad domain of physics, while reincarnation and immor-

tality pertain to the realm of ethics, philosophy, and religion.

As the universe is a unity, and all facts must be consistent with all other facts, any discoveries in any department of nature tend to reveal the truth in all other departments. Mind and matter, spirit and substance, the visible and invisible are so nearly related and interrelated to each other that all are necessary to make up this stupendous mass of force and matter and spiritual power we call the universe. And God and nature, religion and science are inseparable, and constitute one harmonious whole.

The discovery of invisible matter and invisible electricity has destroyed the materialistic theory that "only what is visible and tangible is real." I hold that electricity is the half-way point between body and spirit, or mind and matter; and that when the visible body dissolves into invisible atoms or molecules the spiritual and electric body, which has always been invisible, will exist and live independent of the brain and body, and pass on to a perennial existence in other worlds of destiny. This I deem in accord with eternal justice, moral responsibility, and scientific truth. It gives the highest inspiration for righteous living, noble deeds, lofty thinking, and the aspirations of a glorious destiny.

Materialism teaches unreasoning fatalism, which makes man the blind victim of nature's malice or the recipient of her erratic bounty. It eliminates justice, destroys love and mercy, and makes reason the phantasy of change and accident. It says, we came thence from nothing and in a few years will depart hence to nothing, and while here we are but the shuttlecock of fate, the automaton of accident

and chance. We can have no ideals; we have received our characteristics for good or evil from heredity, and been moulded in the iron bands of environment, and deserve no punishment and merit, no reward. We came without our consent, and without it we will depart to our final extinction.

This is the horrid nightmare of materialism, fatalism, and extinction. It is a slander on Deity and man, and no reasoning soul can accept it. It destroys eternal justice, deadens the affections, turns the sweet joys of life into bitterness, slays all our hopes and ideals, and buries them all in the rayless tomb of darkness and dust.

The materialists remind me of the little boy in the Sunday-school whom the teacher instructed how to answer the questions the superintendent would ask the following Sunday. To the boy at the head of the class she said: "He will ask you who made you, and you must answer, God." To the second little boy she said: "He will ask you, who was the first man, and you must answer, Adam." Thus instructed, when next Sunday came, the little boy at the head of the class was absent; and, when the superintendent asked the second little boy, "Who made you?" he answered, "Adam." "No," said the teacher, "Adam did not make you; God made you." But the little fellow stuck to his instructions and replied: "No, God did not make me, Adam made me. The little boy that God made is not here to-day."

Thus it is with the materialist and the agnostic. They seem to think Adam made them; and Adam was made by protoplasmic fermentation from vegetable pulp, to fish and mammal and monkey; and God had no part in the creation. They think they are reasoning beings, and yet were created by some-

thing that had no reasoning powers. They misquote Darwin and Huxley and others, and think they have some authority for the assumption. Neither Darwin nor any other reputable scientist ever said that "Men were descendants from monkeys." He merely pointed out the probability that man and monkey might be descended from the same ancestral stock, which is quite a different thing to saying one was descended from the other. Instead of saying all were descended from the same original ancestor, he said: "I believe that animals are descended from, at most, only four or five progenitors, and plants from an equal or less number."

The modern theory of reincarnation is a vast improvement on materialism. It is more in accord with justice, reason, and the law of evolution. It teaches the existence of the soul and its immortality after death. It asserts that man is his own savior and creator, and makes his own heaven and hell. That the universe had no beginning, and will have no ending, but will forever exist; and that the same is true of the human soul, which knows no creation and can know no annihilation.

That there may be many transformations, but no creations. That the universe being immortal and eternal, all things in it, even the soul of man, must also be immortal and eternal. That the flesh in which man lives is but as a garment worn for a time; and as matter is indestructible, it is unreasonable to believe that nature would give immortality to a senseless speck of dust and deny it to the soul of man. That there must be a law of evolution for the soul, as well as for the physical body of man. That eternal justice is as exact as the movements of the stars.

That the soul of man has developed through evolution, and in its antecedents, which are eternal, it may have dipped as low as the meanest germs of life, or may have risen as high as the archangels; and through all experience, mean or noble, has maintained its continued existence, and built its own character, and reaped as it has sown in good or evil, and is forever working out its own salvation, or its own damnation. That man's life is an endless battle, in which the good and brave are victorious and happy, and the mean and cowardly are defeated and miserable. That without adversity, man's soul would shrivel for want of exercise. That evil is the penalty of wandering from right ways, and is an incentive to good; and trials, burdens, and griefs are the tests of manhood, and heaven is improved opportunity and progress.

Modern reincarnation largely discards Orientalism, and the Eastern cult of mysticism and Nirvana, and refuses to be buried under mystic symbols, ambiguous phrases, and tangled, tortuous sophistry. There is much good in theosophy, in that it recognizes the universal law of evolution in its best and broadest sense; teaches that man has a soul which is immortal; that he is the architect of his own character and happiness, and makes his own heaven or perdition.

This heaven is a condition and not a place, and I contend for both. I cannot agree that man existed previously to this life, and passed from one body to another.

Nature is always rational, and I can see no reason for such pre-existence without a conscious knowledge of it. As humanity has no knowledge of such pre-existence, either in the subjective or objective

mind, so often dwelt upon, I hold there is no evidence of a pre-existent life, and those few who think they have a recollection of a former life draw on their imagination to entertain a delusion.

I hold that in the beginning God created but two, a male and a female, and they threw off other sparks of life; and humanity grew and multiplied until, through the lapse of ages, the earth has been populated into the millions. The object in creating the male and the female was in order to populate the earth, not simply to produce passion and pleasure. Was it to produce an organism for the souls already in existence and wandering in space to smuggle into? I hold not. I hold:

First—there are no such souls roving through space.

Second—like begets like, and pre-existing life by sexual duality begets life; and the child is like the parents, not only in bodily and physical characteristics, but in its mental and spiritual character.

Third—man is a compound being, having a spiritual, electric, and physical body, and he confers upon his offspring the same compound elements of body and soul and spirit of which he is himself possessed. The law of procreation came from the original creation of body and spirit.

Fourth—this law is universal in nature. The lower animals confer on their offspring or progeny all the elements they possess, both of body and instinct. None come from the outside world; no animal spirits or instincts are hovering around to enter into the embryo of the colt, calf, or pig. The young bird or chicken does not take on the spirit or instinct of a pre-existing bird or chicken except that of its own parents. The wheat, and corn, and

cotton, the apple, peach, and potato are the product of the seed from which they grew, and not from any other seed or thing. "We do not gather roses from thorn trees" nor "figs from thistles."

The theosophists say: "The child is not created; its soul is as old as the souls of its parents. Its sins are all its own, and its character has been formed in its previous existence." I cannot accept this statement, for I find no proof in nature to sustain it. It is contrary to all law and analogy in the universe. All things are the products of the dual forces of electricity in matter, and the dual forces of sex or gender in spiritual and physical organism.

I do not believe there are human spirits wandering in space and seeking reincarnation in the embryo of infants, or that when we depart this life we will thus seek another earthly existence. I believe we are the product of planetary forces, and this is our first and last earthly existence, and when we go hence, it will be to a more glorious and perennial life.

Flammarion says: "If the soul is immortal, and heaven is to be its future home, a knowledge of the soul must in some way be associated with heaven. Is not infinite space the domain of eternity? All truth is one, and may be found in nature. Psychic science is behind physical science. Astronomy has had its Newton, but biology is in the time of Copernicus. The religion of the future will be scientific, and founded on a knowledge of psychology. It will have one great advantage over all that has gone before, *unity*. The immortality of the soul, already demonstrated by philosophy, will be speedily proven by psychology."

So this learned scientist says, "The immortality of the soul is already demonstrated by philosophy, and

will be speedily proven by psychology." Mr. Gladstone before his death declared: "The movement of psychological research is the most important movement before the world." Modern psychology holds that that which is not a supernatural revelation may still, so far as it is good, be a manifestation of the divine; and affirms the laws of the universe have always been constant. Prof. D. G. Brinton, in "Primitive Religions," has given its most attractive presentation in fascinating simplicity. "This universal postulate the psychic origin of all religious thought is the recognition, or, if you please, the assumption that conscious volition is the ultimate source of all force. It is the belief that behind the sensuous phenomenal world, distinct from it, giving it form, existence, and activity, lies the ultimate, invisible, immeasurable power of mind, or conscious will of intelligence, analogous in some way to our own; and mark this corollary, that man is in communication with it." This postulate, psychists contend, dispels the theory that any one tribe or sect can lay claim to an exclusive revelation; but that all good impulses, thoughts, and deeds are in one sense a spiritual revelation and inspiration, and are common and universal to all humanity.

In "The Evolution of Immortality," a recent (1901) volume by Dr. D. S. McConnell, he suggests the hypothesis of the possibility that while all human beings are not immortal, some of them under certain conditions and evolutions are capable of a future life after death, but which will not be endless but subject to conditions of its own.

He thinks we cannot conceive of psychical activity in the absence of a material vestment; but thinks the matter with which the soul may be associated

in a future existence need not be the same kind of matter with which it is connected in this life; that the physical garment of souls who outlive their mortal surroundings will be the strange substance known as the luminiferous or stellar ether, which is the same medium by which the Roentgen rays and wireless telegraphy perform their wonderful work.

He says: "We know that a material medium fills all space, and interpenetrates all that we call matter. The experiments of Struve, Helmholtz, Lord Kelvin, Dolbear, Tesla, Roentgen, and a hundred other physicists have demonstrated its existence. The result has been to compel a new definition of matter. Extension, ponderability, form, dimension, and such qualities can no longer define matter. We can no longer speak of 'empty' space, for no portion of space is empty. We can no longer assert that 'no two portions of matter can occupy the same space at the same time,' for they do constantly. The matter which we see lies bathed in a matter we do not see. This universal ether is matter. It has been weighed and measured. A sphere of it the size of the earth would, if compressed to the density of the earth, be in size between a marble and an orange. It is the medium through which light, heat, and electricity come in waves of different length." Then he proceeds to elaborate the same theory set up in "The Unseen Universe," by Stewart and Tait, with regard to the influence of the second ether. He sets forth that each thought and emotion is accompanied by certain molecular movements and rearrangements in the brain.

Thus the psychical activity builds up a physical fabric for itself. This material fabric is every mo-

ment disintegrating, and at death falls into ruin. Then he says: "Suppose that before this ruin befalls, the soul shall have been able to build up as it were a brain within the brain, a body within the body, such as the Orientals have for ages called the astral body. Then when the body of flesh shall have crumbled away there will be left a body, material to be sure but compacted of a kind of matter which behaves quite differently from that which our sense perceptions deal with. This body would be built of a material the ether of which, according to science, is indestructible. It would move freely through ordinary matter without let or hindrance. When this 'muddy vesture of decay' has dropped away from 'the spirits of just men men made perfect,' it would leave them clothed upon, and still men with rational souls and material bodies fit to sustain their psychical life. Such ethereal bodies with living souls would inhabit a universe of their own, even though that universe should occupy the same space that this one does. Neither earth, nor fire, nor water could in the least impede their movements, and they would be equally at home in frost or flames. With the swiftness of light they could speed from 'where old Bootes leads his dogs to where Sagittarius draws his bow in the South.' "

This ethereal body, he thinks, could have thrills of pleasure and pangs of pain, and accumulate almost infinite knowledge. He says only persons having self-conscious, moral sensibilities have a personality to become immortal; and only to those possessing the requisite moral vigor is that existence possible. For the future life, to be personal life, consciousness, and memory must be continuous. His theory is that any future life must be an embodied life, and

that science has found the material which will serve the needs and uses of such a future life. This is the latest pronouncement of science, and shows she is making rapid headway toward the proof of the immortality of the soul. She has found both the material and the way to immortality. But I do not think it should be limited to a requisite, moral vigor, but all humanity should be included in its beneficent application.

A recent author on individualism and the vibratory theory says spirit and matter are one, and the same vibratory force and mind and matter are one, and not distinct substances. That the sun is the source of life and the great mind centre of the earth; that sun and earth are closely related. Consciousness seems to be born where sun and earth, mental and physical vibrations meet. Consciousness is but the attrition of inner and outer forces, one upon the other, and all having their origin in the sun and earth mass itself. Knowledge is but consciousness of things. Mind can receive vibrations from the sun directly; and the body, indirectly, through food and air. Creative power must come from the unseen; it does not lie in things, it is only manifested by passage from the unseen to the seen. He concludes by saying that "The vibrations of the one power manifested through forms called creative, mental, or sun power, in the realm of mind, is *intelligence*; in the realm of feeling, it is *love*."

He maintains that in youth we have more of the sun vibrations, which are cheering, vitalizing, and inspiring; while in age, we have more of the earth vibrations, which are depressing, producing worry, pain, and finally death and dissolution. That the way to retain youth, happiness, and long life is to

keep our bodies and mind in contact and accord with the sun's vibrations. But how can we do this? So far as we know, the sun has no vibrations. The earth's atmosphere has vibrations, because it deflects the direct rays of the sun.

While I agree as to the sun's wonderful potency and life-giving power, I do not confine it to any vibratory form, and cannot accept the vibratory theory, which is sun theism or sun pantheism. The sun does not send forth its electric power in vibrations. It shoots it to the earth and planets as direct as an arrow from a bow or a leaden ball from a rifle. It is only when its electric currents come in contact with the dense atmosphere of earth and planets, which receives it like a soft, pliable cushion, that its swift, direct rays are thrown into vibratory currents that encircle the globe. The sun's electric rays come as wireless electric currents, as direct as the same currents run along a telegraph wire. There is the direct current and there is the alternating current, and twenty-eight currents can run along the same wire, fourteen one way and fourteen the other way, and pass and repass each other without resistance or obstruction, defying the law of physics, which says that two bodies cannot occupy the same space at the same time. These currents do not go in vibrations, but swift and direct as a bullet, and with but one impulse.

As the vibration of the sun's rays is greatest near the earth, where the resistance is greatest, those on the mountains and altitudes must accept a different vibration; and as in electric storms and climatic changes there is a great difference in the vibrations, which all humanity must breathe and feel, I think the vibratory theory is both uncertain and unsatis-

factory. I do not believe that mind and matter are the same vibratory force and not distinct substances. I believe they are distinct and different substances, and not vibratory forces at all. I believe in the sun as the source of life and the mind and soul centre, and in the one power which in mind is intelligence and in feeling is love. But I hold it is a spiritual entity back of matter and back of electricity which commands both, and which is the eternal intelligent spirit of Deity and man. All creative power comes from the unseen Deity, and all the visible comes from the invisible.

Christian Science teaches that the influence of the mind over the body is so great, it is supreme. Certainly it is so great that no one can afford to neglect it. Medical records show that many diseases have been cured through the mind; and a distorted imagination has brought disease and death.

Christian Scientists announced recently, at Carnegie Hall, that it had cured two millions of sick persons. It has accomplished much good, and will continue a revelation and blessing to mankind if not carried to the extreme dogma of holding that matter, sickness, and death have no existence; that God is impersonal, and mind can cure organic diseases and mend broken limbs. With these ultra doctrines expunged, it approximates to pure spiritual Christianity. It is most helpful to weak, discouraged men and nervous, hysterical women, and works miracles on all desponding humanity, because its doctrine is cheering and hopeful, and promises direct and continuous spiritual aid through the divine mind.

One of its teachers says: "Its basis is the basis of all Christian faiths. The evolution of science shows

that the subtler spiritual forces in nature are the dominant and supreme ones. And these are recognized by all believers in Christianity and students of advanced science. It is the same as the faith of the martyrs, the nuns of Lourdes, the Roman priest, and the Protestant pastor. If man is merely an animal in the Darwinian view, or a machine in the materialists' view, these principles are wrong, but not from any Christian standard. Whatever we are able to do is through divine power acting through us, according to the promises of the New Testament."

Dr. Austin Flint says: "The power of the mind over the body is so great, no physician can afford to ignore it. The question is not, What effects can be produced through the mind? but rather, What are the effects that cannot be thus produced? Telepathy and hypnotism and their phenomena are now included among the established sciences." While I cannot accept matter, sickness, and death as non-existent, they have so much that is good and truly spiritual and Christian that I bid them God-speed on their helpful mission to discouraged humanity.

I hold that belief in God is a scientific necessity; that atheism is universal anarchy; and that Christianity is the only rational and scientific theory of creation and Deity.

Drummond says: "It may be unscientific to indorse some forms in which Christianity is represented, but Christianity itself is a thoroughly scientific thing. It is not narrow. Christ said the broadest things that have ever been said." This is true. There were the Pharisees who were so narrow they could not see spirit or form, and were a species of modern agnostics. The Sadducees were

so narrow they could not see spirit for matter. They were materialists. The Essenes were so narrow they could not see matter for spirit. They were a type of our Christian Scientists. Christ rebuked all these sects because of their narrowness. He recognized soul and body, time and eternity, and said: "Give to Cæsar that which belongs to Cæsar, and to God that which belongs to God." His was the broad religion of humanity, the rational ethics of science, the measureless philosophy of the universe.

Huxley said: "Science is not Christianity, nor is it anti-Christianity. It is *extra-Christianity*." It has supplemented Christianity, and is daily producing proof of its eternal verity. It has thrown rocks at the glass houses of theology, but has never disproved an essential truth of Christianity, nor said a word against Christ or His spirit of love and philanthropy.

Darwin sent his check regularly to a Christian missionary society, though he did not accept Paley's natural theology. Lord Kelvin, the greatest scientist of our age, opens his lectures with prayer.

Scientific men have given up imitations of Christianity, and theological dogmas and cant, but not Christianity. They realize its blessing to the world. They do not talk of saving men's *souls*, but of saving their *lives*, and letting their life-energy and talent go out to some purpose. They say: "Live right, act right, here and now, and your soul is safe. You haven't a soul, you *are* a soul. And you can't lose your soul by carrying it around in your pocket; or save it by putting it in a bank vault. It is your life, and the expression of your life. Save your life by good deeds and blessing the world, and you have

saved your soul." This is the reasoning of rational scientific Christianity. You cannot live a good life and do good deeds without exemplifying Christianity, and recognizing your obligations to Deity and man. This is the essence of Christianity.

Lowell said: "Show me ten square miles in any part of the world, outside of Christianity, where the life of man and the purity of woman are safe, and I will give up Christianity."

Many things can lift society a little; but only Christianity is the leaven of the world and the salt of the earth. And salt is that which saves from corruption. Christianity is the crowning glory, and the constructive force in modern life and character.

Plato, Aristotle, Socrates, all the philosophers went about asking questions. Christ went about answering questions. Socrates asked, "What is truth?" Christ said, "I am the truth." Living is the truth, right living is the supreme truth. And Christ in His life, precept, and example is the truth, the exemplar, and light of the world. He was perfect in His life and teachings, and that is all we could ask of God or man.

Then be glad that you live, because life is the gift of God and the mirror of the soul; because it brings the dreams of love and the opportunity for good; because it gives the consolations of hope that looks up to the stars and the fancy that revels in the beauty of earth and sky, and pictures the beatitudes of heaven; because it is an assurance of the life that never dies and the eternal love that never perishes. And as you make your moments here, God will make your eternities hereafter.

CHAPTER XI

THE CITIES OF THE SUN, AND THE DELIGHTS OF HEAVEN

After looking the whole universe over most carefully, I have fixed upon the suns as the most rational place for the personal headquarters and abode of Deity. If it is the personal and visible abode of Deity, it should also be the future abode of man. If man returns at death to the God who made him, as both reason and the Scriptures affirm, then the suns are the suitable place for the future perennial residence of man.

A well known scientist says: "Science has found no place for a heaven in the universe." And many other scientists are of the same opinion. This is not remarkable when they say eighteen millions of the greatest self-luminous spheres of the universe are burning up and dying out; and billions of tons of matter in our own sun are being consumed daily.

That of the planets only two little ones are inhabited, and they will in time be dead worlds; and all creation is going to ruin in a few million years; that the universe is a great failure; and omnipotent Deity does not exist, or he would not have blundered so; and there is no place for such a mythical creature as God, or such a mythical place as heaven; that things developed from nothing by the law of evolution or earth fermentation; and that while man has a thinking apparatus,

nothing with a thinking apparatus designed or created him, or his little world. I believe as strongly as any in the law of evolution. But that does not do away with Deity. The law of evolution necessitates a law-giver. "Law is a rule of action prescribed by a superior power." Therefore the law-giver of evolution must be the supreme ruling Deity, and evolution is not God, it is the law He has impressed upon nature. How did He impress it on nature? I contend by electric energy that permeates all nature, and which is his word of power.

God is a spirit, and spirit cannot act directly upon matter, but must have an agent or medium. Electricity is that agent or medium, and the machinery by which Deity controls all things. Atoms which are almost spiritual in their invisibility are moulded into all forms of matter under the still more seeming spirituality of electricity. Because God is a spirit, that does not destroy his personality. He must have a personality as well as man, his offspring, and also "a local habitation and a place." The electrician is not present everywhere in his machine, but by the power he controls at the switch he controls the whole machine, the same as if he was present. It does not destroy man's individuality to control a thousand machines; neither does it destroy God's individuality to control a million of worlds or to have a billion of spiritual children. He is potentially and constructively present in his invisible, electric, and spiritual power in all things. When he made man, he gave him power to throw off other sparks of life, physical and spiritual. God must be a personal God if man is a personal man, and must have a special, visible dwelling-place, which, I contend, is in the sun.

To the sun, then, at death, man shall go; as the atoms go; as electricity goes; as all invisible things go. Clothed in the garb of electric power, and winged with the speed of light, and joyous with the whispering melody of space, and the companionship of ministering spirits, he will speed onward to the gates of the celestial cities, and ere the chill of dissolving life shall pass from his mortal body, his spiritual body shall say "good-morning" to the hosts of heaven.

What of the physical geography of the sun? Has it mountains, lakes, and rivers? Has it trees, and shrubs, and flowers? Has it variegated landscapes of hill, and copse, and valley? Has it bending heavens of luminous light, and rainbow-tints of gorgeous beauty? Has it peerless cities of smiling grandeur, inhabited by noble denizens of angelic goodness, with all the graces and fascinations of human personalities, with loving hearts, pure lives, and joyous, aspiring souls?

I believe it has all of these, and more than I could paint with all the glowing sweep of fancy or the gorgeous flowers of rhetoric. It is like our earth, only more beautiful, more glorious, and more divine. Its inhabitants are like our noblest human representatives, only more perfect in form and feature, and more beautiful and divine.

But above all there is perennial gladness and joy, without sickness, pain, or death. No hectic flush of the consumptive; no pallid hue on brow or cheek to indicate the ravages of disease; no halt, or lame, or blind; no sound of weeping, and no sigh of distress; no sad partings, and no heart-broken farewells; no fear of robbers, or dread of murder, theft, or any wrong or crime; no angry men, or spiteful women,

or crying children, or drunkards, mendicants, or thieves. But a world of unending gladness and beauty. And over all the benignant blessings and care of the infinite Father, or His loving Christ.

Humanity in this life has very crude and erroneous ideas of the joys and blessings of the life to come. The early religious conception that throughout all eternity we would wear golden crowns, play on golden harps, and sing joyous hosannas, presented a dreary sameness of stereotyped existence contrary to all analogy and reason.

If the soul is immortal, death does not change its natural characteristics and desires; it only emphasizes the good ones and tends to eradicate the bad. We bring to our future life the same love of beauty, knowledge, and variety that we possessed in our earthly life. And our souls shall be thrilled with new and varied beauty, and our minds ravished with the delights of knowledge and wisdom. All that we learn here will be useful hereafter, for in this life we are building for eternity. And the nobler and purer our lives, the more exalted our character; and the more profound our knowledge here, the higher will be our starting-point in the upward sweep of eternal truth and knowledge.

Death could not destroy the lofty genius of Shakespeare; the sublime ideality of Milton; the mighty epic melodies of Homer; the philosophy of Newton; the inspiration of Moses; or the wisdom of Solomon. These were schooled in divine fancies here, and will climb quickly to the divine altitudes of celestial wisdom and glory. Every soul, as it has improved its talents here, will be rewarded with higher and multiplied talents hereafter. This is the law of evolutionary growth and eternal justice, and applies

to all life and all worlds. Think you Shakespeare will cease to write; or Moses to instruct; or Newton to reason; or Paul to teach? Their most divine and exalted products will flower in immortal beauty in their exultant genius in that perfect and endless life.

But the living shall die, and the dead shall live, and the mystery of death is on every hand. Yes, this old, old fashion of death, and this new and ever unchanging fashion of death, abides with us. It is the fashion which came with Adam and Eve, our first parents. It was inaugurated by our first brother in the flesh, the comely young Abel. Job asked it many questions; Abraham followed it with bowed head into the Cave of Macpelah mourning for his beloved Sarah. Moses looked upon its unchanging countenance on the lonely peaks of Mount Nebo; and Christ faced it in the Garden of Gethsemane, and on the heights of Calvary bowed to this old, old fashion, and said, "It is finished." And Paul obeyed this old, old fashion, though he said: "O death, where is thy sting? O grave, where is thy victory?" And all men in all ages have followed this old, time-worn fashion. It is the fashion that has not changed in all human history, and it will continue till the last breath expires from the last lingering atom of all humanity.

But the exultant cry of hope is heard, and the smiling face of faith is seen amid its darkening shadows, saying, "Thank God, all who look upon this old, old fashion. Thank God for that older fashion yet of immortality. And come, ye angels of light not yet estranged, now that this swift river bears him to the sea, and guide his frail bark to the celestial islands of the blessed in the boundless ocean of another life."

Yet this old, old fashion comes to all. No man can shun it, wealth cannot bribe it, or power overthrow it, or wisdom avoid it. It may be sad when it comes to the young and joyous, full of youthful hopes and lofty ambitions. But it saves many a pang of pain, and disappointment, and sorrow. But to the aged man, weary of life's struggles, who has tried all its pleasures and felt all its disappointments, whose limbs are weak, and whose eyes are dim, this old, old fashion, death, comes like a peaceful sleep after a long journey. Then faith and hope whisper to the departing soul: "Thank God for this old, old fashion, death, which brings new life and immortality; and bear him, ye mighty angels, to the fountain of everlasting youth in the land of everlasting life."

In the bright realms of the cities of the sun no impurity can remain in its life-giving atmosphere. Decay is unknown, and nothing can mar or disfigure its inspiring scenes of marvellous beauty and purity. Nothing will tarnish there. Its mansions are of pure gold, like unto glass, and are ornamented with all precious stones. All food is bountifully provided without labor or effort, in the varied and luscious fruits that are to be found in front of every mansion. The wonderful trees of life with their bending foliage of verdant beauty, bearing their twelve manner of fruits monthly, bend their rich-laden branches in graceful beauty over the vine-clad terraces of those happy mansions, so that its occupants have but to reach forth their hand and pluck an abundance of delightful food which is never exhausted. And they need no other food but the nectared fruits at their door, and no other drink but the crystal water of life in front of every mansion,

where the green grass and flowers grow down to its pearly brink. There their bodies are refined and incorruptible, and need no coarse food or animal flesh; and there no animals are killed for human food; and in fact nothing is killed in that perfect realm of perennial life. There all feel and recognize the beautiful sentiments of Goldsmith:

“No flocks that range the valley free,
To slaughter I condemn;
Taught by that power which pities me,
I learn to pity them.”

There are to be seen dotting the vast valleys and lofty mountains of the sun the spires and domes of many mighty cities that are scattered thick and far over its glowing landscape. Between these cities lie shining rivers, fruitful groves, tranquil lakes, and sparkling seas like molten glass. And all is flooded with the golden light from the bending radiance of the corona.

There nature spreads with velvet verdure the sylvan vales where perfumed zephyrs caress the bending flowers. And far-off mountains kiss the luminous sky and seem like golden stepping-stones on the vast highway of eternity. And the glimmering sheen of silver lakes, and crystal seas, and murmuring waterfalls, gladden the soul with their entrancing loveliness. And beneath the shade of cooling grove and towering mountain height there is a softer light like the mellow haze of slumberous twilight, or the golden afternoon of summer days on earth with the landscape all a-blossom. And there sit loving souls in fond delight and sweet communion. And oft they wander by the emerald-rimmed lakes that nestle near the mountain's base

in nature's fair elysium; and repeat again love's stored-up memories of their other life in planet worlds; and kiss the cheeks that once were stained with tears; and look into the depths of saintly eyes that weep no more; and tell of the grief and sorrow of those earthly years of disappointed hopes and sad farewells; and how the longing heart had found rest at last, thus reunited in this blessed land, where they could feel "the touch of a vanished hand" and hear the voice that had been silent so long. And lifting their saintly faces with beaming joy they thanked the Father of all Good for life and love, and faith and hope; and even every trying care in the earth-life past, that finally housed them with the joy of love united in the bliss of heaven.

And there their bodies are so refined and so evenly balanced with the magnetic atmosphere, that by a mere wish, a gentle impulse, they can float in the air and ride on a fleecy cloud, or sit as it were on a luminous arch of the corona and look out upon the universe, and converse together, and study nature, and analyze and solve all mysteries. And when they feel weary, or the need of greater vitality, they can bathe in the river of life, and float, and breathe, and sleep in its crystal life-giving waters. And there "God shall wipe away all tears."

We often ask, "Why do we not know more of our future life, and our place of existence after death?" The chief reason should be evident to every thinking soul. Because, if we knew all, we would lose interest in our present life, neglect its duties, and waste its opportunities. If we knew what was before us even in this life, we could not enjoy the present for thinking of the joys and sorrows of the future. And it is far better, as we can take but one step at a

time, to have only light enough for that one step; and let hope and faith alone throw their cheering search-light into the dim, unfathomable future, where in its impenetrable shadows are hid all our trials and sorrows.

If we could look beyond the veil and see the celestial gardens, the elysian fields, the beautiful cities, the wondrous lakes, and smiling landscapes, the trees of life, and the magic river; the nectared fruits and blooming bowers, our souls would long to span this seeming waste of life and earthly cares, and, spurning the quest for knowledge and character-building experience here, to reach at once that celestial paradise. Then, instead of climbing slowly to the altitudes of noble character and spiritual life, we would endeavor to reach heaven with a single bound, and avoid our trying experiences here:

“Heaven is not reached by a single bound;
But we build the ladder on which we rise,
And we mount it slowly round by round,
From the lowly earth to the vaulted skies.”

If we could only realize that day by day we are building for eternity, how different our lives would be! Yet every gentle word, every generous thought, every unselfish deed here, will become a pillar of eternal beauty in the life to come. Our two lives are so closely blended, one but a continuation of the other, that we cannot be selfish and unloving in one, and generous and loving in the next. We must needs have a growth in goodness and perfection. All things come by growth and evolution; a tree does not bloom in a day, or bring forth fruit in a week. If we are ignorant here, it will take us longer to become wise there; and if ungenerous and

unkind, we will have to struggle longer with our nature to be loving and kind even in the delights of heaven.

But why should I undertake to describe the glories of heaven and the beauties of the Cities of the Sun, when they have already been so perfectly and exactly described by Saint John in his apocalyptic vision in the twenty-first chapter of Revelations.

In the following chapter, I will endeavor to describe that perfect model of a glorious celestial city. If such a city existed, I have reason to believe it is in the bright realms of the life-giving sun. That when Christ ascended up into heaven, the place he ascended to was the all-luminous sun. That where Moses and Elias came from and returned to, after being seen by the disciples on the Mount of Transfiguration, was that brilliant, perfected world, our central luminary. And there John was translated, and Paul was snatched up to it; and departed spirits fly to it on the wings of electric light and music when they step out of their earthly tenements of dissolving atoms.

In that perennial heaven there will be inexhaustible interest in life, in the beings that surround us, in those we love, in the objects of nature, the achievements of art, the imaginations of poetry, the incidents of history, the ways of mankind past and present, as well as the beauty and wisdom of the angelic hosts, and the fadeless delights of heaven.

Nothing in the universe will be insignificant or uninteresting. There will be everything to please the eye, arouse the fancy, delight the heart, and inspire the soul. All we learn here will be useful in heaven.

Here we live in a world of beauty, of variegated

flowers, trees, lakes and rivers, mountains and valleys, and bending heavens luminous with sunlight and starlight. Nature is bright to the bright, joyous to the cheerful, and comforting to those who will accept comfort. In heaven I judge it will be likewise, only more joyous and perennial, without sickness, sorrow, or death, or earthly trials and temptations. It will not be the cold, calm heaven of the ascetic, or the materialistic paradise of the Mohammedan, but it will be a glorious place to live, to learn, and to enjoy forever.

The most important thing is to learn how to live here, and that will help us to learn how to live hereafter. In both realms, man will be man, and master of his fate. Neither here nor there will he be, as the Orientals think, an automaton and plaything of superior power, as the Persians attribute happiness to Ormuzd, the spirit of good, and misfortune to Ahriman, the demon of evil. All the denizens of heaven will desire to be good, and what they desire to be they will be; for the force of their will joined to the supreme will, will cause them to be the reflex of all goodness and perfection. They will have high, unselfish purposes and aims, and this being universal would make a heaven of any realm—even of the abode of Satan and darkness, if such a place could exist in God's universe.

Even here, Bacon said that "No man's private fortune can be an end any way worthy of his existence." And Plato, Aristotle, Buddha, and St. Paul would never have been content to perfect themselves merely for themselves; for they recognized the curse of selfishness, and the supreme law of usefulness embraced in the divine edict, "It is more blessed to give than to receive."

This is the colossal and enduring principle of earth, and heaven's highest beatitudes. Christ said: "Let him that is greatest among you be the servant of all." Here life is short, art is long, opportunity fleeting, experiment uncertain, and judgment difficult. "What is past and done, Clotho cannot weave again, or Atropos recall." Here courage in excess may become foolhardiness, affection weakness, and thrift avarice; but there the soul will be evenly poised, self-contained, and heaven-instructed. The most we can say of the greatest good is that it is indescribable and of the highest bliss; that it is unutterable.

We are told that "God is love," and we know that the beginning of man on earth is a cry born of love, and the end of man on earth is a cry for love. While it is true that love enslaves, commands, and rules mankind, yet if there were no love there would still be tears on earth, but they would be the cold, meaningless tears of pain.

And were there no earth-love there could be no heart sorrow. Were there no cravings for loved ones gone, the soul of man would rest forever a brother of the clod. It would dwarf his aspirations, and banish his dreams of heaven.

Froude says: "Let us do right, and whether happiness comes or unhappiness, it is no very mighty matter. If it comes, life will be sweet; if it does not come, life will be bitter, not sweet, and yet to be borne. On such a theory only is the government of this world intelligibly just. The well-being of our souls depend only on what we are; and nobleness of character is nothing else but steady love of good, and steady scorn of evil. The government of the world is a problem while the desire of selfish

enjoyment survives; and when justice is not done according to such a standard, self-loving men will still ask why, and find no answer. Only those who have the heart to say, 'We can do without what we desire' find the secret. Man will have what he deserves, and find what is best for him exactly in proportion as he honestly seeks for it."

This gives a true idea of innate justice and happiness. They are like the electric currents of the sun, which go to each planet in exact proportion to their attracting power; and so man receives in his inner nature, and spiritual consciousness, however unfortunate his surroundings, the exact measure of justice and happiness his real merit draws and justifies. Thus honesty of purpose and conscious integrity of soul constitute happiness, and not earthly possessions, or temporal wealth, pleasure, and power. It is not what man has, but what he is, that brings happiness. And this generation in their haste and striving are the most ungrateful in the world's history. All the ages of the past have suffered and toiled for them. A billion human eyes have looked for them, and a billion hands have sowed and garnered the earth for them. All the treasures of the world in all the ages of the world are poured at their feet. All human history has been written for their instruction, and the wise and great of every age speak to them with their tongueless voices from the volumes of their living thought. And the world is theirs with all the past embalmed and glorified.

There can be no real pleasure here or hereafter without doing something useful. And there, as here, the pleasures of the mind, the dreams and aspirations of the soul, will be the most exquisite and lasting.

In those perennial realms there can be no degradation of body or soul. None can fall from virtue, like Vulcan from heaven, in a day. And no evil thought or purpose can spring from the passion-wrought brain, like Minerva full-armed from the head of Jupiter.

There we will not be, as Newton said of himself, as children picking up pebbles on the shore of knowledge, but the great ocean of truth will lie discovered before us, and we can venture at will upon its placid but boundless waters. And the joy of life will be to meander in the fields of truth, and pick up "wisdom more precious than rubies." All nature, radiant with smiles, will tender her welcome mysteries, and the highways of beauty will blossom in the sunshine of supernal bliss. There will abide our loved and lost; and while they cannot come to us here, we can go to them there in the supernal realms of the self-luminous sun.

Then the mysteries of time and the riddles of existence will be solved, and all will know that God made all nature beauty to the eye and music to the ear and rapture to the soul. That every lesson we learned here will be useful in the hereafter, and every tie of earthly love and affection will be reunited in the realms of perennial life.

"My own dim life should teach me this,
That life should be forever more;
Else earth is darkness at the core,
And dust and ashes all that is."

But even dust and ashes shall be reanimated into living forms; and the very earth dust under our feet is clothed with the enduring properties of eternal life, and shall live again and again in the rosy tints

of fruit and flower; in the ruddy glow of cheek and sparkling beauty of the human eye; and shall bathe in heaven's perennial light; and come and go from the luminous bosom of the all-life-giving sun to the earth-dust life of circling planets while the ages roll.

And no speck of dust, or dream of longing soul, or hope of heaven, shall ever be blotted out or quenched in the dark ocean of oblivion. No noble thought, or kindly deed, or lofty aim, or high and holy purpose, but shall receive the recompense of just reward. And every life, however humble, or oppressed with care, or steeped in sorrow, or bathed in burning tears, shall find at last the haven of its long-sought rest, the heaven of its cherished dreams.

And nothing that exists shall be destroyed on earth, or sun, or planet. All things, from atoms to the great white jewelled throne of Deity, shall stand in their own sovereign right of life and destiny forever and forever. The God that made the little viewless atom that makes all visible created things hath thus decreed, and bound its viewless form by chains of living light unto his central throne, and bid it come and go from heaven to earth, and earth to heaven. And living souls upon those angel wings of living light and joy shall sweep upward to that central throne and to the peerless Cities of the Sun, and enter the pearly gates of heaven, where "God shall dwell with men."

The universal dreams of mankind, the aspirations of all thinking souls, the hallowed memories of the dead, and the sacred hopes of the living, all demand a life beyond the tomb.

All nature teaches the lessons of another life in the unfolding verdure of spring and the blossoms and fruitage of summer.

The vast material universe moves with wonderful precision and regularity, bringing in their appointed time the seasons and years. The earth, like a swift racer, speeds upon her circling orbit and completes her annual journey to a second. And infinity looks down upon us from the eternal stars in their unapproachable glory, and all tell us we have an undying soul. The disparity between the vicissitudes of man's destiny here, and the beneficent regularity and perfection of the physical universe, proclaims that man shall have another and more perfect life hereafter.

The numerous and constant changes going on in our body and brain without affecting our reason, memory, or consciousness prove unmistakably that our souls will survive our bodily existence, and enter the elysian fields of immortality. And the sacred oracles of divine truth confirm the visible oracles of the living universe, and teach us that there is in the vast realms of God's own home and Paradise a peerless heaven where the blissful soul shall taste the nectared sweets of peace and gladness, and dwell in perennial joy; where it shall bathe in the crystal fountain of life, and be robed in the divine drapery of eternal love, and sit down at the feast of immortal goodness and truth, and walk the golden streets of the celestial city, and fly on the wings of heavenly joy to the reunited loves of the terrestrial long ago.

CHAPTER XII

THE NEW JERUSALEM, THE CITIES BEAUTIFUL, AND THE CITIES OF PERFECTION

The supernal cities of the sun are thousands and millions in number, and are peopled with the departed denizens of the earth and planets; and bask in tranquil beauty in the circling radiance of the luminous corona. These cities, with their sapphire domes, diamond spires, and glittering turrets scintillating in the far crystal ether of its glowing skies, sit like jewelled crowns on the broad bosom of the father of worlds. Their mansions, spacious and beautiful, are built of gold like unto glass and inlaid with precious gems; their streets are paved with gold as it were transparent glass. For there the vast electric energy of the sun has made gold, and diamonds, rubies and all precious stones, prolific and abundant as rocks and pebbles and the heaps of sand upon the shore of earthly seas and rivers. And there these baubles of earthly desire have no commercial value, for nothing there is bought or sold. There is an endless supply for all "without money and without price."

And there on the broad bosom of the all-glorious sun is the city of the New Jerusalem, described so minutely in the wonderful visions of Saint John, basking in the white light of celestial glory, with the Israel of Jehovah, from Abraham, Isaac, and Jacob, Moses and Solomon, to the latest arrival from the earth planet.

Moses is still a great leader in Israel, and Solomon has been gathering wisdom for ages; and Abraham has been learning more wonderful lessons of faith and righteousness. And these three, we can imagine, are standing in front of the vast auditorium on the lofty acropolis of this great city. They have been looking earnestly through a vast opening in the luminous, bending arch of the translucent sky, and pointing out to each other the flying planets and light-encircling suns in far-off space. And they scan with eyes that see like mighty telescopes the universe of stars and planets, and little circling moons, and fiery comets, and glowing clouds of nebulae, and then explain their motion and their mysteries. And then they pause and gaze long and anxiously at the little earth planet from which they came so long ago, and see it spinning silently through the blue ether like a revolving cannon ball. And memories of the long-vanished earth life crowd upon them. And they discourse upon the scenes and incidents of their transient existence there, and at length gaze down on the glory and beauty of their divine city.

And Moses said: "It is almost nineteen hundred years since I visited that little world and stood upon Mount Tabor, and looked far out over Palestine and saw my beloved Jerusalem sitting upon her dry and rocky mountain ledge, in a hot and weary land, possessed by her enemies, and in desolate widowhood. Oh! what a contrast is here in the new and heavenly Jerusalem of our reunited race in this perennial land of love and peace.

"From the lofty heights of long-remembered Pisgah I gazed on Canaan's promised land 'flowing with milk and honey,' and I longed to enter. But no

such wondrous beauty ere has met my eyes as from this lofty height I now behold. What think you, Solomon? You have visited many suns and spheres."

And Solomon said: "To the Old Jerusalem in the olden time my heart was wedded, and I tried to make her beautiful. But oh! the wonder and the beauty of this our loved Jerusalem. It surpasses all my dreams of loveliness and grandeur."

Then Abraham spoke and said: "I have seen all the cities of Chaldea, and Egypt, and the queen cities of the Nile, the Euphrates, and the Tigris, but nothing ever blessed my sight so grand and glorious as our heavenly Jerusalem. I thought the cities and temples of old Egypt were grand, and the view from the plains of Mamre was beautiful, but never did I dream of such glory and magnificence as greets my sight from the central heights of this great city."

And then they looked down on this heavenly Jerusalem. And farther than the eye can see, even with telescopic vision, in the crystal light of heaven they saw terrace on terrace rise with golden mansions, blooming trees, and shining rivers a thousand miles on every side, yet could not reach the limit of that glorious city. The eyes that looked from Pisgah's heights at far-off Canaan, and those from beautiful Mount Zion, and those from Mamre's tents that gazed across the plains of Edom, though they could see a hundred times as far as then, could reach no sign of end or limit to this heavenly Jerusalem.

This was the heavenly city "not made with hands, eternal in the heavens, whose builder and maker is God." Christ foretold it; Paul was snatched up to it as to the seventh or perfect heaven; and John

visited it in his wonderful apocalyptic journey, and describes it thus:

“And an angel carried me away in the spirit to a great and high mountain and showed me that great city, the holy Jerusalem. And I saw a new heaven, and a new earth, for the first heaven and the first earth had passed away, and there was no more sea. And I, John, saw the Holy City, the New Jerusalem. Her light was like unto a stone most precious, even like a jasper stone, clear as crystal. And he that talked with me had a golden reed to measure the city, and the gates thereof, and the walls thereof. And the city lieth four square, and the length is as large as the breadth; and he measured the city with his reed twelve thousand furlongs. The length and the breadth and the height of it are equal.”

John dwells on this as if it was remarkable, and states it twice that its length and breadth and its height were equal. This great height of a city is unknown on the planets, but may not be unusual in the marvellous structures on the surface of the sun.

“And he measured the walls thereof, an hundred and forty and four cubits, according to the measure of a man, that is, of the angel.”

He seems very anxious to impress upon us the length of the cubit, and that the angel was the size of a man, and had the same cubit or measure from the elbow to the tips of the fingers as a man.

“And the building of the wall of it was of jasper, and the city was pure gold like unto clear glass. And the foundations of the wall of the city were garnished with all manner of precious stones. The first foundation was jasper; the second sapphire; the third, a chalcedony; the fourth, an emerald; the

fifth, sardonyx; the sixth, sardius; the seventh, chrysolite; the eighth, beryl; the ninth, a topaz; the tenth, a chrysoprasus; the eleventh, a jacinth; the twelfth, an amethyst. And the twelve gates were twelve pearls; every several gate was of one pearl; and the street of the city was pure gold, as it were transparent glass."

Could any description be more exact or more real than this? That we may not misunderstand, he repeats the fact that the city was of pure gold, and its foundations were garnished with all manner of precious stones. And then he tells the twelve kinds of precious stones that were used, and states also that the streets were of gold. Could a more perfect description of a beautiful city be given?

Think of the immensity of this city, twelve thousand furlongs. As ten furlongs make a mile, this magnificent city was twelve hundred miles square, and twelve hundred miles high. This seems impossible, and would be so for this earth. Twelve hundred miles square would be, say, from New York and Charleston on the east, to Kansas City and Minneapolis on the west, and from Buffalo and Chicago on the north, to New Orleans and Galveston on the south. Think of the grandeur and glory of such a city. But the most wonderful thing is yet to come in the magnitude and grandeur of its height. That would seem absolutely impossible. A city twelve hundred miles high? John says it was, and repeats it a second time, so there can be no mistake. But he gives us a clue to how this can be. He says he saw it on "a great and high mountain." Then it is plain this city was on a vast, high, terraced mountain, square, and sloping upward to an apex like a regular pyramid. Its height was at

its apex, as we say of a pyramid or a mountain it is so many feet, or so many miles high, according to its highest point or peak measured from its base. So the highest point of the city, at the apex of the mountain, was twelve hundred miles high, measuring from its base to its apex, making a direct altitude of near eight hundred miles. While its base was as it were at New York on one side, Kansas City on the other, Chicago on the other, and New Orleans on the other, its apex would be near Cincinnati, about eight hundred miles above its base. Think of such space, and the beauty of a terraced city of such vast dimensions. Terrace after terrace with beautiful mansions of gold, like unto transparent glass and garnished with precious stones, diamonds, pearls, and rubies. And between these rows of beautiful mansions are broad avenues of wonderful trees, "the tree of life with its twelve manner of fruit, yielding its fruit every month, and whose leaves are for the healing of the nations." And between these avenues of the trees of life is the river of life with its crystal waters. Can you imagine more beautiful parks and boulevards than John describes in this lofty, magnificent terraced city?

John shows clearly this was a terraced city on a great and high mountain when he says "the walls of the city were of jasper and had twelve foundations garnished with all manner of precious stones, the first jasper, the second sapphire," and so on, each of the twelve foundations being of a different precious stone.

And the angel measured these twelve foundation walls "an hundred and forty-four cubits." This would make each about two hundred feet high, and there being twelve of them extending all around

this city, they could not be foundation walls with one on top of the other. Their height would preclude that. So there is but one possible conclusion: there were twelve beautiful terraces, about two hundred feet high on this lofty pyramidal mountain, on which was the magnificent New Jerusalem. These terraces would be about one hundred miles apart if the mountain was regular in sloping ascent and contour. This is the only way the city could have twelve foundation walls on each side of its enormous square of twelve hundred miles. Thus on each one of these vast expanses of sloping terraces there was room for a thousand cities, and millions of people. So that all the Jewish nations, and people of every clime and age, will have an abundance of room for all eternity.

Such wonderful magnitude of width, and breadth, and height, and grandeur, beauty and glory, could not have been dreamed of by John or any mortal man without inspiration from God. John says, "I saw these things and heard them." And from his minute and exact detail he must have seen and heard them. In the times when John lived, this city he described was larger than the then known world. No such city or mountain could exist on this or any known globe at that time. The Roman empire, which embraced the known world at that time, did not have the area that John ascribes to this city.

And unless we admit the sun is inhabited, such a city is absolutely impossible. Our vast central luminary is the only globe in the solar system that could contain such a mountain or such a city. Our sun is so large that if our earth were dropped into its centre, our moon, which is two hundred and forty thousand miles from us, would only be about half

way to its outer circumference. There, on the sun, a mountain eight hundred miles high, and such a city, might exist; and only on our sun, or some great central sun like ours, is such a thing possible. Therefore, I contend, John saw and visited this wonderful city in the vast and luminous sun.

First—because he could not possibly have imagined such a city or such a mountain; it was contrary to all human observation and experience. They could not be possible on this earth or any globe known in his day, and only divine inspiration or an actual visit could have pictured them to his mind.

Second—because he must have seen and visited it, or he could not possibly have described it with such exact minutia and detail.

Third—because he reiterates that “I, John, saw and heard these things,” with the earnestness of a truthful witness, and if he did, it could only be possible on the vast surface of the sun; and he was translated temporarily to the sun, just as Paul was when he was snatched up to the seventh heaven, and Christ when he ascended and “a cloud received him out of their sight.”

Fourth—because John shows that it was not in an ordinary world that he saw this beautiful city, but a self-luminous one; for he says, “And her light was like unto a stone most precious, even a jasper stone, clear as crystal,” and “the city had no need of the sun, neither of the moon to shine in it, for the glory of God did lighten it.” Therefore, it must have been in the sun, as his description of the light there could only apply to the sun, and the brilliant corona of the sun, which he called “the glory of God.” This is an excellent definition, just as the

work of electricity is described in the Bible as "the word of God's power."

John did not know where he was: and as he looked up at the lofty acropolis on the top of this vast pyramidal mountain with the beautiful terraced city sloping far down below it, and Deity and his great white throne and shining acropolis glittering with a million of diamond coronets, and the crystal light of the corona covering all like a canopy of effulgent glory, he thought "the glory of God did lighten it," and it was a city "descending out of heaven from God."

Fifth—this city was in the sun because no such a city could "descend out of heaven from God," for there is no room on earth for such a city; and no such mountain could be found or could exist on the earth or any planet. As it reached so high into the solar atmosphere, with the luminous photosphere bending so close above it, it would naturally suggest the appearance of a city coming down "out of heaven," or descending from the skies. This would be a very natural way to express the great altitude of its rising terraces and lofty, crowning citadel, that seemed lost in the luminous regions of the sky.

As it was shown to John "on a great and high mountain," the very altitude of the mountain would seem to come out of the sky, as "descending out of heaven." John saw this city measured by the angel, the length and breadth and height of it; and from its size he must have spent much time there, so he had opportunity to see and describe it perfectly.

Sixth—this city was in the sun because God was there and it was His perennial residence, and man's future home. This could not be on any of the planets. There all is transitory; they have storms

and tempest, day and night, and God is not visible there.

Seventh—John says there was “no night, and they need no candle, neither light of the sun.” A planet could not exist without a sun, and must have day and night, so this fully and finally settles the question that it was not and could not be on a planet, and must have been on the sun.

Eighth—the immense size and circumference of the sun would enable such a mountain to exist on its surface as John describes, and would render such a city not only possible, but exceedingly probable. And I accept John’s statement as reasonable that he saw it, and visited it, and that it really and substantially exists on our glorious luminary, the sun; and that John is now housed in its celestial mansions. I regard it as more reasonable than two-thirds of the accepted truths of science. Let us see scientifically if our sun would not readily accommodate such a mountain and such a city.

Our earth is eight thousand miles in diameter, and has mountain ranges five miles high, which is five eight-thousandths of its diameter. The moon is about twenty-two hundred miles in diameter; the crater of Copernicus in the moon is eleven thousand three hundred feet in height, which is about two miles,—this would be two twenty-two hundredths of its diameter. While the lunar Apenines rise to an elevation of twenty-two thousand feet, being about three and a half miles, and would be three and a half twenty-two hundredths of its diameter. While a mountain, say, eight hundred miles high in the sun would be one eight-hundredth of eighty hundred and sixty-five thousandths of its diameter.

This would make a mountain in the sun twelve hundred miles high, measuring by its slope to its apex, or by its perpendicular altitude eight hundred miles high, about the same proportion according to diameter as on the earth and moon. And mountains in the sun eight hundred, and even twelve hundred miles high, would not only accord with its great size and vast diameter, but, estimated by its enormous circumference, might be much larger and higher than the one John describes. Thus it is clear that John's statements are not only reasonable, but are in just proportion to the great sphere on which he beheld this great pyramidal city. This is a strong corroborating fact, and a coincidence that goes far to establish the truth and consistency of his explicit testimony.

John says, "I saw no temple therein." Now, that seems strange for a great city to have no temple, and was contrary to all human experience; but he explains it: "The Lord God Almighty and the Lamb (the innocent one) are the temple of it." Their personal presence does away with the necessity of a temple, for John says: "God will wipe away all tears from their eyes, and there shall be no more death, neither sorrow nor crying, neither any more pain, for the former things are passed away."

Ninth—this is further conclusive evidence that this city was in the sun because death, weeping, and pain are on earth, and pertain to all the planets. And God does not in his visible person set aside death and pain in the planetary worlds.

The planets are the schools of experience for "those who have come up through great tribulations," and are afterward housed in this beautiful city.

Tenth—"And the nations of them that are saved

shall walk in the light of it; and the kings of the earth do bring their glory and honor into it." And this "glory and honor," John says, shall endure forever, which is impossible on the planets, but may be easily true on the self-existent sun.

This shows that all nations of men shall walk in the light of these heavenly Cities of the Sun, and all the glory and honor of the earth shall finally be brought into them. "And there shall in no wise enter into it anything that defileth." But there "the tabernacle of God shall be with men and he shall dwell with them." And John says, "there was no more sea," which shows again, conclusively, these things which he saw were not on this earth or a planet, for they would not be inhabitable without a sea.

"And I, John, saw these things, and heard them. And when I had heard and seen, I fell down to worship before the feet of the angel which shewed me these things. Then saith he unto me, See thou do it not: for I am thy fellow-servant, and of thy brethren the prophets, and of them which keep the sayings of this book: worship God." Thus the angel that went with John reprov'd him for his attempt to worship him, and told him he was of his fellow-servants and his brethren the prophets. Now John and the angel had made a long journey in measuring this city, twelve hundred miles square and twelve hundred high. How did they travel at least six thousand miles and make the measurements? John says it was in the spirit; so he and the angel, with ethereal bodies, floated in air with electric speed, and measured the city with the golden rod, and the walls thereof. And thus the inhabitants of the great city may travel in their spiritual or astral bodies.

Who can say that this is not an absolute, literal truth, and that such a city as John describes does not now exist in the sun? It is a real description of a real city, or it is an absurdity. There are real foundation walls, and real gates, and mansions, trees, fruit, leaves, rivers. It is real gold and precious stones that are described. And who can say that because of the sun's prolific life and power, gold and these precious stones are not so abundant that they are used as building material; and even the streets of the city are paved with "pure gold as it were transparent glass"? No such an abundance of gold and precious stones can be found on this earth, which is a sample of all the planets.

Planetary worlds are dependent on the light of the sun and moon, and without them they are in total darkness. The only reasonable conclusion is, that this city was on our sun, and that John took the light of the brilliant corona, which bent like a roseate arch of crystal light above him, to be the glory of God, which it is in fact to the inhabitants both of the sun and the planets. It is as the glory of God, for the light of the sun, the light of the world, and the life and light of the solar system, is the greatest glory of divine goodness in the universe. Modern Christianity fixes no place for its celestial paradise. Many Christians who believe the Bible, and who seem full of faith that there is a heaven somewhere in the universe, treat it more as a myth than a reality, and fear to localize this abiding truth. But John is firm and explicit as to its existence and exact characteristics. He is too minute to be figurative. His eye-witness testimony, detail, and earnestness, make it a fact and a reality. There is no ground to consider it a parable or an allegory.

The vast circumference of the sun would enable such a mountain and such a city to exist on its surface, and they would be impossible elsewhere than on a vast sun like ours. I have no doubt of the inhabitability of the sun. I deem John's statement that he saw and visited this city, and measured it, as both reasonable and probable, and the testimony of a competent and reliable witness—and more reasonable than three-fourths of the accepted truths of science.

John says: "And its gates shall not be shut at all by day, for there shall be no night. They shall bring the glory and honor of the nations into it."

Now, only on the sun is there no night, and only in an enduring, unchanging world could the glory of kings and the glory of nations be brought to endure forever. John, again, in the next chapter, emphasizes the kind of light that shall exist in this wonderful city. "And there shall be no night there; and they need no candle, neither light of the sun; for the Lord God giveth them light: and they shall reign forever and ever."

This time he does not say God is the light, but that he "giveth them light." And this is what he really meant to say before; for he who giveth light, is the source of light, and in one sense is the light. But John began to understand by this time that what he took to be the glory of God that "did lighten it," was a peculiar radiance from the sky, which was the electric radiance of the sun's luminous corona which God giveth them for light. John says he "was carried in the spirit," and saw and heard these things. Is it not clear that he ascended in his spiritual body to heaven, wherever that is—and I contend it is in the sun—but he did not know? That

in that spiritual body he saw the New Jerusalem, and journeyed with the angel five thousand miles around this square pyramidal city, and twelve hundred miles to the top of the pyramidal mountain, which was the vast magnificent acropolis of the city where the great white throne of Deity was? This acropolis may have been a hundred miles square, space is so abundant in heaven, and distance is so easily traversed. As I have indicated, the electric atmosphere and the weight of the refined, incorruptible bodies of its citizens are so nearly balanced, that a mere impulse, an inflation of the lungs, will enable them to rise any height in the air and float at will, and descend without danger; and there could be no fall, as they would come lightly to the earth. Scientific analysis justifies this view of the sun's atmosphere because of its twenty-thousand-mile column of atmospheric pressure.

But the inhabitants of this celestial city do not need to rely on the atmospheric pressure balancing their light and refined bodies. They have the power, like John and the angels, to step out of their refined, visible body, and go where they will in their invisible, spiritual bodies. One of the privileges a spiritual body has, I conceive, is to go where it pleases by its own innate force, or by the electric energy it can always command.

It has no limitations of time and space. So that if it sees fit, when once it has been heaven-instructed in the laws of the universe, and made a celestial messenger and ministering spirit to other worlds, it can do as the angel did with John. It can wake sleeping spirits to the dreams of heaven, and bear them on a visit to their celestial home. It can fly with the speed of light through the translucent

ether of space to distant suns and far-off constellations. It can visit the brilliant rings of Saturn, and the circling moons of Jupiter; explore the craters of old Neptune; and make Uranus a way-station on its route to Mars. It can inspect the mountains of Venus, and "visit the glimpses of the moon" in our little earth, and whisper sweet inspirations to the longing soul; and come like angels' faces in the dreams of sleep; and breathe heaven's consolations in the struggling soul. So that the humblest, saddest heart that yearns for love or comfort may find the secret bliss of heaven a recompense for every earthly grief, and noble thought, and kindly deed.

Such ministering angels visited Noah before the flood, and Lot at Sodom, and Abraham as he sat in "the door of his tent on the plains of Mamre in the heat of the day." And one visited Jacob as he slept on the lonely plain at Bethel, and showed him the wonderful ladder "reaching up to heaven, on which the angels ascended and descended." And they sang the choral welcome of the newborn Christ, "Glory to God in the highest, and peace on earth and good will to men." And thus the angels continue to come and go as ministering spirits from heaven to earth. And now and then some choice, rare, loving spirit like John, and Paul, and Moses, and Elias are translated to that blissful sphere, and return again to earth. Not only is our sun a celestial world, but in his mighty circling orbit he may approach near to other mightier central suns thrilling with greater celestial power, and mightier hosts of angels may flood our earth with unknown spiritual and marvellous inspiration.

And these magnificent cities, varied in beauty, and glorious in celestial grandeur, "have no need of a

sun, neither of the moon," for "the glory of God" and the electric power of his word illumines them.

In every street of every city, "in the midst of the street was a river of water, clear as crystal, and on either side of the river was there the tree of life, which bare twelve manner of fruits, and yielded her fruit every month; and the leaves of the tree were for the healing of the nations."

Thus the inhabitants of these glorious cities do not need to toil, or fear poverty, or disease; for in front of every angelic mansion there is the river of life, and the trees of life; where each one at his pleasure can drink and thirst no more, and can eat and hunger no more.

And John says: "And he showed me a pure river of water of life, clear as crystal, proceeding out of the throne of God." It is clear from John's statement that the great white throne that was in the midst of the city was on this great central apex or acropolis; and there were the great auditorium and magnificent court of honor in front of the great white throne. And from this throne, or near it, and perhaps in the centre of this vast court was a wonderful fountain of the waters of life, "clear as crystal," and from it flowed the beautiful river of life. And as it flowed down the sloping sides of this lofty terraced mountain, it was run many times around each wide sloping terrace, through the beautiful parks and boulevards, with the golden mansions, and the trees of life on either side; and poured down from one terrace to another over the twelve vast sloping terraces, in beautiful cascades and murmuring waterfalls, making joyous music and rainbow arches in the golden sheen and crystal light of heaven. What a glorious dream of beauty

this pictures to the æsthetic soul of sublimated humanity in angelic forms! With what delight they tread its golden streets, and pass through its high arched gates of pearl and up its gently rising incline where its foundation walls, two hundred feet high, garnished with precious stones, glitter in the morning dew, and perfumed zephyrs from the blooming trees of life make gladness smile on every saintly face. And in their saintly robes of spotless white, they can bathe in the crystal waters of life without a spot or blemish soiling their immaculate whiteness; and walk upon the golden sands and diamond pebbles of its emerald shores, and its glittering gold-paved bottom without dust or mire or impurity, and float and breathe and rest, and even sleep in its life-giving waters, and feel their invigorating joy.

And then, in the mellow haze of what seems like twilight, the happy citizens of heaven go to the great court and auditorium, and hear the Redeemer of men instruct them in the laws and economy of the universe; and after the most glorious music, they hear Moses teach and Paul and John preach, and Shakespeare and Milton and Bunyan recite their divine epics. And John says: "I, Jesus, have sent mine angel to testify unto you these things. I am the root and the offspring of David, and the *bright and morning star*."

There is a remarkable suggestiveness in the statement that Christ is the bright and morning star. Now, Christ could not literally *be* a star, but He could *be in* a star, and He could as a joint and co-equal sovereign of heaven control a star or many stars. It is said in the earlier parts of the Bible "God is a sun," and it seems reasonable to believe that as they are one in sovereignty, these state-

ments are made to indicate to us that the stars or suns are the personal headquarters of Deity, from whence they control and direct the earth and all the heavenly hosts. This is a grand conception of God, as sitting on His central throne in the dazzling all-life-giving sun, guiding and directing the solar system in all its marvellous, complex motions, and holding in His mighty grasp every soul and atom, bound to Him by invisible electric chains of power that no force can break and no fate dis sever.

There is no other suitable place for Deity but at the centre of electric life and power in the self-existent, creative, magnetic suns, which hold every atom in their system in complete, dominant control. For God to be personally and visibly present elsewhere than in these great sun centres of force and power would be like an electrician leaving his central controlling switch to do the work of a fireman, or like an engineer who leaves his engine to take care of itself and rides on the express car. Flammarion says the universe and all nature show the thought and forethought of a directing, intelligent mind. This is undoubtedly true; and the most rational view of the government of the universe is that Deity is present and personally directing and governing each sun system at its controlling sun centre.

John speaks of this city as "prepared as a bride adorned for her husband," which means she was beautiful, and arrayed in beautiful garments and adornments. He says also that the angel said, "Come hither, I will shew the bride, the Lamb's wife." This does not signify that they were speaking figuratively; on the contrary, every city in that day was considered as under the direct protection of some deity, and the bride of some deity. Thus Jerusalem

was under the protection of Jehovah; Athens under that of Pallas Athene. And Venice is to this day regarded as the bride of the Adriatic Sea, and annually the ceremony of marriage is performed, and the marriage ring cast into the sea. This shows John was speaking of a real, not an imaginary city.

John says: "Jesus sent his angel to testify unto you these things." This accords with the teachings of the New Testament that "to him was given all power in heaven and earth." As heaven, as then known and understood, included the sun and stars, though at that time the world had little idea of their nature and character, it is clear Christ was and is the ruling Deity of the universe, and has special charge of this part of creation and of man's development and destiny.

Then if Christ, through His angels, showed John these things to testify unto us, Christ is the great benefactor, exemplar, and Saviour of men:

First—in giving them the example of a perfect life lived here among men, under all the trials and sorrows of humanity, and in dying a vicarious death for their redemption and moral reformation.

Second—by giving them perfect rules and precepts as guides, by which they may live a perfect earthly life in accordance with divine wisdom and justice, such as: Love thy God with all thy heart; love thy neighbor as thyself; love thine enemies; do unto others as ye would that they should do unto you.

Third—by giving us, through John, a complete description of the "City of God, not made with hands eternal in the heavens." So that through Christ we have a model of a perfect life, and model precepts to mould our lives by; and also a model heaven or celestial city to lift our drooping fancies

and cheer our longing souls. These are the eternal foundations of truth that no age or power can destroy. What more could we ask of beneficent Deity?

But our friends the agnostics, materialists, and sceptics ask, if God, by Himself or His angels, appeared unto men in times past and instructed them and wrought miracles, why does He not do it now? This seems a very wise question, but it is really a very silly one, and the answer ought to suggest itself to every reasoning mind. God was teaching man how to walk, giving him moral instruction and aid, when he was weak, ignorant, and needed it; after that He left him to use his God-given reason to find out, step by step, everything else he ought to know. This gave man something to do, some opportunity for experience, and enabled the law of evolution, through man's higher nature, to step forward to loftier knowledge and perfection.

A kind and indulgent father will teach his child how to walk, and give him instructions until he has learned. After that he lets him take care of himself, and if he has knocks and falls, he knows the experience will do him good. It is so with God. Through angels, prophets, and inspired men in the far past, He has taught the essential foundation truths of life and creation, and the precepts necessary to moral rectitude and growth to a perfected existence. He now expects man to use his reason and experience, to attain any further knowledge and progress. God did not intend to instruct man in astronomy and science—these He left him to find out for himself; but He gave him needed moral instructions and the foundation principles of a right life.

He has taught man in the Scriptures of inspired truth that there is an all-wise, omnipotent, benefi-

cent Deity, whose name is Love. That He is the spiritual father of all mankind, who are His children and the objects of His affection and care. That man is an immortal soul, and at death shall return to the God who made him. And He sent His only Son to earth that in His exemplary life and vicarious death He might be the exemplar and Saviour of mankind. And then He adds to all that the model beauties and glories of the celestial life and the cities of heaven for man's future existence. What more could our doubters and sceptics ask? Do they expect Deity to come down from His celestial throne and lead them around by the hand, and explain to them how He evolved his marvellous creation, so that they may have no use for the brains He gave them? Do they not know that a boy led around by the hand, after he has been taught to walk, becomes a weakling and an imbecile? And that the boy who relies on his father all the time, instead of using his own judgment and energy, is a conspicuous failure? Besides, they should know that man is incapable of understanding anything he cannot find out or discover for himself. What would the world have understood if the Bible had told them about electricity? It came as near it as they could understand when it called it "the word of His power" and said, "the invisible is greater than the visible." It took centuries of improved conditions for men to discover electricity, God's right hand of power. Suppose Christ had said, "I go to my Father, up there in the sun. That is where I live, and where Moses and the prophets are;" they would have said: "Now we know He has lost His mind. The sun is hot, and would burn Him up." And this is why John does

not say He went to the sun, though it is plain He did; and that there is the heaven of the good and the cities of the blessed.

And there the heat of summer does not oppress, nor the burning radiance of the sun shine upon them; and winter is unknown. But the glowing beauty of the rainbow-tinted corona in the circling splendors of its burnished dome, with golden arches, and sapphire banners of transparent light stream out and flame in every hue of sun and sky, with all the varied changes of heaven's peerless kaleidoscope.

The gentle zephyrs gliding through the trees, the soft, mild breezes fanning leaf and flower, are musical with fragrant melody. And they paint the cheek and brow with the ruddy glow of health, caressing them like the lingering kiss of angels. All is calm as twilight and joyous as a seraph's dream.

All nature is tranquil. No storms or floods ravage that sacred soil, nor rains descend upon it, but like our earth in the beginning, a soft and gentle mist at times falls upon all the land, like silent dew, and moistens the glad, verdant earth. The luminous photosphere bending in beauty above this supernal land carries off its surplus electricity, and shoots its life-giving currents like swift-winged arrows to the earth and planets for their life and light. So that no electric storms or thundering waterfalls, or ravaging hurricanes, spread their devastating breath above these perennial realms. For God is there, and his presence stills all storms, and calms all hearts, and tranquillizes nature, and throws the halo of joy around every angelic and human soul.

In that bright sphere there are "no ravening beasts," or "moths to corrupt," or "thieves to break

through and steal." "The lion shall lie down with the lamb, and a little child shall lead them."

The brutality and vice that once ruled on earth shall become as gentle as the lamb, and lie down with purity as spotless as the snow, and be led by the innocency of truth, as guileless as a child.

There all the nations of all the past in all the planets have their cities beautiful, and their cities of perfection, more beautiful and glorious than mortal eyes ever beheld, or mortal tongue can ever describe. And the former denizens of all the moons and planets of this central orb and god of day are there in the bright mansions of those "cities whose maker and builder is God." There are the citizens of Mars, whose inhabitants, according to the ingenious Tesla, have been so long trying to signal to us and communicate wonderful electric and life secrets, of which we have never dreamed. It seems they have learned how to make a beautiful garden and park of their little star, and divided it by broad canals into irrigated fields and parks of vast extent, and wonderful productiveness. And all property and products are in common like the early Christians; and they have one common beneficent government for the whole globe, where the people determine all questions of law and government; and where the wisest and humblest citizens periodically administer their few and beneficent laws. Where the poorest work but a few hours each day, and give the remainder to joyful recreation and intellectual improvement; for they recognize, like Shakespeare, earth's greatest thinker, that "it is the mind that makes the body rich."

There all are provided with work, rest, and recreation suited to their individual taste and natural

aptitudes; and provided with all healthful comforts and necessities from the common fund; and an injury to the humblest is deemed an injury to all. They have settled all questions of labor and capital; suppression of vice and poverty; honest administration of government; and how to control the elements, and do all work by electricity. And Mars may succeed some day in communicating all these wonderful discoveries and felicities to us, but not until we at least partly find them out for ourselves, for the law of planets is the same as that of individuals—each must learn for himself by experience, struggle, and evolution, the things needful.

While the inhabitants from Mars are small and tactful, there are to be seen the former inhabitants of Jupiter, who are large and masterful like their vast planet. Here also are to be found the fair denizens from Venus, graceful and peaceful, like their mild, benignant star; while those from Mercury are quick and magnetic, like their swift little planet. Those from far-off Uranus and Neptune are slow and contemplative, like their distant orbs. But all are happy, beautiful, and contented, and have their separate cities in the heaven of their eternal destiny.

And God is there, and "dwells among men," and "the Lord God giveth them light." Why should not God be there? and why should He not give them light? Through the luminous sweep of his creative electric word and breath, he has fed the suns and lighted the worlds. And still, He is a personal God and a creative Deity, and must have a local habitation and a place. Let the doubters doubt, and the agnostics slur. But God has a dwelling place in the centre of all life and light.

Why should we ignore this fact, and dream of

Him as only an august shadow hid in dim eternal mists? He is the eternal verity of life, and truth, and power. He is more real than man made in His image; than the universe and all the forces of nature. Why make Him in our minds a fleeting shadow, a dissolving mist, when He "is our refuge and our strength," and the supreme reality of the universe?

If we make God a myth, we must make man a myth, and heaven a myth. We must make immortality a fabled dream, a phantasy of the brain, and the mirage of a deluded imagination. But they are the eternal verities of truth, and God reigns, and heaven exists, and man shall live forever in the peaceful realms of the glorious Cities of the Sun, with their perennial beauty and fadeless joy. "Eye hath not seen, nor ear heard, nor hath it entered into the heart of man to conceive the things that God hath prepared for those who love him."

And these things with all their inconceivable joy, grandeur, and beauty are prepared for man in this universe of suns and planets, and not in some far-off, undiscovered constellation of worlds, nor in some other solar system. But in our own bright central luminary, there are these indescribable wonders and glories. And after we have been trained in all the mysteries of life and the universe, then we may visit with tireless wings the countless sweep of suns and worlds, scattered like gold dust on the highways of eternity.

CHAPTER XIII

THE PURGATORIAL CITIES, AND CITIES OF INSTRUCTION

There is nothing so misunderstood by mankind as evil or crime, and its punishment. Man from the earliest ages has written his laws, like Draco, in blood. He has sought to abolish crime by destroying criminals, to smother evil by brutal severity, and to legislate the world into peace and goodness. But he has never succeeded. The Greeks punished theft, dishonesty, and nearly all petty offences with death; the Egyptians, Assyrians, Romans, and all the nations of the past did the same. England only about two hundred years ago had over one hundred petty offences punishable with death. It may be true that public sentiment did not always permit the brutal execution of such severe penalties, but they existed in the legal statutes, and indicated the unreasoning cruelty of the times.

But crime is largely a disease. It is chiefly the result of an unbalanced mind caused by reason of excessive passion, ignorance, or insanity. Under the impulse of some real or imaginary wrong, insult or injustice, most great crimes are committed. They are often mere impulses of fancy or caprice that unhinge the judgment and let unthinking passion work its havoc. But for the time being there is insanity or monomania. And when the awakening reason returns, the normal mind would give all

the world to recall the unreasoning and dastard deed.

The way to prevent crime is to instruct the minds of men. To teach them to control their passions, impulses, and caprices, and to let a just and generous reason guard and sway their actions. Teach them the danger of ignorance, and unreasoning passion and crime will cease. Will cease with all normally sane persons, but there will still be a few unfortunates who will, under temporary or permanent insanity, commit some horrid crime.

A flagrant violation of law is called a crime; any violation of law, human or divine, is called sin or evil. One of the most puzzling questions of all ages has been, What is evil, and whence did it come? I answer, evil is the perversion of good, or good out of proper relation. Love is good, but to love an unworthy object is good misapplied and is evil. Love of man for woman is good, natural, inspiring; but out of the proper relation in marriage it is seduction, fornication, adultery, and every social vice.

It is good for a man to kiss his wife; but to kiss his neighbor's wife may be evil. And so with courage, strength, and valor, which were the highest virtues with the ancients: they were good and necessary to protect life and property, to defend one's family or his country. But misapplied, they produce brutality, war, carnage, and cruelty. Eating and drinking are good and natural, but carried to excess are a ruinous evil. Thus, all good that God has conferred upon man may be perverted into evil; and all evil is good perverted or misapplied. Then it naturally follows that there is no absolute evil in the world, only comparative evil exists. This wipes out absolute wickedness and the neces-

sity for hell and the devil, and shows how evil came into the world. It shows the infinite beneficence and justice of creative Deity. God did not create evil, He created only good; and man has perverted that good to evil, has misapplied God's blessings and used them to man's injury. Could God prevent this perversity in man? I answer, not without destroying man's free will and responsibility.

God made water, seas, and rivers for man's necessities and commerce; and men sometimes drowned each other in them. Should God interfere and snatch men from the drowning waters, or should He take away seas and rivers? God made beautiful trees to grow; and with a club from one of these, Cain, the first born, slew his brother Abel, the second born. God made electricity the vital cosmic force, and men kill each other with it. Then should God not make trees and lakes, and rivers, water, and electricity? Water is necessary for all human and vegetable life; without it electricity could not do its work in the assimilation of food or the growth of plants and trees; and the world would be denuded of its verdure, and all forms of life would perish. Besides, where water, tree, plant, or electricity is used to inflict an injury, they are used a million times to give life, health, and pleasure, and beautify the earth. Therefore God is not unjust in permitting evil.

The all-wise Creator either *had* to create this world perfect and man perfect, and then there could be no change, and man would be only an automaton, and an unthinking machine of Deity without free choice or responsibility—or He *had* to create the world and man imperfect that there might be change for the better; and man might become wiser

and better by the exercise of his free will and actions. And the stumbling blocks of evil experience are to teach him what is good, that he might rise under the law of evolution and his divine nature to higher goodness and perfection.

God had to work either by the law of evolution from worse to better, or by the law of retrogression from better to worse, or make man and the universe an automaton without law, will, or even motion except when He moved upon them.

Which was best, to be an unreasoning automaton, or from perfection go gradually down to imperfection and misery? Or like the universe is now planned, to have something to do and to attain, and by the law of our nature to climb over the obstacles of ignorance and evil to knowledge and perfection? Man would have no responsibility without free will, and could merit no punishment if the law of evolution was from good to bad, instead of a progressive evolution toward knowledge and goodness. Man has a free will; and environment and heredity do not make his character; they influence it, but his character is his inner life and purpose. This is subjected to his free will.

There is no absolute, but only comparative evil in the world. God, who is perfection and goodness, and omnipotent, could not permit absolute evil. It would wreck the immaculate wisdom of His universe, and bring discord and ruin. As He said in the beginning of creation, "And behold it was good." And all things were and are good; and even man is good, except when he is comparatively evil in misusing and abusing the good gifts of Deity. This leaves no work for Satan; and no place for the figurative Hades of fire and brimstone.

Satan belonged to the myth-gods of ancient mythology, like Jupiter, Cupid and Venus, like Minerva, Pluto and the Satyrs, Apollo and the Muses. They never existed in reality; they were the ideal creations of human fancy, the figurative expressions and symbols of struggling mortals striving to arrive at the true conceptions of man and Deity and the universe. They have become a part of the literature of all ages, and are still used in their figurative meaning and symbolic beauty.

Even at this day all music and poetry is ascribed to Apollo and the Muses, who are supposed to have inspired it; all wisdom to Minerva; all strength to Jupiter or Hercules; and all evil to Pluto, Satan, Mephistopheles, Ahriman, or the Devil. The Jews got Satan from the Persians, who worshipped Ormuzd as the god of light and good, and Ahriman as the god of darkness and evil. All ancient nations, in their struggle to account for evil, believed in a god of evil as well as a god of good. And the Jews imbibed from them the same idea; and all literature is saturated with it, including the Bible.

Christ himself had to use the ordinary symbols and figures of speech understood by the people to whom He spoke, and so He attributed all temptations to do evil to Satan; and so expressed it in regard to His own temptations to convert stones into bread, and to accept the wealth and power of the world. He also spoke of casting out devils, but that was figurative and referred to the restoration of the insane and vicious to their right minds.

Satan has been a much-abused mythical individual. People have laid their faults, foibles, and peccadilloes on the poor old non-existent Satan, and believed they shifted the blame from their own

shoulders. There are but the two temptations, the world and the flesh. The devil is only a figurative, imaginary nonentity. He never existed any more than Jupiter and Apollo.

We do not, like Milton, have to appeal to the heathen muses, sacred or divine, "to justify the ways of God to man." They need no justification; they are the only rational course that could have been pursued in a rational creation; and the only way possible to evolve progress or to preserve the liberty, independence, or reason of human kind. All religious blunders of the past have been caused by man-made theology in human literature.

The poets made the religions of their times. Paul affirmed this on Mars Hill, when he said: "Your poets have well said ye are the offsprings of the gods." The religion of the Greeks was the beautiful, classic, and romantic theology of Homer; that of Italy the productions of Virgil, Petrarch, and Dante; and even the sober, practical religion of our English ancestors was largely produced and elaborated by Shakespeare, Milton, Bunyan, and others. And modern religious thought has been largely evolved by the sweet, pathetic theology of Tennyson, Longfellow, Whittier and others. Thus all theology is of man and has its imperfections, while true religion is of God and is perfect.

The Bible says: "God is angry with the wicked every day," that He "is a jealous God and visits the iniquity of the father upon the children to the third and fourth generations of them that hate him and obey not his commandments." Now, that does not express the idea intended to be conveyed, and is inconsistent with the other statements that "God is love," that "he is more willing to forgive

than any earthly father," and that "God so loved the world that he gave his only begotten Son that whosoever believeth on him should not perish, but have everlasting life."

God is not a jealous God, nor an angry God, and does not punish the wicked. God does not punish and never did. God never punished anybody or anything anywhere or at any time. God has fixed and ordained physical and moral laws for the government of His universe. All who violate the law are punished by the law. And God is no exception; He must obey the law He has established. He is not above the law, or above nature; He is in the law and in nature. The natural and moral laws of the universe are the eternal, unchanging decrees of immaculate justice. No one can violate them without destroying the moral rectitude of the universe, and suffering the penalty of the law.

Then, if God does not punish, who does? The law does by fixing a penalty. Every law, physical and spiritual, has a penalty attached for every infraction. If you put your hand in the fire it is a violation of natural law, and the penalty follows immediately. If you cut your foot, or break a limb, the penalty follows of pain and distress. The same is true of moral law; every violation brings a penalty sooner or later, and there is no possible way of evasion. If you burn your hand or cut your foot there will be a scar; and so with every violation of moral law. Every violation brings pain and leaves a scar.

There is a wound in the mind, and a scar on the soul that will last as long as the soul, as long as consciousness, reason, and memory. You cannot wash it out with water, or burn it away with

acids. Oh, the anguish, and remorse, and torture!

This is the only way that soul or spirit can be punished. It is through memory, through regret, through remorse. That is where the "weeping and wailing and gnashing of teeth," is found. That is "where the worm dieth not and the fire is not quenched." That is the only hell in the universe. It is in man's soul and he cannot get away from it. The mountains cannot hide it, and the seas cannot drown it. And if there is an eternal punishment, it is in the memory of an evil deed, which may endure as long as the soul exists. This may be the eternal punishment of the Bible.

Modern civilization, humanity, and even the churches, have eradicated a literal hell; and with a literal hell must go a personal devil. The question then arises, In wiping out a literal hell and a personal devil, do we not also wipe out a personal God and a real heaven? I answer, Not at all. They are absolutely inconsistent with each other, and could not exist in the same universe. Heaven and hell cannot both exist in the dominion of an omnipotent God. The devil cannot exist where God reigns.

To permit a hell would be a crime to a beneficent God. To permit a devil or an evil spirit to interfere or thwart the purposes of an omnipotent God would destroy His omnipotence; and He would no longer be a God. God is a necessity, an absolute, scientific necessity; and heaven follows logically as a rational necessity to give Him a central or personal habitation. But the devil and hell are not a necessity. On the contrary, they are impossible in a universe governed by an omnipotent Deity.

As a spiritual body cannot be punished like a

material body, it is plain it cannot be punished in a material way; and a real or material hell would be useless and of no avail. You cannot drown spirit in water, burn it in fire, cut it with a sword, blow it up with dynamite, puncture it with a spear, or nail it to the cross. Therefore, in any event a literal hell would be useless.

He who wrongs another injures himself. The wrong-doer receives the wound and not the other, though he may take the property, or ruin the reputation of the other. Reputation is not what one is, but only what people think him to be, and neither his character nor his soul may have a stain upon it. But the soul of the wrong-doer has a stain and a scar. He has violated a moral law, and only the law-maker can pardon him.

We are told in the Scriptures that if thy brother offend thee, forgive him "not seven times, but seventy times seven." We are also commanded to love our enemies. Now, if God requires us to forgive our enemies, and to love our enemies, will He everlastingly punish His enemies? I cannot believe it. The doctrine of eternal punishment is almost as revolting to all sense of justice as a real devil or a literal hell; and belongs in the same category of slanders against a beneficent Creator.

The Bible says man shall be punished "according to the deeds done in the body;" this precludes eternal punishment. For no man in one lifetime or a dozen lifetimes can commit such deeds in the body as to justify by any process of reasoning according to those deeds an eternity of punishment. Man is an atom of Deity, and God will not destroy or everlastingly punish a part of Himself. Besides, when man steps out of the material body, he leaves

behind him the temptations of the world and the flesh, and it is easy and natural for him to be good. His conscience is aroused, and all his nature seeks fellowship with God and the angels, and man cannot be bad after death.

Sometimes it is said, on account of some obstinate, brutal criminal, that "if there is not a hell there ought to be." But we are limited in our knowledge and judgment, and if we could put ourselves in the place of the criminal and know how heredity, environment, blinding passion, benighted ignorance, or partial or total insanity, together with temptations and perhaps wrongs, has goaded, mastered, and possessed him, we would be more charitable in our judgment.

The Bible gives us two views of God: one as a loving father, kind and forgiving; and the other, that more according to the Old Testament of an angry, jealous, vindictive God, whose "spirit is a consuming fire" to the wicked wretches whom He would destroy. Many ministers of the gospel, like Jonathan Edwards, loved to picture the anger and wrath of Deity, or "the sinner in the hands of an avenging God."

These usually pictured Him as worse than any demon from the lowest depths, punishing with the severest torture those whom He had created without their consent, and placed with human frailties in the midst of environments and temptations that galled, and crushed, and overcame them. Without giving them any choice of life, or law, or judge, or environment, or character or will, to demand obedience to a perfect law, or the acceptance of any conditions, or to be eternally punished, would be the infamy of injustice, and the crowning crime

of the universe. A greater crime than it is possible for man or demon to perpetrate.

Men in times past have judged God according to their own standard of injustice and brutality. The ancients did not think they could be happy in heaven unless their enemies were roasting in a lake of fire and brimstone.

Ah! and not so anciently either. Only about thirty years ago, a minister of the gospel, in Tennessee, wrote a little book called, "Heaven in the Globe within the Sun." I heard of it since preparing this book for publication, and after a great effort secured it. It seems to have been written soon after Herschel propounded his theory, that while the photosphere of the sun was excessively hot, there might be cool layers of atmosphere between it and the sun's surface that would render the sun inhabitable. This theory he soon found was untenable, as I have herein previously stated, and he withdrew the theory, but the worthy parson did not know this. In this book he represented the sun as the sun of righteousness, and giving light and heat to the earth, and heaven as the globe within the sun; while the photosphere of the sun was the hell of the wicked and the spirit of the Almighty, whose "spirit was a consuming fire" to the wicked who were caught in it, and burned forever and ever. While the righteous passed through this hell of fire, and lit with their wings unscorched down on the surface of the sun a few miles below, and there enjoyed their eternal heaven with Christ and the angels.

And thus the saints were represented as playing on their golden harps, and singing hosannas to the Most High; while they could look up and see the

wicked writhing in the torments of the ever-burning but never-consuming fire. And thus he pictured heaven as close to hell, and where God and the saints could see the tortures of the damned, and still be complacent and happy in such a heaven. And when I read this little book, I thought of the Universalist preacher who said: "I would rather be an asbestos sinner in hell, than a petrified saint in heaven." My God! could the ingenuity of man invent a grosser libel on a beneficent, creative Father? Men have tortured their minds, and inflamed their fancy, and maddened their imagination to picture the anger of Deity, and the suffering of the damned. Dante painted a hundred infernos of every conceivable agony, pain, and anguish, yet he never put heaven so close to such an inferno. But to have them, the wicked, burned by God's spirit as the hell; and to have the saints and angels in their felicity to witness the eternal burning, writhing tortures of the poor miserable sinners, who are not allowed a cup of water, or unconsciousness, or death, oh, this is horrible! And this by an intelligent Christian gentleman, only about thirty years ago. How the world must have moved since then! And thus to seize on a hurried, mistaken theory of an eminent scientist to slander the good Deity, shows the past tendency to exaggerate and brutalize the severity and anger of Deity. °

Men have invented the thumb-screw, the bow, and the rack, and all manner of torture; and imagined God did likewise. But it is untrue. All punishment under God's moral law is to purify and purge from evil; and is not cruel or vindictive.

Men are not "prone to do evil as the sparks fly upward." And to say "man is conceived in sin and

brought forth in iniquity" is a slander on both God and man. It was only applied to the viciousness and ignorance of the most degraded ancients. The wonder is the great mass of mankind with all their struggles, weaknesses, trials and temptations, are as good as they are. With fair opportunities and favorable environments, mankind are not naturally vicious. In my judgment only the perversely wicked will be punished hereafter, in the purgatorial cities of the sun.

The great mass of humanity are not perversely wicked, and will receive all their punishment in this world. The nature of all punishment hereafter, I conjecture, will be through the memory of past wickedness, that will flood the spirit with remorse, and overwhelm the awakened soul to a sense of guilt; so that it "will call upon the mountains to fall upon it, and to hide it" from the face of its own conscious guilt. On that day man will be his own accuser, and not God, or the angels, or his innocent victim. There is no punishment like the remorse of an accusing conscience. Therefore, O erring man, if thou hast wronged or injured thy neighbor, thy friend or enemy, or any living thing, be quick to make amends, to make restitution, to seek forgiveness, ere thy accusing, torturing conscience with scorpion fangs shall whip thee naked through the universe; and every man and saint and angel read thy crime and curse upon thy pallid brow.

I think in heaven sin will be treated as a noxious disease, polluting, shunned and accursed; and, like the tainted leper, the conscious sinner will cry, "Unclean, unclean." And there will be "cities of refuge," purgatorial cities or asylums, where they will be

cured, and cleansed; and after that taken to the cities of instruction, where they will be taught, strengthened, and purified, and finally shall sit with the redeemed and sanctified, all saved at last and glorified. For all souls are atoms of the living God,—a part of the sovereign Deity of the universe. And not one shall be lost. The loss of one would wreck the immaculate wisdom of the universe.

“For nothing walks with aimless feet,
And not one life shall be destroyed;
Or cast as rubbish to the void,
When God hath made the pile complete.”

In the calm, clear light of heaven, every sin shall seem ghastly, and every crime horrible. And the conscience shall be so aroused and so sensitive, and the memory so vivid and so real, that every offence committed against God or man will burn into the soul like brands of red-hot iron, and every unforgiven soul shall shiver and moan, and “there shall be weeping, and wailing, and gnashing of teeth.”

No galling chains in darkest dungeons, no swirling fire or burning coals in Pluto's fabled realms, or tortures of the damned can exceed the pain and anguish of the self-torturing soul at the constant vision and ever-growing vividness of its past sins and wrongs. Oh! ye whose conscience seems so hardened and so seared, who have wronged the widow and the orphan; who have been cruel to the poor; who have scorned the homeless and trampled upon the humble; who have beguiled the innocent and trusting, and betrayed the faith of woman, and cast truth and love into the mire; your day of avenging wrath shall come, when you shall call upon the mountains to fall upon you, and the seas

to hide you from the tortures of your own aroused, accusing conscience, and from the face of inexorable justice that sits on the eternal throne of righteousness.

When you stand before the righteous Judge, your soul will be as transparent as glass, every secret thought and deed will be written on your forehead, and your memory will be unrolled as a scroll that all can read, and every sin and evil deed will stand out in monumental horror, as red as blood, like the blot on the fabled escutcheon. All the waters of the ocean cannot wash it out, nor tears dim its condemning testimony, nor the sweat of torturing anguish erase its crimson stains. Nothing but the forgiveness of redeeming love can blot it out. Here, in the torturing anguish of the self-accusing soul, before the mirror of eternal justice, is to be found the tortures of the damned and the burning anguish of Tophet's fiery realm. And until the self-condemning soul has suffered the full penalty of its crimes and wrongs, and expiated all in long ages of remorse and anguish, can it find rest and peace, even in the realms of heaven.

And as in ancient times there were appointed cities of refuge for those who had transgressed the law and shed human blood, so in heaven there are appointed purgatorial cities each as an asylum and place of refuge for the self-imposed expiation of sin-tortured souls, where in penitence and sorrow they shall suffer the just punishment of their crimes, "according to the deeds done in the body." And there are ministering angels to aid them in their penitence and teach them how to purify their souls by just remorse and penitence. And after many ages of enduring penitence they shall be purified and cleansed

from their sins, and advanced according to their deserts to the cities of instruction, and taught in the colleges of the divines of heaven.

And every nation has these cities of instruction and purgatorial cities. And one of the useful duties of the inhabitants of heaven is to minister to and instruct these suffering, sorrowing souls, and lead them to the heavenly heights of perfect peace and righteousness. There is no deception in heaven; there can be no deception, for each can read the other's thoughts, and Deity divines the inmost secret intents of the souls of all. So that all penitence and suffering are self-imposed and recognized as just, and no murmur or complaint is heard against the justice or mercy of the God of Love.

His heart is loving, and His helpful hand is ready to assuage all grief, to forgive all sins, and He freely gives His blessings to all who ask aright. But the inexorable law of justice in cases of flagrant and persistent wickedness must have its way. The great mass of humanity are not perversely wicked, and will receive all their punishment on earth in the cares, trials, and disappointments of earthly existence. "And God shall wipe all tears from their eyes."

Then the wicked and the righteous shall all go to the same heaven—the celestial abode of Deity. So I think. Do not the wheat and the tares grow together here? Yes, but at the harvest the wheat is gathered into barns and the tares are burned. So shall it be with the wicked. But the tares are burned on earth, and their substance remains here to fertilize the soil and grow into wheat; burning does not change their location. And in the last day He shall say to the wicked: "Depart from me

into everlasting [an age of] punishment prepared for Satan and his angels."

That does not drive the wicked out of heaven, but only from His presence for an indefinite period of time; for the word translated everlasting means "an age or an indefinite period of time fixed by the gods." So the wicked go to heaven. If they did not, God could not say to them, "Depart from me for an age of punishment." For He will not come to earth to judge the living or the dead, nor set up His throne here. Then we should remember that when the wicked pass out of this life, with its passions, and trials, and the temptations of the world and the flesh (there are no temptations of the devil), they are no longer wicked. They have been wicked, but souls, after they have crossed the river of death, can no longer be wicked. In the first place, they have no opportunity to be wicked; and in the second place, if they had an opportunity, they would have no desire or disposition to be wicked. Their eyes are opened to the just conception of the folly of evil and to the necessity of love and righteousness. And the humblest soul, as well as the most wicked, is the child of God and an atom of Deity. And God will save His own, and never destroy or everlastingly punish an atom of Himself.

And at death, no earthly power or position has any influence in obtaining favors or securing reprieves from its just retribution and purgatorial expiation. All are treated with equal and exact justice. And the humble soul of a penniless orphan, a starving beggar, or a dying mendicant fed on charity and buried in the potter's field, is just as precious in the sight of Deity, and shall have its exact justice of penance or reward, as the Czar of

Russia, the Emperor of Germany, the King of England, Spain, or Italy, or any prince or potentate of earth. Queen Victoria, with emperors and princes following her bier with bowed heads in silent reverence, shall be judged according to her deeds as a woman and a living soul. No dazzling crown or pomp of kings or queenly power would weigh one atom in the scales of justice with the God of all the universe. But because her life was noble, her deeds were worthy, her heart was kindly, her judgment was just, and her Christian example inspiring and glorious, she should have a glorious welcome from the hosts of heaven and the God of Love. But God hath said: "The proud I will bring low; and I will tread down the wicked in their place, and hide them in the dust together." But "the righteous shall shine as the stars forever and ever." And I contend the righteous shall shine *in* the stars forever, for our sun is one of the great stars or self-luminous worlds of the universe.

And of all the hosts of heaven, and the wonders of the earth outside of Deity, there is nothing so wonderful, enduring, glorious, and sublime as the humblest soul that walks in the dust of earth with its face uplifted to the skies, and its longing, dreaming, heaven-bound spirit bathed in the celestial beauties of an eternal life.

CHAPTER XIV

‘WHEN THE MORNING STARS SANG TOGETHER AND ALL
THE SONS OF GOD SHOUTED FOR JOY.’”

We have seen and noted with wonder the grandeur and beauty of the city of God, which John called the New Jerusalem. As Jerusalem, at that time, was the capital of Judea, and the pride and glory of all Israel, it was natural that John, who still had the national pride of a Jew, should name this city of God after the capital of his own nation.

We have noted in his minute description the magnificent terraces with walls of precious stone, and gates of pearl, rising in superlative beauty on the four sides of this vast pyramidal mountain, with mansions of pure gold like unto glass fronting on wide avenues and parks, through which ran the crystal waters of the river of life, and on either side of which were the ever-blooming groves of the bounteous trees of life with their twelve manner of fruit, bearing monthly, and “whose leaves were for the healing of the nations.” From the base of this great city, as we look up at it in the crystal light of heaven, it seems to rise into the cerulean heights of opening skies luminous with the radiance of millions of bright-hued rainbows. As you look a thousand miles upward in the clear, crystal-tinted light, twelve vast walls of dazzling beauty garnished with precious stones rise upward and still upward with their wide-sloping terraces above each, with

golden mansions, and blooming groves of verdant hue, blended with fragrant blossoms; then you behold high up on its sky-capped summit the great white-jewelled throne of Deity, with sapphire dome, and diamond coronets glittering in the glowing light of heaven.

Here for millions and millions of ages, as we estimate time on the planets, have assembled the archangels and rulers of the hosts of heaven; and counselled together for the well-being of earth, and suns, and planets. There are beauty, peace, and grandeur on every hand, but none of the pomp and arrogance of kings, or the flaunting pride of royalty, for the decree had long since gone forth, "Love one another," and "Let him that is greatest among you be the servant of all." And Love, the God of love, reigns supreme. And there on that beautiful acropolis, some hundreds of miles square, being the lofty citadel of heaven's most glorious city, were magnificent auditoriums canopied with gold, and inlaid with pearls, diamonds, rubies; with superb courts of honor, glittering with light and beauty; vast universities with thousands of the most marvellous telescopes; and all the beauties of heaven's matchless grandeur and glories.

There in the universities of heaven the wisest men of all the past ages gather to study the wonders and mysteries of the universe. And we can imagine them earnestly conversing with each other about all the puzzling questions that absorbed their interest and attention, while they were inhabitants of the planetary worlds. And how they would question the angels and archangels about these mighty mysteries!

And we can imagine Moses and the Archangel

Gabriel in earnest conversation. And Moses said to Gabriel: "How long, O Gabriel, since thou didst bear me in the spirit on thy swift wings from yon distant world unto this heavenly city, and show me the creation, and the beginning of time on earth? We keep no time in heaven, and there are no passing years, or changing seasons to mark its flight. Thou didst bring me here and show me the beginning of all things on earth. I knew not then that it was the sun that brightens the firmament of the earthly skies on which I stood. I did not know the stars were glorious orbs like this; I thought they were but specks of light like golden nails in the blue vault of earth's bending skies. And thus thought all the world of men when I dwelt on the earth. As thou didst teach me, so taught I all the earth. 'From the beginning God created the heavens and the earth. And the earth was waste and void.' "

"True," said Gabriel, "thou didst teach correctly, but men have perverted thy meaning. Thou didst say, '*from* the beginning' and it was written *in* the beginning, as though God made all things at the first creation. God has been creating through all the measureless ages, and is still creating. Thou didst speak only of the little earth, and the little sky of clouds surrounding it. Thou didst speak of the earth only after it was created, and lay like a great uncultivated field, waste and void, and unused or occupied by man or beast. But men have misconstrued thy words to imply that the earth was created at the same time as the heavens, including the sun and stars."

"Aye!" answered Moses, "but the word meaning '*in*,' meant '*from, in, into, and concerning*,' also;

and in those days language was brief, and one word had many meanings."

"Well, truly, why should men make such a mistake when the Scriptures declare that 'before the mountains were formed, or the earth brought forth, God was from everlasting to everlasting'? And it also affirms that the hope of eternal life, God promised 'before the world began'; and Christ spoke of the glory He had with the Father 'before the world was.' God could not have existed and had glory, if all things had been created when the earth was. There would have been no place in existence for His habitation."

"It should be plain that the only creation of which I spoke in the Genesis of the world had no reference to the creation of the material earth, or the material heavens. The only things I named as being created were the several varieties of vegetation on the earth; and the various orders of animal life, and living creatures that live in the air, the water, and on the land; and finally, the creation of man."

"Thou hast said truly," answered Gabriel, "for the solid globe of earth had been forming for millions of years, as they speak of time on earth, before the creation of which thou didst speak. Many important processes of accumulating and blending great varieties of material, occupying long periods of time, and forming them into the rock-ribbed foundations of the globe, and giving it suitable soil for vegetable production, had transpired, before the vegetable and animal creation occurred, of which thou didst speak. The present solid crust, and interior framework of that little planet, together with its deposits of metal, coal, clay, sand; the general contour of its continents, seas, islands, mountain

ranges, the channels of its rivers, and the vast sweep of its plains and valleys, had already been created and established before the time of the creation thou didst describe."

"Most truly dost thou say, O Gabriel," replied Moses. "And well I remember, that in that early time, we knew naught of the annual orbit and revolution of the earth around the sun; we measured time by the rising and the setting sun, and by seed time and harvest. So that we could not express periods of time except by the day; and the beginning of a period of time was the morning, and the ending of a period of time was the evening. Thus in fixing the six periods of time, in which the vegetable and animal creation occurred, I had to use the same word which means day and period, for words were few then, and one word had many meanings. I inscribed it in the record as thou didst instruct me. 'And the spirit of God moved upon the face of the waters; and God said, Let there be light: and there was light. And God saw the light, that it was good: and God divided the light from the darkness. And God called the light Day, and the darkness he called Night. And the beginning and the ending was the first period.'"

"Thou didst well, Moses," said Gabriel. "Thou didst use the only words known then to express thy thought; but men have invented many words since that have confused thy meaning. And it is not thy fault if men say thou didst affirm that God wrought the six periods of vegetable and animal creation in six earthly days, counting from sunrise to sunset. I did not so instruct thee, and thou didst not so inscribe it. Men have thus confused terms, and misapprehended the truth through all

terrestrial ages. John, the beloved disciple of Christ, called Him the innocent one; and because the same word meant a lamb, which is the most innocent thing known on earth, men have called Him the Lamb of God; but John never called Him that; he called Him 'the innocent one.' What didst thou mean, Moses, when thou didst say: 'And God said, Let there be light: and there was light'?"

"I meant," replied Moses, "that the earth, already created and ready for habitation, had thick, dark clouds surrounding it, and the sun, which had been in existence and shining on the rest of creation for ages, could not penetrate this dark garment or veil of mist and clouds that surrounded it; and that when God spoke the words, 'Let there be light,' this garment or veil of dark clouds and shadows parted like a curtain, and the bright sunshine of God's luminous heaven burst forth on the earth, and encircled it in its crystal arms of light and beauty. Then the world was enwrapped with warmth and gladness, and looked up into the face of God with such a smile of joy, that God Himself was delighted, and said, 'Behold, it is good.'"

"I remember that day well," said Gabriel. "I had charge of the ceremonies of that inaugural day of earth. It was a great hallowed day in heaven. This beautiful acropolis of the city of God was decorated with more gorgeous brilliancy than usual, the glittering courts of honor were filled with throngs of mighty angels, and glad hosannas rent the sky; and the archangels were assembled around the great white throne; and the learned divines of heaven, such as are known as scientists on earth, were gazing through a thousand telescopes at the little planet. And telegrams and messengers were con-

stantly arriving from Sirius, and Vega, and Alpha Lyra, and Alcyone; for their angel hosts also wished to take part in the inauguration of a new world, to have new beings that would solve the experiment of evolution, and the growth and survival of good under all conditions. And I was bid to take a cohort of angels and inspect the new earth. And as we passed on our way and neared the earth, we could hear the songs of the angels, known as the sons of God, from many far-off suns. And as we reached the earth, the command was given: 'Let there be light,' and at the electric word of power, instantly the clouds parted, and folded up and fled away, while the light of heaven enwrapped the earth. 'And the morning stars sang together, and all the sons of God shouted for joy.' That was one of heaven's most glorious hallowed days of joy and gladness; and the angels all wondered what marvellous creations God would bring forth in that new world, for it is written: 'Every house is builded by some man, but he that built all things is God.' "

And Moses said: "Thou knowest that of which thou speakest, and as thou didst instruct me, so did I inscribe it in the records. 'And God said, Let there be an expanse in the midst of the waters, and let it divide the waters from the waters. And God made the expanse of the sky, and divided the waters which were under the expanse of the sky, from the waters which were above the expanse: and it was so. And God called the expanse of the sky heaven; and the beginning and the ending was the second period.' "

"Yes," said Gabriel, "God's power had pierced through the clouds of darkness in the first period;

and divided the light from the darkness; and in the second period He divided the waters in the air above from the seas below, and dried up the noxious vapors, so that there would be between them a clear blue pavilion of sky spanning the vault of heaven.

“But men called it a firmament, they supposing, at that time, that the sky a few miles above the earth was solid like the earth; and even up to a recent period in that planet’s history the sky above was believed to be a solid sphere of crystal or glass. But the Hebrew word, ‘Rakia,’ thou didst use means to spread out, as one spreads out the curtains of a tent or pavilion; it did not mean anything solid like a firmament.”

“And thou didst further teach me: ‘And God said, Let the waters under the heavens be gathered together unto one place, and let the dry land appear, and it was so. And God called the dry land earth, and the gathering together of the waters he called seas, and God saw that it was good. And God said, Let the earth bring forth grass, the herb yielding seed, and the fruit tree yielding fruit after his kind whose seed is in itself, and it was so. And the earth brought forth grass, and the herb yielding seed after his kind, and the tree yielding fruit whose seed was in itself after its kind; and God said that it was good. And the beginning and the ending was the third period.’ ”

“Yes, the work done on the first and second days,” said Gabriel, “and the first part of the third day, was mostly atmospheric changes: the dissipation of clouds and darkness, which had for ages encompassed that planet, and the clarification and purifying of the air, so that it would be translucent,

and the light of the sun and moon would shine through it. So that when I stood a spectator of the scene on the beginning of the fourth period, I beheld the dry land, and the seas, and lakes, and many rivers, and the earth was covered with the verdure of grass, and herb and tree.

“Then, on the fourth day all things were ready for the light of the sun fully to penetrate the translucent air. The air had been too heavy with moisture, dew, and mist until the fourth period, to let the rays of the sun down to the earth’s surface, though a mild light had penetrated the mists and enswathed the earth as on the first day. On the first day, when God said: ‘Let there be light,’ the light penetrated the darkness, but the air was not sufficiently translucent for the sun and moon to regularly penetrate it, until the fourth day.”

“Then,” said Moses, “in the fourth period God said: ‘Let there be lights in the expanse of heaven to divide the day from the night.’ And God made the two great lights to shine on the earth, the greater to rule the day and the lesser the night. I said God made them to shine on the earth, for He had made them a long time previously, but because of the clouds they could not shine on the earth. He made the stars also.”

“This greater and lesser light,” said Gabriel, “were the sun and the moon. And thou hast truly said, they had been created for many ages previously, and the sun had been shining for three long periods through the moist, warm clouds on the earth, but could not be seen for the clouds and mist; and the moon had recently lost nearly all of her atmosphere, and now reflected from the sun a mild nocturnal light upon the earth. The stars also had been

created for many ages, and were seen now for the first time on earth."

Then Moses continued: "And in the fifth period God created the fish of the sea, and the fowls of the air, and cattle, and all creeping things. And the beginning and the end was the fifth period. And in the sixth period, why did God say: 'Let us make man'? He had not said that in reference to any previous creation."

"Because," answered Gabriel, "in His previous creations He had used only matter and force, which were sufficient for that purpose, and which were diffused through space; but now He must add higher and infinite qualities, and spiritual powers to this new being, so that it could think, and reason, and live forever like Deity Himself. So that He counselled with the holy spirit of truth, which is called the Holy Ghost, and which is His co-ruler in heaven; and They planned together the whole scheme of human creation, which was commenced with the creation of the first man. 'And the Lord God formed man of the dust of the ground, and breathed into his nostrils the breath of life, and man became a living soul.' "

"And that breath of God," said Moses, "was and is the soul of man—ah, indeed, is man; for the body is but a changing drapery of atoms. But men have said man's body was made like unto the lower animals, and in general form and contour like an anthropoid ape. What thinkest thou, Gabriel?"

And Gabriel replied: "It is immaterial to man, and all creation, whether God took red clay or black mud, and formed man's body after the animal forms that had been evolved through the long period of their prior existence; or whether He took the most

perfect type of a mammal and stood him erect, expanded his brain-pan and lifted his face to front the stars. Man's body is no part of man, he does not retain the same atoms a second; he puts on the changing drapery of matter as a garment, and casts it off as a garment. And those who look for man in flesh, and blood, and hair, and hide, with microscope and scalpel, will never find him. He is not there, he is the spiritual image of Deity, and as invisible as Deity Himself. Man's soul is man."

"But, Gabriel," said Moses, "I have often wondered, and canst thou tell me the length of those periods of creation called days?"

Gabriel answered: "There is no time in heaven, and none there take note of the flight of planetary years. It may have been a thousand, a million, or many millions of years, during which the creative processes continued under established law. But any one reading the description of creation, Moses, should have known they were not earthly days, from sunrise to sunset, for thou dost expressly say there was no sun and moon shining on the earth to make days, until the fourth period; therefore, how is it possible for any to mistake thy meaning? How couldst thou mean days when there were no days for the first three periods?"

"True, very true," replied Moses, "but men do not think of these things. They jump at their conclusions. They say these are the mistakes of Moses."

I have detailed this imaginary conversation between Moses and the Archangel Gabriel to show how easy it is for the Bible and all ancient writings to be mistranslated and misunderstood. And all these misinterpretations are so easy and natural because of the difference in the meaning of words

now and in ancient times, and on account of the ignorance and superstition of the past, attributing all natural phenomena to supernatural causes, and the direct interference of Deity. Take, for example, the statement of Joshua that "the sun stood still and the moon stayed." This is a quotation from the book of Jasher, which may have been a poetic or fictitious work. But let us accept the statement and circumstances together, and it is a safe conclusion that there was a great aurora borealis that night, for there have been many in the past that have covered with their brilliancy all of Asia and part of Africa.

These are the circumstances: Joshua came upon his enemies suddenly and discomfited them, and slew them with a great slaughter. Then he says: "And it came to pass as they fled from before Israel, going down to Beth-Horan, that the Lord cast down great stones from heaven upon them unto Azekath, and they died; they were more that died with hail-stones than they whom the children slew with the sword." Then comes the quotation from Jasher that, "The sun stood still in the midst of the heavens and hastened not to go down about a whole day. And there was no day like that before it or after it."

Now, a flaming aurora borealis in the skies at night shooting its rays of colored light downward, like arrows or stones upon the fleeing enemy as they ran down the slope of the mountain ridge, might very easily be mistaken, by the victorious Joshua and his pursuing army, as a providential interference of the Lord to keep light in the heavens until they had destroyed their enemies.

I think there was nothing supernatural or unrea-

sonable in the statements of Joshua, when we remember the ignorance of the ancients, and their superstitious distortion of such natural phenomena. The aurora gleaming in the midnight heavens, and falling meteors blazing through the air, have been distorted into all conceivable shapes and wonders. And these natural wonders have been numerous in all parts of the world in all ages, and have been described by many historians. They were known to the Greeks and Romans. Aristotle mentions them in his *Meteorology*, as "gulfs of black and blue colors of the sky, like brands or torches from the abyss." Cicero mentions them twice, as "nocturnal torches flaming in the midnight sky." Pliny, the naturalist, describes them as "chasms of light beaming in the heavens that made the night almost as bright as day; and nothing is more terrible for trembling mortals." He tells us of one of these auroras seen in America where two great armies fought a terrible battle in the sky, and adds: "This is no extraordinary thing, and it has often been seen." "This popular superstition of Pliny's," says Angot, "which attributed auroras to great armies combat- ing in the sky, prevailed down to the last century." Seneca describes minutely many wonderful auroras, as "the heavens on fire, when the chasms of heaven seem to open and vomit flames."

Angot says that "On the night of August, 1859, the same aurora was seen at the same time over Europe, Asia, Western Africa, and North America as far south as Cuba." As about twenty-eight auroras are seen annually, it is almost certain that what Joshua described as, "Sun, stand thou still upon Gibeon, and thou, moon, in the valley of Ajalon," was a brilliant aurora, which made the

night almost as bright as day, and Joshua thought the sun and the moon both stood still. The fact that he thought the sun and the moon both stood still seems almost conclusive that it was an aurora, for there was no need for the sun and the moon to both stand still, and if the sun was shining in mid-heaven, the moon could not be seen. Therefore, Joshua, not understanding natural phenomena, thought the glowing aurora was the sun still shining, and seeing the moon through the aurora at times, thought both the sun and the moon stood still, at the Lord's command, that he might destroy his enemies.

Yet these misunderstandings and misstatements of natural phenomena have caused many persons to disbelieve the Bible, and reject its divine teachings. While I am a firm believer in the Bible, I am also a firm believer in natural and spiritual law, and am impelled to think there have been no supernatural occurrences since creation began. Whatever happens, happens in accordance with natural and spiritual law. All law is natural, because it is in nature and not above it; all law is spiritual and divine because its source is spiritual and divine. "Nothing less can be said of law, than that its seat is the bosom of God, and its voice is the harmony of the world."

Therefore, if God exists, if heaven exists, if man has an immortal soul, if he can visit heaven and converse with angels, if he can soar on the wings of electric light, and bathe in the bliss of eternal glory, if his soul is an atom of Deity, and he can think the thoughts of God after him, and dwell in the all-luminous sun, and solve the mysteries of the universe; all these he can do because they accord

with his nature and destiny, and the natural, spiritual, and divine law of omnipotent Deity.

And these things man can do here or hereafter as certain as there is an omnipotent, beneficent God. And that there is, and that these things shall be realized, and "come o'er us like a summer's dream without our special wonder," all law affirms, all hope justifies, all affections demand, all truth inspires, and all love makes absolute.

CHAPTER XV

“CANST THOU BIND THE SWEET INFLUENCES OF PLEIADES OR LOOSE THE BANDS OF ORION?”

This remarkable question, “Canst thou bind the sweet influences of Pleiades?” is an inquiry into the uses of beauty in nature. And, “Canst thou loose the bands of Orion?” is an inquiry into the marvellous strength and adhesive power of the united and harmonious universe. It shows God’s love of the beautiful, and His pride in the strength and power, which binds together His vast and complex creations. God, everywhere in His creation, brings forth the “sweet influences” of beauty, to win and to woo us to a love of the beautiful, knowing that it elevates our thoughts and exalts our nature. He has blessed the earth with verdure and the beauty and fragrance of flowers, and bent above it the sublime beauty of star-gemmed skies and the floating panorama of purple and silvery clouds. He adorns the morning with rosy radiance, and the purple twilight with golden glories. He makes suns and worlds with circling lines of beauty, and all things with curved lineaments of grace and grandeur. He has made the human face so perfect and the human form so graceful that the most skilful artist cannot suggest an improvement. The human eye is a marvel of beauty and perfection, a miracle of utility and wonders; while every limb is replete with grace and strength.

God makes all things beautiful, and requires us to do the same. Nothing really ugly can be found in heaven or in the universe of nature. And the man who makes an ugly, grotesque picture, statue, or image commits an offence against God and a crime against humanity. The divine oracles ask, "Canst thou bind the sweet influences of the Pleiades?" God recognizes the sweet influences of beauty and its inspiring, uplifting power. This world was not made by chance, nor formed by the operation of laws and forces uncontrolled by intelligent mind or will. It was created by the beautiful thoughts and glorious dreams of Deity, who loves the beautiful and sublime.

The great Architect, and Builder of the universe, has everywhere and in everything combined beauty with utility. God would not have deemed this a satisfactory or perfect world, or said of it, "Behold, it is good," if it had not been beautiful as well as wonderfully adapted to its purposes and uses. God has an æsthetic nature, and an artistic eye that loves beauty, and revels in visions of grandeur and sublimity. He has set the stars like golden apples in the blue vault of heaven. He has sent the swift-speeding comets like fair-haired goddesses in their flaming chariots, with their sunny tresses streaming through the startled silence of measureless space. He has lit the pyrotechnics of the skies with shooting stars and flashing meteors, and set the rainbow arch of glowing beauty on the bending sky. He has brightened the polar skies with the shimmering light of auroral glory; and made brilliant with a thousand forms and colors the fluted columns, and luminous arches, and flaring banners of the sun's coronal splendors; and flung out his streamers of

golden light millions of miles into silent space, as they go on their mission of love and life to distant worlds.

Thus the life-bearing worlds, the self-luminous suns, the fiery-tailed comets, and the blazing meteors, and all the evolving marvellous creations of the universe, while exhibiting infinite power and utility, regale our senses and thrill our souls with their inspiring beauty and sublimity. Thus is manifested the wisdom of creative power in blending the beautiful with the useful, and scattering His luminous blossoms of light and beauty in the blue fields of heaven, as He has scattered them in the green fields of earth, to look into our faces with the smile of hope and the inspiration of gladness and immortality.

Nature, in her complex and diversified forms and substances, produces marvellous harmony and beauty, with wonderful variety. From the same food, liquid, and air, nature's mysterious processes produce our bones, muscles, nerves, hair, nails, teeth, and blood. From the same soil nature evolves countless and varied products of healthful and poisonous plants; and even the poisonous plants are verdant and beautiful, and have their unknown uses. And even the fierce tiger, and the lordly lion, and the spotted leopard, and the detested serpent with its glossy skin, arched neck, and hypnotic eyes, nature has made beautiful.

Then, lordly man, with a soul as impressible as the sensitive plate of a camera, imitate thy Maker and make all things beautiful. And, above all things, help women to be beautiful; let their eyes rest on nothing grotesque or ugly, but only on that which is attractive and beautiful, for their sensitive souls

must model all human forms of beauty and excellence. Beautify thy home, thy office, thy garden, thy door yard; let every chamber in thy residence, in every ornament, book, picture, statue, and furnishing please, elevate, and inspire thy better nature, and fit thee for the bliss of a beautiful and glorious heaven. And let it be known that he who builds an ugly house, paints an ugly or grotesque picture, or carves a griffin, or a devil, or any horrid thing, degrades his nature and is a curse to humanity. The man who originated the abomination known as the "Yellow Kid," and who permitted its publication, should suffer an age of penitential sorrow for such a horror and crime against humanity. Heaven would not be heaven if it were not beautiful. That which is good is always beautiful. God has so constituted the universe.

The horrors of Dante's *Inferno* have been a curse to a hundred generations, who have shivered at its terrors and cursed the beneficent Deity in their secret hearts for inflicting excruciating torments that never existed. Dante, with all his divine poetic fancies, distorted his imagination, and incited his lurid fancy to picture the torments of his enemies; and if the good he did in other ways does not outweigh this evil, he may have an age of self-imposed penance to suffer for such a crime.

Fear is the slavery of Satan, if there ever was a Satan, and a curse and degradation to the soul. And no man should appeal to it in the name of Deity. No man has a right to make any such appeal, when God tells us His name is Love. Do not fear punishment, but fear to do wrong. Fear to break the just laws of a loving Father.

Doré, the great artist, who, with his great genius

illustrated Dante's horrible *Infernos*, misused his marvellous gifts to the distress and injury of mankind. May they be hidden from the further gaze of suffering humanity, and especially from children and impressible women. And may all horrid, ugly, and grotesque pictures or statues, in public places or in newspapers and advertisements be banished from the public gaze. May public sentiment and the law soon accomplish this glorious purpose.

The ancients indulged their wildest fancy in painting the punishment their mythological deities inflicted on those who disobeyed their laws, or committed some flagrant crime. Tantalus was condemned to stand in water up to his chin, and, though famishing with thirst, was not permitted to drink. Sisyphus was condemned to roll a stone up the side of a mountain, which continued to roll down again, and caused him unending toil. Ixion was tied to a revolving wheel; and Damocles had a sword suspended above his head by a single thread; and Prometheus was chained to a lonely rock, while the eagles fed upon his liver, which grew constantly as it was devoured.

Homer and Virgil described those horrid tortures, which came down from the fabulous stories of the earliest ages. And Dante and Milton obtained their great epic legends from the same source. But these horrors should pass away with the age and character of the people who invented and believed them. Beautiful thoughts and ideals should succeed them. The harrowing and the distressful should be relegated to the forgotten past. The present age knows the value and the inspiration of the beautiful.

The love of the beautiful is ours. God gave it as a shining angel to redeem the world from chaos.

And as we measure up to the altitude of God, so does it seize and possess us. Without it, we might as well be the unfeeling sands that strew the parching desert, or a mummy of a thousand years in the crypt of Egyptian pyramids. With it, we can sing the morning songs of Memnon, and hear the music of the spheres, and hitch our chariot to the glowing stars.

Not only is there beauty, but measureless strength in God's vast universe. There is not only the strength of gravity or magnetism, but also the strength of electric repulsion. "Canst thou loose the bands of Orion?" The bands of Orion not only held things together, but held them apart in their proper places. This powerful belt of Orion was a vast galaxy of stars, held in one great constellation. They were not burning spheres, they were great self-luminous worlds, like our sun; and if they were burning up, as our astronomers claim, they had no bands to unloose.

In the thirty specific reasons I gave why the sun was not hot, and the dozens of others to the same effect, there was one important reason that I overlooked, that should be conclusive in itself. That is, the well-known fact that comets pass through the corona of the sun "without suffering any visible damage or retardation of their velocity." If the corona was 18,000° hot, or had any degree of excessive heat, this would not be possible. The material of the comet passing through frigid space must be intensely cold, and coming in contact with the corona of the sun, if it were hot it would dissolve it into invisible vapor or gases, and the sun's heat would absorb it, and the comet would entirely disappear. But none of these things occurs; but on

the contrary, the comet is unaffected by the sun's corona, which shows that the corona contains no heat.

Newcomb says: "The great comet of 1843 passed within three or four minutes of the surface of the sun, and therefore directly through the midst of the corona. At the time of its approach its velocity was three hundred and fifty miles a second, and it went with nearly this velocity through at least three hundred thousand miles of the corona, coming out without having suffered any visible change or retardation."

This is only one of many instances of a similar kind, and ought to be sufficient to convince any unprejudiced mind, not controlled by the edicts of scientific authority, that the sun is not hot, and its corona is not hot. If the comet contained any matter whatever, in the form of liquid air, frozen air, or any known gases, it would have been volatilized, absorbed, or driven out by the sun's heat. But it is plain the sun had no heat, and this is why the comet was unaffected.

No known substance in nature could have passed through the supposed heat of the sun and survived an hour. With such known facts, why do astronomers persist in affirming that the sun is excessively hot? The sun throwing off the comet, also raises the question of gravitation and repulsion, and the necessity of their equal and exact balance of forces; and at times the greater power of repulsion, in order to prevent the collision of worlds and the destruction of the universe. Some of the astronomers are forced to admit the mystery of repulsion, and that it is antagonistic to the theory of gravitation as the supreme force in creation, and acknowledge their inconsistency and contradictory position.

One says: "Comets, in their substance, mysterious flight and appendages, have laws unto themselves, and the mystery of repulsion is one of them. Their avoidance of the sun must be attributed to their combination of elements, or the unknown properties of their substance; and repulsion seems inherent throughout their existence." Another learned scientist says: "Repulsion has never had full recognition to the extent of its power. As observed in gases and perfumes, its mildness exhibits little force. Thus gentle in appearance is the power of gravitation also. But the power of the two forces in conflict is fully displayed upon mighty globes. Gravity is supreme upon all bodies, but when it would seem greatest, repulsion is able to overcome it."

This is a plain contradiction. If gravity is supreme, how can repulsion overcome it? Again: "It is not a case of atomic repulsion for the purpose of dispersion of a substance, but a direct conflict of the two forces exerted by immense globes not far distant from each other, in fields favorable for both powers. The power of gravitation exerted by the mighty sun, aided by the momentum of the comet, is met and effectually resisted by repulsion in the insignificant body of a comet. The comet is deflected from its course, escapes absorption by the sun, and passes around it. The obstinacy of repulsion must be evident in the abrupt turn and sharp curve made by the comet."

Could the law of repulsion and the force and power of repulsion be better stated? After such a forcible example of the power of repulsion, to contend there is only gravitation and the balancing force of planets to preserve the motion and orbits

of planets, seems a violent contradiction of his own statement of facts.

Another learned scientist says: "Repulsion as co-existing and co-extensive with attraction in the celestial world is worth considering, though if admitted it would compel a revision of no small part of our sciences."

That it is largely admitted on one hand, and denied on the other by the same scientists, will be apparent after any careful investigation. As science by gravitation can make no explanation of the law of repulsion, the formation of matter into nebula, and the rotary motion given to nebula, and also to suns and worlds; and electro-magnetism can and does clearly and naturally explain all these, it ought to be accepted in the place of gravitation as the supreme evolving dual force of creation.

A burning sun could not give light and heat to the planets, or long exist, or even retain its power of attraction over them, if it was excessively hot. Only electro-magnetism explains its marvellous energy, and the abundance and regularity of its supply without heat, and the convertibility of its exhaustless supply of electricity into light, heat, and all vital force, and it should be recognized as the cosmic force of the universe. It is the only rational solution of present scientific problems. Gravity does not answer all these problems. One scientist emphasizes his dissent thus: "The force is inconceivable, and the velocity unaccountable, that hurls gaseous matter three hundred thousand miles in height against the sun's powerful attraction. No element conceivable could concentrate in the body of the sun in such volume, and explode with such force as to accomplish this against an attractive force twenty-seven

times greater than the restraining force of the earth's attraction. No proposition of extreme absurdities can equal this phenomenon of the amazing projectile force of the sun. And no effort can reconcile them to the understanding. Neither the impact of meteors nor the shrinkage of the sun can account for these mysterious sun forces."

Yet this same scientific author (and I prefer not to mention names, as I am criticising their inconsistencies), after such a fulmination against the insufficiencies of present theories, follows in the beaten track. Is this veneration for old theories and accepted authority, or is it prejudice against new theories and new ideas? Another scientist says that: "While only the law of gravitation was recognized, reference to the potency of matter was sufficient, but now another law must be recognized, which presents many complications."

The truth has been forced to struggle with prejudice and ignorance for supremacy through all the ages. Will it always be so?

The distinguished scientist, Sir Charles Lyell, says: "We are sometimes tempted to ask whether the time will ever come, when science shall have attained such an ascendancy in the education of the millions, that it will be possible to welcome new truths, instead of always looking upon them with fear and disquiet; and to hail every important victory over error, instead of resisting new discoveries long after the evidence in their favor is conclusive."

It has taken decades, and even centuries to secure the recognition of the fundamental truths of science. Only the few are sufficiently courageous to champion or approve new discoveries or theories, until they are accepted by popular sanction and high author-

ity. Even so wise a philosopher as Lord Bacon treated the great discovery of Copernicus, of the earth's diurnal revolution, with disdain and contempt. And Newton's theories, now so universally adopted, were tardily received by the British universities.

Sir David Brewster, in the "Life of Kepler," says: "In the infancy of a science, there is no speculation so absurd as not to merit examination. The most remote and fanciful explanations of facts have often been found the true ones, and opinions which in one century have been objects of ridicule, have in the next been admitted among the elements of our knowledge. The physical world teems with wonders, and the various forms of matter exhibit to us properties and relations far more extraordinary than the wildest fancy could have conceived. Human reason stands appalled before the magnificent display of creative power, and they who have drunk deepest of its wisdom will be the least disposed to limit the excursions of physical speculation." This is superlative truth well stated, yet what scientist, or professor of accepted theories, ever heeds such concrete wisdom?

If the statements herein, that the sun is not hot, but is a self-luminous perfected world, the residence of Deity, and the future abode of man, seem strange and chimerical, do not reject them through prejudice, because they are new or strange, but think deeper than the surface of things.

If the statement that the primitive condition of all visible things and substances is invisible and intangible, and that they pass freely and quickly between the sun and earth; and that solid matter by scientific analysis, as Flammarion says, has van-

ished into invisible centres of force that revolve around each other, and do not even touch each other; and that human souls can speed on electric force to the sun in eight minutes, as do the atoms and the sun and earth currents, do not reject it. Investigate, and think deeper, and reason, and determine for yourself.

If science has proven the immortality of matter, and found a "luminiferous ether" that pervades all things, and can pass through all things, and go everywhere, and is suited to form the refined, indestructible body for the soul of man, which his soul can evolve and preserve its future existence, and has almost proven man's immortality, accept it as a possible contingency, and have faith that the truth will ultimately prevail.

Also remember that it is reasonable to believe that angels, and even God Himself, has at various times visited this earth; and that men like John, and Paul, and Moses, and Elias have been carried in their spiritual body by angelic messengers to the celestial Cities of the Sun, and been taught and inspired to teach divine truths to men. And then remember, that if these things are true they are not supernatural, but in accordance with the natural, physical, and spiritual laws of the universe, and have always existed; just as the fact that the earth was always just as round when it was supposed to be flat as it has been since, and turned over the same way in the same time before we found it out. We are just beginning to find out things, and that is why many great truths seem strange and unreasonable. It seemed unreasonable, a generation ago, that microbes floated in the air and disported in the blood flowing through our

veins; that an invisible force we call electricity, should move vast trains of cars with incredible speed, enable us to converse under the ocean from continent to continent, see and talk to each other thousands of miles apart, and even repeat human language perfectly. Yet these are now matters of daily and hourly occurrence, and excite no surprise.

The same will soon be true with regard to the soul, and the sun as its future habitation, and the visible residence of Deity. They will be regarded as reasonable and natural; and the old fallacies of the excessive heat of the sun as a burning sphere will be regarded as the absurd delusions of superficial theories, and unpardonable folly.

Gravitation will be considered but a fortunate step toward the discovery of one of the dual forces of electricity; and electricity will be accepted as the creative, cosmic, upholding force of creation, and the invisible word of power of the Supreme Ruler of the universe. And it will soon be as natural and universal for mankind to look to the brilliant all-glorious sun as the personal abode of Deity, and the future home of man, as to look to it for the elements of light and heat that make the earth inhabitable. Such is the transforming power and glory of the ever-widening vista of truth and knowledge.

CHAPTER XVI

MIND OR SOUL IS THE FIRST AND LAST REALITY. IT,
AND NOT MATTER, IS THE REAL FACT OF LIFE

Mind is the starting-point of all motion, force, and power. The beginning of creation had its inception in the conscious volition of Deity. All the machinery of the universe was started by the intellectual impulse of an infinite power. Conscious, reasoning volition is the ultimate source of all force and all law, and the beginning point of all power. The intellectual will power of Deity and man is the supreme directing, governing force over all forms of matter in the physical universe. The refined spiritual and mental forces are the omnipotent potencies in all creating and created things. They stand back of all visible substances and organisms. They touch the secret springs of action that move and guide all visible expressions of force and power. They are swayed by the supreme majesty of reason, and in the dynamic potency of volition find their omnipotent sphere of energy and action.

God said, "Let there be light," and there was light. God said, "Let us make man," and man was made. Thus, all created things are the products of creative volition; and all creative volition is an intellectual impulse, founded upon reasoning power and mental concept.

God had a spiritual or mental creation or ideal of the universe in His mind before He began the

work of creation. He had planned from the beginning the whole elaborate scheme and machinery of His creation; just as an architect has a previous concept or ideal of every building, the painter of every picture, the sculptor of every statue, and the poet of every poem before they are produced.

This shows the mind must first conceive before the hand can execute; that the mind must create an ideal thing before the real thing can have any existence. Therefore the ideal is the foundation of the real. The invisible is the starting-point of the visible, and the unseen mental creation must precede any visible material creation. No house was ever built, no temple erected, no picture painted, or poem written until there was first an ideal creation of the same in the mind of the builder, painter, or poet. The starting-point of all constructive force and creative energy is in the mental concept and conscious volition of an invisible, spiritual, or mental power. Therefore mind is the beginning of all things, and virtually the end of all things; the first and the last reality. It, and not matter, is the real fact of life.

Matter without mind to direct and mould it into visible substances and organic forms would be but a dead waste of useless material in the void of space, without directing force, consciousness, or utility. It is mind or soul that weaves around its invisible form the changing drapery of visible matter, that gives shape and functions to all organic forms, and permeates them with the electric and mental currents of sensate life and conscious being. In the earlier ages, this mental power was not known and recognized.

Man, from the earliest ages, has been climbing

from the simpler animal phases of life to the clearer atmosphere and loftier altitudes of knowledge and intellectuality. He began his terrestrial career in the warmth of a tropical climate, without a tent, or house, or fire, or any protection from the elements except the spreading branches of trees; without clothing or any garment to hide his nakedness.

We are told that our first parents clothed themselves with an apron of fig leaves, and dwelt for a time in a beautiful garden called Paradise, from which they were driven for disobedience into a less congenial dwelling place, in the ordinary forests and wilds of the then uninhabited earth. This was the beginning of man's career on earth.

In the early dawn of the world's history, its scattered population followed a nomadic life. They dwelt in tents, and drove their grazing herds over trackless plains. Their wants were few and simple; their government patriarchal. When they encroached upon each other, they could say, like Abraham to Lot: "Is not the whole land before thee? If thou wilt take the left hand, then I will go to the right." Under such conditions life was slow and monotonous and without luxuries, and avarice could not grow nor oppression flourish, and knowledge and intellectual growth made little progress.

In time, however, mankind abode in rude villages, and obeyed the head men of the tribe. They built huts and houses, and claimed proprietorship in land. Gradually their villages swelled into cities, with temples and palaces; they studied the arts of peace and war, of commerce and agriculture. They had servants and fine linen, purple garments, ornaments of gold and silver, jewels of rubies, pearls, and diamonds.

Then came the more complex and stable forms of government and organized society, and man began to think of the necessities and luxuries of his physical life and to struggle for supremacy over nature. He then began to take account of nature's bounteous provisions for his comfort, and to delve in forests, and open up mines of gold and silver and precious stones. And as he had leisure he began to look up to the stars and wonder at their mysteries, and to study himself and the book of nature spread out before him. Then he began to think, to invent, and to utilize nature's beneficence, and gradually to throw off the galling superstitions of legends and mythology that bound and hampered his mental faculties. Until now, in the broad, clear light of the twentieth century, the emancipated souls of humanity can feel and respond to the refined and subtle intellectual forces which are the supreme controlling forces of human life. And these forces are now the dominant forces in modern society and human government, and will continue to grow in influence and dominating power through all the coming ages. For countless centuries of the past man was considered as a mere animal, and the gross forms of visible matter as all that existed. But that day "of the earth earthy" and man "the superb animal" has past forever.

A century ago materialism dominated France; to-day its greatest scientist, Flammarion, asks: "Where then is matter? Bodies are composed of millions of millions of mobile atoms, which do not even touch one another, and are in perpetual movement around each other. These infinitesimal atoms are now considered centres of force. Matter disappeared under dynamism." He says again: "Materialism is an

hypothesis which cannot be sustained now that we know more about matter. It does not afford us the solid argument it was once supposed to do."

His statements accord with those of all modern scientists, who unanimously accept the invisible atom, five hundred times more invisible than transparent air, as the basis and foundation of all physical life, and who claim all visible existence in substance or organic form is the result of the myriad aggregations of these infinitesimal atoms. Where, then, is the materialistic dogma that prevailed so extensively fifty or a hundred years ago—that dogma which asserted that "only what is visible and tangible is real"? It has faded from human thoughts with those who believed in witches and wizards, and in astrology and mythology, and those who believed that the earth was flat, and that the sun revolved around it every twenty-four hours. Recent scientists have found a more refined and subtle matter than the atom which they call the "luminiferous ether," which permeates all matter and pervades all space, which is even more invisible and indestructible than the atom. They say it is suited to form an incorruptible eternal body for the soul, which can float in all space, penetrate all matter, and while yet a refined material substance has all the needed attributes of a spiritual body for the spiritual soul.

Professors Balfour Stewart, Tait, and McConnell have undertaken to show how from this luminiferous ether the soul may create a new astral body within the physical body that will survive the dissolution of the material body. And thus they form a physical basis for a future life. The latter says: "The psychic activity actually builds up a physical fabric for itself. Suppose before ruin and death be-

fall, the soul shall have been able to build up as it were a brain within the brain, a body within the body, like that which the Orientals have spoken of for ages as the astral body. Then when the flesh shall have crumbled away, there will have been left a body, material to be sure, but compacted of matter which behaves quite differently from that which our sense perceptions deal with; which is indestructible, and moves freely among and through ordinary matter without let or hindrance. The gross conditions of material existence, which in the present stage drag love down to lust, and make of the spirit a bond slave toiling to win bread for the body, will then be replaced by others so fine and plastic, so responsive to psychic needs, that a progress toward completeness of life will be possible and inconceivably swift."

As three eminent scientists agree on this physical basis of a future life, it ought to have a fair consideration as a most reasonable hypothesis. And a fourth, Professor Cope, in his "Origin of the Fittest," asks: "Is there any generalized form of matter distributed through the universe which could sustain consciousness?" He answers, "The presumption is that such a form of matter may well exist." Thus Professor Cope also seems to be a champion of the physical basis of immortality. Professor Fisk objects to the hypothesis that "the essential weakness of such a theory as this lies in the fact that it is thoroughly materialistic in character. By it the putting on of immortality is in no wise the passage from a material to a spiritual state. It is the passage from one kind of materially conditioned state to another."

But Doctor McConnell thinks that in this mate-

rialistic basis lies the strength of his theory, as "it turns away from the phantasmal region of 'disembodied ghosts' and looks for the hope of continued existence at the top of the hill, but in the line of the same path up which life has been climbing throughout the æons."

These scientific theories and testimony, taken in connection with that of Flammarion in his last book, "The Unknown" (1900), in which he says, "The immortality of the soul, already demonstrated by philosophy, will be speedily proven by psychic science," show science is making rapid strides toward the proof of man's immortality.

The tendency among scientists is becoming prevalent since the last decade, and the proof of the invisibility and instability of matter, to recognize mental and spiritual potencies and the soul of man and its immortality. This is the result of the simplest reasoning: such as a speck of matter being indestructible and immortal, the invisible reasoning power which moulds and controls them in myriad clusters in organic forms ought to be immortal also.

Sir H. Davy, after a remarkable vision, exclaimed: "Nothing exists but thought. The universe is composed of impressions, ideas, pleasures, and pains." After all this scientific testimony and authority, we should not be too severe on Christian Scientists if they go so far as to deny the existence of matter. They make a mistake, because, however variable, fleeting, and invisible in its elemental form, in its organic form matter is a positive reality which cannot be ignored. Their emphasis of the refined and spiritual forces in human nature as the controlling and dominating forces is correct and truth-

ful, and has an elevating and spiritualizing influence on humanity. Their faith, when honestly exercised, that they receive direct spiritual aid from the divine mind and will, is a cheering consolation.

But they should remember that Deity or the divine mind uses material ways and means to accomplish His purposes, otherwise there would be no visible earth or visible bodies. And that while mind is paramount, matter also exists, and in this life is the ever-changing drapery of the soul, which cannot be ignored.

As to the "luminiferous ether" providing a refined, indestructible, material body for the soul, I deem there is good reason for the assumption. But I hold that this luminiferous ether is the electro-magnetic sea of ether, which fills all space and permeates all matter; that it also constitutes the electric body of man within the material body, which weaves around the soul its atomic and molecular garb of visible existence. I hold that spirit cannot operate on matter, or directly control and mould it; it must do it through this luminiferous ether or electro-magnetic energy, which is its medium and agent, and its right hand of power. It is the directing, creative power of both man and Deity. God impresses His laws upon nature, and holds suns and worlds and all material things in the intellectual grasp of His omnipotent power by means of this potent electro-magnetic ether and forces.

By means of this same electro-magnetic ether and forces man controls his body, and exercises the functions of his five senses, seeing, hearing, smelling, tasting, and feeling, and obtains from it all physical knowledge and consciousness. This electrical body begins with man's life, grows with his growth, re-

ceives and imparts all impressions to his mind and consciousness, recalls all bodily experience to memory, and in fact is the embodied manifestation of his directing mind and reasoning soul. This is the refined material, indestructible body that has its birth with man's soul, and remains with it through all its terrestrial vicissitudes, and gives it electrical wings when the material body dissolves, to fly to the central abode of Deity.

This is the invisible guardian and protector of the soul in life and death, and in earth and heaven. It is the refined, invisible, electric garment of light and power that surrounds the soul, and is the right hand of the spirit. I contend, therefore, that man has three bodies: a physical, an electric, and a spiritual body. The physical body dissolves into its invisible elements at death, but the other two bodies remain one and inseparable always. I contend there are four states of matter: the solid, the liquid, the gaseous, and the electro-magnetic.

The electro-magnetic is the refined ether and forces that permeate all space, and all other forms of matter. Matter and the electro-magnetic forces that now touch matter in every atom are supposed to have separate beginnings, and to have been brought together by the special act of creation, when God said: "Let there be light, and there was light."

The beginning of creation marked the period when matter and the cosmic electro-magnetic forces were blended, which unfold life forms wherever atmosphere, light, heat, and moisture give living environments. The distinction between the ordinary forms of matter and the invisible electric ether and forces that move matter, evolve it into organic forms, and impart motion and velocity to it, has never been

clearly drawn; while the distinction between mind and matter is treated as a basic principle, which has long been recognized.

Space is not a vacuum, but rather the home of this magnetic ether and forces, whence comes all motion, and the perennial fountain, out of which come all forms of creative work, by establishing germ centres and building around them, and unfolding all possible forms of body and life.

Professor Crookes calls the fourth state of matter "the ultra-gaseous"; and Professors Balfour Stewart and Tait "the second ether"; and Dr. McConnell calls it the "luminiferous ether"; and Joseph Cook calls it "the force back of the bioplasts"; and Professor Cope says: "It is a generalized form of matter distributed through the universe, which could sustain consciousness." It seems, therefore, that these learned scientists and myself all agree on the facts and the hypothesis, the only difference being in the name of the refined material body that enwraps the soul. This is a distinction without a material difference. It is as yet only a reasonable hypothesis. But an hypothesis is the foundation of all human knowledge. A learned scientist has well said: "Every advancing step of human knowledge has been gained by an hypothesis. If a given theory brings together coherent facts, and makes them intelligible, and leads to the discovery of other corroborating facts till then unknown, it slowly changes from an hypothesis to a conviction." This conviction then becomes an established fact or truth.

This is an hypothesis concerning the refined body of the soul. As to the soul itself, Dr. George H. Hepworth very wisely says: "As to what the soul is, of what elements it is composed, we dare make no

dogmatic assertion. In some future age, when science shall have penetrated into the radiant centre of this problem, and the invisible becomes visible, men may be able to see each other's souls as they now see each other's bodies. The genius of research has wrought so many miracles that such a consummation would add but a little to the astonishment we have already enjoyed.

"Psychology is a new domain as yet practically unexplored, with many a surprise in store for us. It is easy to imagine that at some future time science will be able to demonstrate the difference between matter and spirit, and prove beyond doubt that the latter does not cease to exist when the former is resolved into dust. Whether the soul consists of some sublimated material substance, like the ether which fills the planetary space, or is essentially different from anything we call matter, is a question which at present puzzles the thoughtful world.

"I am satisfied that the real man is behind the eyes that look, behind the lips that speak, and that when the lips are dumb, and the eyes are closed, this real man will step out of the worn-out house which has served his purpose, and enter another house that shall better fit his new environments. He will be the same man in another home, but with larger prospects and a brighter outlook."

I hold that science will in time establish man's immortality, and the sun as God's headquarters and man's future residence.

In clothing the soul with an electrical body of magnetic power, I do so because:

First—out of the electro-magnetic realms of space and matter come all the grand facts and forces

that control the three visible forms of matter, solid, liquid, and gaseous.

Second—because from thence come the wonderful phenomena of life, soul, spirit, thought, consciousness, with all the elements of mind force.

Third—because it is the magnetic field from which come all the changes of matter, and all that we know of life.

Fourth—because in the veiled mysteries of these invisible realities is the realm of immortality and pure spiritual existence.

Fifth—because all material phenomena come into our field of vision as effects produced by an unseen potency, which consists of a universal presence or electro-magnetic ether surrounding all bodies in space, and which weaves around them lines of force of infinite fineness, and which is Professor Cope's "generalized form of matter distributed through the universe, which could sustain consciousness." In thus tracing the elements of matter to their source in electrical and magnetic energy, we have reached the *ultima thule* and dug into the foundations of the universe. It is as far as the wisest scientist can go; and yet we have not reached the eternal mystery of God or life, or the essence of the undying soul. Science has almost been able to discover the presence of indwelling intelligence at the sources of material life. And while matter may disclose no soul powers or spiritual affinities in itself, yet the perfection of the immutable laws by which it is guided shows that there is above and around it an omniscient Lawgiver, a divine Intelligence, an omnipotent spiritual Power "unsearchable and past finding out."

As the best temples of creative work on our earth

are for the soul of man to dwell in, it is but a step to the sublimer creation of a peerless heaven for a sublimer order of reasoning immortal beings, where, clothed with the shining drapery of light, they shall abide in the dwelling-place of perfection and beauty. The suns of the universe seem best fitted as the place for their perennial abode and the visible residence of Deity. The time will soon come when we shall throw off these mortal habiliments, and know for ourselves all these marvellous mysteries, and tread the shining pathway of infinite life and knowledge.

When this perishable frame shall return to dust, there shall come forth a body from "this mortal coil" which shall be ethereal as the light, as warm and glowing as the stars, as intelligent as untrammelled spirit, as swift and quick as the lightning currents of electricity, as joyous as the dreams of heaven, as exultant as the banners of hope waving from the battlements of eternity, as vocal with songs of rejoicing as when "the morning stars sang together, and all the sons of God shouted for joy."

With a wing of electric light that never tires, and a thirst for knowledge that is never satisfied, it shall sweep on with the blaze of the sun upon its shining path and the rush of glowing planets around it. And in the æons of future destiny it shall visit central suns, and countless worlds, and universes yet unknown; and shall pass over vast, measureless space, where towering constellations seem to scale the heights of eternity, and infinite abysses of starry worlds seem swallowed up in depths unfathomable; and before it shall be the life of everlasting ages full of infinite knowledge and supreme unending happiness.

CHAPTER XVII

THE THREE GREAT MYSTERIES—MIND, MATTER, AND DEITY

In exploring nature and the wonders of the universe, we find three great mysteries that embrace all others. They are the foundation elements of all things. They confront us at every turn of our investigation, like the three sides of a triangle, in which we are enclosed by impenetrable walls. They are the three great fundamental mysteries of mind, matter, and Deity. Mind or soul is the reasoning, conscious, spiritual entity that constitutes the living ego and the human individuality we call man. In its physical organism it is called a personality; but as the human personality is constantly changing from youth to age, while the soul or individuality never changes, we must recognize the distinction. Mind is the first great mystery, because it is the first reality, and enables our conscious reason to recognize all other realities and investigate all other mysteries. What is mind or soul? We can describe it only in indefinite terms. It is the spiritual body of man; it is the breath or living spirit of God; it is an atom of Deity, the first and last reality, the real, thinking, conscious being which constitutes man. While matter is the ever-changing drapery of the soul, the visible aggregations of invisible atoms and forces; it is the invisible spirit or essence of things forming centres of force, which revolve around

each other without touching, constituting all visible substance and organic forms. Matter is visible and invisible, solid, liquid, gaseous, and electro-magnetic.

The conceptions of matter and the properties of matter have greatly changed in the last century. The same is true of man's conception of the universe, and great opposition was manifested to both.

M. Mercier, a member of the French Academy, published a book in 1806 maintaining that the earth does not revolve on its poles or move round the sun. When Lavoisier analyzed the air and showed it was principally composed of two gases, a member of the Academy wrote: "Are we now expected to surrender our belief in fire, water, earth, and air as primary elements when these have been recognized as such in all countries and all ages?" Yet these four elements, so vehemently defended less than a century ago, do not exist. Fire was then claimed to be the "god and machinery" of the universe. The same opposition was excited when the properties or elements of water were discovered. Electricity was discovered only about half a century ago, and without it travelling by steam could not have attained its present perfection, for stations could not have communicated instantaneously with each other.

Science up to a decade past told us we must admit only what we can see or can touch, or what we have received on the clear evidence of our five senses. But we find our senses deceive us absolutely. We see the sun, moon, and stars revolving as it seems around us. It is false. We feel the earth is motionless. That is false too. We see the sun rise above the horizon. It is beneath us. We touch what we think is a solid body. There are no solid bodies. We hear harmonious sounds, but the air has only

brought us silently undulations that are silent. We admire the effect of light and the colors that bring vividly before our eyes the splendid scenes of nature, but in fact there is no light and there are no colors. It is the movement of opaque ether upon our optic nerve that gives us the impression of light and color. We burn our foot in the fire; it is not the foot that pains us, it is only in our brain the feeling of being burned resides. We speak of heat and cold; there is neither heat nor cold in the universe, only motion. Thus our senses mislead us as to the reality of matter and objects around us, and sensation and reality are two different things. Matter and motion are so blended and woven into each other's arms, including the visible and the invisible, cause and effect, that it is difficult to distinguish between them. Our senses are insufficient to make us feel the movements that make up the life of the universe. Matter is so changeable, varied, and incomprehensible as to constitute one of the great mysteries of the universe.

A new form of matter has been developed recently by Professor Metz, of Tulane University, New Orleans, by freezing liquid air, and thus forming solid ice air. The liquid air shrinks to one-sixth its quantity and becomes solid. This is the first time this has been accomplished, and it may benefit commerce. Matter is but the shell and covering of the invisible forces, which weave it around themselves as a garment is woven by a skilful weaver. And while it is seemingly solid, there is no such thing as solid matter.

In "The Riddle of the Universe," Haeckel says M. Raymond holds there are seven great questions: the nature of matter and force, the origin of motion,

the origin of life, the apparently preordained orderly arrangement of nature, the origin of sensation and consciousness, the foundation of thought and speech, and the freedom of will. But he claims they are all subordinated to and embraced in the problem, What is substance or matter? That the universe, which is infinite and eternal, has two mysterious attributes, matter and energy, which permeate all space and produce eternal motion, and continuous change from life and growth, to death and dissolution. That all molecules and masses are continually revolving in space, some to their destruction, others to new life and development. That it has taken man and his ancestors three millions of years to attain his present distinction, which is the highest among the vertebrates, which are the highest species of animals.

He says: "Our mother earth is a mere speck in a sunbeam in the illimitable universe. Man himself is but a tiny grain of protoplasm in the perishable framework of organic nature." He claims man has two hundred bones, the same as the anthropoid ape, arranged in the same order; the same three hundred muscles direct his movements; the same kind of hair grows on his skin; the same group of ganglionic cells build up the marvellous structure of the brain; the same thirty-two teeth, a four-chambered heart, and the same organs throughout as the ape. He describes the fossil ape-man of Java, which, he asserts, supplies the "missing link." He asserts that all the world, the universe, that which we call soul and that which we call body or matter, are all one, forever changing, to be reanimated to continue its evolutions through time and eternity.

These are the honest conclusions of Haeckel, the

last of the great materialists. He seeks the solution of the universe in matter, instead of the invisible realities which control it. He is authority only in his own chosen sphere. In his doctrine of matter we will follow him to the end of the world; in his doctrine of spirit we will follow him not at all. He knows no more of spiritual things than a poor blind mole knows of the geography of the universe. He who spends all his days studying beetles and apes is no authority on angel faces. He who makes his life study only flesh, and bones, and hairs, and hide, and mud, and dust, and never looks up to God and heaven, may be authority on soils and monkeys, but he is no authority on man, or human hopes and spiritual aspirations. He has looked at only one side of life, and delved into the earth, until he cannot rise above the grossness of matter and look up to the stars.

Admit all he undertakes to prove: that man in his organic form is exactly like the anthropoid ape; that he has the same kind of bones, muscles, teeth, hair, brain, and heart structure; that he springs from "a single cell like all other living animals"; that "he is a commonwealth of endless billions of these cells," and that his brain is "a combination of force and matter, acting under the influence of centuries of education and adaptation," this does not disprove man's spiritual existence, or that of Deity. On the contrary, it tends to prove both, for all these things are the result of the law of growth and evolution, which necessitates a lawgiver. And all law deals with spirit at one end and matter at the other. Matter and force without a supreme directing Intelligence is anarchy, a chaos, and not a cosmos. God is a scientific necessity. Our universe is a per-

fect organism, working under natural law, which necessarily proclaims an omniscient Creator.

Science treats only of man's body and takes no cognizance of the soul. If all matter is one matter, as all present science affirms, what does it matter whether God took a developed mammal or a monkey and transformed him into a man, and breathed into him "a living soul," or whether He took the dust of the earth from a clay bank or a dunghill and shaped a man and gave him a soul or spiritual body? He is a living soul just the same.

The substance of his body is the same, and yet he is a special spiritual creation. There are no monkeys like him. There are no monkeys with living intelligent souls; therefore man must be a special intelligent, spiritual creation, different from all animals. Man is not a tetrapod.

Moses says, first, man was a special creation; second, that what constitutes man is "a living soul." Therefore all questions concerning his bodily organism are irrelevant, and do not affect the real man, or his mental and spiritual individuality.

Darwin, Huxley, Haeckel, and all the materialists in their investigations have never touched the real man. They are spiritual non-conductors, and have no conception of spiritual things. Ploughing the earth's surface does not reveal its rock-ribbed foundations; examining the construction of a palace does not give a biography of the owner or the architect; and a jewel case does not reveal the value or character of the jewel. God may have made man's body by a long process of evolution, from a primordial cell to a vegetable pulp, and from that to a jellyfish, and from that to a mammal, as the Darwinians claim. And there is much good reason to

believe that all vegetable and animal forms of life have been gradually evolved from a few species, as shown by Mr. Darwin with great research and erudition. But this does not prove all they claim. It does not prove that man is descended from a monkey or is not a spiritual being.

God is economical in the development of animal structure, as well as of stellar structure, for the stars, suns, and worlds are formed after very much the same pattern and governed by the same laws. Why should divine wisdom take the dust of the earth and make a new animal form or structure, when one had already been developed from the growth and evolution of ages, needing but comparatively little change and improvement to be suited for the body of man, which is the temple of the soul and the temple of God?

How much wiser in God to take a perfect mammal evolved from the ages, stand him erect to front the stars, shape his head and limbs more perfectly, expand his brain, give him the organ of speech, and breathe into him "a living soul." I do not say that God thus made man; I do say that He might have done so—and done all the materialists claim—and evolved his body from the lowest orders of vegetable or animal life; and still man is not the descendant of a monkey or any animal, and is and always has been a spiritual and intellectual being, far different from any mere animal.

It matters not how man's body was made or of what material, it is only the drapery and casket of the man; and as science affirms that all matter is one matter, it is no more humiliating to man to be formed from a monkey than to be formed from red clay, black mud, or a dunghill; the electro-chemical

purifications of nature make the fairest, most fragrant flowers, and luscious fruits spring from such a source. The difference is, Haeckel and Darwin follow the dirt, and Moses follows the deity in man. Haeckel and Darwin tell us how they hunted for bones and tissues, horns and hoofs. Moses tells us how, by a special creation, God made man in His spiritual image greater than all animals, and gave him dominion over all animals and over all the earth. I accept Moses. The history of the human race, its progress and dominion over the earth, confirms Moses.

We must go to the Bible first or last for all fundamental truth. If any essential truth there conflicts with science, or any known fact, it is because it is misunderstood. The first chapter of Genesis has been misconstrued for ages to be a creation of the universe, when Moses was telling only what occurred on this little earth and the sky that surrounded it, after it was ready for habitation, when the vegetable and animal organisms were evolved and man was created.

In the light of modern discoveries, we may believe that the dust was already animated dust, which was used in the creation of man before the breathing spoken of; and ages may have elapsed between the "forming" and the "breathing," which constituted the creation of man. Such a belief is neither contradictory nor disloyal to the Bible. Flammarion was formerly a strong materialist, now he says matter furnishes no argument to sustain materialism. If Haeckel could get out of the old ruts and expand his soul and observation, he would say the same. He began at the wrong end of creation to solve the riddle of the universe, and while he has

gathered an ocean of material facts, which show an infinite, intelligent, directing power, he considers the facts only, and not the infinite power.

And in his recent book, "The Riddle of the Universe," Haeckel denies he is a materialist, and says his doctrine is monism, all things from one thing or substance; that the monistic problem has but one simple enigma, "the problem of substance." He holds with Goethe that "Matter cannot exist and be operative without spirit, nor spirit without matter." He says: "Pure monism is neither theoretic materialism that denies the existence of spirit and resolves the world into a heap of dead atoms; nor theoretic spiritualism, which rejects matter and considers the world a group of energies or immaterial natural forces." He adheres to the monism of Spinoza, which he says is "Matter or infinitely extended substance; and spirit or energy which is sensitive and thinking substance. These are the two fundamental attributes or principal properties of the all-embracing, divine essence of the world—the universal substance."

Thus while he makes mind, matter, and all things of the same substance, he is not a real materialist, but recognizes spirit, and claims it is only a more subtle and refined matter. He says: "The life of the soul or psychic activity is the most important phenomena, and a branch of natural science."

This is not so bad as to ignore spirit altogether, as does materialism proper. And he contends that "scientific experience has never yet taught us the existence of forces that can dispense with a material stratum." As spirit has never been defined by reason or revelation, according to Haeckel it is refined matter or "sensitive thinking substance," which

exists everywhere and controls the grosser forms of matter. I hold this does not do away with Deity or the soul of man, but necessitates both as the supreme directing power. Dr. Hepworth aptly says the question that puzzles the thoughtful world at present is "whether the soul consists of some sublimated material substance, or is essentially different from anything we call matter?" Haeckel contends that all thought and reason is a refined material substance, and that the monistic conception of the unity of God and the world should constitute a world pantheism of modern science. His religion has but one postulate—mind, matter, body, soul, spirit, and Deity, all from one substance.

It seems, then, the old materialism that solid matter constitutes every real thing in the universe has passed, and the new materialism of Haeckel and others accepts spiritualism and spirit influences and forces; but they contend that they are a higher order of refined substance. This confines the whole difference between science and religion to a definition of what is matter and what is spirit. So that universal science and universal religion virtually agree now on everything, except whether spirit is refined matter or something essentially different. This difference is not very great nor very important, and brings science and religion nearer together than ever before in the world's history. They are now ready to shake hands, with the only question between them whether the hand is controlled by refined intellectual substance or intellectual spirit.

I hold that thought, reason, and consciousness are spiritual qualities and entities, and any kind of matter possessing these would be spiritual, and would not come under the definition of matter.

The greatest mystery of all mysteries is Deity. Who can describe the Creator of man and the universe, of mind and matter, the omnipotent, all-wise Ruler of heaven and earth? Perhaps some wisecrack will ask, If God made man and the universe, who made God? We might continue that question indefinitely, and ask who made God's grandfather and great-grandfather? This is like asking a child just learning its alphabet to solve a difficult problem in mathematics. We may need many cycles of time and ages of experience and instruction in many worlds of destiny before we have the spiritual wisdom to answer this question. Besides, such inquiry does not concern us at present, and would be useless folly. We want to know more of God and His present universe, and not of the infinities of the past.

We are told that God is a triune God. It is easier to understand that God is omnipotent and all-wise than to understand how and in what manner He is a triune God.

There is God the Father, God the Son, and God the Holy Ghost. We can get some idea of the first two, but when we come to the Third Person of the Trinity we are utterly bewildered by the great mystery. We could have a more definite and natural comprehension of the Trinity, and the relationship of the Trinity, if we could say, God the Father, God the Mother, and God the Son. After all, as this seems the natural and reasonable conception, may it not be the true one?

"And God said, Let us make man in our image, after our likeness, and let them have dominion over the earth. So God created man in his own image, in the image of God created he him, male and female created he them." "Let us make man" was

doubtless addressed to the Holy Ghost or Spirit of wisdom, and as in all nature it requires a dual causality to produce anything, so there was the concurrence of dual minds.

First—this teaches or seems to teach that man could image forth God only by being created in the dual state of male and female.

Second—this would seem to indicate that God was a duality of sex, like man, as God the Father, God the Mother, and God the Son; this would be a natural and co-equal trinity, such as constitute the human trinity of father, mother, and son, or man woman, and child.

Third—the Bible is a revelation of God to man, and all natural law and relations have their analogy and likeness in spiritual laws and relations, and shadow forth in man the similitude of father and son. Why may it not be intended to complete the triune analogy in God the Mother, thus forming the perfect circle of the Trinity by adding to the Fatherhood and Sonship the Motherhood of the Holy Ghost?

Fourth—the sacred oracles reveal God to us in His relations to man as a heavenly Father, and His Son as an elder Brother; and if it also reveals to us a divine and heavenly Mother in the Holy Ghost, is not this a blessed and glorious revelation? Is it not also a natural and reasonable conclusion?

That it does this there are many reasons for believing. Bishop Goodwin says: "If we could grasp the mystery of Father and Son, we should probably find that it was impossible not to include in the mystery the being of the Holy Ghost." Trench says: "The earthly birth was preordained to typify the mystery of the heavenly." While Jefferys adds: "Why

not go a step further, and say that the earthly mother was preordained to typify the heavenly mother?" John says: "That which is born of the flesh is flesh, and that which is born of the spirit is spirit."

Fifth—the work of both the Father and the Spirit or Holy Ghost is indicated in the human birth of Christ. And the angel said to Mary: "The Holy Ghost shall come upon thee." This shows the work of the spirit. "And the power of the Highest shall overshadow thee." The Highest is God the Father, and the statement clearly shows there was a dual force or personality exerted in the birth of Christ, just as there was in the creation of man when God said: "Let us make man." And the angel continued: "Therefore, that holy thing which shall be born of thee shall be called the Son of God."

This thought of the duality of God the Father and God the Spirit pervades many parts of the New Testament, such as "the renewal of the Holy Ghost," "born of the Spirit," and "begotten of God." The world and the church have been slow and dubious in its comprehension of the threefold personality of the one triune Deity. But it should be so no longer. Woman for ages was regarded as the inferior of man, and treated with contempt and brutality. She was sold into slavery, treated as a menial, and denied a soul by Mohammed. But that day is past, and she has attained her true position.

If such a doctrine as the Fatherhood of God has been lost to the church for centuries, who can wonder that the Motherhood should have remained so long an undiscovered mystery?

Paul says a woman should be veiled "because of the angels." This seems a very strange reason, and

must be on account of her likeness to the God Mother or Holy Spirit, which man does not recognize, but the angels who know do. And man, and even woman herself, is not aware of her true likeness and typical nature; from her proceeds all human and divine life.

It may be that the sin against the Holy Ghost, which is the "unpardonable sin," is because she is the God Mother, and a slander or falsehood against her is regarded in the same way as that against an earthly mother, as the most unpardonable offence possible to be committed. It is said "the Old Testament revealed the Father; in the New, the Son was manifested; each truth had to be firmly established in the minds of men before the next could follow. The Deity of the Holy Ghost was one of those truths which the church could not bear at first, but which she is now learning from the divine Comforter." This is a true statement of history. The church has progressed step by step, and woman has now been elevated to her true position, so that the world may claim its Mother Deity.

Sixth—there is no reason why that which has been acknowledged in all ages of humanity as the purest, highest, holiest, and most unselfish of all earthly ties and relations should stand alone and unrecognized, as having nothing in common with heaven, and nothing analogous to it in the relations and attributes of Deity. If this were true, men could not have been created in the image of God, for in the image of God they were created, "male and female created he them." This includes woman, who was created in God's image, and foreshadows and necessitates God the Mother, as well as God the Father and God the Son. At least, this seems

both natural and reasonable, and that which is natural and reasonable is usually true.

Trench says that "men have at various times regarded the Holy Spirit in the light of a Mother," and cites one of the fathers. Pearson says: "The Nazarenes made the Holy Spirit the Mother of Christ." This is going back to an early Christian conception of the Holy Ghost. Surely a Mother God is the most perfect conception of a "comforter" and one who "is patient and long-suffering."

Seventh—all the offices of the Holy Ghost are feminine in their character and qualities. Christ said, I will send the Holy Ghost, "the comforter, who shall lead you into all truth." James says of this comforter, "The wisdom which is from above is first pure, then peaceable, gentle and easy to be entreated, full of mercy and good fruits." These are all feminine qualities. Isaiah says: "Thus saith the Lord; as one whom his *mother comforteth*, so will I comfort you." When man thinks of a comforter, it is usually the sweet, comforting patience of his mother. And if not his mother, his wife, for it seems a woman only is suited for a comforter.

Kingsley expresses this thought when he says: "I am weak, would you have me say that I am strong? Would you have me try to be a Prometheus, while I am longing once more to be an infant on a mother's breast. Will you reproach me because I see a soft cradle lying open for me, with a virgin mother's face smiling down upon me? I long to crawl into it and sleep a while. I want loving, indulgent sympathy." Ah! this is what all the world wants, the loving, indulgent sympathy of a noble womanly heart, and an angelic womanly face smiling down

upon them. All, even the strongest men, want such a motherly comforter.

In "The Madonna" Jameson says: "Everywhere the worship of the Madonna seems to have found in the human heart some deep sympathy, deeper than mere theological doctrine could teach, ready to accept it; and in every land the ground was prepared for it in some already dominant idea of a mother goddess, chaste, beautiful, and benign. As in the old Hebrew rites and pagan superstitions men traced the coming of a messiah, so Eve of the Mosaic history, Astarte of the Assyrians, Isis nursing Horus of the Egyptians, Demeter and Aphrodite of the Greeks, and the Scythian Freya, have all been considered types of a divine maternity foreshadowing the virgin mother of Christ." Jefferys says: "The human longing which found relief in the worship of the virgin, was not so much the deification of certain feminine virtues as for a divine mother. Man that is born of woman, and has drawn his first nourishment from her breast, looks up to heaven with an unspeakable longing to find the same patient, inexhaustible, untiring tenderness, the mother-love, which, if it do not image the Spirit's love, is that anomalous thing, a copy without an original."

The love of man and woman and the institution of the family are the strength and foundation of all human society and government. And blessed with children, they are the triune glory of humanity and the prototype of the triune Deity of heaven.

The benign influence of woman is now acknowledged everywhere. It is said that woman is the discovery of the nineteenth century. Her potency in the home, in society, and in government was never previously recognized.

It takes man and woman, both, to constitute humanity, and a lovely, glorious womanhood is even more important than a true and noble manhood; for woman exerts a greater influence on the rising generation and on society than does man. She is the most potent factor in maintaining the churches, and all forms of charity and benevolence. Comte said: "Woman worship is what the age wants. We want the glory of woman to worship."

To me there is nothing so supremely admirable and lovely as a noble, true-hearted woman. And before her I uncover my head, as in the presence of that divinity which is Godlike and next to Deity. What a glorious record she has made in the history of humanity. Ah! without her there would have been no humanity. While the cruelty of man has been ravishing and destroying the earth, woman has been binding up its wounds, healing its sorrows, and replenishing its losses.

At the expulsion from the Garden of Eden, when Adam's sinful feet were scorching up the verdure where the desert now lies, Eve did not forsake him. If he had lost one heaven, he had regained the paradise of a woman's love. Jacob, when he went forth twice seven years to watch his peaceful herds amid Judea's hills, found in fair Rachael his guiding star of hope and love. With what pride must Abraham have looked upon Sarah as she stood in the shadows of the tents of Mamre, and said, though nearly a hundred years old: "I am yet comely and young."

Who has not pictured the thoughtful Abigail, whose wise diplomacy saved her husband and her house from impending ruin; or the sweet faithfulness of Moabitess Ruth gleaning in the fields of Boaz; or the fearless, dark-eyed beauty of Queen Esther, as she

put in jeopardy her own life to save her people; or brown-eyed Judith, who slew the dread commander of her country's foes; or Ada, Jephthah's fair daughter immolated on the false honor of a father's vow; or the fair immaculate Mary, mother of the loving Christ, as the great masters—Raphael, Titian, Correggio, Murillo, and Reubens—loved to paint her, with the halo of golden glory thrown around her like Dawn smiting the angels along the friezes of St. Mark?

Think of Mary, and Martha, and Mary Magdalen, sitting in the meekness of love at the feet of divine wisdom and ministering to immortals. Think, ah! think of the divinity of woman, as she stands next to Deity the creator and preserver of the human race, and remember she must have her counterpart of mother-love and forgiving patience in the celestial realms of the triune God of heaven.

And remember, whenever man and woman truly love each other, though they wear wooden shoes and dwell in the humblest cot in the lowliest valley, it is the lost paradise regained, the Eden of earth's truest delight, the heaven of all earthly bliss.

The divine beauty and loveliness of woman is the inspiring cause of every verse that poet ever sang, and every gem and flower of art, painting, or sculpture that was ever executed, by the skill of man from the magic chisel of Praxateles, the brush of Raphael, or the noble architecture of Michael Angelo, to the rude sculpturing on the walls of Nineveh. And God never made a woman who to some man was not supremely beautiful or lovely; for a lovely woman is always beautiful, and a truly beautiful woman always lovely, and their ennobling influence is a part of the world's best wealth.

And whatever man obtains by his labor or courage, he lays at her feet for the joy and sunshine of her approving love and smiles. It accords, therefore, with the eternal fitness of things, with the similitudes of nature and truth, and with the eternal oracles of the spiritual and material universe, that the noblest, saintliest part of humanity should be represented in the triune Deity of heaven, in God the Father, God the Mother, and God the Son, as shadowed forth on earth in the human trinity of father, mother, and child.

In her divine motherhood woman is the prototype of life-giving Deity, and is pronounced "blessed." She is the tree of life, the fairest in God's garden beneath the jewelled stars. Quicker in perception, brighter in fancy, nobler in goodness, truer in love, she has won and wears the world's heart upon her bosom, and its crown of blessings upon her forehead. As she is earth's sweetest charm and brightest inspiration, she should typify and represent the beneficent love of the God Mother in the triune Deity of the universe.

CHAPTER XVIII

THE LIFE AND DESTINY OF WORLDS, AND THE INFINITE COST OF HUMAN SOULS

A learned scientist asks: "What becomes of the dead worlds? If none of them have been removed, there are about as many dead as life-supporting worlds moving in the heavens. The spaces in the Milky Way and the cleft in it may be filled with them. The middle of the annular cluster in Lyra may be as well filled with them, as the encircling ring is with worlds in their glory. If none have been removed, destroyed, or dissolved, there must be many generations of them—far more invisible than visible stars." He thinks that, as sure as there are generations of human beings, so there are generations of stars. And as human generations have increased from a few individuals to millions, so the generations of worlds have increased from a few to a countless host.

It is important to know whether stars have limited terms of existence however long, and if they have beginning and end. A recognition of a continued succession of generations of worlds may help men to a better understanding and treatment of their own world.

Until recently scientists have thought but little of the habitability of planetary worlds belonging to the fixed stars. The question whether the eight large planets of our solar system are populated has been

a more important inquiry. On that question they are divided in opinion except as to Mars, which is generally believed to be inhabited.

It is said that in time repulsion may become a dominant force in the worlds and planets, and bring about their dissolution. Repulsion is in force all around us. It is observed in smoke, in steam, in perfumes, and in many gases. For purposes of dissolution it is only necessary to extend its force to other substances of worlds to produce their gradual disintegration.

J. H. Bennett, in the "Genesis of Worlds," says that "the stars of the universe, like the generations of men, have growth, maturity, and old age; and in both cases complexions furnish the criterion of the various ages; and a knowledge of the stage of usefulness and age of the stars may be gained through their various colors. Light-colored at first, they grow gradually darker toward the last. The universe is strewn with the remains of dead suns, with their systems dark, desolate, and useless." I cannot agree with him that there are any considerable number of dead worlds floating through space. It is possible there are a few.

He claims that the natural process of dissolution of all organic substances is by atomic dispersion or by transformation of substance, whereby the power of repulsion overcomes gravitation, with the result of a dispersion in the form of primordial matter. By a similar means, he says, the organic substance of worlds will become subject to a similar process, and the power of repulsion affect their dissolution and dispersion throughout the regions of space.

As such a dissolution cannot occur while populations remain, mankind cannot witness their dissolu-

tion. As everything in the animal and vegetable kingdom ends in dissolution, so doubtless will the substances of the mineral kingdom and suns and worlds in their natural course. There may be some truth in the statement, but I cannot fully accept it.

I consider that the life of worlds as well as suns is so enduring as to seem unending and eternal; that there are no forces of repulsion or disintegration that can dissolve or destroy a world. The law of electric attraction and cohesion will for ages, and perhaps forever, prevent any world dissolution. Yet it is well to hear all theories and weigh all the evidence.

He holds that there are two forces acting alternately under natural law. Worlds are formed very gradually and quietly, by accumulation of atoms under the law of gravitation, while they may be dissolved as gradually and quietly by dispersion of atoms under the law of repulsion. These two forces work together locally, though actually in opposition to each other. The explanation of the anomaly is in the form of matter. When solid, it is under the law of gravity; when gaseous, it is under the law of repulsion. It is not difficult to conceive a development within a world of the means for its disintegration.

It would be gratifying, he says, to be able to conceive a natural development in the regions of space, whereby primordial matter held under the power of repulsion should be brought under the law of gravitation. This is an admission that gravitation does not explain one-half the laws of the universe, and not even the beginning of them. But no analogies appear to be available, he says, for solving the mystery of the transformation. It is well to have con-

spicuous failures in some important processes of nature, as men are prone to conceit and pride of achievement, and would fail to recognize the supreme Ruler of the universe. Even now, there are creatures of His bounty, he says, who prefer to consider themselves descendants of monkeys, rather than confess their direct origin from Deity. They admit there are many missing links in the evidence, but they are so intent in proving their pedigree they trust the evidence may be made complete. The motive of their ambition, doubtless, is to be free from subjection to a higher power, under whom their wills and passions might be subject to unwelcome restraint.

The recognition of the recurrence of successive generations of worlds may give new interest to astronomy. And the appearance of the new and the disappearance of old stars will have a new interest and constitute a continuous history. It is true that all of our astronomers assume that the suns are burning up and shrinking away, and that the earth and planets can exist but for a few millions of years, and thus assert that there are living and dead generations of worlds; and many dead generations of suns and worlds floating in space.

Bennett, therefore, thinks it is necessary to have the old suns and worlds removed, and that they are dissolved into atoms to prevent an accumulation of them, and their atoms added to new worlds, which would avoid all danger of them moving at random, and causing disastrous collisions. In order to have in our mind a complete view of the universe, our astronomers require us to imagine innumerable dark and dead suns and worlds floating in limitless space, having lived their generation of usefulness, and been

the home of millions of intelligent creatures; that suns with their systems of worlds are now dark floating sepulchres of departed and embalmed organic life. This is a sad and distressing picture.

Herbert Spencer says: "Integration must continue until the conditions which bring about disintegration are reached; and then there must ensue a diffusion which undoes the preceding concentration. This indeed is the conclusion that presents itself as a deduction from the persistence of force. If stars, concentrating to a common centre of gravity, eventually reach it, then the quantities of motion they have acquired must suffice to carry them away again to those remote regions whence they started. And since by the conditions they cannot return to those remote regions in the shape of concrete masses, they must return in the shape of diffused masses. Action and reaction being opposite and equal, the momentum of dispersion must be as great as the momentum of aggregation, and must cause an equivalent distribution through space whatever be the form of the matter."

Thus Herbert Spencer holds that to preserve an equilibrium of matter, force, and motion the primordial matter from which worlds are evolved must, after having served its purpose in world-forms, return again to its primitive state. He suggests it may do so as the result of worlds being precipitated together, and by collision converted into a gaseous condition, and diffused through the space it originally occupied. He thinks the time will come when the now living worlds will be dissolved into their original elements.

The first precipitation, of course, would be that of the planets one by one upon the sun, when they,

including the earth, would be entirely absorbed by it, and greatly enlarged. Then the centre of gravity of stars concentrating to such a centre from other systems might create a giant sun of a volume that could not be volatilized and dispersed by collision with a star of medium size, but have a capacity at intervals to absorb the surrounding stars. Then would occur what, I contend, would have resulted long ago if the law of gravitation existed in the universe. All worlds and suns would long ago have been precipitated into one vast globe. Therefore I demand of these learned astronomers to show why this has not occurred long ago under their doctrine of gravity, rather than picture the dismal destruction of the far future. But let us hear their "tale of woe."

Mr. A. Winchell, in "The Machinery of the Heavens Running Down," says: "Are we not compelled to recognize the fact that every sun in our firmament, as it journeys round and round in its circuit of millions of years, is slowly but surely approaching the centre of its orbit? And in that most distant future, the contemplation of which must paralyze our powers of thought, is it not certain that all the suns must be piled together in a cold and lifeless mass?" This contemplation would be most paralyzing did I not recognize three most potent facts: First, the law of magnetic cohesion to hold worlds and suns in globular forms; second, the law of electric repulsion to prevent suns and worlds coming together; and third, the directing and upholding wisdom and power of Deity. This fear of the collisions of suns, as a great and final catastrophe, ignores the existence of a beneficent, omnipotent, controlling Deity; it ignores the law of electric repulsion

in sun and world form, for which I contend; and everything is accounted for by the natural laws of gravital motion, or Herbert Spencer's "persistent force and matter," under the law of gravitation. In the case suggested of stars concentrating to a common point, the centre of gravity might be unoccupied, and each star encountering no resistance would pass on in a flight of perhaps thousands of years, and, meeting no resistance, continue to oscillate until scores of stars had entered in the hazardous strife, and the chance of colliding would not be one in a thousand flights. Even if they were dissolved into gases their substance could not be disseminated in space, in the condition of original primordial matter. No colliding force could so disperse substances of worlds that they would fail to settle again in a body of more or less consistency. Further, I contend there is no warrant for believing in a dissolution of worlds, or in a readjustment of them, by means of any collision likely to occur to suns or worlds in the limitless fields of space. But it is well to consider all possibilities, and recognize the omnipotent care of a controlling Deity.

Our astronomers claim there are over one hundred millions of suns and planets, and they say there may be twice that many, one-half of which, fifty millions, have been listed. If there are a hundred millions of suns and planets, one-half of which are inhabited, say the fifty millions classified by astronomy, can there be a more sublime thought than the conception of this vast procession of suns and worlds, freighted with living souls and lofty intellects, rolling majestically along on the wide bosom of time, space, and eternity? Where can you find a more glorious conception of the wisdom and omnipotence of Deity, than

in the mighty sweep of these fifty millions of life-giving suns and worlds? Only Omnipotence could create and uphold them, and Infinite Wisdom guide and direct such an immensity.

A learned scientist estimates the duration of a generation of stars at a thousand millions of years, which seems almost infinite; and yet he says there has been space for a mighty procession of those generations, extending down in marvellous numbers from that far and mysterious beginning. And broader views may spring from a wider recognition of a long succession of past generations of worlds. He asks, is our interest in a star or sun greater in the orb itself, or in the inhabited worlds around it? And he says we cannot suppose that a sun is inhabitable, we must regard the star suns as like our own—useful mainly as stores of heat and light, and the regulator of motion. There comes in the old superstition of the sun's excessive heat, as a great thermal engine and burning globe. Will this slander on the sun and Deity never cease?

Thus the suns are treated as storehouses of heat, light, and motion, and ignored as perfected, self-luminous, inhabited worlds. Surely this hoary-headed blunder and violation of all scientific principles and natural law will end before the universal cataclysm.

But let us look at the infinite cost of human souls. We will begin by taking our earth as a sample of the almost infinite time and preparation necessary to create and furnish a world suitable for human habitation. The process of the earth's creation and preparation for human habitation, by the lowest estimate of science, is fifty millions of years, and many put it twice as long, while it has been occupied not one-thousandth part as long, and is still

being improved by nature and recreated and furnished for the purpose of blessing human life and ennobling human souls, and annually brings seed-time and harvest, the verdure of spring and the fruition of summer.

In estimating the existence of the Solar System, we must include several millions of years for the formation of the nebula from atoms or star-dust, several more millions for condensation of molecules and nebula into solid globes, including the sun and its attendant planets, and still many more millions of years for the preparation of the earth for the occupation of the human race.

After all this vast preparation, and long duration of time to create and evolve a suitable abode for man, our scientists affirm that man's residence here is brief in comparison to the time of preparation, perhaps only about one-thousandth part of the time. This interval of possession of the earth by the human race, they claim, is limited to the time of the reduction of the temperature of the earth only a few degrees, perhaps not exceeding ten degrees. They hold that an average loss of ten degrees of heat on the earth would cause the human race to perish. I think it would take twice or three times such loss of heat to destroy the habitability of the earth.

While I do not agree as to the brief period of planetary occupancy by the human race, I think a most instructive and impressive lesson may be learned of the value of human souls, from the vast outlay of resources and the vast period of time expended, and the infinite wisdom and power displayed for their benefit.

What infinite power and resources in gathering the star-dust and nebulae from vast latitudes of space;

what mighty displays of power in condensing them into a mighty sun system of worlds, with lavish expenditure of marvellous skill and labor during fifty to one hundred millions of years, endowing these worlds with all varieties of food, and every comfort for man's necessities, and adorning it with all the beauties and luxuries to please his taste, regale his senses, inspire his æsthetic nature, and elevate his soul!

Behold, what an infinite wealth of time, material, and skill expended, all that for some thousands of years human creatures in the spiritual image of their Creator might find desirable homes and genial environments, with loving companionship, and finally be transplanted to a perennial heaven!

How marvellously favored is humanity, and what abounding gratitude and love we should manifest toward the Giver of all Good!

Man is the highest order of reasoning beings on this planet. He has been endowed with intellectual supremacy over all the earth, and given dominion over the beasts of the field and the fowls of the air, and all things proclaim him "the lord of creation" on this mundane sphere. Should he not maintain his exalted position, and cultivate that knowledge and refinement which will fit him for a higher plane of existence in a future life of greater possibilities and attainments? Surely natural pride, business sagacity, and an honorable sense of gratitude should impel him to do so.

Aside from all questions of religious considerations, or Christian discipline, man being so wonderfully favored should recognize the beneficence of his Creator, which is so interwoven with the marvellous works of nature. I am not a member of any relig-

ious society or scientific cult, but I affirm with all the emphasis of my nature that all men should endeavor to harmonize their lives with the beauty and perfection of the universe, and its perfect subjection to the law of nature which is the will of the Creator. And they should, like all inanimate things, keep themselves in accord with their nature and the will of their beneficent, all-wise Creator. Otherwise there is ever discord and conflict of will and law, and anarchy reigns, and, moral restraint and obligations being ignored, there is ruin and misery.

Ancient heathen philosophers advocated the necessity of man being under such a course of disciplinary influences and moral restraints as tended to elevate his mental and spiritual nature, and one of the first requisites was gratitude to the gods. Restraint of overpowering passions, waywardness, and resistance of evil were supposed to follow as a natural result of a grateful recognition of Deity, which was considered the foundation of all moral reforming influences. If this was true of heathenism, what shall we say of Christianity?

Neither in heaven nor earth can there be social order and harmony, without the recognition of a Supreme Ruler and a supreme law. It could be possible, perhaps, by the mutual agreement of *all*, which might last for a while, but on account of difference of habits, tastes, and variable propensities it would, if obtained, soon lapse into discord and anarchy. Human beings are not controlled by natural law, like matter in its elemental and organic forms. Natural law is inherent in all matter, but this cannot be predicated of free moral and intellectual agents like mankind. It takes knowledge, refinement, and recognition of a supreme Deity to train

intellectual beings for loftier aims and a perfect life.

Man has never attained the ability to keep himself even comparatively perfect, relying on his own strength, and without divine assistance. It is said that, in the fulness of his powers, man ignores destiny, but when shorn of his strength no creature is more helpless. Thus it is certain that preparation for a future life should be made before entering upon it, here in this earth life.

After such a profusion of creative power displayed in millions of worlds, through millions of centuries, for the precious souls of intelligent beings, it cannot result in aught but the most perfect, wonderful culmination of celestial life and glory. Anything less would be a reflection upon the wisdom and power of the Almighty, after such displays of infinite goodness and love.

The vastness and stability of the universe, the perfect balance and movement of countless celestial spheres, and the matchless order and design in the ceaseless operations of our terrestrial globe, proclaim with the sublime voice of destiny the fruition of bliss for every longing soul in the perfect hereafter.

There is, therefore, a reliable scientific basis for a perfect life hereafter. The fact that the Supreme Ruler has all humanity under His constant care and keeping, preparatory to that perfect future life; the fact that, at limitless cost of time and energy, He has put all suns and planets under subjection to the cause of humanity and the growth and redemption of human souls, are guarantees, in conjunction with His unfailing power, that He will not fail to execute his glorious purpose, and man shall dwell with Him in His peerless heaven.

Said one: "I cannot afford to be careless of my destiny, for I must live with myself forever; and I must see that myself is well prepared for that destiny."

He who neglects himself, and is careless of his destiny, must suffer the penalty of such neglect, which comes as surely as the penalty of violated natural law.

All things both of matter and spirit, here and hereafter, are under the supreme control of an all-wise Deity, and all the marvellous preparations of suns and worlds, and all organic life, are but preparatory steps to lift the human soul to a higher plane of future existence.

Science seems loath to recognize the fact that matter in the form of suns and worlds cannot maintain themselves suspended in space with incredible velocities, amid all the complex motions and attractions of the universe for millions of years, without a supreme intelligent directing Power. It is undoubtedly and necessarily true that there is ever an omnipotent guiding hand under divine law upholding the universe. Why does not science recognize the spiritual power of a beneficent Creator?

The question is sometimes asked: "Can dead matter take upon itself life?" Science unhesitatingly replies, It is impossible. But it seems to hesitate when the same question is asked in an ampler form, thus: "Is there not in matter the promise and potency of all terrestrial life?" It then seems to try to bridge the chasm between inorganic and organic matter, by some chemical process yet undiscovered.

But after all scientific quibbles and chemical experiments, it all resolves itself into the unanswerable fact that all matter is controlled by infallible nat-

ural laws, promulgated by omnipotent wisdom; and the initial movement of creation began through the intellectual impulse of an infinite Power.

I contend that the sovereign force and ruling power in the physical world is the electric machinery and electric energy in atoms, worlds, and suns; but back of it is the directing omnipotent power of the Supreme Ruler of the heavens and the earth. And while he uses ways and means in handling His vast material universe, yet as the Father of all spirits He can teach discipline and inspire human souls by direct spiritual influence, and uplift and ennoble them to His divine ideal, which is a further assurance of a blissful future life.

But we have not told of all the munificence of the Creator in preparing our earth for habitation. It would take many volumes to do so. But we have not yet estimated the vast vegetable, animal, and mineral supplies provided for man.

Let us suppose that, in preparing the earth for the abode of human souls, when it was about ready for occupation the good Deity, after the method now customary in building large structures, had given the following details and specifications: "There shall be supplied, as the development of the earth progresses, thirty thousand species and two hundred thousand varieties of infusoria and insects. There shall be formed twenty thousand species and one hundred and fifty thousand varieties of higher order of animals. Last of all, man, a still higher order, shall be formed; he shall be the crowning jewel of all creation, and we will ourselves mould and fashion him, and breathe our own soul into him, and give him dominion over the earth." In filling an order for so many species, and varieties of insects

and animals, there must necessarily be strong resemblance in the successive grades. So much so that it would be easy to imagine they had been developed from one variety or species to another, by evolution and natural selection. And the measureless variety and supply of vegetable products and vast mines of ores and minerals are beyond computation. No power less than infinite can perform such wonders, and all for the benefit of man.

But the crowning product of creative power is in the intellectual and spiritual world, for which all that precedes it in the material world is but the preparation.

To the intellectual beings are given dominion over the material things of the world; they are given also, the higher life, which will be glorified and perpetuated beyond all physical organisms. Truly, heaven must be an immensity of space like the circumference of our sun, to accommodate all the denizens of the planets through all the ages; yet God has made ample provisions for every living soul. And as each solar system has a central sun vaster than all their planets, there will be an abundance of room for all God's children in the eighteen millions of suns of the universe.

Considering all the mighty preparation of worlds and suns, their patient evolution, and the profuse creation of the lower animals and vegetables and mineral products for man's use and comfort, and the raising up of inspired men and prophets for the instruction of mankind, together with the awful cost of redemption, the value of intellectual beings seems beyond our power of comprehension. They seem of greater value than all worlds and suns, which are made as the theatres of their life and activities.

But we mortals, in our limited experience and observation, are not able to estimate the true value of human souls, for we see in all of them evidences of fallibility and weakness. And the history of the human race has been mostly the record of their wars, cruelties, and intolerance, and embraces thousands of years of ignorance and slavery. Their supreme value can only be ascertained and appraised in the world to come, in the perfect and perennial life in the inspiring presence of Deity. God may see in man great possibilities which we cannot now see or understand. His omnipotent wisdom can construct an angelic immortal being out of a human soul.

It is said that values may be best ascertained by comparisons. We are conscious of a vast superiority of intellectual power over brute instinct. We may find an equal advance of power in the next step,—that is, from our present intellectual power to that with which we may be endowed in the life to come. We may be made equal in mental grasp and spiritual power and wisdom with the angels and archangels. We may be commissioned as ministers plenipotentiary to aid and guide distant worlds and their inhabitants to a more perfect and glorious existence. What wonderful possibilities accompany an eternal life!

Science deals only with the phenomena of matter, and the laws that govern it. Though soul qualities and spiritual powers are not included, being on a higher plane, yet they are all a part of God's wondrous creation. They are the supernal part for which all others are preparatory; the nobler part to which all other is subjected; the part that shall endure when all others shall have passed away. They are the priceless fruits of eternal life, eternal

truth, boundless intelligence, and everlasting love. All the rest of creation is but the rind and husk of preparation for this blossom and fruitage, where finite beings are blended into the infinite, and lifted to the exalted heights of infinite knowledge and wisdom. This will be attained by the choice of a better and nobler life here, before we are ushered into the presence of the beneficent Deity and the heavenly gathering of exalted spirits and cultured minds,—the noblest and best of all the generations of earth, and the refined and gifted spirits from all peopled worlds and planets of present and past ages, dwelling in loving harmony together with their spiritual Father, in a continuous “feast of mind and flow of soul” in perpetual fellowship forever.

In view of the infinite outlay of time and creative energies in preparing for the creation, and future destiny of intelligent beings, humanity should not forget that a human soul is the crowning achievement and wonder of creation. And they should regard it as a business matter, aside from any Christian duty, to protect the vital and eternal interests of their souls by noble, unselfish lives of preparation for the higher blessings and realities of an exalted heavenly life.

Could we conceive of the wonders, glories, and associations of that higher eternal life beyond, with all its refined enjoyments, marvellous discoveries, and its perfect ineffable delights and companionships with Deity, and the good and wise of all ages and planets, we would regard it as more than a thousandfold compensation for any discipline, trials, and self-denials possible in this brief mundane existence.

These inestimable, enduring destinies can only be

obtained by compliance with the laws of moral rectitude, culture, and refinement, essential to qualify human souls for association with perfect beings. Under natural law all material things must obey the natural law of growth and evolution, impressed upon them by their Creator; this is necessary to complete the plan of creation, and preserve the existence and harmony of the universe. But with reasoning beings God must appeal to their reason, love, and gratitude to choose wisely in the issues that control their destinies, which are infinite in their endless results.

We should ever keep in view the beneficent object and purpose of Deity in creating worlds and suns, not only for His own glory, but for the crowning benefit and glory of man made in His image. The future life will not be a constant succession of religious solemnities, which seem so distasteful to many here, but there will be the study of all worlds, the discovery of all mysteries, and the instructive converse with all the philosophers and sages of all past ages. There will be oceans of delights and wonders spread out before them, absorbing traditions and histories of millions of worlds and their inhabitants, to satisfy their love of knowledge. Students of nature, astronomy, and history will have every facility to observe the resplendent displays of the infinite wonders of creation. And there will be the soulful ecstasy of happiness, the perennial joy of knowledge, love, and peace.

But the most exquisite and unfathomable joy will be to dwell with the great Creator of the universe, to see and hear and know the infinity of His goodness, power, and wisdom. This will forever excite our wonder, gratitude, and love. In the rapturous

joy of all His boundless attributes—His divine majesty, sublimity, love, and eloquence—our souls will be thrilled with unutterable peace and bliss.

He will then not be as a crowned sovereign, on an exalted throne with a few favored courtiers at his side, reigning in unapproachable glory, but be everywhere among His heavenly children as a sympathetic Father, accessible and affable to all, in perfect friendship, sympathy, and love. So very true is this that the inspired record says: "And God shall wipe away all tears from their eyes, and there shall be no more death, neither sorrow nor crying, neither shall there be any more pain."

Yet he who would enjoy this endless felicity of God's presence, and hear Him who spake "as never man spake," and feel the entrancing delights that overflow the soul with unspeakable peace in that endless and perfect life, should seek and cherish in the preparatory school in this life the elevating knowledge and refining love that lead to infinite life and eternal love and knowledge.

For in the spiritual world as well as in the material world, all things and persons gravitate to their natural destinies in the realms for which they are suited, in accord with the righteous judgment and perfect harmony of the universe.

And in that beauteous world, in the celestial Cities of the Sun, will be gathered the perfection and excellence of the noblest human lives, the most fascinating personalities, with the most delightful accomplishments and bewitching graces, of all worlds and planets; and on many festal occasions of glory and grandeur there will be spontaneous outbursts of exultant joy, praise, and gladness that will make the choral swell vibrate from city to city and from

star to star, and echo and reverberate through the countless worlds of measureless space. And all honor and glory will be ascribed to the Supreme Ruler of the universe and the beneficent Father of all spirits.

Life has its day, its sombre night;
Then comes another fairer day,
Else why the angel hopes that write
Their sweet dreams o'er our earthly way?
From heaven's far-off jewelled towers,
God hangs the stars like banners bright,
And in the silent, whispering hours,
His voice is in their beams of light.
Ye weary toilers on life's road!
Ye burdened hearts so strong and true—
Patience a step, death lifts the load,
And angels' wings will come for you.

THE END

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