

ARTICLE III.

IMMORTALITY AND SCIENCE.

BY PROF. JAMES T. BIXBY, MEADVILLE THEOLOGICAL SCHOOL.

THE venerable Bede, the monkish historian of the early days of England, relates that when Paulinus, one of the missionaries sent out by Pope Gregory to convert England to Christianity, entered the domain of Edwin king of Northumberland the priests and warriors were assembled to deliberate whether they should allow him to preach, or not. Then a gray-haired chief arose and said, "Thou mayest remember, O king, a thing which sometimes happens when thou art seated at thy table with thy men of arms and captains, in the winter season, when the fire is kindled and the hall well warmed, while without wind and rain and storm are raging. Then comes a little bird, which traverses the room on fluttering wing, entering at one door and flying out at another. The moment of the passage is full of sweetness for it; but this interval is brief. It vanishes in the twinkling of an eye. It came out of the darkness, and it goes out into the darkness. None knows whence it came, and none knows whither it goes. So is our life. We come, and our wise men cannot tell us whence; we go, and they cannot tell us whither. Therefore, if there be any that can teach us more about it, in God's name, let us hear them."

Yes; if there be any that can tell us more about our whence and whither, in God's name let us hear them! This is the cry that has gone up from many and many a heart beside that old barbarian's— hearts of Christians as well as of heathen. Immortality! That single word awakens a whole world of thoughts. No theme more magnetic. No question of the many between science and religion which comes closer to our hearts. That mysterious realm of the

beyond has engulfed the myriads of the past. Many dear to us have already entered it, never to return. We ourselves are fast moving forward to it—at any moment may break through the thin veil that alone divides us from it. What is it that awaits us there? At the present day we ask that question with an intenser eagerness than at any previous time. Through the revelations of science the horizon of our existence has come to appear comparatively so small; the limits of our range upon this terrestrial speck, so petty; this globe where the law of gravitation holds captive our body has been weighed and measured and analyzed so exactly, that our whole being leaps forward from this domain where scarcely a shred of mystery seems still left, to scrutinize the perspective of the future, and unriddle, if possible, its eternal enigma.

It is to the scientific Delphi, also, that we turn our footsteps to find the oracle that may solve the anxious problem. Theology long ago told her story, and gave us her solemn assurances. Earlier ages did not doubt them. But science has of late overthrown so many of the dogmas of theology that the modern world is not satisfied without something more than its authority. It would have indorsement from science also before it feels ready to discount the notes of another world. Weary with the painful balancing of ecclesiastical dicta and rationalistic objections,—of weighing the heart's hopes against the mind's suspicions,—it turns to this solver of so many previous problems, as an umpire from whom, if any, it may receive a trustworthy decision.

Well, what is the judgment of this high court of science? It is by no means an undivided judgment. On the one hand, we see such books as the recent works of Figuier, and Professors Tait and Stewart; the one picturing a physical theory of the possible localities and conditions of the to-morrow of death; the other sketching the opportunities furnished by a possible unseen universe for a continuance of memory and personal existence. Or we may notice the faith disclosed by the public Christian position of a Faraday, or the lectures of

a Dawson, a Peirce, or a Le Conte, or the belief in spiritual life disclosed in the writings of Wallace, Crookes, and others. On the other hand, there is that band, led by Vogt, Moleschott, and Büchner, who positively declare that science cannot tolerate belief in a future existence; that it is but the chimera of the religious imagination — a product at once of man's cowardice and overleaping desires, destitute of any support from the testimony of life and nature. This band is one that by its loud and confident assertions impresses the world as much larger than it really is.

The larger body of scientists, probably, would pronounce neither of these opinions. The average position of the scientific world — that which is with little doubt the judgment of such representatives of modern science as Spencer, Huxley, and Tyndall — is, that in the name of science they can neither affirm nor deny immortality. It is a problem which the balances and lenses that have solved so many other problems cannot effectually grasp. In such a confession of the inadequacy of scientific methods to deal with the question of a future life, the main body of the scientific world would, I think, agree. But here it would divide into what the French would call a right and a left centre. The left centre would tell us that, inasmuch as we can never adequately solve the problem, we must content ourselves with our ignorance, and ought to occupy ourselves with these questions of the future life as little as with the politics of the inhabitants of the moon. The right centre, — that part which contains, it seems to me, the clearest-headed representatives of science, — while equally confessing the insufficiency of scientific methods to give any full answer or definite settlement, would recognize, nevertheless, that, as all truth is related, science in many points has that which throws more or less light upon the subject. Its investigations into the nature of matter, force, life, mind, are all contributing something to one side or the other of the question. It can furnish in this way, to be sure, nothing more than dim intimations, analogies, and comparisons. These may only hint as to the probable,

and sketch vague boundary-lines, showing something of the wide sweep of the possible and its line of demarcation from the impossible; yet they do supply thus much. This, indeed, falls far short of what is desired. But even these vague hints are to-day precious to anxious inquirers, are valuable as contributions to a stock of knowledge all too scanty.

What evidence, then, may we gather from the domain of nature and the fields of scientific research in regard to a future existence of the soul?

The evidence, like the weight of authority, is found on both sides of the issue. Science has both its objections and its confirmations to suggest. In the first place there is the familiar objection that the spirit is inseparably bound up with the body. "Physiology," says Carl Vogt, "decides definitely against individual immortality as against any special existence of the soul. The soul does not enter the foetus like the evil spirit into persons possessed, but is a product of the development of the brain, just as muscular activity is a product of muscular development." Daily observation shows us, that when the body dissolves the life ends with it. The soul, the man that we had known, we never see again. No after-sight, touch, speech, witnesses to any continued existence of him whom the grave has once closed over. The only conclusion is, that the person has ceased to exist as surely as the frost-forms which appear on the window-pane and vanish before the sunbeam's touch."

These would be fatal objections were they entirely valid and without answer. But these views of the materialistic phisicis are not by any means supported by undivided scientific authority. The more cautious voice of science fails to bind up the soul inseparably with the body. When Socrates was about to drink the hemlock, his friend Crito asked him, "How and where shall we bury you?" "Bury me," said Socrates, "in any way you please, if you can catch me to bury." And, at the same time, smiling and looking gently around, he said, "I cannot persuade Crito that I am this Socrates who is now arranging each part of this dis-

course ; but he obstinately thinks I am that which he shall shortly behold dead."

Yes ; the true man, the real self, is not the body, nor its result ; but something earlier than it and different from it. The soul uses the body and lives in it ; but our consciousness assures us we are something different from our organs and fleshly tabernacle. They are things extended, tangible, visible, divisible. But who will venture to attribute the like to the qualities of our inward self ; assign figure or extension to our thoughts ; touch with any finger a feeling ; weigh an aspiration, or divide into parts the Self ? This Self is no abstraction, no mere ideal. Every ordinary process of sense-observation implies it. Every thought proves it. You say your scientific studies all point to the existence of nothing except matter. What is it that studies matter ? Analyze clearly the perceptive process. It always contains two elements, each implying the other. An object is perceived by the sense ; but it is not sufficient that an impression be made upon the material organ. The image formed on the retina of a dead or unconscious man gives no perception. Before it can be perceived it must come into consciousness. The perceived object implies the perceiving subject. I cannot know an impression on my senses without knowing myself impressed : and, if I know myself impressed, then I know my Self — not as a baseless and vanishing state, but as a permanent power or existence to which this present transitory state belongs. As a vibration must be a vibration of something, so a mental impression must be an impression upon something. If we deny reality to the subject we make the object also illusory. If we cannot trust this inward reality, the distinct Self, we can trust nothing ; for it is the clearest testimony of consciousness, the mirror in which all other things are discerned. Nor can you explain the conscious self as a mere result or action of the body. Vibrate cells as you please, no vibration is the same thing as an idea. Compound motions as you please, you can never weave them into thought. The most subtile spinning of

nerves will never change them into faith or love. These physical structures and forces form the wonderful instrument by which the soul, while on earth, works and manifests itself. They are not to be confounded with the conscious self, any more than the musician's harp is to be confounded with the musician's self. Because an injury to the musician's harp ends his music, it does not carry with it the destruction of the musician. So the death of the body does not involve the annihilation of the soul. In point of fact, the body here on earth dies again and again, while the soul lives on. When at last, all at once, an injury comes to its habitation too great to be remedied, and that habitation dissolves, what reason is there for supposing that the soul does not retain its life? Body after body has gone, yet the *I* has still lived on unchanged. This dissolution is no worse than the many previous ones that the soul has withstood, save that it is less gradual. What is there in it to compel the soul out of existence? What is there in the intangible spirit that is liable to crumble in pieces? What chemical reactions is it to be believed are going to consume the imponderable soul? What material process shall ever disintegrate the unit of the personal self? As Martineau says, if our life should be prolonged a thousand years, no one would imagine we should need new souls, only new bodies. The soul preceded the bodily organs. The latest and most careful researches of science show that life is anterior to organization, impelling it and directing it according to rational plan. When the structure which it sustained here at last, in spite of its efforts, wears out and dissolves, and the soul is set free, why may it not with the same organizing force build up another body in some more harmonious realm? Why may it not even before death have organized, preparatory to the change, an ethereal body which, released from the outer sheath of grosser matter, shall glide, invisible and intangible, into its home in that ether ocean in which we are constantly immersed? We see the earthly career of life end; but there is no witness or proof that it may not still go on

in another realm of existence. If the cessation of signs of life argues annihilation of the soul we might as well believe the soul to pass into non-existence every time the man goes to sleep, and the state of waking consequently to be the coming into existence of a new being. Death does not testify to the ending of life, but simply fails to give any report at all, leaving us free to pronounce such verdict as other reasons suggest.

In the second place, the immortality and future existence of the soul is liable, on scientific grounds, to a number of objections.

The law of unity and continuity — the uniformity and oneness of nature — are first principles of science. In all the infinite variety of the universe, one thing shades insensibly into another. "There are no sharp dividing lines, no sudden leaps in nature, but all is gradual unfolding."

Now the spirituality of the soul, and its bound at death into an immortal life, contradict this, it is said. All other forms of life — the plant, the tree, the insect, the bird, the quadruped, are mortal. On what ground should man be immortal? Why this sudden interruption of the law of death, — this abrupt release of one member of creation from the conditions of the finite into infinite relations and capacities? Again, it is urged, all other things known to us are material. "Imponderable matter," Burmeister declares, "is a contradiction." "Immaterial soul-substance," says Vogt, "is a speculative fable." "The knowledge which science has attained of the heavens and the universality of the laws of nature," says Büchner, "show from a scientific stand-point that there neither exists, nor can exist, any spot beyond the earth where souls separated from their material substance could congregate." "That the soul after death," says Büchner, "should enter a more perfect body, is unsupported by physiological facts, which teach that the human body is composed of the most delicate and perfect organs, and cannot conceivably become still finer and more perfect." How, it is demanded, can immaterial spirit be brought at all into harmony

with the material world that we know? "How," asks Strauss, with similar blindness, "from an extended, non-thinking thing, such as the human body, can impressions be conveyed to a non-extended, thinking thing, such as the soul is alleged to be, and how can impulses be re-transmitted from the second to the first? Will not the matter be much more intelligible if we have only to do with one and the same being, of which, in one respect extension is predicable, in another, thought? If we suppose at a certain time and place in the organic scale such an intervention of a radically different element, then, as Tyndall and Maudsley ask, "what is this soul? How did it come into the body, and from whence? Is it localized in any one point, or diffused through the whole? At what moment did the soul come in? Did it enter at once or by degrees? What intelligible or consistent idea can we form of it, and if it is thus beyond our comprehension, is it credible that it exists?"

Can the belief in immortality retain any scientific standing when opposed by such objections and difficulties?

It seems to me that these objections are by no means conclusive, by no means without answer. While it is the faith of science that Nature never leaps, yet to observation, certainly, many gaps and sudden leaps appear. Though science believes that all is at bottom one, yet within the limits to which alone man's vision can extend numerous and irresolvable distinctions have to be admitted. That which is abrupt and startling in its manifestation may yet occur in accordance with regular law and with gradual transition processes. When water is cooled until it freezes, or heated until it turns to steam, the process is gradual until a certain point is reached, when, at the next increase of the same amount of force, a great and sudden change takes place. Similarly in the bursting forth of the winged insect from his cocoon, or the birth of the infant, gradual processes, at last culminate in an event which suddenly transfers the creature altogether to another scene and realm of existence. So the passage from the mortal to the immortal life, from the

material to the spiritual realm, while apparently sudden, may not violate at all the law of continuity. Neither is that law violated by the attainment of life after death only by man, and not by plant or animal, if such be the case. In a common seed we see how there is a certain particular stage of the ripening process, anywhere before which the seed is incapable of renewing the species, but which once reached, the new life becomes possible. So with the ripening of the soul. The human stage is that where the developing process has reached such maturity as enables it to run a fresh career.

Neither does the immaterial nature of the soul, and the invisibility and intangibility of the spiritual realm, violate the unity of the universe. For even in the natural realm in which we now live there are varied phases of existence; such as the amorphous, the crystalline, and colloidal forms of matter, the lifeless and the living domains of being, the unconscious and the conscious orders of existence which can be reduced to no single substance, nor brought under any one law. Neither does the most rigid science, in fact, confine its belief merely to that which is material—which it can see, touch, or weigh. Ask science what is the kind of physical energies that it now believes in. Were it to answer frankly, it would tell you they are no longer perceptible things, but the correlates to them which thought supplies. Electricity is not a material entity, but the hidden cause inferred by the mind to account for certain results. “The forces of modern science,” says Lewes, “are as transcendental as anything in the scholastic philosophy.”

Consider such a common phenomenon as that of gravitative attraction, acting from sun to earth without the consumption of the smallest observable fraction of a second, and drawing atom to atom and star to remotest star, in spite of the necessary non-existence, in more or less of the space leaped over, of any intervening medium. Or recall the character of the luminiferous ether, whose existence is an accepted fact of science, and is inseparably involved in the

whole theory of light. This ether is the bridge by which every wave of sunlight or starlight comes to us. It surrounds, we are told, every particle, penetrates every body, and fills all space, possessing at every point, whether in atmospheric vacuum or stellar void, a coercive force thirty thousand million times that of gravity. Yet, if we cite this omnipresent ether before the bar of sense, we find no warrant from direct observation to establish its existence. Though the medium of vision, it and its motions are further beyond all visibleness than the tiniest atom. Though more tenacious than steel, we move through it without feeling it. Though pressing on us from every side with so enormous a pressure, no touch of ours can detect it. Imponderable matter a contradiction? The immaterial a speculative fable? Then, Professor Vogt, science is just as guilty as religion. "No room for spiritual beings in the universe, and our present bodies the most delicate kind of substance known!" Verily, Herr Büchner seems to have forgotten that which constitutes the bulk of the universe. For in comparison merely with the invisible, intangible ether, how much is ordinary matter? In the proportion of one to eleven trillion, say the mathematicians. Here surely is room and verge enough for as much invisible life as you please; for as many imponderable beings as need to be provided for. Here is an element, impalpable to the senses, yet whose existence is vouched for by science itself, vast enough to furnish a home for all the invisible life one can imagine.

And as to the objection drawn from the incomprehensibility of spirit acting on matter or entering into the realm of life, no one knows from whence nor at what point,—one might disprove the most common facts, the best accepted scientific theories, by such objections. Whence springs that gravitative force which no number of solitary atoms possesses, but which arises the moment they are placed within acting distance of one another, and multiplies itself with every new atom brought within the sphere of influence, and increases when the distance is diminished according to the

square of the distance? How can one wheel set another in motion or hold itself together when, as most physicists admit, and as the fundamental attributes of matter require, there are separating intervals between all atoms? How can the imponderable ether of light act upon the ponderable matter of ordinary bodies? Here are questions just as perplexing, putting just as good a bar to material hypotheses as any difficulties that attend the hypothesis of spirit acting upon matter.

You object that you cannot understand this soul. Can you understand your matter? When we attempt to comprehend matter, we find ourselves in the midst of insoluble enigmas and contradictions. There are conclusive reasons, say the men of science, against matter being infinite in extent, and against its not being so; against its being infinitely divisible, and against its not being so; against the cohesive force which binds molecules together conforming to the ordinary law of gravitation, and against its failing to so conform; against the ether possessing friction, and against its not possessing it. In religion as in science, we must accept that which, on the whole, is most consistent and least improbable, in spite of the many things about it that we cannot explain. If it seems incomprehensible that inextended spirit should act on extended matter, or a conscious soul should enter from a spiritual realm into a material germ to direct physical forces, build up a body, and progressively manifest its spiritual capacities in proportion as its material instrument is developed and perfected, surely it is more incomprehensible how this extended matter and inextended spirit can be, as the materialists would have us believe, only one and the same thing; the essentially inert, the spring of spontaneous motion and free-will; the unconscious, multiple, and shifting, transformers of themselves by mere addition and re-arrangement into a thinking unity with conscious identity. Here, indeed, is an improbability vastly greater.

The fact is, we must recognize that our experience does not begin to be exhaustive. Neither our observation, our

reason, nor our power of conception is infinite, and there must be immense fields of existence about which we cannot even guess. To the scientific Horatio, I would say with Hamlet: "There are more things in heaven and earth than are dreamed of in your philosophy." Nothing has done more to stretch out the bounds of the universe, and exhibit its infinite variety, than science itself. Its magician's wand, in these last two centuries, has been exhibiting to the world marvel after marvel before unimagined. "Science," says Professor Jevons, "does nothing to reduce the number of strange things that we may believe." These larger draughts upon our faith which science, from year to year, constantly makes, open the door simultaneously to the grand hopes of religion. As a great man of science has said, "Every step I have advanced in knowledge has lightened the physical difficulties in the doctrine of immortal life, by revealing to me, more and more, the infinite possibilities of nature."

We may maintain, then, I believe, that there is nothing in the spirituality of the soul or its future existence necessarily inconsistent with the facts of observation or the unity of nature.

And now, having disposed of these objections which often are, or may be, drawn from science, we may advance to the inquiry if there are not some positive intimations or analogies furnished by science which hint at a future existence? It seems to me there are some very striking ones.

1. The law of continuity would suggest another and higher existence.

When we survey nature we see that it is not a single plain, nor two or three sharply discriminated plateaus; but a pyramid, as it were, step rising above step in a gradual succession. And when these successive steps are closely examined,—says the modern scientific school,—there are found no decided gaps, but the lower class shades almost imperceptibly into the other. Nor is this shading of class into class all. The modern scientists assure us that there is a blood connection—that each lower, by a process of

gradual unfolding and improvement, produced a higher, until existence has attained to the man of to-day. Standing on this, our human plane, and looking down, we see the close, successive, and countless gradations of existence that slope gently up to us. Looking up, what do we see? If there is no future life, only, at an infinite height, one Supreme Being; between us and him an immeasurable gap, absolutely unfilled. Is this in conformity with the law of continuity? Does not the same mental need and scientific faith that presuppose formerly existing in the animal scale the transition links now missing from the paleontological record, suppose also above man, between him and the Supreme Life, some intermediate life to fill that vast gap?

“Think you this mould of hopes and fears
Could find no statelier than his peers
In yonder hundred million spheres?”

If the law of continuity holds from matter up to man, is it in accordance with scientific method to believe that there it suddenly stops, and leaves an immense gap between man and God entirely unfilled? If from apes—nay, worms—we have become men, as we are told, then, in accordance with the law of evolution as well as that of continuity, we have good grounds for trusting that, going on, we may become spirits and angels. The one transition is no greater than the other. There is, indeed, the dark gulf of death between; but if the laws of evolution and continuity are good for anything, that break, like others, should be reckoned only a covered passage onward.

It is true, we do not know anything of such a higher life. Neither does the chicken before it has broken through its shell know anything of the world outside that unbroken wall around it. The grub at the bottom of the pool knows nothing of the air above, nor of its life or denizens, to which, nevertheless, it will soon ascend. There is nothing in the mechanical or chemical properties of matter to give knowledge of life, or inform of consciousness. The ignorance of the lower about the higher, were it even an absolute incapability of conceiving it, would not make the higher life impossible.

Doubtless it will be objected that it is by the race, not by the individual, that progress in the world has been made. The evolution process is one only of types and species. While, therefore, it may point to a superhuman race hereafter to be developed from man, there is nothing to be argued from it in favor of personal immortality. But the evolution process in the case of man works, in point of fact, as Wallace has so well pointed out, in a radically different manner from what it did with the lower animals. With them it had wrought upon the physical system, perfecting the physical organs and form. With man it takes a different and higher course. Development in man becomes inner, instead of outer, mental instead of physical, spiritual instead of material; sweeping on, by the shifting of its scene, with vastly greater speed and power, and achieving far grander victories. Why may we not suppose that, simultaneously with this significant change of method and state, it changed also from a race development to a personal development? The consciousness that gave occasion for the one change—from the physical to the mental evolution—would at the same time give opportunity for the other change—from the successive evolution of better species or individuals to a continuous evolution in the unbroken eternal life of each individual. The creatures below man had no power of comprehending Nature's plan, and voluntarily carrying on the progress of the world. But in man there has been reached a being capable of taking up Nature's thought, and by its own creative energy freely carrying it forward. Through that combination of consciousness, memory, reason, and will which constitutes the personality of man he is able to advance upon himself within his own life. The individual no longer, then, needs to be cleared from the path of progress as so much rubbish, but merely transferred to a fairer clime and fresher soil, when he has completed what growth is possible in this nursery of earth. The development of species gives way now to the conscious development of the immortal personality.

2. The eternity of the fundamental elements of nature suggests most strongly the eternity of the soul.

“No proof of the soul’s immortality,” says Papillon, “is so strong as that from the necessary simplicity and eternity of all the principles of force.” Take the most fragile form, the most delicate substance you please,—a withered leaf, a melting snow-flake, the gossamer of a spider’s web. No effort or device of art or science can enable you to get rid of its substance. Burn it with fire, the same amount of matter is still there, either in the ashes or the smoke. A balance delicate enough would show that it weighed as much as before. Crush it with a trip-hammer, scatter it to the ends of the earth, dissolve it with acids; the old shape, the old combinations disappear,—new ones succeed. But it is no new matter that arises; it is the original matter itself, in the same quantity and in the same constituent elements, that emerges in the new form. The same atoms of carbon and oxygen that fought together in the gaseous nebula, are with us to-day. They have witnessed the terrible struggle of fire and water that took place when the first rain fell upon the glowing rocks, and rose again in steam, that it might be condensed and descend in cooling vapor. They have seen the mountains reared on high and submerged again beneath the waters. They have built up the ferns of the carboniferous age, and slept in hidden coal-beds, as many centuries as Rip Van Winkle slept years. Called out from their lurking place by miner’s pick and touch of fire, they have heated our houses, cooked our dinners, passed into the air around us, and to-day pass into our lungs and blood; to-morrow, out again, to be taken up by plant or vine, and recommence another cycle of existence. Thus ceaselessly circulating from object to object, from form to form, not a single atom has ever yet been lost to the world.

Indestructible and immortal as matter are also the forces of nature. I accept here, and make the basis of a spiritual argument, what Büchner urges as logically pushing one on to materialism. The physical forces revolve in the same

never-ending circles, and emerge from any form in the same quantity in which they enter. No force proceeds from or passes into nothing. It is the consequence of a preceding motion, and becomes immediately the cause of an equivalent succeeding one. Not the fall of a single drop of water, nor a motion of limb, nor a vibration of sunbeam, passes out of existence. Its form may have been changed. But through whatever transformations the cunning hider may pass, however long it may sleep in any of its dynamic caves, he who will pursue it long and carefully enough will find again at the end the same quantity of force as at the beginning. If we had power to follow and detect the minutest effects of any disturbance we should find, as Mr. Babbage has pointed out, that each particle of existing matter must be a register of all that has happened. A movement anywhere in the world starts changes in other and larger portions of surrounding matter, which in turn, once moved, communicate motion to others in endless succession. When a man utters a syllable, though in the most secret recess, that syllable passing out of his mouth causes pulsations of the air, which expand in every direction till they have passed around the globe, and affect the whole atmosphere through all future time. When a man makes the slightest motion, he makes a certain impression on the waves of light, and prints on the substance around him or the luminiferous ether a photograph of the deed of that moment. No matter how many centuries ago the wave of light commenced its journey in the ethereal ocean, no matter what an infinity of space it has passed over, it will retain its identity through its whole course, so that there can be inferred from it just what disturbance of the ether started it, and even the chemical elements found in its source. Moreover, as sound and light require a certain time to pass over space, it will be seen, as the author of *The Stars and the Earth* has pointed out, that the various words and deeds of a man's whole lifetime may be recorded in the air, and in the luminiferous ether at the various distances off corresponding to the intervals of time

required to reach the different points: At the distance of twelve miles, the sounds of a minute ago; seven hundred and twenty miles away, the words said an hour previous. At the sun, the sights of eight minutes before; at Alpha Centauri, the scenes of three years ago; in the star Virgo of the constellation Lyra we should see going on the battles of the Austro-Prussian war. At a star of the sixth magnitude, we might behold the flash of the revolutionary cannon; at the distance of a star of the twelfth magnitude, there might be seen the condition of the earth when Memphis was founded and Abraham wandered over Palestine, four thousand years ago. Thus the universe is, as Babbage suggests, one vast whispering-gallery and photograph-chamber, where the history of each individual is recorded indelibly. Were a being with eye and ear delicate enough to decipher these records to move in toward the earth from the remotest bounds of space, this being would successively observe every scene in the earth's whole past history.

Such is the indestructibility of matter and force, such the permanent record of every one of its changes. There is clearly shown by it this truth at least, viz. that eternal life is not an impossible nor incredible thing for finite existence. There is strikingly exhibited the feasibility of an immortal existence for the soul, and that indestructible preservation and registration of past events and knowledge which, if not absolutely necessary to the maintenance of memory and personal identity, would certainly be most serviceable to it. And not only does it show the natural, scientific possibility of eternal existence for the finite, but it suggests emphatically whether it is in harmony with the imperishability of every other substantial existence that the soul should enjoy only the existence of a fleeting moment. Is it to be credited that brute matter is immortal, while the spirit that alone comprehends it, that transforms it into shapes of beauty and intelligence and service, rearing with it pyramid and Parthenon and cathedral, carving from it forms that seem instinct with life, making it draw and push and lift and run and sew for him,

— can it be that this spirit is only the creature of an hour? If every atom of most common, inert earth is indestructible, why are we to judge that this forceful personality must soon, beyond a peradventure, dissolve into nothingness? If every act and thought of a man is still inscribed and will forever leave its trace upon the vast sensitized plate of nature, wherefore should the man himself be removed utterly out of existence? All these shows of sensible appearance, all these bubbles of phenomenal existence, all these indirectly inferred results of our experience to be immortal in substance, but the consciousness alone directly known — the sole assured reality — to be but so much dissolving mist in the sky of time! What greater improbability than this!

Doubtless it will be said, that in material as in spiritual things every form, every aggregate, must perish; that life and mind will continue to live, as the heat and light of an extinguished flame, in their effects, — in diffused, latent, or transformed modes, — but in this there is no reason for supposing the personal identity is preserved, any more than the personal identity of the flame or continual heat-vibrations. The only things retaining an eternal identity are the indivisible atoms, the units composing each varied aggregate. Very well, what else is the testimony of consciousness, except that the soul is just such an indivisible unit? Like Lucretius's atoms, every personality "stands firm in solid singleness." The strongest acids of scientific and philosophical analyses have failed to resolve the indivisible person into parts. Without this indecomposable unity of consciousness "nothing," as Kant says, "can be thought or known, because they could not be connected in one self-consciousness." The self, then, is absolutely one — a spiritual monad, — and, like the material atom, no change can decompose its ultimate singleness into anything else. As "the particle of iron," to use Büchner's words, "rushing along in the wheel of the locomotive, flashing through the sky in the meteor, or circulating in the veins of the poet's brow" has essentially the same qualities, eternal, inalienable, and untransferable, —

so, I say, the soul, wherever it shall go after its earthly existence, shall carry with it its own indivisible life, and its own inseparable, untransferable, indecomposable personality. The only way that it can cease to exist is by an absolute annihilation of its whole being — an event inconceivable as a result of natural processes, possible only by an exercise of the same divine power that created it. Whether it is likely that God would choose to interpose to annihilate a soul is, of course, a question beyond the reach of science — a question, however, you will permit me to say, which in that court of religious inquiry where alone it can be legitimately discussed cannot well receive any answer unfavorable to the purest hopes of the soul.

3. A future life of the soul is suggested by the law of correlation. The harmony and completeness of both physical and human nature would seem to demand it.

In all that part of the universe open to thorough examination, viz. the surface of our globe, we find life everywhere abounding. The land has its two, four, or many-footed inhabitants; the waters are stocked with swimming denizens; the air with flying creatures. Even those parts of nature that seem to us uninhabited we find, on closer examination, to rejoice in animate existence. The torrid deserts and the polar sea and snow have their respective tribes. The pool of water, that seems to us empty, swarms with millions of infusoria. The air is alive with pollen-germs, yeast-plants, and bacteria-spores. The depths of ocean teem with the hosts of globigerinae and countless other tiny forms of life. Every spot where animate existence can sustain itself, and add its mite to the world's stock of happiness and service, is carefully utilized.

But, if life exists only within these material conditions and visible form in which we see it, what an opposite spectacle does the rest of the universe exhibit! What infinite waste of space and energy! For in what proportion would the unoccupied space around our planetary system — extending, say, to the nearest fixed star — stand to the material plane-

tary matter, where life similar to our terrestrial life can exist? As millions of millions to one. And what proportion of the mighty energy incessantly radiating from the sun is intercepted by the planetary system, and therefore (if there is no other kind of life than such as this terrestrial life) alone of any use? Only, as Proctor tells us, one two hundred and thirty-millionth part. Surely, it seems, as he suggests, not at all in accordance with the economical utilization for life purposes of everything here on the earth's surface that these enormous opportunities of space and supplies of first-class energy should be totally and continually squandered. It seems as if there must be some invisible life, which may be improving its opportunities. Whether or not there would be an incredible wastefulness in the absence of life everywhere save on the surface of our globe, certainly there would be the strangest wastefulness in Nature developing and perfecting with such care as she does reason and consciousness in man, and then, at the climax of success, blotting out her work. All the forces of the universe have co-operated to the production of the conscious individual. From age to age, as Mr. Darwin has been showing us, Nature has selected and preserved the best, till at last the reasoning personality, capable of progressing indefinitely within its own individual life, has been reached. Year by year, Nature has instructed the man in wisdom, righteousness, self-government, and capacity for useful action. And now, with this highest and most precious of earthly things, will Nature change her law, and, instead of preserving her best, undo all her previous work? Will Nature reverse her hitherto continuous ascending course, subvert her grades of existence, and give the ascendancy at last to the lowest forces of all, suddenly making vain all her previous travail and care and hard-earned upward progress? Surely, this were a senseless squandering of Titanic forces, out of all harmony with that Nature which according a scientific axiom, always does its work, with the least possible expenditure of force. This were an incredible wastefulness that can only be compared, as Mr. Alger

has so well done, to the tyrant's mocking task, which Michael Angelo spurned, — to scrape up the snow in the Via Larga, and with his highest art mould from it a statue to dissolve in the glow of the Italian sun.

Again, in the rest of nature we see a correlation of supply to every innate demand. Organs are fitted to their elements. Attractions are proportionate to distances. The oyster does not yearn to fly, nor the grasshopper to swim, nor the chicken to suckle. But when the young duckling scarce out of its shell betakes itself to the water, when the young bird hastens to try its wings, or the infant nestles for the mother's breast, the instinct is a prophecy of that which shall meet its need. It is in the strength of this great law that the worm makes its chrysalis, the bird broods over its eggs, or starts on its migrations. It is in reliance on this law that the scientific world, upon finding in a creature any faculty, — such, for example, as the power of vision, — affirms the existence in that creature's habitat of the corresponding element of light; although, as in the case of the creatures recently found at great depths of the ocean, the previous calculations of scientific investigators had led them to believe sunlight could not penetrate to such depths.

Now, if in the light of these great laws of nature we survey man, what do we see? Do we not observe in him the most deeply planted yearning for continued existence? the most universal, inborn instinct in a life beyond the grave? This yearning is not a mere shrinking from death, though even regarded in this light it would be in marked contrast to the absence of such shrinking in other domains of animal life. It is not a mere projection forward of our vital energy; for it is as active, or even more so, in old age and vital feebleness, as in health. It is a yearning for something which here we have had but a taste of — a longing for the fulness of the divine light, waxing clearer to our eyes the more the veils of the flesh are thinned away. This instinct in another existence is common to the earliest and the latest times, the rudest savagery and the highest civilization. The burial

rites of the cave-dwellers of the stone age testify to it. And a Renan dedicates his *Life of Jesus* to the pure soul of his sister. The barbarians, who have not yet risen to a belief in a God, confide in a future existence of the soul; and the sceptics, who have outgrown the belief in Deity, still cherish in their heart of hearts this immortal faith. As the grub, in its prevising instinct, prepares for its transformation into the winged insect, so in the heart of man is the innate drawing toward a higher existence.

“Here sits he, shaping wings to fly;
His heart forebodes a mystery;
He names the name eternity.”

With this forefeeling of a future life man has the limitless desires and possibilities corresponding. The aspiration for perfection, for growth in knowledge and goodness, is an unending yearning and an unending capacity, save as annihilation may end it. The tablets of memory never come to an end. No heart loves so much that it could not love more. The more we know, the more we desire to know. Conscience is ever spurring us on towards the ever-receding goal of absolute rectitude and complete spiritual unfolding. Every achievement is to the earnest soul but the height where it awakens to the ambition of something grander, and takes a new start for the achievement of something better. Humanity in this world, then, is always incomplete. The greater the man's achievement, the more conscious is he of his imperfection; the wider the gap between his real and his ideal, the more manifest is it, even to the onlooker, that the human spirit has heights and depths which it has never measured, and can never experience in this hand-breadth of time and rough mould of clay. When a saint or a hero dies we feel, with fresh conviction, how inadequate a stage for the full drama of humanity is all that this earthly life can afford. Is it really all, or but a prologue to the swelling act of the imperial theme?

Wherever else in nature we find an end naturally and actually reached, the result, whether great or small, is com-

plete and rounded. Individuals in a species may perish before they have attained the full development normal to the species, but, as Horace Mann has pointed out, there is no whole species, no race, whose natural term of existence necessarily causes every one of its members to perish prematurely, before it has had half time enough to unfold its powers. When fruit or brute or our own bodies come to their normal end they fall into the granary of Nature as ripened products, each having finished all it is capable of doing. But every single soul, if it die with the body, dies unripe; a bud that has but commenced to develop; an existence whose possibilities of perfection can never be fulfilled here below. If such phenomena of immaturity, of unfinished beginnings, are sometimes seen elsewhere in nature, it is—as in the chrysalis, the egg, the embryo—the promise of a future fulfilment. Is man the one false prophecy of Nature? Is the world's highest work its greatest discord? This grand cosmos itself has taught us to expect grand things of it; not such an impotent conclusion, such a flagrant anti-climax, as this.

Such intimations and pregnant suggestions as to the possibility and probability of a future life may be drawn from nature and science. Of the local place and scenery and circumstances of that future life science can say nothing. All that science can contribute, is to show by its own physical infinities and marvels, the boundless and hitherto unimagined possibilities of the universe to shelter invisible life. The molecule, too fine for the most powerful microscope to discern, may be, say men of science, a stellar or planetary system; and, on the other hand, the vast suns of our Milky Way may be, perhaps, but the atoms circulating in the veins of some creature as much larger than they as they are larger than their smallest constituent atoms. Our senses give us but the narrowest glance through the minutest loophole at the infinite gradations of existence; and life in boundless quantity may exist both below and above the petty range of our powers.

Science, then, leaves the question entirely open, without the least unfavorable balance of presumption, to whatever positive proofs religion may bring forward, drawn from faith in the power, wisdom, and goodness of God. It is in the arguments furnished by a consideration of the only worthy conceivable action of an Infinite, Holy, and Perfect Father dealing with his conscious children that faith derives its best guarantees of a life beyond the grave.

ARTICLE IV.

PROPOSED RECONSTRUCTION OF THE PENTATEUCH.

BY PROF. EDWIN C. BISSELL, D.D., HARTFORD, CT.

IV.—DEUTERONOMY AND THE RELATED CODES.

THE subject of the relation of the Pentateuchal codes was considered, in a number of important particulars, in the preceding article. In the present one it will be concluded; the special point of view, however, being the code of Deuteronomy (chaps. xii.—xxvi.), which will be compared with those associated with it as far as the legislation covers common ground. A matter of no less importance in the criticism—the laws of Deuteronomy which are original with that book, and the question of the harmony of Deuteronomy with itself and its historic surroundings—must be reserved for later treatment.

1. *Destruction of Idols and of Heathen Shrines in Canaan.*—The code of laws found in Deuteronomy is consistently introduced (xii. 1) with the words: “These are the statutes and judgments which ye shall observe and keep in the land which the Lord God of thy fathers giveth thee as a possession.” And the first requirement is no less so (vs. 2–4): “Thou shalt utterly destroy all places where the nations whom thou drivest out serve their gods,” etc. It is something to which attention had been already repeatedly called in the preliminary history (iv. 15–19; vii. 5, 25, 26), and to which the present code also, under another form, reverts in this and a