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MANIFESTATIONS OF DESIGN AND PURPOSE IN CREATION.

I SHALL not in this paper refer to Nature as it surrounds us, nor draw from its harmonies and adaptations any illustrations of benevolent design or mechanical contrivance. My purpose is to follow the course of Creation from its commencement down through the ages revealed by geology to the advent of man, and to note in their successive features such facts and principles as prove the presence of a comprehensive design and of a guiding purpose. I use the term "Creation," therefore, as signifying the long-continued introduction of new life-forms and new physical changes which occurred during the preparation of the earth for man, and which ceased at his advent.

A few words here respecting the controversy relating to the geological accuracy of the first chapter of the Book of Genesis may not be out of place. This chapter is now violently assailed, and declared to be scientifically false; and such is the force of the assault and the vehemence of the assertions brought against it that many timid Christians seem ready to abandon its defence, and to take refuge behind such phrases as that the Bible was never intended to teach science, and that its moral teaching is independent of its scientific accuracy. I have no sympathy whatever with such statements. I regard them as indications of indifference and cowardice, and I believe that the clergy will not be respected if they tamely surrender statement after statement of the Word of God at the bidding of a shallow scientific philosophy. The general scientific accuracy of the first chapter of Genesis has been maintained by such leading geologists in the past as Buckland, Hitchcock, and Hugh Miller, and in our own day the geological correctness of this chapter has been affirmed by Professor

Dana and Sir J. W. Dawson, the greatest geologists in America. The geological correctness of Genesis i. is also established by two remarkable facts. The first is, that the history of life which it sets forth is presented in it in three great divisions: (1) that of vegetation on the third day; (2) that of great monsters on the land and in the sea on the fifth day; (3) that of great beasts and mammalia on the sixth day. Now, every student of geology knows that the three great periods of life revealed by geology had similar leading features. The main characteristic of the primary era, although there was much animal life in it, was its wonderful vegetation. The leading feature of the secondary period, which had its special plants and animals, was its great land and sea monsters; and the special characteristic of the tertiary era was its abundance of great beasts of the field and terrestrial mammalia. Now, when we consider that the first chapter of Genesis probably describes a series of visions, in which only the leading facts were witnessed, surely this agreement is very remarkable. When we remember also that *no other account of Creation* agrees in this manner with geological discoveries, we have a right to demand that objectors should explain this striking circumstance. Further, the outline of the succession of creative acts in Genesis i. agrees with the succession of geological events in a manner that *no other* cosmogony does. Thus, geology shows us (1) a period of chaos and darkness; (2) a time of universal ocean; (3) land without life; (4) a great outburst of vegetable existence; (5) a period of great monsters on land and sea; (6) the appearance of birds; (7) the great development of land animals; and (8) the advent of man. This is precisely the order of events in the first chapter of Genesis. In that chapter we find (1) a period of chaos and darkness; (2) a time of universal ocean; (3) land without life; (4) a vast outbreak of vegetation; (5) a time of marine and terrestrial life, the leading feature of which was the abundance of land and sea monsters; (6) the appearance of birds; (7) the great development of land animals, the mammalia; (8) the advent of man. Here, then, in the Mosaic account of Creation is the same order set forth as is revealed in geology; and when we remember that *no other* ancient cosmogony shows such an agreement, we may once more demand that objectors should explain this wonderful circumstance. It is vain to assert that the Scripture narrative of Creation was borrowed from the Tradition of the Akkadians in Babylonia, for this latter cosmogony is full of polytheistic statements, besides being contradictory to the geological sequence of events, whereas Genesis i. is rigidly monotheistic and scientifically accurate. It is folly to maintain that the Scripture

account of Creation is merely one of a series of ancient traditions. It is unique in all its characteristics—unique in its literary grandeur, unique in its stern monotheism, and so unique in its scientific accuracy that we are compelled to assign to it a unique and supernatural origin.

We often hear it said that the acceptance of the philosophy of evolution has destroyed the argument from design, but this is a great mistake. Evolution is not an established truth, but only a theory, concerning which scientists are not all agreed. Some reject it entirely, others only partially accept it, and some again thoroughly adopt it. Now, even if evolution be true, the argument from design is unshaken, for we cannot escape from the need of guidance and superintendence. If all life was evolved from primitive germs, then how wonderful must the design have been which gave those first existences the power of so developing! If such wonders were evolved *from* them, what marvels must have been involved *into* them! A law of order must have been impressed on them at the beginning, and all their development must have been guided at every step along the chosen directions. If blind chance alone had occasioned the variations of plants and animals, then the organic world would have been in a state of utter confusion and disorganization; but its order and harmony, and its manifesting leading types and ideas, all through its course, prove plainly that if evolution ever prevailed, it could only have worked in harmony with design and guidance. And what are we to think of the judgment of those men who on disinterring a rudely-shattered flint from a bed of gravel instantly declare it to be the work of man because it bears marks of design, and yet they refuse to see any marks of design in the formation of the maker of the flint, or in the arrangement of the world which he inhabits?

The first great evidence of design in the course of Creation is the rigid adherence to certain fixed types of animal and vegetable life. Taking the animal world as it now is, we discover that all its forms may be arranged under five divisions, each of which is characterized by a special type of structure. Thus we find the protozoan, cœlenterate, articulate, and molluscan types of the lower animals, and, highest of all, the vertebrate type to which man belongs. Now, these five types have existed from the dawn of Creation, no others having appeared. With the exception of the vertebrate, they all start side by side; not the lower before the higher, but all begin their existence at the same time, while at their origin they have all their main characteristics as fully established as they have to-day. They put forth countless forms, pass through varying climates and con-

ditions, and they have come down to the present day with all their leading features unaltered!

Let us look at the first great period of life in the geological record—the Lower Cambrian[1]—and observe how vitality first appeared in the world. We find that when living creatures began to exist upon this earth all the leading types of animal life (with one exception the vertebrate) were represented. The protozoa appeared in the sponges; the cœlenterate in the hydroids; the articulata in the worms and crustacea; and the mollusca in the pteropods and brachiopods. Here, then, is the dawn of life, and in looking at that far distant time we find no unknown divisions of types now in being, but we discover with surprise that the organic world, when it commenced its existence, was characterized by *the same great types* as we now find in it. Moreover, we observe that the special divisions of the animal kingdom, instead of appearing in *succession*, with the lower invariably preceding the higher, all came into being *at the same time*, and started in the race of life side by side. The words of Professor Heilprin, an ardent evolutionist, will set forth this truth more clearly. He says: "It is certainly a surprising fact, whichever way it be considered, that, with the formation bringing the first unequivocal evidences of organic life, we should meet with that multiplicity and variety which characterize the faunal assemblage of the Cambrian period. Most of the greater divisions of the animal kingdom, possibly not even excepting the vertebrates, were there represented, and most of these already in the lowest or oldest deposit—protozoans, cœlenterates, echinoderms, worms, articulates, and molluscs. And more than this, some of these groups were already represented by a full, or nearly full, complement of the orders that have been assigned to them by naturalists, and which include all the various forms that have thus far been discovered as belonging to the groups."[2]

Then let us look at the extraordinary *preservation* of these five types from the beginning of Creation down to the present day. What ages have passed since they began to exist! What millions of years have elapsed from the dawn of life down to our own time! And yet through all these countless ages these five types have remained practically unaltered. The forms belonging to the types have come and gone in countless myriads, and we can study the variety of combinations which characterized the type, but the type itself is pre-

[1] The so-called foraminifera of the Laurentian rocks are merely mineral concretions. There is no animal life in the Laurentian rocks.

[2] "The Geological and Geographical Distribution of Animals," p. 135.

served in all its grand features. What an instance have we presented to us here of an adherence to a fixed plan by a personal Designer!

Let us state the case once more. These five types have existed since the dawn of Creation, and no others have ever appeared. With the exception of the vertebrate, they all commenced their existence side by side, and at their origin they had all their main characteristics as fully established as they have to-day. They put forth countless forms, pass through varying climates and conditions, and they have come down to the present day with all their leading features unaltered. Surely had *blind chance* prevailed this could never have occurred, and we see here a proof of the influence of design. There is first a *selective* influence manifested in the choosing of five types, and no more. Next, there is a *guiding* influence shown in the controlling their variations, so that these should only occur in special directions, And, lastly, there is a *preserving* influence exhibited, so that amidst all the ever-changing physical conditions these types have been so preserved and protected that, having passed through the long ages of Creation practically unchanged, they exist to-day unaltered in their main characteristics. Chance could not have produced this result; it must have been effected by design, and design indicates the existence of purpose, choice, and will, which all demonstrate the working of a great personal Designer. If it be said that evolution has done all these things, the reply is very simple. Only an evolution originated by a thinking Mind and guided by a designing Will and Power could have maintained such an order and achieved such a result.

Next, the *progress* in the course of Creation indicates design. Here, however, I must explain the kind of progress exhibited, since many mistakes are made in dealing with this subject. It is not true that the lower divisions of animal and vegetable life have *invariably* preceded the higher. Nor is it correct to say that each step in creation has been an advance on its predecessor, for the present fauna and flora on the earth are inferior to the fauna and flora which *immediately* preceded them. Statements about the *regular ascent* of life are very common in books characterized by superficial theology and imperfect science, and may do much harm if hastily accepted. The progress exhibited in Creation's course is by sudden lifts and heaves, and not by regular upward movement. There comes first a sudden outburst of creative activity, followed through long ages by a decline in life's exuberance. Then another sudden and extraordinary exhibition takes place, surpassing the first in its extent and variety.

and then succeed long periods of decline. Lastly, there occurs a third manifestation of creative energy, which shows still greater grandeur than all which preceded it, and once more it is followed by ages of decline, during which the creative activity seems slowly to ebb. At present Nature seems to be declining in vitality and exuberance; but as each period of decay was followed by a corresponding outburst of creative energy, does not this condition point forward to the grandest of all the manifestations of creative power, when, according to the words of St. Paul, "Creation shall be delivered from the bondage of corruption into the glorious liberty of the children of God" (Rom. viii. 21).

Once more, there has been from the beginning of creation a progress in localizing faunas and floras. At present the earth is divided into a number of botanical and zoological provinces, each having its special plants and animals. At the beginning it was not so, but a uniform climate prevailed over all the globe, and similar forms of life everywhere existed. Step by step, however, we observe indications of the origin and development of different climates. Gradually special plants and animals are confined within fixed zones and limits, until at last, after a series of beautiful changes, the present diversified arrangements appear on the scene. If we see an army drawn up at first in one dense mass, and then observe it gradually to unfold itself until each division takes its proper position on the field of battle, we immediately infer that a master mind is guiding its evolutions; how much more, then, should we conclude from this regular and gradual localization of plants and animals that their arrangements were being guided by the Master Mind of an Almighty Designer and Superintendent! We must remember, further, that there has been a gradual calming down of those violent energies which convulsed the earth in its earlier ages. Step by step we observe the convulsive movements of the world's crust to become less violent and its lands to become more stable, until at last the present state of comparative quietude is reached. In Southern India a tract of country as large as the British Isles has been overflowed by a vast sea of lava; and in South Africa an extent of land nearly as large as the whole of Italy once (in past ages) was covered with an ocean of molten rock, which had been poured forth from the depths of the earth. In such a tempest-tossed world man could have found no proper home. He did not appear in the early times simply because his habitation was not yet ready for him, and his reasoning mind would have been out of place in a world convulsed with such furious outbursts of volcanic energy.

We shall find the evidence for design to increase as we

examine this circumstance further. It is of little consequence to our present argument to fix the time of man's appearance by calculating the number of years that have elapsed since his advent. It is enough for us to know that it took place somewhere in the latter part of the Tertiary Period.[1] In the primitive times the earth's crust had not sufficiently consolidated for it to be a fit dwelling-place for man. In those primeval ages its surface was tossed with furious and fiery outbursts, its oceans were convulsed with endless and devastating tempests, and its atmosphere was full of noxious gases and deleterious ingredients. Even when in after times the sky had cleared and the air had been purified, the earthquake powers within continued to convulse the earth in a manner unknown in the present day. In such a world man with his reasoning mind would not have found a proper home, for where would have been that uniformity of Nature on which he bases all his calculations? This conclusion is strikingly set forth in the eloquent words of Hugh Miller:

"The trap district which surrounds our Scottish metropolis, and imparts so imposing a character to its scenery, is too inconsiderable to be marked on geological maps of the world that we yet see streaked and speckled with similar memorials, though on immensely vaster scale of the eruption and overflow which took place during the earthquake ages. What could man have done on the globe at a time when such outbursts were comparatively common occurrences? What could he have done where Edinburgh now stands during that overflow of trap porphyry of which the Pentland range forms but a fragment, or that outburst of greenstone of which but a portion remains in the dark ponderous coping of Salisbury crags, or when the thick floor of rock on which the city stands was broken up, like the ice of an Arctic sea during a tempest in spring, and laid on edge from where it leans against the Castle Hill to beyond the quarries at Joppa? The reasoning brain would have been wholly at fault in a scene of things in which it could neither foresee the exterminating calamity while yet distant, nor control it when it had come; and so the reasoning brain was not produced until the scene had undergone a slow but thorough process of change, during which at each progressive stage it had furnished a platform for higher and still higher life. When the coniferæ could flourish on the land and fishes subsist in the seas, fishes and cone-bearing plants were created; when the earth became a fit habitat for reptiles

[1] The Quaternary Era in which man actually appeared first is in this paper considered as a part of the Tertiary Period.

and birds, reptiles and birds were produced; with the dawn of a more stable and mature state of things the sagacious quadruped was ushered in; and, last of all, when man's house was fully prepared for him—when the data on which it is his nature to reason and calculate had become fixed and certain —the reasoning, calculating brain was moulded by the Creative Finger, and man became a living soul."[1]

Another circumstance connected with the time of man's appearing on the earth, which plainly points to design on the part of the Creator, is the fact that the different climates of the world, which exercise such an influence on man, and which by their variety stimulate his exertions and develop his intellectual powers, do not seem to have had *full* development until just before man's appearance. In the earlier ages of the world's existence the climate of land and sea appears to have been very uniform; and although in later times—in the Jurassic and Cretaceous eras of the Secondary epoch—traces of climatic zones are stated to have been discovered, the evidences seem to be too slight to warrant such a conclusion. It is only when we enter the Tertiary Period that climatic peculiarities begin to manifest themselves, and they steadily increase until the time of man's appearing, when we find them developed in all their diversity. Consequently, while man was as yet not in being, different climates scarcely existed. Just before his advent they began to appear, and when he was created they were developed with all their peculiarities as training schools for man's intellectual nature. These climatic differences quicken man's mental powers, delight his senses by their varieties, stimulate his efforts by presenting difficulties for him to overcome, and develop commerce through the interchange of their different productions, thus making the world a great training school for man. Does it not furnish another striking proof of design that man was not introduced upon the earth until it had become so varied and diversified in climate, variety, and natural phenomena, that all his mental faculties and powers could find in the world a fitting training-school for their fullest existence?

In the gradual increase of natural beauty through the development of its essential elements from the beginning of Creation to the time of man's appearance, I see another proof of beneficent design. Beauty in Nature has existed from the earliest ages, but it *steadily increased* by the accumulation of its characteristics, until it attained its perfection at the time of man's advent. Its leading features may be considered to be: a sky clear of fogs and mists, with a sun shining now in

[1] "Footprints of the Creator," pp. 276, 277.

the open heavens, and now amongst brightly-tinted clouds; sea and land intermingling, the surface of the latter being ridged with mountains and furrowed with valleys; noble forests and frowning precipices, rolling uplands and grassy plains; bright birds and graceful beasts; fragrant herbage and beautiful flowers—such harmonies and beauties as the poet of Ettrick describes when he portrays Kilmeny looking into fairyland:

> "She saw a sun in a summer sky,
> And clouds of amber sailing by,
> A lovely land beneath her lay,
> And that land had valleys and mountains gray.
> And that land had forests and hoary piles,
> And pearlèd seas with a thousand isles.
> Its hills were purple, its valleys green,
> And its lakes were all of the dazzling sheen,
> Like magic mirrors, where slumbering lay,
> The sun, and the sky, and the cloudlet gray."

Now, it is very remarkable that as we follow the history of Creation through the geological ages, beauty steadily advances step by step towards perfection, each successive period containing more beauty than its predecessor. First, the sky clears. Then vegetation begins, but it is tame and monotonous. Soon, however, it becomes varied. Bright birds and graceful beasts steadily increase in numbers. Lofty mountain-ranges, with all their grand characteristics, manifest their presence, and at last, when beauty has attained its highest development, man appears, who alone can admire it, can reproduce it in the creations of his fancy and skill, and can see in it a revelation of the glory and the love of his Creator. Have we not here another proof of purpose and design in the course of Creation? It is very instructive to watch the development of a water-colour painting. First, a few general washes are put on. Then the tints deepen; gradually the darker tones appear; lights and shades assume their proper colours; each portion of the work receives its full tint, until at last the picture is complete, and fully reveals the mind and skill of a master in design and execution. So it is in the case of natural beauty in the development of the earth's history. First of all, beauty was but rudimentary; gradually it accumulated details and harmonies. Step by step, as the ages rolled on, it advanced in loveliness, until at length, just as man appeared, it attained its perfection. Who, then, can deny that in the development of beauty in Nature we have also the revelation of a Master Mind manifested in its design, development, and completion?

I would now ask everyone to consider the accumulated weight of the arguments I have brought forward. I have not

referred to the many cases of contrivance in Nature which exist on every side. On the contrary, I have indicated great principles and arrangements, running through the course of Creation, which seem to point to a grand purpose, and to an ever-present design. The facts are undoubted; it is our duty to consider what conclusion is to be drawn from them. We have presented to us a vast series of harmonies, adjustments, and combinations, all of which manifestly worked together towards a special end; while through the long ages of Creation's course there are no signs whatever of confusion or disorganization.

The countless changes in the earth's physical condition in the past all led up to a state of permanent stability, general quietude, and fully-developed beauty; and the myriads of its living creatures from the beginning of Creation did not swarm over land and sea in confused and disarranged millions, but were grouped into regular divisions, linked together by special resemblances, and guided in their developments towards special ends. All these combinations indicate a plan, originating in a profound thought. But there cannot be thought without a *thinker*, and as a thinker must necessarily be a *person*, we reach the conclusion that Creation had its origin in the mind of an almighty Person, while it received its development from the hand of the same omnipotent Agent. Thus far does physical nature testify to the existence of a Great First Cause, and then the moral nature of man takes up the argument, and by revealing to us through conscience that we are each responsible to One above who loves goodness and hates evil, tells us that we recognise no mere blind energy, but One whom it is our blessed privilege to call "Our Father which art in heaven."

D. Gath Whitley.

PROFESSOR BURY'S "LIFE OF ST. PATRICK."

FEW, if any, countries hold the missionary who first brought Christianity to their shores in such honour as Ireland does St. Patrick. The complete success of his efforts, the length of time he was enabled to labour in the land, the romantic circumstances of his early association with the country, combine to win for him a unique place among national saints. Other elements, too, have contributed to bring about the affectionate veneration, touched with a sort