

THE
Garden of Eden
AND
The Flood

JOHN C. KEENER





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The Garden of Eden

AND

The Flood.

BY J. C. KEENER, D.D., LL.D.,

One of the Bishops of the Methodist Episcopal Church, South.

“How can one in gentle terms remonstrate, when he has to begin by proving the very existence of God?”—*Plato*: “The Laws,” 888; Jowett.

“For if ye believe not that I AM, ye shall die in your sins.”—*Christ*: John viii. 24.

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Dedicated to One

WHO HAS MADE MY HOME ONLY A LITTLE
LESS THAN EDEN.

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Preface.

UNDER the prestige of high scholarship and honest inquiry, a most dangerous body of unbelievers in divine inspiration have assailed the five books of Moses, denying their authorship and invalidating their genuineness as the true history of God's dealing with Israel. Men of weight, in high position, affecting to know theology as well as statecraft, Greek as well as Hebrew, have thrown themselves into this controversy, as once before they doubted the unity and authorship of the Iliad and the Odyssey.

By the grinding word-by-word process of Professor Green, of Princeton, N. J., there is absolutely nothing left of these classical doubters but the chaff of a summer's threshing floor. Whatever might seemingly yet remain of them has been sifted out by the Bishop of Ely, until not a single grain of truth can be found in this heap of well-threshed straw.

These books of Moses are books of history, of law, of journeys and campings, of numbers, of names, of mighty acts, of wonders of the deep and of the clouds, of a divine commissariat for the feeding of a million of armed men, and camp followers, in long marches over sandy wastes, with daily bread from heaven and quails from over the sea; and of streams in the desert, which, like a pursuing Providence, quenched the thirst of Israel for forty years.

But beyond all else they are the books of God; in the might of his creative glory, evolving worlds, angels, spirits out of his own will, by the one Word, through the eternal Spirit. Of all which they, and they only, are the revealed record.

We cannot in silence afford to see these inspired books invaded by critics who, under the plea of searching after truth, throw a cloud over every paragraph, by mere statement of cited versions, but which in fact they are not able to read. Dean

Burton, in his great work, "Revision Revised," states that but one man existed in England (Scrivener) capable of critically weighing versions with which these critics professed to be familiar. (Pages 231, 234.)

The Bible holds its place in the hearts of men as the Word of God, by its history, its prophecy, and its vitality. Its history is the only absolutely true history ever written. The Pentateuch, Joshua, Judges, Samuel, the Kings, and Chronicles give us the facts that occurred in the various changes of the fortunes of Israel, and the secret springs which shaped the policy of its kings and counselors; motives open only to the eye of Omniscience. Besides this, there is an outside history of nations contemporaneous, recorded on tablets of stone, in cuneiform cipher, in hieroglyphic writing, on papyrus, or on the linen wrappings of mummies, which are being brought to light at the present time, all confirmatory of the sacred Scriptures.

The second line of supporting evidence is that of prophecy; for none but God could read the history of nations in advance; the fate of the Jews, scattered but not destroyed; recognized everywhere, though without nationality; the fate of the great empires of Syria, Media, Persia, and Macedonia, long since foretold and fulfilled. Above all, the announcement of the Messiah, his sufferings, resurrection, and kingdom, all wonderfully portrayed and fulfilled.

And yet if a third element, a concurring vitality, were wanting, the word would soon pass out of sight, or remain only as one of the marvelous products of human genius and intellect of past ages; venerable and curious, but as the leaves of the forest, fallen and withered by the frosts of time. Such, however, is not the case with the Bible, as evidenced in the number of volumes of the Holy Scriptures printed hourly in England, America, and in all civilized

countries; in many islands, and once barbarous coasts, in native languages. This vitality awakens and quickens the consciences of men, and transforms them from the power of darkness into the kingdom of God's dear Son. It reveals to the yearning spirit of man "the mystery which was hidden from the generations and ages past," but is now made known in all its wealth; "which is Christ in you the hope of glory."

But there is also a fourth line of evidence confirmatory of the Bible that comes from an unexpected source; that of geology. The recent discovery of enormous beds of fossils in the Carolinas proves incontestably that the continent of America before the flood was a great center of life, possibly the first. And these opportune discoveries providentially meet the latest stages of unbelief, so that by the light of His presence, as the mariners by stars, the Church of God still sails heavenward, amid deflecting currents and devouring waves, over fathom-

less depths, taking many reckonings, but always consulting the one divine chart, perfected by Him who made the sky, the sea, and the dry land.

How words could make worlds was the problem which St. Paul declared could alone be solved by faith; that the mind was incapable of understanding that great fact of creation, that worlds were framed by the word of God; that phenomena, "things seen," were not preceded by phenomena—that they were made of that which no thought, argument, or imagination could detect or depict. Hence science was non-plussed in its efforts at the first hour to apprehend the mighty work, as much as at any subsequent moment of time. Moses was learned in all the wisdom of the Egyptians, but he could not pass this limit of human thought. Had he been present when the morning stars sang together and the sons of God shouted for joy, had he heard the prelude attending the laying of

earth's foundations, the wonder would have appealed in vain to his understanding. The disciples saw Christ feed the multitudes with bread as from the oven, and took up basketfuls of fragments, but they saw not in him the One Word that made all that ever was made.

Probably the first chapter of Genesis was as astounding to Moses in its ten words as were the thunders of Sinai to the children of Israel. There can be no clearer evidence that he wrote by inspiration than the record of this chapter. All its wonders—the creation of light on the first day, the creation of sun and moon on the fourth day, the evening and the morning for each day, the measured cadence of every sublime word, as it unrolled into a sublimer expression of some new world of flora or fauna; the magnificent pauses, and silences, as if to wait upon the recognition and response of listening hierarchies—all this far transcended the natural powers of the lawgiver.

He wrote it because the Spirit of Truth revealed it, and then wondered as when he saw the bush in the desert on fire, but unconsumed, and heard the greater word, "I am that I am."

General Introduction.

THE facts which this book proposes to establish are:

1. That all life was destroyed by the flood in the western and in the eastern continents; that before the flood the western were the centers of animal life, but ceased to be at the flood; that life began after the flood in the eastern only, and that by miracle.

2. That every creature has been fossilized; those species that were in the ark and those out of it; that therefore we have a full record of the original creation; that all that now live are also found fossilized as first made; that all species were fossilized at one and the same time, and by the same electrical current, which was universal, instant, and directly upon the catastrophe of the flood—while dying their tombstones were set up.

3. That America is the great Eden con-

continent. Before the flood Noah would continue near the site of the garden of Eden; and all animated nature springing from that center would for a long period annually return to it; which in part accounts for the gathering of the so-called Pliocene creatures, of both land and water, at the flood, "as if they had been summoned there to die."

4. That there is no fossil older than man; that bones and teeth of man have been fossilized, which gives an overwhelming support to the Pentateuch of Moses.

5. That creation was in time, and that time not very long ago; thus agreeing with Cuvier's estimate of the age of the human race.

6. That since the flood, for a period of four thousand years, the two Americas, North and South, remained silent as an old graveyard, and were, in fact, God's BURIAL MOUND; a superlative record of human disaster; more wonderful than those discov-

ered by Rawlinson in the mounds of Mesopotamia, or those discovered by Schliemann at Hasirlik, Troja, and Mycenæ; or those of Egypt that sleep in the ribs of the mountains or beneath the sands of the desert.

That full one-half of the world should have been ordered back into oblivion, after sixteen hundred years of abounding life—which filled plains, mountains, rivers, and lakes of these continents with herds of oxen, horses, sheep, goats, and all other tribes of birds and beasts, so necessary to the domestic life of man—is the great, if not the greatest, discovery of the nineteenth century.

That these bones and teeth, which were fossilized at the flood, should reveal to us the wealth of creation, as it came fresh from the hand of the Creator, shows the care that God has taken to secure a monument of those mighty works which declared his wisdom and benevolence, and which awakened throughout the universe

the high anthems of the sons of God at the laying of earth's foundation.

7. *As to the site of Eden.* It is probable that the garden of Eden was on a very high table-land, and was surrounded by a wall of rock, difficult to scale, and guarded by angels; that it inclosed a large area of diversified surface of fertile, well watered woodland; that it remained, from the fall to the flood, in sight, but unapproachable; that it was the last point to give way under the terrible storm that swept the whole earth of its life—possibly remaining until, by earthquake or volcano, earth's surface took its present outline.

Who has not tried to realize the beautiful home and the sublime history of our first parents, as described in Genesis? It certainly is the poetry of truth to which the Scriptures introduce us in recounting the eventful year of man's innocency.

The Flood.

(1)

I.

The Mosaic Record.

THERE is a certain firm grandeur in the first chapter of Genesis that declares its origin. Out of each verse HE speaks whom no man hath seen or can see. Every line, every syllable, has in it the commanding precision of the words spoken on Sinai.

There are human spaces, angelic spaces, and spaces which belong only to the Godhead. Out of these regions of the Infinite there has been given to us through Moses a revelation exact, fixed, which shows the sublime work and unity of God, when by the Son and by the Spirit he created the heavens and the earth in six days, and rested on the seventh.

The human mind could never have known how to begin or where to end such a drama, affecting as it did the universe, moral and natural. But in the opening chapter of the mighty record there is no hesitation, no

speculation; but all is prompt, full, ever-enduring law, written upon freshly created matter. Comparatively, how childish are all other conceptions of this huge labor! The superhuman vision of Job gives a conception of creative energy and law that can only be conveyed in the lofty reaches of the Spirit: "Where wast thou when I laid the foundations of the earth? Who hath laid the measures thereof, or who hath stretched over it a line? Upon what are the foundations thereof settled? who hath laid the corner stone of it, when the morning stars all sang together, and all the sons of God shouted for joy? Or who shut the doors against the sea, when it burst forth as from a womb; when I put a cloud upon it, as a garment, and thick clouds as a swaddling band; and appointed for it my bound, and set bars and doors, and said, Here to this place shalt thou come, and here let thy proud waves stop?"

In the Mosaic account there is more than

the mere labor of the great Architect. A hallowing thought reigns everywhere. All through the dry work of creating there was a blessing upon the floods and the light, and a beneficent purpose to be seen in the elements of nature. Thought-relations were imprinted upon every creature, and upon every clod; and much more, which God discerns if we do not, but which we do if our hearts are full of his love.

The pauses of God were to contemplate and approve these benign ends; and to mix with the acts of creation the element of time, without which the human mind would be incapable of its least conception. The extravagant periods which speculative geologists have assigned to the earth—some as much as eighteen hundred thousand years, and others going into the millions—are of course in the face of all inspiration. Fortunately the recent discoveries of the fossil deposits on this continent have limited the range of all such speculators. The

fact that bones of the mammoth and of man are found side by side, and with them innumerable remains of the ichthyosaurus, megatherium, and extinct monsters of the shark species, and of squalodons, has confirmed the Mosaic record of the creation and of the flood. It would appear by these deposits that animal life was richer in variety and finish at its beginning than at any subsequent period of which we have knowledge.

Wherever Eden was originally planted, it is now certain that in America are found fossilized remains far more varied and extensive than have as yet been discovered in either Europe, Asia, or Africa; and that they indicate a long, undisturbed period of production before the flood.

The enormous cemetery of marine and land animals in South Carolina tells its own story.

The question as to where the ark grounded may be considered as correctly settled—

Mount Ararat in Armenia; but the yet more interesting one, as to whence the ark took its departure, as still open. And to its solution we contribute this volume, presenting many important facts which cannot be set aside by any fair-minded person. Meanwhile the corroboration of the Mosaic record is of much greater moment than the discovery of the latitude or longitude of either Ararat or Eden.

II.

Creation and Time.

WHAT can science do in describing the first moment of creation? It cannot even conceive of the first creative word, which is so accurately recorded in the Mosaic account, and which of all the words was the most pregnant in glory and power. Nor can it conceive of any, the least, connection between speech and the creative act itself. Was it by an idea in the divine mind, or by a movement of the divine hand, or by some divine syllable, that substance came out of nothing—this huge bulk out of that which did not appear? The orderly statement which preceded each day's work; then, afterwards, the fact itself as having transpired; and then the final stamp placed upon it by the Creator, expressive of its fitness and of its contribution to the good purposes of his will, would not have entered the human mind.

Nor would the time which accompanied the act have been stated had not time entered essentially into the work itself. It must be remembered that each act transpired along with one distinct revolution of the earth; that it was this turn in space that put upon it the first notch of time, terrestrial. And that the needed space itself was created along with the moving earth, as well as the time; that they first existed, not as outside and distinct from the creating acts, but as part of them.

Nor is the work represented as long delayed by vast interruptions of space and time, but when once begun as going through with short pauses of divine purpose; each day's work being brought within the compass of an "evening" and a "morning," and completed under the divine eye with a divine benediction. The time element, the night, the day, the daily finish, and the daily approval of His own work, would not have entered into any con-

ception or history of creation save that of the inspired penman.

Let the reader try to think how *he* would create one grain of sand—and he is as apt to think sensibly as any other uninspired person. He will find that the method of creating contradicts his ideas as much as the fact itself transcends them. One could scarcely expect to turn a log over by mere thought, much less a world; and certainly not to make it. The power to create sand, or matter of any kind, by speech, would be quite as far from the ideas of man. Indeed, thought would seem to be the more probable instrument for working with the invisible elements of nothing, in a mere void, and in the utter absence of light. But God “spake” where there was no room for echo; and the word made its own room, and filled the space with its own glory. The first utterance of the mighty will surpassed all other creative wealth, and in extent held all that came after in all its

unwasted strength and beauty, outstreaming to the utmost bounds of the stellar universe.

This orderly substance of earth must have had an orderly beginning. Speech implies the Presence of a Person. It is the highest perfection of creative skill. Only such a creature could hold the divine purpose. God "spake," not to the void merely, but in the hearing of the heavenly hierarchies, and "it was done." The syllables holding his wisdom, power, and love revealed to them his highest form of communion with his intelligent creatures. Until then they knew not the ineffable fullness of the divine word. It was the revelation of a power which, by and by, was to be employed in the creation of sons of God.

The principle of growth that had essentially a large place in creation was very distinct from it. It requires the element of time in all its working. Its laws had first to be framed, and then lodged permanently

in substances, as a continuous vitality. Creation and growth cannot be mixed; creation goes before everything except the word. If we subtract the idea of growth from that of creation, we shall find its demand for the element of time greatly moderated.

He had made all things, whether visible or invisible, whether angels, principalities or powers, thrones or dominions, is called the WORD OF GOD, because by his syllables they were created. The ninetieth Psalm, "the prayer of Moses, the man of God," gives us the grandeur of the creative hour, as compared with which the idea of a growth is unutterably meager: "Before the mountains were born, or ever thou hadst formed the earth and the world, even from eternity to eternity, thou art God." "The birth-travail in the production of a world, in its suddenness—for emotional grandeur," says Tayler Lewis, "for the feeling that comes from the 'Living Word,'

and without which thought and knowledge are dead—what are miocene, and pliocene, and eocene, and the frigid decimals of the geological notation, to the power of language like this?" In the twenty-eighth chapter of Job the sea has its natal period, as in this Psalm the mountains had theirs.

The difficulty with us inheres in that we cannot conceive either of ourselves or of creation as outside of both time and space; but, in fact, they all came together. It is wonderful to see the earnestness of some evangelical writers as they plead for "room" in creation; that is, for more time. As if the periods asked for could in the slightest degree relieve the work of creation. But nothing can make creation easy; only revelation can present it intelligibly to the mind. There is less difficulty in accepting it as a command than as the result of a law feebly started by God on its way to a growth of expression, and which involves an infinite period of time for its completion. The

mind has no "room" in it for creation, apart from faith in the "Word of God"; by which we understand that "the worlds were framed," "so that things which are seen were not made of things which do appear." (Heb. xi. 3.)

As creation is itself the greatest of all miracles, atheists are uniformitarians, arguing that creation is still going on, as at first, and was therefore no more wonderful at any time than it is at present. But can any believe that the ages have added a single fleck of gold to the breast of the humming bird? Many strong beasts and fearful creatures of the land and of the sea, which were marvelous in their build, have faded out, but none have been added to the animal kingdom. Their huge vertebra and powerful teeth tell the story of an extinct grandeur. Their majesty and hegemony have been fossilized and let into the rock forever. Man, too, has lost his original stupendous reach of vitality, stretching on and

on over whole centuries; but his years have dwindled to the period of fourscore as their latest boundary. Now we ask, What has gained, of all that ever was, by the lapse of time, whether in the heavens above or in the earth beneath? Has any achievement of the mind surpassed or equaled Job, the first epic? And if the intellect has not advanced in its power of thought, sentiment, or imagination, or in the divine quality of speech, we surely may not expect anything new in departments of creation lying much farther out from God.

III.

The First Great Whales.

“And God created great whales, and every living creature that moveth, which the waters brought forth abundantly after their kind, and every winged fowl after his kind; and God saw that it was good. And God blessed them, saying, Be fruitful, and multiply, and fill the waters in the seas, and let fowl multiply in the earth.” (Genesis i. 21, 22.)

It will be seen that they were made—finished. They were ready to multiply, to fill the waters in the seas; that is, to stock the seas with fish, and the earth with fowl. A special blessing was pronounced upon this food-providing creation. This was on the fifth day; on the sixth, man is presented with “dominion over the fish of the seas and over the fowl of the air.” Their creation was therefore an accomplished work; finished the day before—for man.

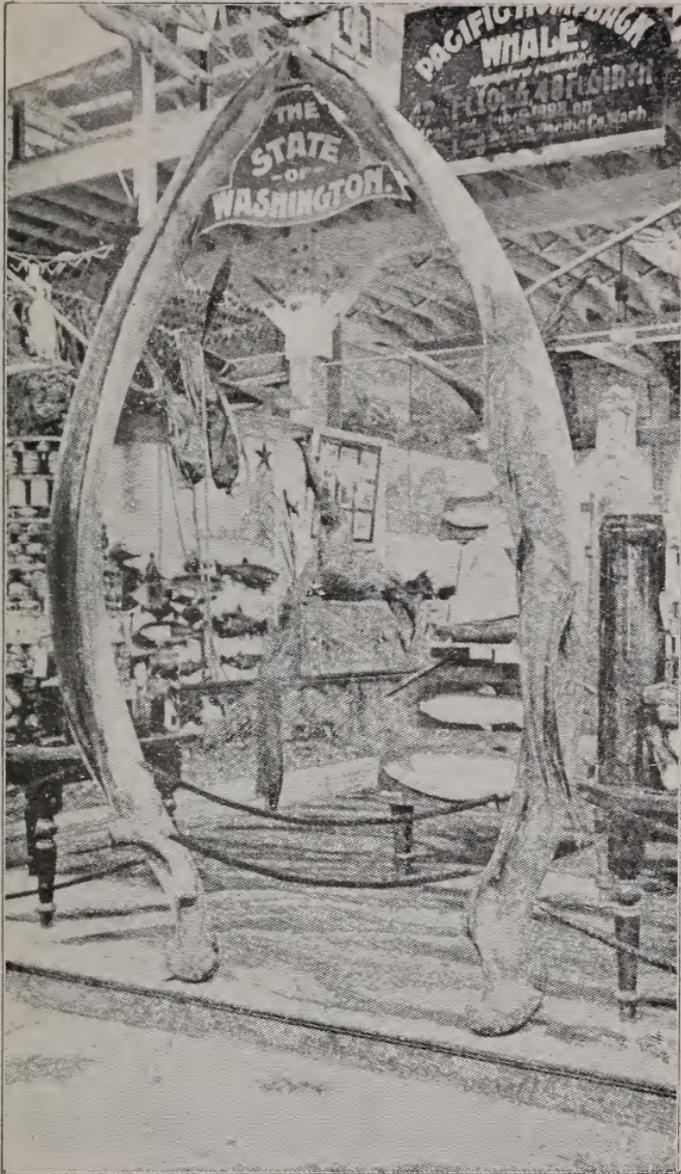
As the fish and the fowl were made complete in their generations, and the laws of

production made inherent and perfect in the moment of their creation, so were the great whales. They, too, began complete, and came in for their share of divine approval. Had they been merely "whales," they would have become "great" in the course of a thousand years, it may be: not *made* great, but "*grown*" great. But these were "*created* great"—great at once, by the creative Word that made all fish. This one creative Word has put a period to all theories of evolution. Great whales do not go on to produce great whales; though after the lapse of a thousand years every whale becomes great. But these started great. In the Washington Territory, on the Pacific coast, a whale was stranded in 1892, supposed to be within fourteen years of being a thousand years old—probably the hugest creature that ever grew. Its jawbone was at Chicago, in the World's Columbian Exhibition, in the Fishery building. It was placed as the door to the exhibit from

Washington Territory—twenty-four feet high. An admirable plate of it can be seen in the “Book of the Fair” (Bancroft Company), Part xiv., page 523. The following statement of the dimensions of this huge creature and history of its death is given in the *South Bend Herald*, Washington Territory—Mr. H. J. Hubler, editor:

A WHALE WHOSE AGE IS COMPUTED AT NEARLY
ONE THOUSAND YEARS.

The largest whale that ever entered this harbor and one of the largest ever seen on this coast, washed ashore recently at Tokelund. The fish came in on the high tide, and lies just a little below Charles Fisher's bath-houses. It was alive and kicking, and did not finally surrender its lease on existence until the following day about noon. County attorney M. D. Egbert had taken along a tapeline and carefully measured the monster. The line showed an extreme length of one hundred and seventy-four feet and eight inches, with a “waist measure” of one hundred and sixty-one feet and six inches. County surveyor L. C. Vickrey figured on the weight of the “animile,” and pronounced this member of the balænoidea family to weigh forty-seven and a half tons, and the blubber and whalebone to be worth, at current



JAWS OF WHALE, SECTION ENTRANCE.

[This plate is in the "Book of the Fair," published at Chicago, and is inserted here by special consent of the publishers. The jaw of this whale was twenty-four feet long. Part of the inscription refers to another whale in the Washington exhibit.]

prices: oil, \$9,795; bone, \$1,000—making a net total of \$10,975.

Attorney L. E. Ginn attempted to compute the age of the subject under consideration, and concluded from the transverse lines on the baleen that his fish had existed for nine hundred and eighty-six years, lacking but fourteen years of having lived the longest term of whale life. The pectoral fins are twelve feet long and seven feet broad. The mouth is twenty-four feet long, the blow holes fifteen inches long; and the half-hundred bathers in the water at the time it came ashore say the noise of spouting water was deafening, and the spray ejected ascended at least fifty feet in the air. The thrashing of the tail on the water in the struggle to regain the channel was heard at McGowan's cannery at the mouth of North River, four miles away.

County school superintendent L. W. Fanscher furnished some historical facts in regard to the whale. Alfred the Great had been dead but six years when his whaleship first began to navigate the waters of the earth. The old boy was one hundred and twenty years old when William the Conqueror was born, and may have been playing off English shores when he was crowned king. He was on earth at the time of the making of the Great Charter at Runnymede; he was middle-aged when the pilgrims landed at Plymouth Rock, and probably looked upon the wars of Napoleon,

the American Revolution and Civil War, with many a sad sigh and shake of the head for the ruthless slaughter of humanity.

A taxidermist secured the jawbone for the Columbian Exhibition. This description proves that with time and growth all whales could become one hundred and seventy-four feet eight inches long, and have a "waist measure" of one hundred and sixty-four feet six inches. Probably this was the largest creature that ever grew, and illustrates those first creatures that were created on the fifth day. It is one among many illustrations that "one day" is with God as "a thousand years," and a thousand years as one day. Time with the Creator of time is without measure. "He speaks, and it is done; he commands, and it stands fast." Whales are among animals such as the behemoth, and among fish such as the leviathan—the largest in size, in strength, and in possibility of growth; not, however, as large at first as after a thousand years of

growth. But these whales of the fifth day began great—so great that it was recorded as a special instance of creative power. The size of the largest whale is set down in the *Britannica* as measuring eighty-five feet.¹ In Genesis no mention is made of “great” leviathans, or “great” elephants, or “great” behemoths, though all had put in them a law of enormous growth. These “great whales” were the statement of an instant creative act, not of a creative law.

¹The “blue whale,” the largest of all known animals, attains a length of eighty, or even sometimes eighty-five, feet. Its color is a dark blueish gray, with small whitish spots on the breast; the baleen is black; the flippers are larger proportionably than in other eorquals, measuring one-seventh of the total length of the body; and the dorsal fin is small, and placed very far back. This whale has usually sixty-four vertebræ, of which sixteen bear ribs. Like the others of the genus, this species seems to pass the winter in the open seas, and approaches the coast of Norway at the end of April or the beginning of May. (*Encyclopædiæ Britannica*, vol. xxiv., page 524, note.)

CORRESPONDENCE WITH EDITOR HUBLER.

OCEAN SPRINGS, MISS., Sept. 8, 1899.

EDITOR OF THE SOUTH BEND HERALD, Washington Territory, U. S.

My dear Sir: Your answer to my former letter came duly to hand; but by a very strange and annoying accident it was mislaid in an hour, and has not been seen since. This will explain why I do not address you by name. I should be very much obliged for a duplicate of what I valued so highly.

I found one excellent picture of the jawbones of the whale in the Bancroft "Book of the Fair," Columbian Exposition of 1894, published at Chicago—Part xiv., page 523. This was found from information in your letter.

Will you do me the favor to answer a few questions in regard to that hugest creature that was stranded at Tokelund? It was probably the largest that ever *grew*, and probably as large as those great whales that were at first created. (Genesis i. 21.)

1. Was there any photograph taken of this whale?
2. What was the actual yield of its immense bulk, in money, or what was done with it?
3. Do you know the name of the taxidermist who secured its jawbones and placed them in the Columbian Exposition, or where these bones are at present?

I hope that these inquiries will not give you any trouble beyond the stating what you yourself know.

With many thanks for your former letter, and high consideration, I am very truly yours,

J. C. KEENER.

P. S.—Were there any editorials written by you on the wonderful event at Tokelund besides the one headed “Methuselah Knocked Out,” etc.?

If there were any photographs taken of this whale, please tell me where I can procure one.

SOUTH BEND, WASH., Sept. 18, 1899.

REV. J. C. KEENER, Ocean Springs, Miss.

My dear Sir: Your third letter at hand, and as I have not a copy of my other letter here at the office, will answer the questions now, and to-morrow copy the other for you.

There were photographs taken of the whale, and I will endeavor to obtain one for you.

The whale was not turned to any commercial profit. No one undertook to assume ownership, and when decomposition began it was surrounded with driftwood and burned where it lay on the beach.

Taxidermist John Hudson, now somewhere in Alaska, included the jawbone with the other “game and fisheries” exhibit from the state of Washington; and it is my impression that after the close of the Fair the whole collection of preserved fowls, fishes, and ani-

mals were placed in Olympia, the state capital, as the nucleus of a museum.

I do not remember whether I mentioned the whale more than that once or not. I probably mentioned its destruction, but it would be quite a task to hunt it up in the files, as I have never taken time to bind them yet.

Can't find any photograph of the whale.

Yours,

H. J. HUBLER.

IV.

America Before the Flood and After.

THE Ashley beds of South Carolina indicate beyond a doubt that the western hemisphere once abounded in animal life of every variety; that if not originally, yet it had come to be a great center of organic existence at the period of the flood. It is not to be expected that a single deposit should contain absolutely the fossil of every species, yet there are few wanting in this huge cemetery of animate creation, so few, as to make the supposition that with more time and discovery all will be found.

In Europe, especially in northern Siberia, in France, Italy, and England, extensive beds have been found and explored, which determine the common destruction of animals and man by sudden and overwhelming catastrophe. In the main, they are land animals, amphibious. But they do not contain extinct saurians, sharks, seals, in touch with

extinct mammals—a vast fauna of land and water in one bed and in close contact, as we find in these phosphate beds.

With such a history before the flood, a large continent crowded with life in its most active expression, the wonder arises, How came it that presumably nothing remained; that both man and beast—“the horse and his rider”—disappeared; that the slopes of the Atlantic, the prairies of Kansas, the heights of the Rocky Mountains, the pampas of Brazil, the range of the Cordilleras, became as still as death? How was it that this immense wealth of herds, and flocks, and fishes, and huge mammalia disappeared, passed away, without leaving their tracks to tell the story, or cause a suspicion of their having once been there? Had the inhabitants which usually attend such animals remained, the story might have come down to us that the horse and the ox and the sheep and the goat once browsed upon these great plains and aided the life of man.

But for three thousand eight hundred and fifty years all remained quiet, excepting only the slow advance by the way of the Aleutian Islands of wild beasts, and its accidental occupation by small companies of men who had been wrecked or blown by adverse winds out of their course. It has been but a few years since the geologist exhumed traces of the abounding life that once filled this great hemisphere of the west. Only since the opening of the Ashley beds is the full statement disclosed of a fauna, marine and terrene, equal to that of the greater hemisphere of the east.

Such a catastrophe as left nothing in life, as searched every mountain, valley, plain, and crevice of a continent for its victims, could only have been accomplished by a huge flood of water. In the language of Mr. Howarth in the "Mammoth and the Flood," which must be accepted as the latest and highest authority in geology:

Continental uniformity of results is only consistent

with a continental cause. This displaces the view so often urged by the patrons of easy methods in science, that the animals of the Pleistocene age chiefly perished by being drowned in rivers, and were buried by their mud—a view upon which we have already adverted when urged in regard to Siberia and Europe. Again, a destruction of life so complete, so widespread, so independent of climatic and physical consideration, so absolutely at variance with every kind of normal process of extinction that we can think of, is assuredly consistent only with one theory, namely, that which appeals to a catastrophe on a gigantic scale. A huge hecatomb, covering two continents with the corpses of a myriad herds, can only be imagined as the result of a sudden, complete, and widespread catastrophe; and this is even more certain when we remember how cosmopolitan in constitution and habits such animals as the horse, the mastodon, the megatherium, etc., must have been to have lived in the extremely diversified terrestrial provinces where their remains occur.

The difficulty of meeting these necessities of the case by any theory of uniformity has been felt even more by inquirers on South American geology than in Europe or Asia. Darwin long ago said: "It is impossible to reflect on the changed state of the American continent without the deepest astonishment. Formerly it must have roamed with great monsters; now we find mere pigmies compared with the antecedent allied races. . . . The greater number, if not all,

of the extinct quadrupeds lived at a period and were the contemporaries of the existing seashells. Since they lived no very great change in the form of the land can have taken place. What then has exterminated so many species and whole genera? The mind at first is irresistibly hurried into the belief of some great catastrophe; but thus to destroy animals, both large and small, in southern Patagonia, in Brazil, on the Cordillera of Peru, in North America, and up to Behring Strait, we must shake the entire framework of the globe." The great naturalist then faces the various theories which have been suggested to account for the facts, but discards them in turn and leaves the problem unsolved, proving how great a stumbling-block he, the most ingenious of inquirers, found it. (Page 351.)

The opinion of Mr. Jeffries Wyman, on "Fossil Mammals" (page 3), we give as quoted by Mr. Howarth, still strongly confirmatory of the abounding life and equally abounding death illustrated in the fossil records of South America:

From the various recent discoveries of the remains of mastodons in South America, it appears that they once had a geographical range over nearly the whole of that continent, since they were found by Humboldt

as far north as Santa Fe de Bogota, especially at the *Camp des Gians*, where they were collected in great numbers, and have also been discovered as far south as Buenos Ayres, on the Atlantic, by Admiral Dupotel, at Concepcion de Chili, on the Pacific, and at various intermediate points in Peru, Chili, La Plata, Brazil, and Colombia, by Dombay, Gay, Alcède, D'Orbigny, Darwin, and others. Thus their remains extend from five degrees north to thirty-seven degrees south, and on both sides of the great chain of the Cordilleras from ocean to ocean. What is still more remarkable, the bones of mastodons have been discovered at unusually great elevations, according to D'Orbigny, some up to the borders of perpetual snow. One of the molars described by Cuvier was obtained by Humboldt on the volcano of Ibambura, at an elevation of seven thousand two hundred feet above the level of the sea.

It has been greatly urged that they were killed off by the glacial cold. Can anything be produced more fantastic than such a view? If the glacial cold invaded the tropical regions of Brazil and Guiana, as Agassiz has suggested, and took possession of the equatorial belt itself, how is it that any life survived at all anywhere on the earth save those forms of it especially adapted to exclusively boreal conditions? . . . What became of the myriad tropical products of the valley of the Amazon while the cold was so intense there that it killed off not merely gigantic sloths, but horses and lamas, all of which could live as far south

as Patagonia? The notion is supremely ridiculous, and affords another example of the crudities which take possession of scientific men when they offer incense to some metaphysical idol.

This mixture of animals of different habits and habitats—of carnivores, and pachyderms, and herbivores—is most puzzling, especially when the remains show so often a common freshness and an unworn and ungnawed appearance. Death certainly has no parasites, and is singularly neutral in its methods, but it does not, in its normal moods at all events, collect great mylodons and thickly hided megatheriums, nimble opossums and softly cuirassed glyptodons, caries and mastodons, and kill them together, and bury them together.

These full quotations from masters of the science of geology are enough to establish the overflowing life of the western hemisphere at one period in its history. Yet, strange to say, all of it has been obtained from the history of death written and graven in stones by the power of God, and distributed by him over its entire surface of field, mountain, and flood.

Until the arrival of the Spaniards, near four hundred years ago, none of this mass

of varied animal life existed nor was recognized as ever having been on the continent, or on any of the islands of the Americas. We can now form some conception of the rapid production of fauna by what has been its progress since that period. It is not unlike the increase of the rabbit in Australia during the last fifty years.

To get a full idea of the destruction brought in an hour by the Noachian flood, we must suppose what was the sum of undisturbed animal life during a growth of one thousand six hundred years. The sentence of death in the garden now first found its full expression in the myriads of herds and flocks, of huge mammals, marine and terrene, that were hushed in a silence that continued unbroken for four thousand years. It is only of late that the curious scientist has scratched the moss and earth from the time-covered tombstones of man and beast which the Creator himself had set up in memory of the one great disaster that con-

signed the whole world to an equal fate. This vast burial of creation at the hands of the Creator certifies to the truth of inspiration, that originally all had been called into existence out of nothing. For the fiat that created all could alone destroy all at a word.

Such a continent of life and then of death fully vindicated the wisdom which thereby confirmed to all ages the truth of the Pentateuch. The pick and the spade can now effectually dissolve the higher criticism of unbelief. Had the western hemisphere appeared again full of life directly after the flood, as the eastern has been ever since that catastrophe, the whole truth might have failed for lack of evidence. In the face of inspiration there would have been placed the living masses of the fauna of Asia, Europe, and Africa, and the claim of an uninterrupted life since the memory of man. The caches of petrified bones and tusks found here and there over the

wide surface of continents would have been held in evidence of partial floods, or of fluvial action, disturbed through great reaches of time and at long intervals. The fiat of God would not have been heard amid those confused voices of a higher criticism. But now the silence of the dead can be heard farther than the sound of the living.

V.

The Fossiliferous Beds of Ashley, South Carolina.

THE work of Schleimann, which gave reality to the Troy of Homer, that of Rawlinson, of Sir George Lewis, of Ledyard, and others, in defeating the criticism destructive of Roman, Grecian, and sacred history, is equaled, if not surpassed, by the pick and spade of Professors Holmes and Tuomey, in the Ashley beds of South Carolina.

There is a certain precision in the spade which cannot be found in the analysis of German criticism. It would seem as if the purpose of God had been to hide confirmatory evidences of the sacred Scriptures for centuries, that in due time they might be brought forth from the deep burial chambers of Egypt, the banks of the Euphrates, the mounds of Nineveh, the desert of Moab, and the rocky heights of Sinai.

While these discoveries have been going on in Asia, which give so much additional strength to the prophetic and historical books of the Old Testament, there have been recently opened vast beds of fossilized substance in the American continent which would indicate that it ranked first in the wealth of animal life at the very earliest period of creation. In 1844 beds of phosphate of lime in nodules and small bowlders were discovered in South Carolina, extending from the Santee to the Savannah rivers. These beds were presently found to be rich in both land and marine fossils of every conceivable kind. They were evenly disposed over a surface of more than a hundred miles in diameter, averaging some six feet in depth, containing sixty-five per cent. of bone phosphate, and more than eight hundred tons to the acre. The bones and teeth of gigantic extinct saurians, ichthyosaurians, and squalodons were mingled with those of the ox, horse, goat, hog,



STRATA OF THE ASHLEY BEDS.

sheep, deer, muskrat, beaver, and opossum, which are found usually in the neighborhood of man; as well as those of the bear, tiger, elephant, mammoth, sperm whale, and megatherium.

Besides these, there were underlying beds of marl containing univalve and bivalve shells, ninety per cent. of which were of mollusks still existing in the waters of South Carolina. In these beds were also found arrowheads which differed in shape from those of the North American Indian, and other evidences of human life; of which more by and by.

These fossils were discovered by Professor Holmes, at that time one of the faculty of the College of South Carolina. It was he who, after the war, discovered the wealth of phosphoric acid these beds contained, and brought this fact to the notice of capitalists, and succeeded in introducing the manufacture of fertilizers from these deposits, which have become an article of

trade throughout this country and Europe. There may not be every species of animal life, but certainly the remains are here in amazing quantity of every genus both of marine and land creatures, not separated by layers of earth, or rock, or intervals of inorganic matter, but lying in touch of each other, buried together as they died, in one grave, overwhelmed by one disaster. The bones and teeth of creatures which geologists have theoretically separated by Eocene, Miocene, and Pliocene periods; by Silurian, Devonian, Carboniferous, and Cambrian formations—all here and *in situ*; whether they belong to so-called Paleozoic, Mesozoic, or Cenozoic ages; from mollusk to mammoth; whether of marine or mountain habitat. Here they are, in these Ashley beds; and here they lived, until by some huge catastrophe—having been summoned here—they died; and by their Creator's power were entombed, and embalmed in fossilizing fluids of lime and silica, only to be un-

covered in the lapse of ages, for human instruction and confirmation of the Genesis of Moses.

Had the deposit been only of bones, and of a small number of animals, scattered over a large surface, it would have been subject to the usual explanation of "fluvial action," which had mingled remains of recent date with the fossils of Eocene and Pliocene periods. But the deposit is large enough to contain all there was of life belonging to the Postpliocene period. So long as a geologist reasons upon the remains of mastodon, eliphas, megalonix, mylodon, bisonlatifons, ursus, felis atrox, etc., of Mississippi; on those of mastodon, megatherium, etc., found in Missouri; upon the remains of the horse, elephant, moose, reindeer, and muskox, found in the ice cliffs of Arctic America, there is room enough in the separating space to indicate a possible difference in the periods of their existence. And while one cannot

room among extinct mammalia, such as *Hypotherium Venustum*, etc., there is room enough for speculation; but when all these are found in familiar position, with the well-known remains of the horse, sheep, hog, and such animals as are domestic, feeding in the same field, criticism ceases to be destructive.

As to “fluvial action,” “water-rolled fragments of bones,” “accidental occupants,” by which the teeth of the horse are found with those of the megatherium, the gigantic sloth, and mastodon: in the first place, they are in very large quantities; next, they are larger than the ordinary horse tooth; and lastly, the enamel of the tooth is more completely folded than in those of the modern horse, which easily distinguishes them.

The reader may not know the vast periods which the theories of Lyell, Dana, Leidy, and others, would place between these creatures of the “prehistoric past” and the

horse and ox of to-day; but thousands upon thousands of years are required by them to fill up the gap between the Megatherium and the Bos Taurus, the Ovis Ammen and the Sus Americanus, etc. They say "it is somewhat difficult to determine to what particular geological formation or period the fossils collected on the Ashley shores are to be referred. The difficulty is especially great in regard to fishes, less so with the reptiles and cetaceans, and least so with other mammalian fossils." Difficult, of course, if there be any theory to maintain. But surely they are all *fossilized*; and of course at the instant, by the same flow of the fossilizing silica. Gigantic sharks, tapirs, and the Virginia deer, the tiger and the opossum, all overtaken in the same storm, lay down and were covered with the same floods, alluvial and diluvial. Besides this, *all the fossil shells* of the Eocene, Miocene, Pliocene, and Postpliocene periods are here; two hundred and three species are in these

beds, perfectly preserved, of which ninety are known to be recent, now living in the waters of the South Carolina coast.¹

¹See "Pliocene Fossils," by Tuomey and Holmes. Charleston, S. C.: Russell and Jones, 251 King street. 1857. Also, "Postpliocene Fossils," by F. S. Holmes. Russell and Jones, Charleston, S. C. 1859.



MINING THE PHOSPHATE.

VI.

The Ashley Beds.

WE cite four of the most celebrated professors of geology and paleontology, as to the character of the fossils of the Ashley beds of South Carolina: Professor Leidy, of Philadelphia; Professor Holmes, of Charleston, S. C.; Professor Tuomey, State Geologist of Alabama; and Professor L. Agassiz.

STATEMENT BY PROFESSOR HOLMES.¹

There is an extensive formation in the low or flat country of South Carolina, which, according to geological distinctions, is the most recent of the Tertiary division, called the Postpliocene. This is included in a belt extending from the seacoast ten miles inland.

Three distinct beds belong to this formation. First, the marine, composed of a gray sandy clay, in which are imbedded innumerable small shells, of a species now common and living on the coast; and many large shells, in the position they occupied when living, having both valves entire and perfect as if destroyed suddenly.

The second, a stiff blue clay, containing remains of

¹ "Postpliocene Fossils of South Carolina."

marine and terrestrial animals. . . . The fossil bones obtained from these strata are often in a fine state of preservation. . . . The marine beds lie immediately beneath, and are exposed on the high land which surrounds the swamp. If we take the one hundred and fifty species of mollusca, whose shells are so beautifully preserved in these beds, and place the entire group alongside a similar collection of shells of the recent species living upon the coast, we will observe that they are identically the same in form, character, and every other respect. There are among the fossils two shells whose analogues are not now living upon the seacoast of Carolina, but are common in the Gulf of Mexico and West Indian seas. We also find the remains of the vertebrata, of the deer, opossum, raccoon, and others well known to be living at the present time in South Carolina; but we find with them two or three species that are no longer existing north of Mexico and South America—the *peccary*, the *capabara*, and the *tapir*. The mastodon, the megatherium, the mylodon, and one or two others, are extinct. The better to appreciate the analogy between the groups, as regards the living and the extinct species, we give them in tabular form:

FOSSIL REMAINS.	MOLLUSCA.	VERTEBRATA.
Species same as now living in South Carolina	140	37
Species not in recent fauna of South Carolina, but in tropical latitudes....	2	3
Species in northern latitudes.....	2	3
Species presumed to be extinct.....	2	5

F. S. HOLMES.

LETTER FROM PROFESSOR AGASSIZ.

KEY WEST, February 25, 1858.

PROFESSOR F. S. HOLMES—*My dear Sir*: I have not forgotten my promise to write you my impressions respecting your important discoveries of fossil mammalia in the Postpliocene beds of South Carolina. Indeed, I have been thinking of them continually since I saw them, and nothing impressed me so deeply for many years past as the sight of these bones. I consider their careful study in all their relations as of the utmost importance for the progress of our science. It is true there is hardly any interest in the animals themselves, since they appear to be all well-known types; but their simultaneous appearance in the same beds, showing that they have lived together at a time when the white man had not yet planted himself upon this continent, renders their association as undisputed. How does it happen that horses, sheep, bulls, and hogs, not distinguishable from our domestic species, existed upon this continent, together with the deer, the muskrat, the beaver, the hare, the opossum, the tapir, which in our days are peculiar to this continent, and not found in the countries where our domestic animals originated? The whole matter might seem to admit of an easy solution by supposing that the native American horse, sheep, bull, and hog were different species from those of the old world, even though the parts preserved show no specific differences; but this would be

a mere theoretical solution of a difficulty which seems to have far deeper meaning, and to bear directly upon the question of the first origin of organized beings.

The circumstances under which these remains are found admit of no doubt but the animals from which they are derived existed in North America long before this continent was settled by the white race of men, together with animals which to this day are common in the same localities, such as the deer, the muskrat, the opossum, and others only now found in South America, such as the tapir. This shows beyond the possibility of a controversy that animals which cannot be distinguished from one another may originate independently in different fauna; and I take it that the facts you have brought together are a satisfactory proof that horses, sheep, bulls, and hogs, not distinguishable at present from the domesticated species, were called into existence upon the continent of North America prior to the coming of the white race to these parts, and that they had already disappeared here when the new-comers set foot upon this continent; but the presence of tapir teeth among the rest shows also that a genus peculiar to South America and the Sunda Islands existed in North America in those days, and that its representatives of that period are not distinguishable from the South American species.

It would be desirable at this stage of the inquiry to compare your tapir teeth with those of the species from

Central America, which is considered distinct from the Brazilian species. This circumstance leads naturally to the question of the specific identity of all these animals with those now living in the same locality, and with the domesticated species. And here I confess the difficulty to be almost insuperable, or at least hardly approachable in the present state of our science, when the views of naturalists are so divided as to what are species among the genera *bos*, *ovis*, *capra*. For myself, I entertain doubt respecting the unity of origin of the domesticated horses. But whatever may be the final result of this inquiry, this much is already established by the fossils you have collected: that horses, hogs, bulls, and sheep were among the native animals of North America, as early as the common American deer, the opossum, the beaver, the muskrat, etc. What remains to be settled respecting their specific identity is involved in the controversy now carried on between naturalists who admit specific distinctions upon a very wide range of differences and those who limit them within narrow boundaries. But the final solution of this point can in no way lessen the interest of your discoveries.

Should you publish anything upon the subject, let me have your notice, for I am deeply interested in the subject, as I always shall be in everything you do.

Ever truly your friend,

L. AGASSIZ.¹

¹ "Postpliocene Fossils of South Carolina," by F. S. Holmes: Introduction, page x.

The professor's doubts as to the unity of origin of the domesticated horses can have but one solution, namely, the theory of several distinct creations, which he seems eventually to have adopted. But is not this a violent supposition? Does it not conflict with that economy of divine power everywhere recorded in the Scripture history of God's dealing with man? Does not this theory of distinct geographical creations, of the same genera, amount almost to a *reductio ad absurdum*, in favor of the truth of the Mosaic account of a universal flood, and of the miraculous preservation by the ark of those air-breathing creatures which we now have in both hemispheres? It must not be overlooked that this discovery of the fossil deposit of the Ashley beds, and not all those found in other places, impressed him so deeply. The truth is, they solve the great problem as to the history of creation, of the flood, and of the ark of Noah, given in Genesis.

Professor Joseph Leidy, of Philadelphia, in his "Description of Vertebrate Fossils" found on the shores of the Ashley River, or its vicinity, about ten miles above Charleston, S. C., says of the horse:

It appears to be quite well authenticated that the horse, now so extensively distributed, both in a wild and domestic condition, throughout North and South America, did not inhabit these continents at the time of their discovery by Europeans. Coupling this fact with the circumstance that in many instances fossils may become accidental occupants of earlier geological formations than those to which they actually belong, we should require strong evidence before it is admitted that species of the horse belonged to the ancient fauna of the western world. At the present time such evidence is not only ample for the purpose, but actually indicates that more equine animals formerly lived in North America than in any other portion of the earth, so far as known. Remains of the horse, discovered in Brazil, Buenos Ayres, and Chili, have been indicated by Dr. Lund, Professor Owen, M. Weddell, and M. Gervais. These remains exhibit no well-marked characters distinguishing them from corresponding portions of the skeleton of the domestic horse, and it is uncertain whether they are referable to one or more species.¹

¹ "Postpliocene Fossils," p. 100.

LETTER FROM DR. WIGHTMAN.

WASHINGTON, D. C., 916 Mass. Ave., N. W.,
January 11, 1892.

BISHOP J. C. KEENER, D.D.—*My dear Bishop:* At your request I send a short sketch of the phosphate beds that lie around Charleston, S. C. These mysterious volumes of dry bones have never yet been carefully studied. The history of the human race may be involved in this uninterpreted book of nature. During my long pastorate in Charleston I had the pleasure of an intimate friendship with Professor F. S. Holmes, of the Charleston College. He was the discoverer of these vast phosphate lands. He was a Christian gentleman of high social standing and a member of the Episcopal Church. During frequent visits to the college museum he took pleasure in showing me a great variety of fossils taken from the bed of the Ashley River, near the city. The museum is rich in these prehistoric remains, both of fish and land animals, antedating the introduction of man. They are found mingled in the same beds with fossil deposits of animals of the present era. The ichthyosaurus mingles his bones with those of the horse, the mastodon with the deer, the shark and sea monsters more than thirty-five feet long lie side by side with animals common to our day. This vast bed is more than a hundred miles long, and extends inward from the seacoast about fifty miles. It is a great cemetery of the world, in

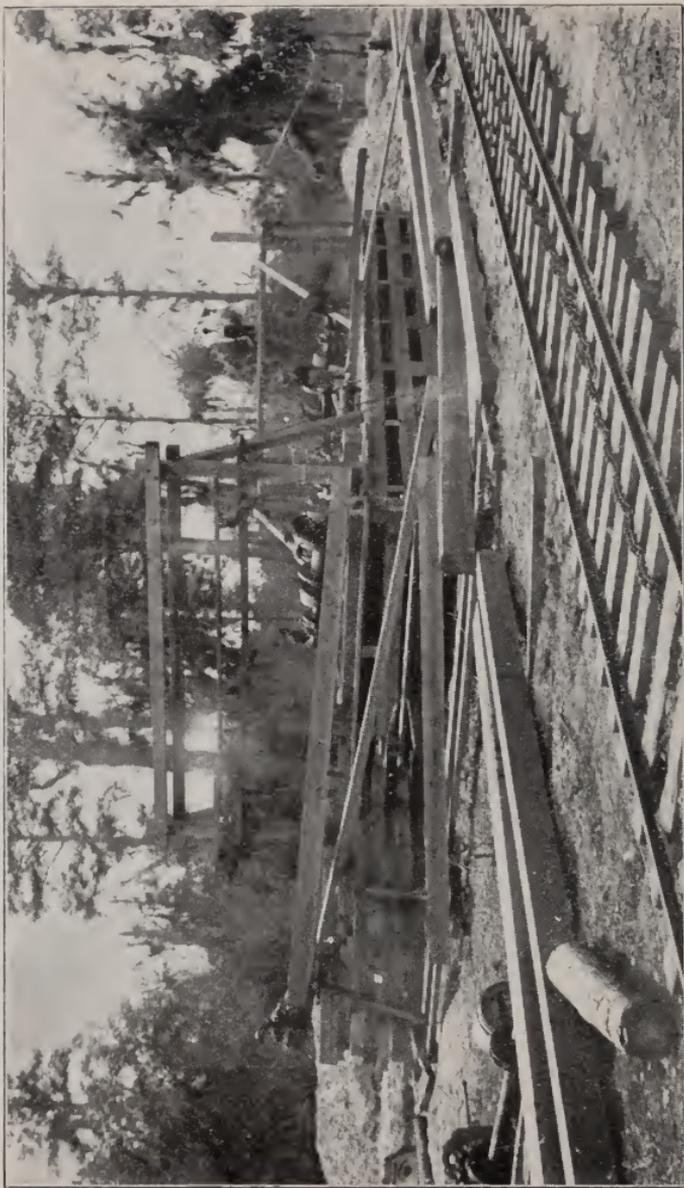
which almost every extinct and living species of land and marine animals lies entombed on a common level in strata varying in thickness from a few inches to several feet. Millions of tons of these bones have been shipped. Professor Holmes has given a full description of these beds in his history of the phosphate discovery, published at Charleston. Professor Louis Agassiz, the distinguished naturalist, had maintained that the horse was of Asiatic origin up to the time of visiting these beds. Professor Holmes told me that Agassiz was very much excited when he saw the old horse teeth. He spread them on the floor and spent almost the entire night in making comparisons. He wrote a letter to Professor Holmes, in which he said, in substance, that these old bones had confused his theory and well-nigh set him crazy with surprise. His letter was published in the *Charleston Courier* about the year 1854. Professor Lyle and Dr. Morton accompanied Dr. Holmes on a visit to the Ashley beds, and with their own pick took horse teeth from the black seam of fossil running along the bank of the river about the height of a man's head above the water line. Professor Holmes showed me at the museum a gigantic human thigh bone, three inches longer than the average bone of the same kind. It was said to have been taken from these beds, but of the precise spot the professor was not informed. It was a remarkable fossil.

These vast deposits open a new field of ethnological inquiry. No theory yet advanced is satisfactory. Some suppose these beds to have been salt licks, or peat beds, or fresh-water lakes, and that large numbers of land animals perished there during the ages. At the occurrence of the Noachian flood this charnel-house invited to the spot all sorts of predatory marine animals, and the sudden fall of the water left the sea monsters to perish in the basin with the remains of the land animals. There is a difficulty in the theory, as the country abounds in salt licks and water courses far up from the seacoast to the mountains, so that animals need not resort to these beds for a supply of salt or water. Besides, the remains of land animals that never herd together and have no sympathy for each other are found side by side in this vast cemetery, as if driven together by some external terror. It is to be hoped that a scientific ethnological investigation will interpret this "valley of dry bones," and throw light upon the chronology of the human race.

With much respect, yours,

JOHN T. WIGHTMAN,

Pastor of Mount Vernon Place Methodist Episcopal Church, South,
Washington, D. C.



MACHINE FOR CRUSHING PHOSPHATE, ETC.

VII.

Fossil Contents of the Ashley Beds.

THE following fossils, with phosphate nodules and bowlders, from the beds of the Ashley, were on exhibition in the South Carolina Department of the New Orleans Exposition of 1884, from the collection of Major E. Willis, of Charleston:

Phosphate Nodules.	Heads of Crocodilians.
Phosphate Bowlders.	Teeth of Crocodilians.
Stratified Phosphate Rock.	Ribs of Crocodilians.
Teeth of the Elephant.	Jawbone of Deer.
Bones of the Elephant.	Jawbone of Deer, with
Tail Bones of the Elephant.	Teeth.
Ear Bones of the Elephant.	Horns of Deer.
Tusk of the Elephant.	Coprolites of the Ichthyo-
Teeth of the Mastodon.	szurus.
Vertebræ of the Mastodon.	Ribs of Cetacean.
Bones of the Mastodon.	Jaws of Cetacean.
Skull of the Whale.	Skull of Cetacean.
Ear Bones of the Whale.	Fossil Shrimp.
Teeth of the Whale.	Jaws of Alligator.
Ribs of Manatus.	Jaws of Alligator, with
Bones of Manatus.	Teeth.
Skull of Manatus.	Ribs of Alligator.

Leg Bones of Camel.	Teeth of the Peccary.
Bones of Camel.	Jaws of Clam Cracker,
Teeth of Tapir.	Myliobates Holmesei.
Teeth of Porpoise.	Cast of Conchs.
Jaw of Porpoise, with Teeth.	Cast of Periwinkle.
Skull of Porpoise.	Skull of Saurian.
Fossil Barnacle, small and large.	Ribs of Saurian.
Proroziphius Macrops (Leidy).	Teeth of Saurian.
Teeth of Zeuglodon.	Tail Bone of Saurian.
Teeth of Walrus.	Leg Bone of Bison.
Teeth of Plesiosaurus.	Ribs of Bison.
Teeth of Ichthyosaurus.	Indian Pottery.
Teeth of Beaver.	Indian Arrowheads.
Bones of Beaver.	Indian Jaw, with Teeth.
Bones and Teeth of Musk- rat.	Indian Weights (Brass).
Teeth of the Phocodon.	Teeth of Lamna Sharks.
Vertebra of the Phocodon.	Teeth of Carcharodon Sharks.
Ribs of the Phocodon.	Teeth of Tiger Shark.
Teeth of the Mylodon.	Teeth of Sand Shark.
Vertebra of the Mylodon.	Teeth of Man-eating Shark.
Spines of Giant Fish.	Teeth of Spotted Shark.
Teeth of the Monkey Family.	Vertebra of Shark.
Bones of the Monkey Family.	Ear Bones of Shark.
	Carcharias Shark.
	Galeocerdo Shark.
	Skull of Dolphin.

Vertebra of Dolphin.	Costal Plate Turtle.
Tail Bone of Dolphin.	Jaw of Swordfish.
Teeth of Sting Ray.	Teeth of Raccoon.
Spine of Sting Ray.	Teeth of Opossum.
Sting Ray.	Teeth and Bones of Rab-
Teeth of extinct species of	bit.
Horse.	Bones of Garfish.
Tibia of extinct species of	Manatus Antiguus.
Horse.	Mylodon.
Vertebrae of Saurians.	Megatherium.
Vertebrae of Balæna.	Hippotherium Venustum.
Sections of Turtle Shell.	Toredo Cell.
Bones of Turtle.	Trigona Clarendata.
Teeth of Reptiles.	Teeth of Muskrat.
Jaws, with Teeth, of Rep-	Pen of Cuttlefish.
tiles.	Horn of Elk.
Clams.	Fossil Cocomat.
Clam Shells.	Femora of Monkey.
Fossil Oysters.	Palate of Toad.
Hydrochelus, Molar, low-	Bones of Iguanodon.
er jaw.	Bones of Hadrosaurus.
Coral Cast, in Marl.	Teeth of Megatherium.

VIII.

The Great Wall Built by God.

IN the July number of the *Edinburgh Review* of 1892, a writer has set forth the condition of America at the time of its discovery. In it he presents the theory that "the glacial epoch swept away at least a dozen species of great mammals—the elephant, the mammoth, the megatherium, the rhinoceros, and others—which, until then, roamed the continent in exuberant vitality." For some unexplained reason, he adds, "the almshouse of the tropics failed to rescue and maintain them when a stress of circumstances arose in the temperate zone." This "stress of circumstances" is a rather mild allusion to the all-devouring catastrophe of the flood. As for that ghastly conceit of a "glacial epoch" which is so often paraded, we have no answer only its reference to Sir Henry Howarth's

recent work, and his views of this *Deus ex machina* of modern geologists, page 344. We quote still further from this article, in evidence of the biological history of America, as usually held by the scientific world; and to show how completely these generalizing periods have been crushed out by the discovering of the Ashley beds. The writer continues:

The almost total absence of domesticated animals from aboriginal America illustrates its zoölogical shortcomings. For man's selection implies superiority. The organisms intimately associated with him must possess something of the plasticity by which his own organism is preëminently distinguished. They must be capable of departing from the groove of wild nature, of meeting the exigencies of culture, of responding to demands for service. Native in a country without oxen, asses, sheep, horses, goats, or pigs, the red Indian was limited to the companionship of the dog, as represented by the shabby curs that snarled around Iroquois and Ojibbewa wigwams. The Aztec race, notwithstanding their highly wrought existence, were in this respect no more than on a level with the cave-dwellers of the old world.

These views of the writer are valuable

as showing a necessary connection between man and the domestic animals; that they aid him in elevating his pursuits, so that he becomes a keeper of flocks and herds, and not merely a hunter or warrior. It is also an argument for the presence of cultivated man on this continent; not "paleolithic" or "neolithic" man, with intervening cataclysm, or "prehistoric" man, but simply man as he was originally when surrounded with all the aids and companions of creature life needful to his instruction, assistance, and pleasure.

The evidences of man as contemporaneous with all other animal life are abundant in the eastern hemisphere; all which has been set at rest by Professor Prestwich, of England, who found axes in undisturbed deposit, associated with the bones of the great mammifers. And Sir Charles Lyell, on his fourth visit to America, called attention to the possibility of man and the extinct animals having been contemporary;

that he was shown the bone of a man found in a lake at the foot of a cliff in Mississippi, near Natchez, two feet below the skeleton of the megalonyx and other extinct quadrupeds.

In the museum of the American Philosophic Society of Philadelphia, Lyell was shown a block of limestone from Santos, Brazil, obtained by Captain Elliott, of the United States Navy, which contained a human skull, teeth, and other bones, together with fragments of shells, some of them retaining a portion of their color. Remains of several hundreds of other human skeletons, imbedded in a similar calcareous trefa, were dug out at the same place.¹

It is enough to say that evidence of this kind is superabundant and easily obtained. But had these evidences of contemporary existence only been found scattered over Europe, it would have been difficult to show that their fossilization occurred at one and the same time. The argument would have been that the process is going on always, at one place or another; and so all com-

¹ Lyell's Journey, II. 200.

parison as to change of animal structure would have been virtually defeated. Great stretches of time are demanded by "evolution" to sustain its theories of gradual selection. These stretches are now afforded without interruption by the western hemisphere, so far as fossils of three thousand four hundred years can afford them. They can, at least, show if any change has taken place in mollusk or muskrat, in ox or man, in deer or beaver, in horse or sheep, in goat or pig, in all that time. But above all, they show that the entire work of turning organic substance into stone was completed at the instant when the whole fauna of the Americas was destroyed.

The effect of the flood in America therefore set up a barrier against all theories of evolution, wholly impassable—a chasm in the process of thirty-four centuries. Such a gap amounts to an absolute extinction of all life forces back of it. Another limitation equally weighty was that in this fossil-

izing there was included every species of life that inhabited either land or water. The process changes the substance upon which it acts by displacing it with either silica or lime, by which all animal or insect or mollusk life, bone, shell, or flesh, becomes stone. It literally turns an animal into its own gravestone. The most delicate organism is transubstantiated by it without the slightest injury to its form, and so quickly that the life expression is secured before death sets in. The lens of an eye has been found perfectly fossilized, which existed in the very lowest formation, as geologists say, of articulate, organic structure, that of the trilobite.

It operates as freely upon whales and other creatures that live in the sea. Of the shellfish now living, and which are confined to the waters of the Atlantic, along the Carolinas, ninety-seven per cent. are found fossilized; two per cent. have been found in the West India

waters, and one per cent. remain as yet unfound.

In the Ashley beds are the teeth of the sperm whale, exactly like those now living in the Arctic Ocean. The facts show that of animals inhabiting land there are many more species fossilized than now exist, and all that now exist have been fossilized. The reader may have supposed that the marvelous process was only occasional, and occurred at intervals here and there; whereas it was as broad as the various species of created life, and occurred but once by the mysterious agencies that were let loose at the one great flood.

This imperishable record which God himself has set up of all his work, of all the creatures he had made, constitutes a wall of stone as high as the peaks of the mountains and as deep as the sea-gash between them, which cannot be passed by or dismissed or dissipated by any mere speculative thought of men. Jehovah has writ-

ten the history of the creation in stone and stored it away in the earth, to be discovered by man in the roll of the ages, to confirm the truth of his word and the cosmogony of Moses.

We are largely indebted to these flinty records for our knowledge of the wealth of creation. But for them we should never have conceived of the megatherium, of the myriads of herds of mammoths, of the countless herds of cattle that once ranged the plains of earth from the Andes to the Straits of Magellan, from the Rocky Mountains to Behring Strait, from the Pyrenees to the Steppes of Siberia, from the Himalayas of Asia to the lakes and mountains of Africa.

As they reveal to us the affluence of the creative days, so do they confirm the one storm of death that by the fiat of God engulfed the whole earth. They separate by death as well as by stone all that was before the deluge from all that came after.

These fossils run back to the beginning. They give the identical mold of creatures fresh from the shaping hand of the Creator. They tell what the elephant was when first made, so that if there has been any change in its form by any force since, it can now be easily ascertained. And if the theory be correct that a break in the current of animal life is always accompanied by a break in the succession of rocks, then there has never been but one; for in animal life there has been but the one—at the flood. A break in the current, but none in their original forms, which puts an end to those incalculable ages between species and species; for as the modification itself disappears, the periods demanded for it disappear also. This stony structure built of God, high as the clouds, deep as the sea, broad as the earth, cannot be undermined, pierced, or scaled by the theories of men, but abides in its integrity as the rock of Horeb and as the tables of the law written by the finger of God.

IX.

The Fossil Barrier.

THE provisions for making a permanent record of all the fauna which perished in the catastrophe of the flood is one of the great facts brought out by the science of geology. Such a provision existed for all creatures from the mollusca to the mammoth. In the extensive beds of gypsum under Paris, and in the yet more extensive beds of phosphate of lime in South Carolina, immeasurable teeth and bones of marine and land animals, and myriads of mollusca, of fresh and salt water, have been laid away in fossil by the Creator, that their record might be read by future generations of men as cuneiform slabs were deposited by kings in the chambers of Babylon. They constitute not only a history of all that perished, but of all that were created. Many of these creatures perished

not to be reproduced: animals of terrible strength and size, and millions of tiny shellfish, a thousand to a grain, with their numberless varieties, in which the creative energy seemed to disport in the affluence of its resources.

The variety of organic substance then, as now, displayed the handiwork of God; so, too, did the vast sum of inorganic matter, in the heaven above and the earth beneath. He who made all contemplates the work of each day, with its infinite distinctiveness and harmony—

The fair music that creatures made,

In perfect diapason—

as necessary to the one Sabbath as a divine rest.

At the flood every species of every class of living creature was fossilized and its remains distributed over the plains, upon the hills, and in the tops of the mountains, in evidence of what the earth was. The distinctness of species, classes, and tribes

was maintained in death as in life. Fossils give no witness to theories of selection and transition. Each creature in its sphere from the first gave its own statement of organic life. There were no earlier, no later; the trilobite, with his eight hundred distinct lenses, gave as good evidence of the presence of light, in his narrow circuit, as the large-eyed saurian that ranged the sea-depths for his food. However connected by a common vitality, the Creator has assigned to each of them its own place. There were many forms with the antediluvians which we have not, but since the flood there have been no additions to the world's fauna. In this all things continue as they were. We have the unrelenting record of fossil-bearing rocks, and of the Ashley beds, going back to the first hour of organic and inorganic structure. Nor can the endless cycles of the bit-by-bit theory of Lyell show aught to the contrary. Surely, if evolution had the least showing

in these records, it would be able, among the countless cast-iron facts, to bring forth some slight vesicle, some tiny shell unknown to the ancients, of some new species, toward the solution of the uniformitarian problem.

Shells, and particularly marine shells, may be called the time-medals of creation. Their comparative indestructibility, and the fact that the element in which their inmates live, which preserves their habitation when they die, make it certain that in them geology keeps her oldest, most complete, and most authentic record. (Argyll.)

Organized fossils are to the naturalist as coin to the antiquary; they are the antiquities of the earth. (William Smith.)

According to MM. Agassiz and D'Orbigny, all, or nearly all, the fossils of each formation are peculiar, very few species being supposed to have survived from one period to another. (Woodward.)

Yet in these the Creator has preserved the statement of mollusk life as it existed in the myriad varieties at the first. They are as distinct in their habitation now as they were then; most of them identical with

those that now live. Many have perished, but no new ones appear; not the shell, but the mollusk, has disappeared. Its life was limited; while it lived it only expressed the law of its life in the shaping of its dwelling. As a plant rounds its life into a fig, or a thistle, or a grape, but does not change the one into the other, so the univalve did not change into the bivalve, nor did one species invade the lines assigned to another. The tract upon which it must have moved, if passing its boundaries, has never yet been discovered; the link of transition is wanting in all these uncounted forms. The Creator said, not only to the ocean, but to each creature in it, "Hitherto shalt thou come, but no further."

It is as reasonable to suppose that a bivalve would gradually evolve into a whale as that an iguanodon would eventually come to be a member of the Royal Society.

Of nine hundred and fifty-seven species of shell fossils that occur along the Atlantic slope, there are

two hundred and eleven species that are in existence at the present time. Of the seven hundred and sixty-six species wanting, one should never have been known but for the fossilizing process passed upon them. The number of living and fossil species of each genus of mollusca in the world, so far as ascertained, are eighteen thousand five hundred and sixty-eight fossil, and twenty thousand five hundred and two living; so that a large part of the living are also fossilized. (Woodward.)

If we have all organic life, as now seen, stereotyped in these fossil records, is it likely that there exists any law of development? A force which claims to have existed latent for so long a period may not be relied upon for new forms in future. And yet there are theorists who say it will revive some of these days. The bow on the clouds, which secures us against another flood, is equally a security against any, the least, process of evolution.

The almost inconceivable suddenness of fossilization is admirably stated by Buckland (*Bridgewater Treatise*, page 233). In speaking of the fossil sepia, he says:

I might register the proofs of instantaneous death detected in these ink-bags, for they contain the fluid which the living sepia emits in the moment of alarm; and might detail further evidence of their immediate burial, in the retention of the forms of these distended membranes, since they would speedily have decayed, and have spilled their ink, had they been exposed but a few hours to decomposition in the water. The animals, therefore, must have died suddenly and been quickly buried in the sediment that formed the strata, in which their petrified ink and ink-bags are thus preserved. And [he adds in a note] we have elsewhere applied this line of argument to prove the sudden destruction and burial of saurians, whose skeletons we find in the lias that contains the pens and ink-bags of loligo.

His proofs go on the supposition that petrefaction was due to muddy invasions that destroyed and buried suddenly the creatures inhabiting the waters at the time of their arrival. This may have been, but the probabilities are that a much more rapid agent was employed in the combined work of destruction and fossilization, namely, that of electricity, which electrotyped the very act, as well as figure, of the crea-

ture destroyed. The finest lines of plants, shells, and insect life preserved show that an agent was at work which searched every cubic inch of sea and land in carrying out and in recording the death sentence that had gone forth against the world that was. Water is so excellent a conductor that the ocean at the flood must have glowed as a summer sea at night with electric fire.

X.

The Horse and the Flood.

THE place which the fossil remains of the horse occupy in these Ashley beds is in company with the teeth and bones of extinct fishes, saurians, and mammals; also with overlying and underlying marl beds containing more than two hundred varieties of fossil shells—of which a large per cent. are still existing.

Millions of horse teeth are in these beds. They are the ordinary teeth of the horse, only they differ in the enamel of the crown of the tooth. It is much more complex in its folds. This can be seen at a glance. It leaves no room for “accidental occupancy,” or for “fluvial changes and currents”; they are found *in situ*. By their very great quantity, the range of the horse is shown to have been equal to that of any

other animal. The continent must have abounded in horses.

That no horses remained in America up to the time of its discovery by the Spaniards is fully established; and that the present herds were introduced by the Spanish discoverers is equally so. This fact, therefore, proves that the catastrophe which destroyed the horse in the region of South Carolina extended throughout the two Americas.

The high organization of the horse brings it to the very latest "formation" of the Quaternary age; it is only less than that of man. Indeed, if any animal was ever made for man, it is the horse. It shares with man in all the conditions of his labor, his adventures, or his pleasures. Whether in peace or war, the horse is equally available for man's uses.

Yet in these beds the horse is of no later period than those gigantic creatures of sea and land which by theory have been placed

at the earliest times of the Cenozoic age. So the horse brings down to a very recent period all those extinct creatures which the scientific imagination has worked up into an evolutionary growth of millions of years. There are certainly two sides to this fact: either the mammalia are as recent as the horse, or the horse is as old as the extinct mammalia. If, however, the theory of Darwin be taken, we ask, How is it that animals so near in death were millions of years apart in life? There are as many fossils of one as of the other—equally as well preserved; in fact, the horse teeth showing a longer burial than those of the gigantic shark. The truth is, one hour made them, one hour destroyed them, and the one flood covered them.

With these deductions, which are not forced, we can appreciate the fact that Professor Agassiz spent the whole night over a tray of horse teeth, carefully examining their crowns, and in the morning exclaimed to Professor Holmes, “These old

bones have nearly made me crazy; they have destroyed the work of my life!" He saw rightly that they were thoroughly fossilized, and of antediluvian origin.

If all horses were destroyed in America, those of Europe and those of Asia doubtless shared the same fate. The horse therefore began a second line of production in central Asia, where the ark rested; and thence made its way to Arabia; thence to Spain. From Spain it was replanted in Mexico, and thence spread over the whole American continent, as at this day. The horse was here before the flood for sixteen hundred years; it has been here since not yet five hundred years. If all the genus had not been destroyed in America, this continent would have been a center of its reproduction as well as Asia.

XI.

Extent of Changes Wrought by the Flood.

It seems to have been the purpose of the Creator to give everything a fresh start after the flood; to change the fauna and flora, the metallic veins, the order of strata, the system of rivers, water channels, and thermal lines: all underwent a simultaneous reconstruction, adapted to the change wrought in the fortunes and constitution of man.

If the degree of depression was sufficient to cover this continent with water, it is not merely probable, but certain, that the same relative height of water would obtain throughout the globe; water being a fixed quantity, contractions of the land would be proportionally distributed.

The exact description in the Pentateuch of the flood gives its daily increase for forty days, until it covered the tops of the mountains. (1) “The waters increased and bare

up the ark.” (2) “The waters prevailed and were increased greatly,” and (3) “the ark went upon the face of the waters.” (4) “Fifteen cubits upward did the waters prevail, and the mountains were covered.” One hundred and fifty days they stood at this height. After that the fountains of the deep and the windows of heaven were stopped, and the rain from heaven was restrained. On the seventeenth day of the seventh month the ark rested upon the mountain of Ararat; and the waters decreased continually until the tenth month. On the first day of the tenth month “the tops of the mountains were seen.” At the end of forty days Noah opened the window of the ark, and sent forth a raven: then he sent a dove to see if the waters had abated to any extent; then, after seven days, he sent forth the dove again. And the dove came in to him in the evening, and lo, in her mouth was an olive leaf plucked off! He stayed yet other seven days, and sent

forth the dove, which returned not again to him any more. "In the six hundred and first year of Noah, on the first day of the first month, the waters were dried up from off the face of the earth. And Noah removed the covering of the ark, and looked, and behold, the face of the ground was dry." "And in the second month, the twenty-seventh day of the month, was the earth dried"; so that with safety Noah could go forth of the ark. One cannot conceive of anything more gradual than the rise and the fall of the waters; nor of a more minute record. It is not unlike the log of a voyage in its accurate dates and observations. In all the Scriptures there is nothing more historical and actual on its face than this record.

The hilltops of the earth, and the mountain tops of its continents, confirm to this day the truthfulness of these Scriptures. The abundance of fossil seashells, and fossil bones and teeth of marine monsters, scattered over all places, heights, and wastes,

mingled with those of the land, repeat the story of the flood, which is told with such graphic detail by Moses. The duke of Argyll, in speaking of the hills of the Snowden Range, says: "Old ocean has been there, and he has been there very lately. The Mael Trefantop, in North Wales, is covered with marine gravel, one thousand one hundred and thirty feet above the level of the sea; containing shells in abundance, all of existing species. Gravels with three hundred kinds of existing shells are piled up at elevations of two thousand four hundred feet above the Mediterranean in Calabria. Charles Darwin recognized the same phenomena on the vast continent of South America: the massive marine gravels of Patagonia—the recency of them; and the correlative destruction of the great mammalia. The geologists of North America report similar facts.

“ ‘Old implements’ have intellectually a double edge. They may serve to establish

the extreme recency of some great convulsion, far more than they tend to prove the extreme antiquity of the creatures affected by it." With an instinctive dread of this alternative, "vigorous attempts have been made to treat all implements bearing gravels as fluvialite—the work of existing rivers and the spoil of existing watersheds. But human implements have now been found abundantly in gravels which must have been at least spread and redistributed, not by rivers, but by the sea." "A depression of the land has taken place, according to Professor Prestwich, in England, great enough to swamp not only the greater part of Europe, but the greater part of the habitations of man all over the globe."

"Nothing can be more certain than that nature did not generate itself. The things which are seen were certainly not made of things that do appear. . . . What we call nature—ourselves included—must have had an origin and a cause. These are the ob-

jects of religion. Of two things we may be sure about theology: first, that there must be facts concerning it; secondly, that these facts must be the supreme facts with which we have to do. They may or they may not be accessible to us, but they must exist as realities—with all their dynamic apparatus, and with all their corresponding laws.” (Argyll.) He adds: “No man, however scientific, can be allowed to brow-beat our reason in coming to those conclusions which men of even ordinary understanding are perfectly competent to draw from facts which others have ascertained.”

XII.

The Mollusca and the Flood.

IN these Ashley beds there are mollusca that belong to the earliest strata of the Tertiary period—the polyparia, the brachiopoda, the bryozoa, etc.; yet side by side with them are the teeth and bones of the sheep, the horse, the deer, and the hog. The mollusk is no older than the horse; the deer as perfect as the nautilus; the ovis ammen as old as the chambered shell of the ammonite. If fossil shells are the time-medals of geology, they report the age of the dinotherium, the megatherium, to be as old as that of any mollusk. The soft fleshly animal, with its lamellated fringe and double shell, has resisted the flow of ages better than the large-boned megalosaurus, but no better than the muskrat or the beaver. Nor do the great sharks or saurians escape the storms of time any

better than the domestic animals: all have been fossilized, but the feeble creatures remain, while the monsters have left us only their tombstones to tell the story of their having once lived.

The number of species has dwindled perceptibly, while there has been no improvement in the organic structure. It is as perfect in the *Cervus Virgiannis* as in the *Megatherium Mirabile*. In the *Equus Fraternus* and *Elephas Americanus* we have as high and perfect structure as ever has been found in animal life. Yet these lie in the same bed with shells that are only one remove from the jellyfish.

Judging from the fossils of the Pliocene and Postpliocene beds at the Ashley River, so vast in number, no form of life is older than any other form, whether articulate or inarticulate; they all began and all ended together. Of these forms, if any now live, they revived elsewhere. These all died quickly and at once. The hand that made

them fossilized them, or else we should never have known of them.

In Maryland and Virginia, three hundred and forty-four species of fossil shells, in beds overlying the Eocene marl, were examined by M. Conrad, and he determined that fourteen per cent. were of living species. These beds were referred to the Miocene period of the Tertiary. In the final report on the geology of South Carolina, made in 1846, these beds were referred to the Pliocene period, a newer division of the Tertiary. Two hundred and three species are figured and described in "The Pliocene Fossils of South Carolina," published in 1857 by Professor M. Tuomey, of the University of Alabama, and Professor F. S. Holmes, of the College of Charleston, S. C. The following tabular statement is presented in this admirable work, published under the auspices of the state of South Carolina, of the extinct and recent species found in the

beds of New Jersey, Virginia, North and South Carolina:

New Jersey, of 170 species, 22 are recent=13 per cent. Virginia, of 160 species, 29 are recent=18 per cent. North Carolina, of 80 species, 27 are recent=34 per cent. South Carolina, of 203 species, 85 are recent=42 per cent.

Of these 957 species of fossilized shells, 211 species are known to be recent. "Recent" does not mean of later origin than the rest of the 957. They are all of the same age. There is not a scintilla of evidence to the contrary. All were fossilized at the same time, lay in the same bed. But 746 are only in fossil. But for the fossilizing process they would have perished historically as well as vitally. The 211 are not descendants or outcomes of the 746 dead mollusks. They were living together; only the 746 disappeared, and 211 remain.

The varieties of mollusca are not so many as at first; there has been a very marked decrease. Nor is there any evi-

dence of any change in those that remain that would indicate improvement. They therefore represent nothing but themselves. Time has not changed them for the better or the worse. It is a common inference that a fossil must of necessity be older than any living forms. The nautilus is living, but it is fossilized, and is found in formations of every age. We know all that there was in this department of creative power. The record remains to us. The Creator has seen fit to write the forms, if not the names, of his earliest creatures upon imperishable tablets. With this record before us, we may venture to affirm that *every species of creature has been fossilized that ever was created.* The remains found in Europe, Asia, Africa, and America fully bear out this statement. The idea that only extinct creatures have been let into the rock is a mistake. The Ashley beds abound in fossil teeth and bones of domestic animals, all the animals that keep near man and were especially

created for his comfort. They lie side by side with those fearful creatures which were made to keep down an overproduction of life—the police of the land and of the sea.

The attempt to prove that fossilizing still goes on is a failure. There may be a deposit, here and there, from saturated solution of lime or soda that leaves its film upon the surface of earth, or plant, as at the hot wells of the Yellowstone Park; but this is quite different from that solution of silica which at the flood seized upon every form and shell, whether at the bottom of the sea or on the shore, and that infiltrated the bones of the sperm whale with fluid crystal; very far from those electric currents that carried death in solution into every crevice of earth and every cubic foot of the ocean.

It is probable that after the diluvian storm, when all strata had fallen into their present position of order, or disorder, elec-

tric currents shot through all metal-bearing rocks and supplied the metallic veins with gangues of quartz and turned all organic substance into stone. The metallic veins determine this fact; for they pass through all formations, and fasten both veins and rock together in their present position.

The universal power of death implied a universal power of life. Without the flood we could have had no adequate conception of the power of Him "who spake, and it was done; who commanded, and it stood fast." That far-reaching sentence of death has alone given us a conception of the width of creation. Fossils do not grow—they only arrest decay, with the story of an existence written on them. These tell everywhere of a perfected creation, or nothing half-formed. In all the width and variety of their record there is no evidence of any transition from step to step, or advance from form to form.

If any creature survived this width of

death it must have been by miracle. Only by an inspired forecast could man possibly have prepared for a cataclysm so wide, so deep, so high, so long continued. The heavens and the earth were chained together by continuous lightnings; the tornado nipples moved incessantly upon the deep, plowed the highest plains of earth, and cut off the tops of the mountains. Only the ONE who made man could shield and preserve him amid this fierce strife of cosmic powers.

Human life probably tells the story of all animal and vegetable life. The falling off in the years of man's life would carry with it all that was tributary to that life. Time had something to do with the enormous size to which some of the mammals grew; but the slight change which we perceive in the horse, in the whale, and in the deer, between the flood and the present period, would indicate that between the creation and the flood but little change had taken place.

There is one statement in the first chapter of Genesis of marked significance: "And God created great whales, and every living creature which moveth, which the waters brought forth abundantly, after their kind, and every winged fowl after his kind; and God saw that it was good." The whales were created "great," as Christ created not bread only, but bread as from the hand of a baker—brown, cooked—not wheat, nor flour, nor leaven, nor barley, but bread for the table, enough to feed five thousand people; and "fish likewise," cooked, salted, cleaned, broiled. So "great whales," which came not from jellyfish, nor pushed their way up through ages of time, nor through oceans of crustacean insects, but were made great, out of hand, by the Creator, veritable monsters, mammals, adapted to the deep seas in which they were to live. They were the beginning of a long succession of mighty monsters. If a creature has not changed essentially dur-

ing four thousand years since the flood, it probably did not change in the sixteen hundred before. Of course geologists make small account of time, unless one speaks of ages; but fossils give no play to the imagination. Four thousand years would seem to be a sufficient gauge to measure by; surely there would be some scratches of the Workman's chisel in that length of time, if he were actually at work. But what if there be no traces? then the fair conclusion would be that nature is still at rest, that its wing is still folded.

Five or ten thousand years give but little progress in a movement that is so slow that we cannot see it. If the work of creation still goes on, its energy has greatly abated: for it has received, in one instant, in every department, a check such as can only be compared to the mighty word of an instant creation.

XIII.

The Nautilus Its Own Successor.

THE preservation of many of the inhabitants of the sea amid the universal death storm of the flood is as miraculous as the maintenance of many of the land animals by the ark of Noah. The power that created and afterwards fossilized them could also order it that a considerable proportion of the mollusca should reappear which had been the earliest occupants of the ancient deep. The *Nautilus Pompilius* not only exists at present in our tropical seas, but is one of those genera which occur in a fossil state in every formation. In a minute estimate of the design evidenced in the structure and life of this little creature, Dr. Buckland says (page 240): "We enter upon our examination of the structure and uses of fossil chambered shells with a preliminary knowledge of the facts that the recent shells both of the *Nautilus Pompilius*

and Spirula are formed by existing cephalopods.”

The various shells of the nautilus are remarkable for the beauty and strength of their construction. Its organization is of a high order and adapted to its home in the ocean, capable of sinking to the bottom or of rising at will to the surface of the deepest sea. It illustrates the mechanism of myriads of similarly constructed creatures long since swept from the face of the earth. The only organ connecting the air chambers of the shell with the body of the nautilus is a siphon which passes through a short tube in each successive transverse plate till it terminates in the smallest chamber of the inner extremity of the shell. This mollusk was one of the carnivorous cephalopods — one of nature’s police. It lived off the herbivorous mollusca, and roamed on the sea bottom for its food. “Species of this family are found fossilized at the elevation of sixteen thousand feet in

the Himalaya Mountains identical with those of the Lias at Whitby," in the formations of Europe and America, on the coast of Chili, and in the green sand of England and of New Jersey.

"It will appear," says Buckland (page 237), "on examination of the shells of fossil nautili that they have retained through strata of all ages their aboriginal simplicity of structure; a structure which remains fundamentally the same in the *Nautilus Pompilius* of our existing seas, as it was in the earliest fossil species that we find in the transition strata. Meantime the cognate family of ammonites, whose shells were more elaborately constructed than those of the nautili, commenced their existence at the same period in the transition strata, and became extinct at the termination of the secondary formations."

This evidence of one who may be considered the greatest of geologists is sufficient for our purpose, that is, to show that

existing mollusks are their own successors. They include all that they were at the time their ancestors were fossilized, and have added nothing since to the wealth of their order.

The trilobite leaves no successor. We have in the fossil remains of one of the marine crustaceans evidence of a high organization at the very earliest moment of fossiliferous strata. The trilobite has not been found in any recent strata, in nothing later than those of the so-called "carboniferous period." Their remains were distributed over the surface of the globe. They occur at the most distant points both of the northern and southern hemisphere. They occur in the Andes and at the Cape of Good Hope. (Buckland, page 294.) "The trilobite furnishes the most ancient example in the fossil world of the preservation of parts so delicate as the visual organs of animals that ceased to live many thousands of years ago." (Buckland, page 300.) "The struc-

ture," he adds, "of these eyes supplies an argument of high importance in connecting together the extreme points of the animal creation—the construction of an optical instrument precisely similar to that which forms the eyes of existing insects and crustaceans."

"In the trilobite each eye contains four hundred nearly spherical lenses fixed in separate compartments on the surface of the cornea. The form of each eye is nearly that of the frustum of a cone, incomplete on that side only which is opposite to the corresponding side of the other eye. This eye tells of the light of that period and of the atmosphere through which it passed, and of the clearness of the sea water which enabled a creature crawling on the bottom to see upward. . . . We do not find this instrument passing onward, as it were, through a series of experimental changes from more simple into more complex forms; it was created at the very first in the fullness of

perfect adaptation to the uses and condition of the class of creatures to which the kind of eye has ever been and is still appropriate. If we should discover a microscope or telescope in the hand of an Egyptian mummy, it would be impossible to deny that a knowledge of the principles of optics existed in the mind by which such an instrument had been contrived." Here are two marine creatures of wide distribution in time and space: both have been fossilized. One still lives, the other has passed away; both give evidence that their original structure remained, since they were created, unchanged. They establish a universal law of creation, applicable to all genera of which we have knowledge.

XIV.

Universal Destruction of Life by the Flood.

THAT one hemisphere could have been submerged without an equal disturbance in the other is not possible, if the law of fluids to maintain a fixed level be allowed in the calculation. M. D'Orbigny thought that the sudden rise of the Cordilleras would be a sufficient cause for the sudden movement of the sea which invaded all at once the continent. We present his argument in his own words:

My final conclusion from the geological facts I observed in America is that there was a perfect coincidence between the upheaval of the Cordilleras, the destruction of the great race of animals, and the great deposit of pampas mud. These three questions of immense importance for American geology and for the chronological history of faunæ may be explained by one cause, namely, the upheaval of the Cordilleras, to which we may perhaps attribute the analogous phenomena of which Europe has been the theater. (Op. 382.)

We quote this to show the calculation of an able scientist as to the general effect of submerging a continent. If we consider water the fixed quantity, as indeed it is, we can see that the plunging both Americas into the all-embracing depths of the seas must raise a corresponding flood above the highest mountains of Asia. It is equally certain that animal life must have disappeared as suddenly and as universally there as in the western hemisphere; this without the equally sure testimony of the fossilized ammonite found in the Himalayas, at an altitude of ten thousand feet.

If now the mammoth and the horse and all other animals perished as completely in the East as in America, how is it that flocks and herds and elephants and men are found presently abounding in all these plains and mountains of Asia, Europe, and Africa? Or, to narrow the question, how came it that anything survived there any more than here in the West? Why does life

reign there while death reigns here during the space of four thousand years? Men and beasts perished by the myriad in the vast heights and wastes of the one hemisphere, why not in the other? Where the ruin is continental, what could confine it? Where twenty thousand mammoths went down in one grave at one time, in the delta of the Lena, in the wide plains of Siberia, in Europe, or in the valley of the Danube, and in the vast area extending from Behring Strait as far as the Pyrenees, what could survive?

The escaping such a catastrophe was not the work of an hour. Only a prescience more than human could have divined such an event in time to prepare for it, nor could have prepared for it even if foreseen. Superhuman wisdom and superhuman strength were equally necessary. The huge hulk that stranded on Ararat is the only rational solution of this problem. Higher criticism might find ample room here to deploy its re-

sources. The facts are as certain as death, and as stern as death and time can make them. There is no room for imagination amid the fierce laws of warring floods. How did man outride a catastrophe that destroyed every mammoth distributed everywhere over both hemispheres?

In all the lines of sacred truth nothing is more exact and unromantic than the account given in Genesis of the warning and preparation made by God for man's rescue from this all-embracing flood of great waters. A hundred years were consumed in the immediate work of preparing a vessel that should be adequate for this great commission, of carrying the fortunes of the human family through a storm that reached from the foundations of the earth to the windows of heaven. The details of the architecture of this mighty craft could only have been carried out by workmen long accustomed to the ocean, and must be held in evidence of a wide commerce at that

early period of man's history. The proportions of the ark are those of the latest naval structures of England and of Italy, but larger than either—say about fifteen thousand tons. It was not only architecturally a model, and so recognized by the English Admiralty, but it was prepared for electrical conditions of the sky and sea altogether unknown before, nor likely to occur again after its one voyage. It was made thoroughly to resist the electrical currents that presently filled air and water throughout the earth.

Doubtless there is a great record yet to be revealed of the events which attended the wholesale destruction of animals and men in that hour of judgment. Now much of that fearful story is as silent as the cemeteries of the fossilized dead. But it was full of intelligent warning, of spiritual "striving," and of the divine intervention of the Spirit of Christ. Yet as with Cain, so it was with that world of unrelieved

wickedness—they heard not, they heeded not the voice of God.

The various items of historic interest in the building, loading, floating, and unloading of the ark are set down in the Bible much after the style of a seaman's log. During that long and stormy trip there was no room or opportunity for observation. Noah could have had no reckoning; there was no pilot but God—indeed, no helm; no method of relief for man or beast seemingly practicable. All went by miracle and an economy of creative power which it is hard to comprehend, but which sets forth God's unwillingness to disturb that creational Sabbath which he had instituted once and forever, and in expectant possibility of this very flood.

The Garden of Eden.

I.

Scientific Doubt.

THE instances of determined unbelief in well-established truths to which we would call attention are comparatively modern, but repeat the tenacity with which physiologists of the last century resisted the discoveries of Jenner and of Harvey. The first is that of German and English scholars to the one authorship of Homer; and to the literal existence of the Troy of Homer, long after Schliemann had unearthed the several cities which had been built upon the site of the Homeric Ilios, the second of which was "The Burnt City of Gold." After a ten years' war by his pen, the site of Hasirlik was proved by its discoverer to be the burial mound of the Troy of Achilles and Hector; even then the destructive criticism of Germany was dissipated only by the spade and pick.

The next instance is that war of French and German chemists and biologists against the discoveries of Pasteur: their bitter, persistent denial of his positive, delicate, and thorough processes, until, by the cure of disease in animal, vegetable, and insect life, he placed the amazing facts beyond controversy, and proved that the invariable cause of death was microbe life, and that there was no such thing as spontaneous generation. Yet until this day these results are ignored by many distinguished practitioners and medical schools.

The third instance of persistent theory in the face of a vast sum of inductive evidence is that of the school of uniformitarians among geologists, who still maintain the idea of creation without any natural intervention of power beyond that now going on; that is, that nature works uniformly from its beginning—granting the postulate of unlimited time.

In addition to the checks which Profess-

ors Prestwich and Howarth have placed upon this theory, there is now presented the discovery of the Ashley beds, with their rich deposits of all conceivable forms of life, fossilized, and *in situ*. "I know very well," says Mr. Howarth, in his "Mammoth and the Flood," "that every opinion and every judgment, however apparently immovable, is really at the mercy of some new and obstinate fact." This "new fact" may be found in these beds. They put an end to all theories of successive strata, with intervals of successive ages, the cosmogony of modern geologists.

Sir H. Howarth has established by incontestable facts, collected with much industry, "that the mammoth and its companions were finally extinguished by a sudden catastrophe, involving a great diluvial movement over all the northern hemisphere, from the Pyrenees to the Behring Strait. The evidence is not only ample, but it is evidence which converges from all sides; and there

is literally nothing on the other hand, save a fantastic attachment to a theory of uniformity which revolts against anything in the shape of a catastrophe. Nay, it is more than this, for the facts are too many for such a theory to be held rigidly. It is rather the predicating of one simple general catastrophe, constituted by a wide continental flood, instead of a complicated series of lesser catastrophes, involving violent changes of level, changes of climate, and deluges as well." ("Mammoth and Flood.") In commenting on this, a writer in the *Edinburgh Quarterly* (1893, page 355) says, very justly: "Approved principles in science have their drawbacks; once authoritatively laid down, they tend to stiffen into prescriptions; accepted by one generation, they impose themselves upon the next, and finally come to be regarded as a sort of touchstone of truth. What appears inconsistent stands, *ipso facto*, condemned; adverse evidence is rejected as irrele-

vant, or inconclusive. Difficulties are ignored, or smoothed away with easy phrases, and a specious aspect of completeness and solidity is thus given to an edifice of knowledge often reared upon insecure foundations.”

II.

The Garden of Eden.

THAT so many great events of sacred history have occurred on mountains would suggest that the site of the garden of Paradise was on a mountain. Moses saw the promised land from the heights of Pisgah; the law was given from Horeb, "the mount of God"; Aaron died on Mount Hor; Moses died in the heights of Mount Nebo (Deut. xxxii. 49); Christ was transfigured on Mount Hermon; the temptation was on "an exceeding high mountain"; the meeting of the disciples with Christ after the resurrection was on "a mountain in Galilee." (Matt. xxviii. 16.)

If Paradise was on a table-land before the flood, then this fact would disappear at the physical reconstruction of the earth's surface, by elevation or depression, directly after the flood. Eden was, as its name in-

dicates, a "delight"; all the excellences of all zones and products of all climates were originally found in this garden of God. It must therefore have included every degree of temperature.

From the sea to the City of Mexico there are successive elevations or plateaus which give all varieties of fruit: at Vera Cruz the cocoanut and vanilla bean; at Atoya, fifty-three miles farther, the ascent to the plateau of Cordova begins, a region of coffee, pineapple, and banana; eighty-three miles farther is the plateau of Orizaba, a region of oranges, tobacco, and cotton. From this point it is twelve miles to the Maltrata valley. From the Maltrata the ascent in thirteen miles is two thousand six hundred feet, to the plain on which the City of Mexico stands; a table-land three hundred miles in length and fifty in width, a region of corn, wheat, oats, barley, and the aloes, eight thousand feet above the sea, where ice is often seen.

III.

The Site of Eden.

It is probable that the wide plain about and near the city of Charleston, South Carolina, was once the table-land of a mountain ten thousand or more feet above the sea level. This is evidenced in part by the fossil beds which lie thousands of feet beneath the marine beds of marl under Charleston, and partly by the volcanic action which still continues the source of the earthquakes by which the table-land was depressed to its present sea level. This table-land was traversed by streams, swift-flowing or gentle, taking their rise in the highest part of the mountain, like those in the great plain of Mexico. The flow of these mountain springs to the sea would provide plateaus for an ascent from the temperature of the tropics to that of frost and ice. The great plain of Mexico is about three hundred

miles long and fifty wide. A plain of table-land of that length and twice that width would give all the conditions necessary to meet the region of "delight" in which the first man and woman were created: the Eden of Genesis.

A mountain site would explain the mingling of the fossil bones of sea and land monsters with those of domestic animals as found in the Ashley beds. It would explain that the waters were the last to retire from the point where they were at their highest during the flood; that is, from the table-land of a high mountain. Dr. Murphy, of Belfast, professor of Hebrew in the Assembly's College, in his learned and highly suggestive Commentary on Genesis, speaks of the statement that the waters of the flood had "prevailed exceedingly on the land, and all the hills that were under the whole skies were covered; fifteen cubits upward had the waters prevailed, and the hills were covered." He says: "'*Fif-*

teen cubits upward.' This was half the depth of the ark. It may have taken this draught of water to float it. If so, its grounding on a hill under water would indicate the depth of water on its summit. . . . The sobriety and historical veracity of the narrative are strikingly exhibited in the moderate height to which the waters are said to have risen above the ancient hills." (Page 194.)

The sum total of animal and vegetable life, with the exception of those in the ark, is here declared to have expired. "Then expired all flesh that creepeth upon the land, . . . all that was in the dry land died. . . . And the ark rested in the seventh month, on the seventeenth day of the month, upon the hills of Ararat. . . . And the waters decreased continually until the tenth month. . . . In the tenth, on the first of the month, the tops of the hills were seen."

The interval from the entrance to the

exit from the ark consisted of a lunar year of three hundred and fifty-six days and ten days, which makes a solar year of three hundred and sixty-five days. It is remarkable that both the lunar and the solar year seem at this early day to have been known. According to the Hebrew text, the deluge commenced in the sixteen hundred and fifty-sixth year of the race of man. (Murphy.)

Here is recorded a long voyage, whatever place was the point of departure, and in whatever direction the vessel went. HE was at the helm who knew all depths, all currents, all winds, all the terrors of an ocean whipped into fury for the ends of an almighty judgment.

THE CHARLESTON EARTHQUAKES.

For several weeks dating from August 31, 1886, a large part of the United States, embracing nearly all the Atlantic Slope and a considerable portion of the Mississippi Valley, was visited by earthquake shocks.

The starting point of these disturbances was in the Carolinas, and the city of Charleston and its neighbor-

hood were the scene of the most violent and disastrous visitations. . . . The *sound* which accompanied the tremor was a second element in the phenomenon. This came from below. It resembled the rolling of some heavy body over a floor, or the booming of distant cannon. Like the tremor, it was continuous, and became a long roar and grinding like ten thousand rusty chariots on a rocky road.

The destructive effects of the earthquake were mainly confined to Charleston and Summerville, South Carolina. Nearly every building in the former place was more or less damaged; many were demolished. Of the churches, scarcely any were left in a condition to be used. The wreck of private houses was terrible. . . . The terror of the unfortunate citizens cannot be conceived. Many of them passed the night of August 31, and several succeeding nights, in the streets and squares. Many persons were injured and some killed by falling walls. This visitation was the ninth which has occurred at Charleston since 1754.—*Maury's Physical Geography*, page 3.)

IV.

Age of the World—Eden.

I TAKE it for granted that the theory which places Eden at the North Pole brings it into America. Then I suppose the Arctic day of six months would be quite a windfall to those who want “more room” in the Mosaic account of “the evening and the morning” of the first day.

Now, suppose we bring Eden down South; say as far as Charleston, embracing the coast between the Santee and the Savannah, with its several rivers and inlets, between the thirtieth and the fortieth parallels of latitude. We have for it this much to say:

1. In and near the Cooper and the Ashley rivers there is a vast collection of the remains of the largest mammals, specially of their molars and vertebræ. These are remarkable for their variety; very huge,

very many, and evidently of many distinct species. We put this against all solitary individuals as yet discovered in or near the Arctic regions.

2. Besides those remains which, from the amount of silica in them, have resisted the action of time and acids, there are phosphate masses in which these molars are imbedded. Probably the large bones returned to their original source. Then there are scattered about small and large bowlders of the phosphate of lime, indicating at a greater depth a mine of this mineral.

3. This shows that these animals were not floated into this place by the action of sea currents, but were here from the first and found in the alluvial plains around, and meadows filled with bulbous plants, and an exuberant flora, their original habitat. Only a region supplying plants fed by a heavy phosphate pabulum could support creatures of such enormous bone.

4. As these several species multiplied from a single pair, masses of their remains would most probably indicate the place of their origin. Whether behemoth was made in Eden, we know that he was reviewed there, and there named by Adam. And the Almighty says, speaking to Job: “Behold now behemoth, *which I made with thee*; he eateth grass like an ox.”

These views, if correct, are still further strengthened by the building of the ark. As the race had not been separated by dispersion or language, it is to be supposed that Noah lived not very far from the original home of man.

The construction of a vessel at that time required the same conditions of material and shape now essential in naval architecture. Indeed, the dimensions of the ark are now those of a first-class sea steamer for freight, and are the standard proportions in the English Admiralty office. It was a long, narrow vessel, evidently de-

signed for speed and a long voyage. Had it been made only to start from a given point and float about for a hundred and fifty days, and then ground at no great distance from the point of departure, it would have been shaped heavy and square.

The timbers for such a vessel of length, over five hundred feet, required to be of continuous length and great strength. The cypress was entirely too brittle for the purpose. Its knees and ribs would require such wood as the live oak, grown near the sea, used to storms, and of a grain running every way, bearing equally well a strain from every direction. Large quantities of pitch and tar would be required for pitching it heavily both within and without. The word "*gopher*" means "pitch," "pine," and it is probable that the gopher wood was the wood of the long-leaf pine. I need not say that either of the Carolinas could have furnished the materials in abundance.

That the ark was built somewhat inland for convenience of timber, is probable. Yet not very far, as the principal weight of its cargo was to be graminivorous stock and large quantities of dried herbage, both of which were to come from meadow lands.

The breaking up of the deep, etc., at the time of the deluge would not necessarily imply any very great change in the conformation of the continents nor in the sea currents. We must also remember that the Lord at the creation had in view the possibility of the flood, as well as of the "fall," and arranged accordingly. When the ark was lifted up, and, as it is so grandly said, "went upon the face of the waters," it started due east if it started from near Charleston. It would presently strike the Gulf Stream. Floating on that sea current, it would take a northerly direction until it reached the fortieth parallel, and then would go due east, and, as many a helpless craft since, would come within sight of Spain

and Africa. But those coasts being submerged, there could be nothing to deflect the current, but it would pass over the plateaus of Spain into the Mediterranean, across the lower part of Greece, then over the plains of Asia Minor, and, still holding the same parallel, strike Mount Ararat. The distance from Charleston to Mount Ararat is one hundred and thirty-one degrees of latitude, say eight thousand five hundred and fifteen miles. The time the ark was on the water was one hundred and fifty days, or three thousand six hundred hours. Off Cape Hatteras the Gulf Stream has a velocity of two and a half miles an hour; this would leave very little to be overcome, if anything, when we allow for the uninterrupted flow which the current then had.

It is not likely that animals would be landed in any other than the latitude to which they were accustomed. They would determine the direction of the ark. The pathway of the ark, under this supposition, had

a blessing in it. Between the thirtieth and the fortieth parallels have sprung the great philosophers, warriors, statesmen, and discoverers of the race.

V.

Eden and Charleston.

THAT so wealthy a deposit of fossils should be found on the banks of the Ashley cannot be accounted for by the action of sea currents. The only other force is that of glacial agency, a theory that supposes the preparation of the earth for the habitation of man by ice processes, which enveloped all animal life in death long before man's appearance. The advocates of it, however, say that "the glacial agency is not recognized in the United States south of the Ohio River, and proofs of its action are entirely wanting in California."

1. Doubtless these fossils are of animals indigenous to the region where they were found. The statement of Professor Holmes, of Charleston, to the Academy of Natural Sciences of Philadelphia, is that there is on the banks of the Ashley River a remark-

able conglomerate of fossil remains, in deposits of the Post-tertiary age: "Remains of the hog, the horse, and other animals of recent date, together with human bones, mingled with the bones of the mastodon and extinct gigantic lizards."

They were all overwhelmed together by a common disaster. It is no great stretch to suppose that among the beautiful groves of Eden-land there were grottoes and cathedrals built by God, such as the Luray Cave in Virginia, with its clustered, fluted columns, its high Gothic arches, and even its organ pipes. The white phosphate of lime would have presented the material for such retreats of sufficient strength. In the hour of their alarm, men and beasts would have sought such shelter. Its vaulted chambers would have held their floating bodies free from the action of the flood until its subsidence. When at the end of the year the earth was broken in strata, and all nature disposed by God so as to throw over

man a deeper shadow and a shorter life, then the electric pulsations which visited Eden might break into pieces these remains of Paradise and mingle the bones of domestic animals and man with the mastodon and the saurian.

It is noticeable that Tournal and Christol, Schmerling, Austin, M. Lartet, M. Boucher, Dr. Rigollet, all speak of remains—found usually in the south of France—of the mammoth, the elephant, the extinct ox, in company with bones and implements of men, all in caves.

There are two facts of much import in the fossil deposits of the Ashley. They contain fossilized human bones, with the bones of the mastodon. The bones of *M. giganteus*, the mastodon, have been seldom found in a mineral state, though bones and teeth have been found silicified. This mastodon, in the opinion of Dr. Adam Clarke, is the behemoth of Job. It has generally been obtained from the alluvial formations

at a depth of from five to ten feet. We are not surprised at the discovery of a human bone, here and there, enveloped in stalagmites, with the remains of mammoth, rhinoceros, and other animals, which, under the drip of lime, might require no great length of time, but we seldom, if ever, hear of a fossilized human bone. Indeed, for a long time it was averred that there were none; and considerable stress was put upon the fact to prove that man lived long after these great mammals—maybe “thousands of years after”! Now we find that on the banks of the Ashley they lived together, and we can understand the true force of what the Almighty says to Job: “Behold behemoth, *which I made with thee.*”

2. Man might have been made as well on one side of the Atlantic as on the other, for he could cross over; and before the flood probably did. But how about behemoth? Elephants might have been carried, for they were serviceable to man and could

be gentled. The general character of behemoth makes it very questionable if he could have been gotten on board any craft. He is represented as "the chief of the ways of God"—the head of land animals, as leviathan was of the sea. And these two, behemoth and the whale, are the best known of all mammals. Whoever visited the Exposition in New Orleans will remember the consideration given to both of them. The mastodon, as reproduced by Mr. Ward, was standing in the gallery of the Government Building, midway, just in front of the principal aisle. He stood there as the lord of creation, his great tusks and head projecting well over the rail; altogether about the size of several elephants. If this was a faithful rendering of his parts, we can add to them the fierce consciousness of his strength: the largest, wildest, most invulnerable and dangerous of all that inhabited the hills or the plains. "He that made him can make his sword to approach unto

him." He could surpass the enormous speed of the elephant, having a greater stride. Strong as the inclination to migrate may have been in him, he could not have passed the barrier of the ocean between Europe and America. If he crossed over, he must have crossed by way of the Aleutian Archipelago, between America and Asia. Only "He that made him" could bring him before Adam in Eden.

John Foster, of England, says "that the sight of the first two wild or fierce creatures that came up of their own motion into the ark must have produced an effect upon the scoffers of that day only less powerful than the tread of an earthquake." We can well imagine that two enormous mammals would lead off in this sublime procession of animated nature at the bidding of the Creator. It was doubtless well to get them securely stowed away in their cribs at the very earliest moment, as on the other side, at the unloading, they should be the very

last to test the consistence of the new-made ground.

3. "Gold" has been found somewhere near the sources of the Santee and of the Savannah; possibly also the "onyx." The Pison, the Gihon, the Hiddekel, and the Euphrates doubtless gave their names afterwards to many "flowery," "falling," and "arrow-swift" streams in the land where the ark rested, and humanity began again its great flow: just as movers to the far West from the Carolinas are very apt to transport the names of the streams and towns left behind them to the frontier regions where they conclude to dwell.

VI.

The Fossil Record of Eden.

HOWEVER much imagination may float in airy vision over the site of Eden, there is none in the bones which lie just beneath its surface. To these matter-of-fact bones we now turn; for there is far more in them than the phosphoric acid of which they are largely composed. They, in fact, unlock the mystery of the ages, and drive back to its hidden source the destructive speculation of human philosophy.

Among the vast variety of them we first notice *the fossilized bones and teeth of man*. Their first discovery in these beds absolutely alarmed the discoverer. He records unconsciously the immediate effect upon his mind. He doubtless saw at a flash that one human bone *in situ*, in place, mingled with the bones of the mastodon and the saurian, was more than the lever of Archimedes,

overturning, as it did, vast theories of formation, whether Paleozoic, Mesozoic, or Cenozoic, and ended in an hour those carefully constructed solitary "reigns" of "fishes," of "saurians," of "reptiles," of "mammals," stretching through unnumbered ages to prepare the way for man. And in the same hour dissipated those "cataclysms of ice" and of "ice-born torrents," those "cave-bear epochs" and "reindeer epochs," those "ages of stone" and of "unground stone," as also the "bronze age," and the "iron age"; all of which, as it was supposed, served the long purpose of introducing a "prehistoric man"!

Recovering from the first shock of his discovery, Professor Holmes, with a carefulness which marks the true lover of science, presently returned with a friend, a geological expert, and the two together fixed its scientific value. This was in the year 1844. In 1867 Professor Kerr and Dr. Pratt discovered other human bones, a

jawbone with teeth, a thigh bone and a shin bone, in the same bed—"all of which we now have in our cabinet."

He was led to this discovery by the finding of arrowheads and spearheads in "out-of-the-way" places, which differed greatly in their general characteristics from those found scattered all over this continent. "After a careful study," he adds, "of everything connected with their discovery, the place and stratum in which they were found, and their remarkable forms, we were satisfied that they belonged to, and were deposited in, the same geological age to which the bones and teeth of the mastodon, elephant, rhinoceros, horse, and other land animals belong."

To do full justice to this important discovery we quote at length its history: "Not very long after finding the above-named relics of human workmanship, and while engaged in our usual visits to the Ashley bed, a bone was found projecting from the

bluff, immediately in contact with the surface of the stony stratum (the phosphate rocks). We pulled it out, and behold a human bone! Without hesitation it was condemned as an 'accidental occupant' of quarters to which it had no right, geological-ly, and so we threw it into the river. Alas! we have lived to regret our temerity and rashness. A year after a lower jawbone and teeth were taken from the same bed. Subsequent events and discoveries show conclusively that the first discovered human bone was 'in place,' and the beds of the Postpliocene, not only on the Ashley, but in France, Switzerland, and other European countries, contained human bones associated with the remains of extinct animals and relics of human workmanship, proving most conclusively that the Carolina specimens were found *in place*. These European discoveries were made ten years later.'

The fact is now fully admitted. The duke of Argyll says: "Latterly geology

and archæology have met on common ground—ground in which man and mastodon have been found together.” (“Primeval Man,” page 24.) That this is a recent item in geological calculation may be seen in the statement of Buckland in 1837: “No conclusion is more fully established than the important fact of the total absence of any vestiges of the human species throughout the entire series of geological formations. Had the case been otherwise, there would indeed have been great difficulty in reconciling the early and extended periods which have been assigned to extinct races of animals with our received chronology.” (Vol. I., page 86.)

Dr. R. P. Smith, in his “Scripture and Geology,” says: “Upon the whole, no evidence has yet been afforded by geology that man existed on the earth earlier than during the alluvial period.”

Hitchcock says (edition 1852, page 100): “Some writers contend that when Asiatic

countries have been examined the remains of man may be found in all the fossiliferous rocks, and that they do not thus occur in Europe and America because he had not spread into these parts of the world until a long time after his creation." But on this he observes: "Comparative anatomy shows conclusively that most of such animals as now inhabit the globe could not have lived when the same physical conditions existed that were necessary for the creatures found in the lowest rocks."

The same writer is arguing in respect to the twenty-four hours of the Mosaic day. He says: "By this theory existing species of animals and plants ought to be found mixed with the extinct species in all the fossiliferous rocks; for Moses describes only one creation of the different races. Now the fact that they are not thus mixed shows that they could not have been contemporaneous." (Page 285.)

It was on this supposed absence of the

bones of man that speculative cosmogonists ran wild in their estimates of creational periods and processes. The elimination of man from the record of the rocks was the virtual elimination of the Mosaic record from the work of creation. And philosophy was now at liberty to enter upon its own methods consistent with nature, as nature now is. A universe could now begin with the law of growth as far back as might be necessary—the farther the better; not with the narrow resource of a few thousand years, but with the full sweep of countless eons.

And it is curious to see the license of speculative creation—its diminutive beginnings, its "*Amæba princeps*"—"a lump of jelly from the gutter, without stomach, or liver, or heart, or breath, or head, or feet"—rather a hopeless start. Next in the procession of life comes the "epic of the trilobite." Then an interval of time in the history of the world, "when the scales

of empire hung balanced between 'fishes' and 'reptiles.' Fortunately 'nature favored the latter.' " In those ages, too, came the batrachian, frog-like creatures, some of them as large as an ox, leaping along the red sandstone of Connecticut, and leaving tracks that for a long time passed for bird tracks. Then came the "reign of reptiles" proper, unnumbered ages in duration; of ichthyosaurs and plesiosaurs, huge creatures having the body of a lizard, the conical teeth of the crocodile, and the biconcave vertebra of the fish, with which many other sea monsters divided empire, especially enormous seals, turtles, sharks, and crocodilians.

After this long drama of reptilian life, we are next introduced to the "reign of mammals—the megatherium, dinotherium, mastodon, and such like quadrupeds, moving supreme over the broad range of ages. Elephants and rhinoceri on the land, sea lions and hippopotami in the water." To

each of these "reigns" is assigned any period from ten thousand to one hundred thousand years—time being no object.

Then follows the "glacial epoch," then the "submergence," and "elevations" of continents. Before this is completed nature makes several pauses, "oscillations," in which the sea stands "perhaps for ages over districts that had been marked out as the dwelling place of man." The most pronounced of professional philosophers (Winchell) puts it thus: "Empires rose upon the earth and crumbled in succession to decay a thousand ages before the foot of Adam had pressed the soil of the Garden of Eden. A series of dynasties flitted like shadows over the face of our planet and disappeared beneath the dim horizon of the past while the empire of man was but an idea dwelling in the Almighty mind."

All this is, in the interest of creation, made easy—to prepare the way for man;

in fact, to prepare man. He is the ideal toward which all nature moves, and all nature expects—by the way of the gorilla, and by the thumb of some preadamite African that has a tail, if possible, shorter than a rabbit's! But it takes time to do it. Lyell says eight hundred thousand years, Haeckel twenty thousand, and Mortillet two hundred and thirty thousand. "Cuvier," however, says Bishop Gleig, "has clearly proved that the human race cannot be much more ancient than is stated in the writings of the Hebrew lawgiver."

Is it not pitiful indeed to see humanity so degraded in its ancestry, embracing all the brute and reptile horde in the source of its life, and to be assured that this is the testimony of nature through all the strata of her history? And is it not painful to see intelligent Bible readers staggered at this enormous *reductio ad absurdum* of philosophy, to read their apologies for the Mosaic record, that self-luminous revelation of the

Infinite One "who spake and it was done, who commanded and it stood fast"? Surely the image of Him whose manhood is now a factor eternal in the divine subsistence, who was at the first made after the sublime pattern of his own mind, who is the center of the universe, "the first and the last," may not be degraded by his creatures, even in their philosophic speculations, with impunity. Will he not rather suffer them to walk in the light of the sparks which they have kindled until these go out, and the light that is in them becomes a great darkness? But as soon as man's position as chief contemporary among all fossils of all periods, of all species, of all strata, and of all successions is recognized, then do these creational epochs, agencies, and evolutions "melt into air, thin air," and the fabric of their vision, as an insubstantial pageant, is dissolved.

It would seem as if God had summoned all his creatures by the one fiat from the

deep and from the waste to this basin of the Ashley, that he might bury them, and that he might write in their fossilized remains the epitaph of a world created and of a world destroyed "by the breath of his mouth."

Next in import to the bones of man are those of the horse, man's comrade on the field of battle, in the field of sport, and at his daily toil; specially as they are here found mingled together with the bones of extinct quadrupeds. This is clearly stated in Wells's *Geology*, page 293: "At the time of the discovery of the American continent, the horse was unknown to the natives—the horses now found wild in North and South America being undoubtedly descendants of subsequent European importations. Yet the bones of the horse are found fossil in the very latest Tertiary deposits of the United States, and seem to warrant the inference that the species having been called into existence upon this continent died out, and was then re-

newed from the old world by the agency of man.”

The saw-like teeth of the great shark occur in these beds in vast numbers. Had the beds been “elevated” after the fossilization of the bones of marine animals, they would have been covered with a stratum of *globo cerina*, an unctuous mold, separating them from the bones of gigantic land quadrupeds. But they are all alike mingled and covered with alluvial sand to the depth of two feet from the surface, doubtless washed upon them from neighboring sources. There is nothing among fossils older than sharks’ teeth, nothing more uniform; and they are the same shaped teeth that are found at present in this fierce creature. Its age and size may be determined by its teeth. Every two inches represent thirty-seven feet in length. “Out of forty thousand taken from the Ashley basin and examined by us,” says Professor Holmes, “the largest specimen was six and a half inches

long, four and a half wide, and weighed two pounds." So that the enormous size of these carnivora belong to the earliest ages of life when organic forces were richer and higher than at any subsequent period. They existed to check excessive increase of lesser tribes. These deposits carry us back to the creation. They have lifted the extinct gigantic vertebrated monsters out of their supposed antiquity and made them coeval with man. Their being found so near the latest surface breaks up all supposed connection between the position and the age of strata, showing that the order of place is not an order of time—that the deepest places of the earth are of the same age with the highest, which is confirmed by the fact that the metallic veins with their gangues run through all strata equally.

The theory which begins the universe of life from a single invisible point finds no support here. Of all figments it is the

weakest. On the contrary, organisms were never more numerous or elaborate in their structure, never huger, more active or multifiform, than at the first hour of creation. And never was there a moment of earth's history in which the form of man did not appear preëminent, perfect, and divine in its power and character of expression, moral, spiritual, or physical.

We find a strong confirmation of these truths in the views of the two foremost of living physiologists. Dr. James Martineau, in his "Modern Materialism," page 179, says: "To suppose that by pulverizing the world into its least particles, and contemplating its components where they are next to nothing, we shall hit upon something ultimate beyond which there is no problem, is the strangest of illusions. There is no magic in the superlatively little to draw from the universe its last secret. The inorganic and unconscious portion of the world, instead of being the potentiality of the or-

ganic and the conscious, is rather its residual precipitate. In advancing this speculation, I only follow in the track of a veteran physiologist and philosopher whose command of all the materials for judging is beyond question—the author of ‘Psychophysical.’ Fechner insists that protoplasm and zoöphyte structure, instead of being the inchoate matter of organization, is the cast-off residuum of all previous differentiation, stopping short of the separation of animal from plant, and of sex from sex, and no more capable of further development than is inorganic matter, without powers beyond its own of producing organization. And, far from admitting that the primordial period had few organisms, which time increased in numbers, he contends that the earth was formerly more rich in organisms than now, and that the inorganic realm has grown at the expense of the organic.”

If there were any “prehistoric” instant in the world, it is not indicated in these

Carolina beds. For where man is, there is history, specially man fresh from the hands of his Maker. If the records of Moses are not sacred, they at least are human. They go back to the "beginning." Speech implies a perfected beginning, and writing implies speech. "The first beginnings of human speech," says Argyll, "must have had their origin in powers of the highest order. Man's first speech was of God, and with God. That of itself implies a wealth of endowment the most comprehensive. It establishes the highest rank of spiritual and intellectual being as man's possession—that he was made in God's own image."

As the spade and pick of Schliemann pierced through stratum after stratum of earth that covered ancient Troy, and dissipated the destructive theories of German scholarship by striking the very gates of the city, and thereby confirmed the truth of Homer, so does the uncovering of these long-buried remains of the flood, on the banks of the Ashley, confirm the truth of the Mosaic record.

VII.

Eden's Final Drama.

WE have at last secured a firm footing on the banks of the Ashley—the first that has been found for centuries—upon the fossilized relics of the original home of man. Here we can make a stand for the Mosaic record against the speculations of those cosmogonists who toss the history of creation about as a kitten plays with a ball. These relics tell a wonderful story. As far back as 1850, Professor Agassiz pronounced the remains of marine vertebrata in the Charleston basin to be “the greatest cemetery he ever saw.” And Professor Tuomey’s report said: “The most remarkable feature of the fauna of the period of the deposition of these beds was the vast number of cartilaginous fishes. It would seem as if about the close of the Eocene period these voracious monsters, conscious of their

approaching end, had congregated here to die." At that time but few specimens of the remains of quadrupeds had been found upon the Ashley. Collectors had been searching in the marl beds, not in the overlying beds. Since then a vast deposit has been uncovered of fossilized bones and teeth of mastodon, megatherium, dinotherium, elephant, deer, horse, cow, hog, muskrat, intermingled with the remains of marine animals and the phosphate nodules.

These phosphate rocks and fossils lie intermingled but two or three feet below the surface and nearly parallel with it, extending over many miles, yielding an average of over six hundred tons to the acre. They contain sixty per cent. of "bone phosphate." The working of these beds has come to be an industry of amazing proportions. As much as 432,757 tons have been taken out and shipped this present year, and during the past eight years the enormous sum of *two million three hundred and forty-six*

thousand one hundred and forty-three TONS. The whole tonnage of lake, river, and ocean steamers in the United States is 1,221,206 tons. So that the product of these Carolina beds would have loaded them twice over with full freights. Large ships and steamers and fleets of dredges and flats are employed in the working and exportation of this fossil and phosphate wealth. Millions of dollars have already been realized from this burial place of the antediluvian world. The beds are exhaustless, far more so than the Siberian deposits of gigantic elephants, great as they have proved to be.

We naturally inquire, Where did this mass of bones come from? They once lived. How did these herbivorous and carnivorous herds meet together—these marine and land creatures? What sound called them? They must have lived together, to have been buried together. How is it that the more domestic animals, which

are always found on the outskirts of men, if not with them, are also mixed with these saurians as well as with the huge mammalia? How came it that they all sleep high and dry, near the very latest formation, and within three feet of the earth's surface? Nor could they possibly have been floated here. They are *in situ*, "in place"; where they fell, there they lie. Had such a float started from the shores of Europe, it must have speedily been strewn over the waves and found its rest in ten thousand distinct burial places at the bottom of the ocean. On the other hand, how could the huge, swollen carcasses of quadrupeds have been detained in one spot until their remains could form an evenly-disposed stratum and be covered over by red and yellow soil?

The Noachian flood doubtless did its share of the work, and that quickly, with these and all air-breathing creatures that inhabit the land. Yet in these mighty records, which no mind, however speculative,

can afford to pass by, there is disclosed a history which must have preceded that universal disaster.

As these creatures of field and flood were widely scattered over the waters and the estuaries of the continent, not only for subsistence, but by the laws of their distinct natures, the imagination of man cannot supply a satisfactory theory for their simultaneous herding just before the instant of their destruction. Within a limited area, those who heard the first mutterings of the universal storm, and were near by on the hills, would seek shelter in grots and caverns, in company with man himself. But the action was too rapid, too wide, and, in the nature of such overflow and pluvial torrents, after the first half hour there was no opportunity afforded man or beast for flight. So, whatever means was employed for massing these herds, it must have preceded the flood by many weeks or months.

The buffalo slowly started its long lines of movement, and came in thousands to the appointed place of rendezvous. The huge bulls and cows of the elephant took up their stately march as to a funeral; the elk of vast strength and width of antler; the light-footed deer; the lion, with lordly gait erect, one of God's police; the cautious, soft-stepping tiger, his rage for blood hidden beneath the beauty of his skin; and all the lesser tribes of creatures—the boar with foam upon his tusk; the furtive wolf, now walking meekly in line with flocks of fleecy sheep; the bearded goat, with port of dynasties unborn; last of all, the horse, with quivering life restrained—all these and many more, as if by preconcerted signal, converged to the one center. Why not? They were about to leave their bones, at the bidding of their Maker, upon the plains of earth, or else to contribute the noblest of their kind to a world that should come after.

Doubtless instinct had brought the older individuals of them more than once back to the first center of animal life, to enjoy its salt licks and its luxuriant herbage, well charged with grateful phosphates, until the motion of herds had marked traces and lines of travel reaching far away from the precincts of Eden to distant pasture grounds.

Along with these there could have been seen flocks of birds stretching their flight from every quarter of the heavens. The wavy columns of the snow-white swan, crimson-plumed flamingoes, screaming eagles with light-devouring eye; the strong-winged goose, in his flight filling the sky with clarion call; the brilliant, noisy parrot; the richly-colored bird of paradise; the tiny humming bird, as flecks of sunshine waltzing with the flowers; the peacock, trailing his gorgeous wealth; and pigeons swift of wing, ever at the service of man, and among them the very one that by and by brought out of the ocean's waste an

olive leaf! These lighted, or rose or circled over these beautiful plains of tropical verdure, dotted with islands of richly-laden fruit trees and forest growth that still remained to man.

We can scarcely surpass the truth in trying to paint the life and color of this part of the home of the race, originally planted by God with every tree that is pleasant to the sight and good for food, as it gleamed under the golden haze of its setting glory. Nor of the event about to happen would it be possible to surpass the reality in attempting to realize the minute ordering and preparation which the Divine Prescience outlined in his direction to Noah. And when the final hour came everything was ready and went forward as if by the exact weight and measure of a creative purpose.

The extended plain of table-land and surrounding hills of Eden formed a basin destined presently to become the scene of

the great catastrophe and the evidence of the truth of sacred history. Through the center of this fertile plain there ran a clear, wide stream. The entrance to it was bounded by cliffs whose walls rose sheer, and whose heights were crowned with beetling crags of opal, amethyst, emerald, sapphire, and chrysopterus—the angel-guarded ramparts of Paradise, where, it was thought, might be seen at sunrise and at sunset the sword of the cherubim shooting its lines of fire far out on every side. And when the night set in, the fire of God, in jagged maze, flashed continuous behind the clouds that circled its top. And at the deep hour of midnight some thought they heard the wheels of a thousand chariots, spirit driven, raging round its heights; but others heard a thousand golden lutes with organ pipes, and, at intervals, voices crying, “Holy! holy! holy! holy!”

Doubtless numerous parties of armed herdmen, mechanics, and thousands of

others, came from the neighboring port to see this marvelous gathering of beasts and birds, who saw the inspired procession of life, wild and tame, as it moved in majestic tread and order, self-segregated and self-divided into bands of sixteens and fours; the great males in front and the females following, and lowing for their young now left behind forever.

The primeval year commenced about the nearest new moon to the autumnal equinox. The rains began the 17th of the second month, say about the 8th of November. On the 1st day of November, by the command of God, Noah began to take in the live part of his cargo. The stream of moving beasts and flocks continued for one week. The birds circled in from above, all excepting the firm-stepping ostrich, who went in by the gangway, until the three decks of the mighty craft were securely stowed and the hatches fastened down. It was on Friday that the labor of the week

ended—yes, of a hundred years. Noah had placed his wife and sons and sons' wives on board. As a preacher of righteousness, he had warned the vast crowds that from time to time gathered to see the world-famed structure, and, as they thought, the immeasurable folly of an old man's life. The Spirit of Christ was with him, until one window after another of the proffered mercy closed upon them, and judgment alone remained.

Meanwhile, though stunned by the silent column of creatures which mysteriously confirmed the warning, yet, as the sun never shone fairer nor was the earth ever more solid under the tread of daily life, they rallied each other with timbrel and dance near the ark until the very day that Noah entered it, and up to the very hour when its door was secured by the Divine Hand.

Then, in a few moments after, the wind moaned, the sky darkened, and nature gave signs of universal distress. The tor-

nado was already on the wing; all around its dark nipples lowered. The crash came; floods fell in huge waterspouts; the sea came in; the waters rose thirty feet in an hour, and so continued every hour for forty days and forty nights. The work of death was swift. All that breathed the air died, old and young, man and beast, from the mastodon to the mole. For the most part they were choked where they stood, not knowing whither to escape from the all-surrounding waves.

Presently marine monsters, the huge carnivorous saurian and the yet more terrible shark, were borne in. The color and scent of blood brought them in shoals. They found the feast prepared for them, upon which they gorged and fattened month by month. In two hours the plains of Eden became a lake covered with the bodies of quadrupeds, birds, and men. The cutting dorsal fin of gigantic sharks flashed everywhere, leaving behind them a crimson wake.

Huge land carnivora and sea monsters closed in the unequal death grapple. Every hour brought in fresh schools of saurians, squalodons, sea lions, and huge crocodiles. Here they stayed and fattened upon flesh, and the Eden of man became the habitat of gigantic creatures of the sea.

When by and by the ark grounded upon Ararat, then the waters of the flood retired more swiftly than they rose. The vast congregation of sea monsters, detained too long upon the feeding grounds, were stranded by the rapid exit of the water. They, too, must needs encounter the death struggle at the end of the catastrophe, as the creatures of the land had at its beginning. All their bones were mingled together and formed the greatest of cemeteries on the banks of the Ashley.

It was probably at this period of reconstruction and subsidence that the high table-land of Eden, the parterre of heaven, with the groves of glory, where Adam and

Eve ate and drank before God, now disappeared, with the other features of that part of Eden, Havilah, Ethiopia, the "Cedarn" Assyria, circled and watered with rivers; those streams whose strands were gold and pearls and gems, all, all disappeared, leaving us only their memories and their names. It could no longer now be said "the nearer the ark the nearer to Paradise," for the ark rested on a far-distant shore, where, in the Orient, the world began anew, with new divisions of the human race and of human language, and with new centers of animal life.

VIII.

The Genesis of Eden.

IN approaching an unknown region we are greatly tempted to enter it by the charmed woodlands of fancy. Metaphysical speculation has had full play in its effort to realize the origin of all things. The ancients and moderns have met in the solution of this problem. The fortuitous concurrence of atoms was a favorite theory with Roman philosophers, which draws from Cicero his admirable answer: "Si mundum efficere potest concursus atomorum, cur porticum, cur templum, cur domum, cur urbem non potest? quæ sunt minus operosa et multo quidem faciliora." ("De Natura Deorum," lib. 2, 37.)

To make a beginning of the universe has been the perplexing problem. What seemed easier, if the germ were almost invisible? But, in the language of Mr. Burt Pope:

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“The Scripture precludes any other doctrine than that of an absolute creation of all things by the direct act of the Divine will. It omits any allusion to preëxisting forms of matter, animate or inanimate, out of which the present universe was through long periods developed. Physico-theological speculation may interpose universe after universe, to carry up the continuity of cause and effect nearer to the final source; but at length it must come to the unsearchable chasm between phenomenal things and the eternal essence.” (Page 366.)

“Thou hast made heaven, the heaven of heavens with all their host, the earth and all things therein, the seas and all there is therein, and thou preservest them all.” (Nehemiah.)

The thought of a completed beginning did not enter the minds of the Grecian philosophers. Therefore there was nothing finished in creation—in fact, no creation, only a womb-product that had elements of

further development; only an analogy suggested by processes of growth, no new idea even, that is, a something made out of a nothing.

The difficulty of conceiving substance as starting up and out of an absolute void inheres in our native feebleness of thought. We cannot even fancy such a thing: much less can we conceive of a world solid, full of forms, of vegetable and animal life, of metallic and earthly structure, springing into existence, whirling on the soft cushions of an invisible attraction, and moving off on a pathway accurately defined, at an enormous speed, all suspended over "the empty place." What human mind can realize this even *after* the fact? Surely none could before. And yet there is no fact more certainly ascertained. By weight, measure, and number, it is proved, forever proved. That such full-orbed substance, endowed with such harmony of movement, should come into actual expression, and

continue without change, or hesitation, or decadence of regular flight, for centuries, adding days to days, months to months, years to years, unwearied itself while giving to all else the abiding rule of time—itself the permanent standard by which the subtile movement of the ages may be measured—surely all this is as incomprehensible as it is vast, and vast as it is real.

That it could have had *no* beginning, is the other impossibility of intellectual conception. If life had a beginning, mere substance must have had. Of the former truth we are conscious; so that we feel that the latter must also be true. Overwhelmed by the fact of one world, what of a system of worlds, equally as large as this, as round, as swift, as luminous? “Where can a creature hide?” The tremendous sum of realities which press us on every side, and as if they were made to press upon us the stupendous truth of that universe which is not of us, but outside of us,

which weighs us down into our own superlative nothingness—surely it is well calculated to make us ready to receive from some higher source, maybe from Him who created us, the explanation of how and when all came to be that is.

This it is which the book of Genesis furnishes: written by Moses under the direction of the Holy Ghost. And we may now approach the sacred precincts of the first Eden through the sublime arches of the divine treasure-house of verbal inspiration. There is in the first chapter of the Bible the whole formulated glory of creation. The internal grandeur of these records carries with them the evidence of their origin; of that “wisdom” which was “the beginning of his way, before his works of old; which was by his side, as the Architect of the world, rejoicing before him day by day; when he set up the heavens, and decreed a compass upon the face of the roaring abyss.” But in its first verse, as in a proem,

there is contained the fullness of God's essential nature, and the sum of all the terrestrial, celestial, and heavenly phenomena of his mighty hand.

The last analysis of power is speech, as also its first expression. The Word, the still small voice; not the invisible wind or the visible fire, or the felt throb of the earthquake; in these God was not, but in the Word he was; not in phenomenal power, but in essential. The Word—"He spake, and it was done!" Nothing else? Yes, lightnings: "Canst thou send lightnings that they may go and say unto thee, Here we are?" If they go and come by his Word, then surely the Word is the last analysis of power.

The speech of God is next to God—without the Word, not anything was made that was made. So near is it, so much is it of himself, and like himself, that it is itself personal, an Eternal Personality, the Son of God. It is not merely an expres-

sion of power, but an existence of power, consenting, acting in perfect accord with, and producing the exact image of, the Divine purpose.

St. John opens up to us the deep secret of the creative process: the combined will of the Father and the Son as realized in the energy of the Word. That "Word," by whom St. Paul says "all things were made, whether visible or invisible, whether they be thrones, or principalities, or powers, or dominions; all things were made by him and for him."

All which lay imbedded in the first verse of the first chapter of Genesis, out of sight to Moses himself. In the plural form of the Hebrew there was in the very name of God a statement of the nature of the divine subsistence; nor was it revealed to any prophet, priest, or king, however holy and well informed, from Job until John; until Christ himself, at the last hour, and after his resurrection, revealed it to his disci-

ples: the Father, the Son, and the Holy Ghost, as the sublime persons of the Godhead; in whose eternal name he ordained that all nations should henceforth be taught and baptized.

So, too, in the second verse there was hidden a mystery fully as great: the personality of the Holy Spirit, who moved over the face of the deep, and threw upon it the shadow of his own glory; in advance of the creation of light; embracing all its floods and preëmpting them by the presence of his holiness, eternal, vital, infinite, as his own hallowed possession.

There could not be stronger evidence of the fullness, accuracy, and faithfulness of these records than that they held truths to be revealed in the roll of the ages, the existence of which was unknown to Moses by whose pen they were written; the light of whose inspiration was withheld in its height and depth of meaning, but reserved for those that should come after. This volume

of hidden truth, be it also remembered, was upon a subject greater than that of creation—upon the nature of the divine subsistence, and which held in its evolving the dispensation of the Son and the administration of the Spirit.

We may therefore receive implicitly the very words of Moses in this divine record. At every step it transcends every possible preconception of the human mind. The order of the creative work is confirmed by all subsequent discovery, not excepting the sandstone tracks in Connecticut. Yet before the sun, the evening and the morning are said to be “day the first.” Certainly that could only have been written by an inspired pencil. The first four days were God’s days. They carried with them their own measurement. Still these days had their duration in the Divine mind. They lacked not in precision, though the sun and the moon were not as yet charged with notching the thin space. He who moves

by law reveals to us that these four primal days were "days," as fully as those which afterwards were marked by solar evenings and mornings; they were days, mighty days; accurate as the flow of time, though as yet they belonged to the eternal spaces of the Godhead. Stupendous in labor, infinite in results, each had its programme painted on the Divine mind. Each was uttered in prelude by hosts of angels, with choral response, and each was completed and framed into the fixed law of its continuance. "He spake, and it was done; he commanded, and it stood fast."

Without a definite beginning there could have been no definite completion of the work. Not only once, but again and again, the element of time is introduced by God in his creative fiat; it is the limit without which we could not conceive of the work itself; hence the struggle against the precision of the Mosaic cosmogony. This checks all speculation as to an infinite be-

ginning and an infinite development, which practically ends in the eternity of matter. Take away the act of creation, positive, definite, complete, and you take away a personal God, and that leaves God out altogether. "Nature" alone remains, which is agnosticism, which is atheism.

God created, and created in time, not before it. As the laws of his moral universe were thundered from Sinai in "ten words," so the laws of his natural universe were given forth in the ten fiats, "Let there be." "His works were finished from the foundation of the world." The full round beginning assures the full perfect completion of the great work. If there is anything finished, done, completed, it is certainly this world of birds and buds, of dew and diamonds, of winds and clouds, of day and night, of spring and autumn. No cocoon, or siliceous sponge, or spray, or leaf is imperfect; nothing is fragmentary. As far as the microscope can pursue crea-

tion, all is rounded and finished; the farther, the more perfect—wonders increasing at every step. And as far as the telescope can follow his hand in the garniture of the heavens, to Arcturus or Orion, to Sirius or the Pleiades, or where “his Spirit formed the crooked serpent,” where the arches of space are literally peppered with suns, even there the work of the Holy One is perfect in every line of movement, every gramme of weight, and in every beam of the spectrum. We are now in the midst of God’s creational Sabbath, as declared by every voice of nature. “It stood fast.” The seas could not overleap their bounds, nor could the mighty creatures in them leave their habitations. Myriads of beautiful forms floated on the air, as on an upper sea. The light flashed on wing and scale, and all the waves laughed in the sunshine. The clouds moved about, carrying the glory of God as if direct from his throne, filling every landscape and flood

with a sense of his presence. The thunders of a thousand flukes, sporting on the deep, mingled with the ocean's ceaseless octave as it raged on stormy coasts. Vast forests lifted their heads to the sun, darkened with vines, or bent under richly laden boughs, the beautiful home of feathered tribes. Extended plains, on which browsed herds and flocks; where the tall grass waved in billowy gold beneath the autumnal wind. Brooklets, gathering drops from mossy heights, leaping, hiding, darting on toward the stream, now restless, now gentle and clear, which moved by easy curves, as a thread of silver, through rich meadow lands, flashing its way toward the sea. Here and there hoary mountain tops aided the sun, with dome and needle, to lighten up the distant valley. Cataracts, awful as Nyassa or Niagara, break their beryl columns in muffled cadence, filling the air and earth with ceaseless pulses of terror. Above all, the cerulean arch of ever-enduring mercy,

with its all-satisfying depth by day and its myriad glowing sentinels by night, kept its unwearied watch against the hosts of darkness.

There was a time—an hour—when the world was not; yes, we may say, an instant. Then came the instant when it was. What then? It moved not. There it is! On what does it rest? what holds it up? Emptiness of space—nothing. Now it moves! It required a power to move it great as that to create it. It moves sixty-five thousand miles an hour on its orbit. But after the first hour it requires the same force to hold it up and on—in fact, every moment the same; so that creational energy is being repeated continually. Why, then, should we hesitate to believe that the world was made by a word? Some of the fathers thought that an apology was in place, that it should have taken so long as six days to make a world, when the vast creation of all-embracing, all-continuing light was made at a word.

“God’s first creature was light,” says Lord Bacon. That all-pervasive ether that gives form to everything, that enriches with its color, that warms with its heat, that binds with chemical ray every atom to some kindred atom, that bears upon every beam the story of its origin; subtile, swift, fresh, exhaustless, a fluid expanse without bottom or shore, in which worlds and systems of worlds swim and float as minnows and air bubbles in the sea. Such a creature is only less than the Divine Word from which it sprang.

There would seem to be no hesitancy in receiving the truth that God said, “Let there be light, and there was light.” How else could anything so swift have come into being? Was there any recess or depth where it could be slowly perfected; whence in the full strength of its all-penetrating radiance it could issue forth? Only in the Infinite Wisdom could the complex laws of light have been conceived, and only by the Infinite Word could it have been kin-

dled into its fullness of expression. The world, vast as it is as a scene of creational power, is small when compared with the orbit on which it moves. It is but eight thousand miles through, but its orbit is one hundred and eighty-three millions of miles in diameter. The two forces which hold it in its movement upon the empty nothing are the sun's attraction, proportioned in intensity to the square of its distance, and the force with which it was started at the rate of sixty-five thousand miles an hour. Here are laws which repeat themselves in this immense orbit every instant, compared with which in size the earth is but a mustard seed. And this vast orbit when compared with the extent of light is itself still less. Such reaches of the divine harmony present the work of creation to the faith rather than to the intellect of man, to that "evidence of things not seen, by which we understand that the worlds were framed by the word of God."

St. John introduces us to the prime agent in this great work in the cosmogony with which he opens his Gospel: "Him who made the light that was made; who was himself the uncreated Light; the glory as of the only begotten of the Father, full of grace and truth; whose ray has lightened every man that cometh into the world; who was made flesh and dwelt among us; who was in the world, and the world was made by him, and the world knew him not." These bursts of amazing light thrown by the Spirit upon "the beginning," and upon the creation of all things, reveal to us the Creator himself in the Son of man, Jesus of Nazareth. Therefore to him we come logically for instruction in the deep things of God; of which he took part in the beginning, when "things which are seen were not made of things which do appear."

It aids greatly the feebleness of our powers, as we attempt to stand with the

Stars and Sons of God in the creative morn, if we may see him, the Maker of the universe, in the desert, over against Capernaum, with five thousand seated before him in ranks, both men and women, about to witness his creative power. The bread with which he fed them implied naturally the field, the seasons, the cultivation, the threshing, bolting, grinding, mixing, leavening, and the cooking, say of sixty barrels of flour. The fish that he made implied by natural process the seining, salting, cooking of a ton and a half of that kind of "meat." Yet they who saw the hand that fed them, heard the blessing, and ate the bread, believed not on him. It required supernatural aid to perceive, or even receive, the act of creation, so far does it lie outside of the range of human thought.

The voice that swathed the primal floods repeats itself on the deck of the craft that bore him asleep on a pillow, when, at a call, he arose and stilled the tempest. The

loud-echoing voice that brought forth "Lazarus" from the vaults of the dead is the highest expression of the power of life, in its swiftness and action, that the human mind can take in.

In creation, the law of continuance was the first thing; else simply individuals would have existed. But to create a genus, a tribe, a kind, it was needful that the seed should be in the citron and the citron be ripe; that the tree should be grown and planted. The time must be that of fruit, the golden hour of autumn. Every tree was richly fruited with luscious gold; every vine hung its ripe clusters on bough and branch, or overlaid the cool grots where fountains bubbled and streamlets murmured as they glided slowly along over beds of pebbly opal. So every bird was feathered high, created in the full wealth of its life, male and female. The song was in its mouth, and presently the egg was in its nest. The first morning breathed as fra-

grant an atmosphere and exhaled as pure incense to the Creator as any that ever came after. The odor was on the full-blown rose; the yellow pollen, as grains of gold, was on the lily's leaf, as perfect in its beauty as when long after, in the eyes of Christ, it was richer than King Solomon's white vest brodered with golden bees. Nothing imperfect, nothing incomplete, came from the hand of God. The tiniest creatures were, if possible, more perfect than the largest. Whatever was out of sight, and remained to be hidden for thousands of years to the limited vision of man, was yet finished to the last point, awaiting the discovery of sight-invigorating lenses, that new worlds of harmony might burst upon the mind of man, out to the farthest edge of animalcule minuteness. So that grains of sand held caverns, and in them ravenous beasts laid them down until hunger drove them forth to seek their prey—all fed by God.

And as beneath, so above; in the reaches

of space, an overarching depth of penetrable impenetrable distance; where the Spirit garnished the heavens, and his hand "formed the crooked serpent"; there, out there, are orbs of flame and solid fire fearful to contemplate, impossible to conceive, millions of times larger, mightier than this world, and great in number as in speed or size. There new centers are established, with swift-rushing planets attending. There is the same finished work; all are balanced as the accurate weights of the chemist or the numbers of the mathematician, so that nothing can be added, nothing excerpted, without danger to the celestial mechanism. The balancings of spheres, the axes and curves of orbits, were conceived in the sublime harmony of the Divine mind, and brought into their places and shapes at his omnific word, to await the opening thought of a Copernicus, a Kepler, a Newton, or the space-penetrating lens of the great Italian.

The creation of man was reserved to the latest hour, about whom and for whom all was to revolve, in the heights above or in the floods beneath, who was to be the true expression of the Divine purpose amid all these forms of his own will. Another will, the image of his own person, the pulse of his own love responsive, Adam, "which was the son of God," was now to be. When we consider that this was a first step in the direction of the Incarnate One; to be the ancestor of him whose manhood was to be, and is now, an eternal factor in the expression of the Godhead; the majesty of him who sits throned amid angels and spirits, created, redeemed; well may we pause to catch the wisdom, the delicacy of structure, the wealth divine of this handiwork of God. The brain, the eye, the hand, the voice, the soul, the consciousness, the affections, the passions, the form, the countenance, the powers immortal, spiritual, for high converse with the Father and

the Son, and for the life of undimmed glory to be inherited by and by from the ages before, and to reach forward through the lifetime of God; which all entered into this crowning work of the Divine Spirit, and consummated it—"male and female created he them."

They were beauteous in holiness. As, long after, the babe Moses was "beautiful to God," they were beautiful to the Spirit, beautiful to each other, beautiful to the angels, beautiful to the children, who have ever since dwelt upon this holy pair as the beginning of all that was noble and elevated in man—our first parents.

Whatever may have been the awful processes of their creation, there was in them implanted an uncreated essence which came direct from the Spirit. He breathed into them "the breath of lives, and man became a living soul." As the risen Saviour again breathed upon man and said, "Receive ye the Holy Ghost," so now his life became

their life, his pulses of honor and love were theirs, and they were his.

It was now, when they were endowed, and the garden was prepared for them, that the Divine hand and mind rested. He saw that it was "good," all was good, but this was "very good." Creational energy entered upon that long Sabbath which has ever since overarched our being with its sublime repose. He rested, and we enter into his rest. Though disturbed in its spirit, it will be maintained forever. There is a rest reserved for the people of God—a virgin rest, as yet untried, unopened; the restoration of that eventide hour of the first Eden, when Adam and Eve ate in the presence of God and feasted upon the tree of life. Into this we shall by and by enter, as children let loose in a garden, and so be forever with our God.

IX.

Evolution Broken at the Neck.

MR. DARWIN invented the theory of a continuous force which, beginning at a protoplasm, develops into every form of life, of consciousness, or of conscience. This involves all organic and all inorganic substance. The simplicity of this theory was thought to solve all problems of existence. It was eagerly accepted, illustrated, and set forth as the end of all controversy in respect of the creational mind and methods. It satisfied all who were willing to reduce everything to natural law with its cast-iron necessity. It relieved humanity thereby from all responsibility. It presented to the insatiable conscience a theory of human life and condition which must still its clamors and endless protests once and forever.

This mighty chain of created fate consisted of many adamantine links, which de-

fied all interruption. As usual, the whole world seemed for a time captivated and carried away with this marvelous solution of moral law and of all spiritual life; it set free the slave of mortal fear; it released man from the hot shackles of Sinai; it enthroned nature in all her moods of terror and beauty as the one mistress of the world; it drove back the tyranny of inspiration into the dim regions of star-dust, and offered an undisturbed sleep to all the sons and daughters of humanity in nature's ceaselessly recurring seasons of death and life; it transformed all immortality into a dream of the past.

Mr. Darwin was himself transformed by his own philosophy from a Christian to a materialist. His letter to a student at Jena, published in the *Pall Mall Gazette*, dated Down, June 5, 1879, shows the change:

Sir: I'm very busy, and am an old man in delicate health, and have not time to answer your questions fully, even assuming that they are capable of being

answered at all. Science and Christ have nothing to do with each other except in so far as the habit of scientific investigation makes a man cautious about accepting any proof. As far as I am concerned, I do not believe that any revelation has ever been made. With regard to a future life, every one must draw his own conclusions from vague and contradictory probabilities.

Wishing you well, I remain your obedient servant,

CHARLES DARWIN.

My mind [he says elsewhere] seems to have become a kind of machine for grinding general laws out of a large collection of facts; but why this should have caused the atrophy of that part of the brain on which the higher tastes depend, I cannot conceive. ("Life," page 160.)

Mr. Huxley rejects Christianity simply upon the ground of "defective evidence, not upon that of the mystery of its truth"; but accepts evolution, the evidences of a system which, as yet, has never shown, either in life or in fossil, one single link of the supposed transition of species.

The transition must have occurred, if evolution be true; and especially a transition

from the inorganic to the organic, which may properly be taken as the neck of the system. But Mr. Huxley and Mr. Tyndall, and all others of the scientific world who have watched the thorough and profound results of Pasteur's biological and chemical experiments, now fully indorsed, accepted, and confirmed by the French Academy of Science, must know the incontrovertible truth that there is no such thing as spontaneous generation. This puts an end to all evolution, which is continuous or nothing. It is broken at the one point which divides between the inorganic and the organic. Evolution may still have its up-country partisans, who have not heard the news, and keep up the fight after the war is ended; but it is dead, hopelessly dead, by a blow from the great French biologist.

The supporters of spontaneous generation have, as Janet observes, been driven to take refuge in the sphere of the invisible. Up to the present time, at any rate, the delicate and exquisite experiments of Mr.

Pasteur may be regarded as decisive. (Farrar's "Witness of History.")

Aristotle said in regard to spontaneous generation: "All dry bodies which become damp, and all damp bodies which are dried, engender life." At the time of Louis XIV. we were hardly more advanced. Van Helmont, a celebrated alchemist doctor, wrote: "The smells which arise from the bottom of morasses produce frogs, slugs, leeches, grasses, and other things." His recipe for creating a pot of mice was: "To press a dirty shirt into the orifice of a vessel containing a little corn. After about twenty-one days, the ferment proceeding from the dirty shirt, modified by the odor of the corn, effects the transition of the wheat into mice." Van Helmont asserted that he had witnessed the fact. Upon the discovery of the microscope, partisans of spontaneous generation said: "Is it possible to believe that microscopic organisms are not the outcome of

spontaneous generation?" (Life of Pasteur, page 89.)

In his lecture at the Sorbonne, Pasteur exclaims:

There is not one circumstance known at the present day which justifies the assertion that microscopic organisms come into the world without germs, or without parents like themselves. Spontaneous generation is a chimera.

To this Mr. Florens, permanent secretary of the Academy of Science, adds his testimony:

The experiments are decisive. Pasteur puts together air and putrescible liquids, and nothing is produced. Spontaneous generation, then, has no existence. (Life of Pasteur, page 109.)

These facts are confirmed by William Burt Pope, of England. (See "Compendium of Christian Theology," I. 404.)

The continuity of this development suffers a fatal breach at the outset: it has no link between the inorganic and the organic world. . . . Meanwhile the doctrine of Biogenesis, that all life comes from life, holds the field against all experiment, or rather in the strength of all experiment. Spontaneous generation

has never yet been attested. But that is not the only gap. The genesis of a new species of any kind, whether of plant or animal, has never been observed by man. And most fatal gap of all, the leap from the highest approximate to the appearance of man himself is one over a great gulf as fixed as that between paradise and the lower hades.

To suppose that by pulverizing the world into its least particles, and contemplating its components when they are next to nothing, we shall hit upon something ultimate beyond which there is no problem, is the strangest of illusions. There is no magic in the superlatively little to draw from the universe its last secret. (J. Martineau, "Modern Materialism," page 118.)

Fechner insists that the protoplasm and zoöphite structure, instead of being the inchoate matter of organization, is the cast-off residuum of all previous differentiation, stopping short of the separation of plant from animal, and of sex from sex, and no more capable of further development than is inorganic matter, without powers beyond its own of producing organization. And far from admitting that the primordial periods had few organisms, which time increased in number, he contends that the earth was formerly more rich in organisms than now, and that the inorganic realm has grown at the expense of the organic. (*Ibid.*, page 178.)

The truth is, that Mr. Pasteur has opened to science a universe as vast as the stellar spaces of Newton's discovery. Out of the infinitely small, at the millionth end of the microscope, he has revealed an empire dreadful to contemplate, the true realm of the sources of all disease. This amazing discovery has determined beyond controversy the nature of life, and its impassable boundaries. After many years of demonstration and conflict, he has left no room for doubt. Whether it will or not, the scientific world must dismiss its theories and change its formulas to suit the incontrovertible facts brought to light by this great biologist.

X.

The Five Books of Moses.

THE Bishop of Ely, in the Speaker's Commentary, says:

The book of Genesis is not an ill-digested collection of fragmentary documents, but a carefully arranged narrative, with entire unity of purpose and plan. The use of the names of God is neither arbitrary nor accidental, but consistent throughout with the Mosaic authorship and the general scope of the history. After Moses's miraculous experience of the burning bush, and God's revelation of his name Jehovah as a name not known before, we might naturally expect that he would show a partiality for its use; a revelation by which the Most High had declared himself the special Protector of his people. From chapter ii. 4 Genesis to the end of chapter third, the two names JEHOVAH and ELOHIM are used together in order to forcibly impress upon Israel that the ONE who had created all things was the "Jehovah" who had revealed himself as their Protector.

Moses could have written the First Book of Moses, for he had every conceivable qualification for writing it; but the writer of after times who could have produced that book must have been himself a

wonder, unsurpassed by any of those wonders which he is supposed to have devised and recorded. Certainly as yet nothing has been proved in modern discovery which can disprove the records of Genesis.

If Moses did not write Genesis, he wrote nothing; hence to shake the foundation of Genesis is to destroy the fabric of the Pentateuch.

Upon this contention nothing can be more satisfactory than the learned and elaborate work of Professor Green, of Princeton, New Jersey, in his "Unity of the Book of Genesis." His reasoning and refutation of the hypothesis of higher criticism are complete. He shows that it has no support in the Pentateuch, absolutely none.

All tradition [he says], from whatever source derived, whether inspired or uninspired, unanimously affirms that the first five books of the Bible were written by one man, and that man was Moses. There is no counter testimony in any quarter. From the predominant character of their contents, these are commonly called "The Law." All the statutes contained in them are expressly declared to have been written by Moses.

The higher criticism has been of late so associated with extravagant theorizing, and with insidious attacks

upon the genuineness and credibility of the books of the Bible, that the very term has become an offense to serious minds. It has come to be considered one of the most dangerous forms of infidelity, and its very nature hostile to revealed truth; . . . and it has proved a potent weapon in the interest of unbelief. The faith of all past ages in respect to the Pentateuch has not been mistaken. It is what it claims to be, and what it has always been believed to be.

The Bishop of Ely, in his admirable introduction to the Speaker's Commentary, powerfully supports these views of Professor Green. He says:

The romance of modern criticism is as remarkable as its perverse ingenuity; for when once a theory has been suggested, its author and his followers proceed forthwith to construct an elaborate history upon it much as if, instead of excogitating a theory, they had discovered a library of authentic records. The wider a theory is from all that has hitherto been believed, from concurrent testimony and careful inquiry, the more it finds acceptance and is hailed as a discovery. If we look a little into the foundations of the theory, it will be found as baseless as other dreams.

The facts which have been disclosed by the learned scientists of South Carolina and

Alabama, Professors Tuomey and Holmes, do by pick and spade contribute satisfactorily to the truth of the Mosaic record, and to the belief of all ages in its inspiration.

The question is not merely, Who are inspired? but, What is inspired? Dr. Murphy, professor of Hebrew in the University of Belfast, Ireland, in his profound commentary on Genesis and Exodus, says: "We must take our views of inspiration, not from *a priori* considerations, but entirely from the evidence furnished by the Scriptures themselves." It is clear that, in discussing the question of verbal as distinguished from plenary inspiration, our recourse is only the plain statement of the Bible: Exodus xxv. 21, 22; Numbers xii. 5-9, and vii. 89. "Thou shalt put the mercy seat above upon the ark; and in the ark thou shalt put the testimony that I shall give thee. And there I will meet with thee, and I will commune with thee from above the mercy seat, from between the two cherubim which are upon

the ark of the testimony, of all things which I will give thee in commandment unto the children of Israel.” (Exodus xxv. 21, 22.) “And when Moses was gone into the tabernacle of the congregation to speak with God, then he heard the voice of one speaking unto him from off the mercy seat that was upon the ark of testimony, from between the two cherubim; and he spake unto him.” (Numbers vii. 89.) The effect was as though Moses was audibly addressed by another. How this effect was produced we are not told.

This certainly was *verbal*; it consisted of *words*, attested by a *voice* of some *person* near, but invisible. This was the character of God’s communion with Moses, when he spoke “face to face” with his servant. It was in this accurate method that God gave his law on Sinai; by exact writing of words upon a table of stone; written by his finger, as with the point of a diamond. It was the only way in which a law of life and death could be given.

The same is true of the laws of mercy, which demanded positive accuracy, expressive of deliverance from the law of sin and death. All that set forth the sacrificial and priestly mediation essential to a system of pardon demanded a like precision; and this is all found in the ample and specific ceremonial laws of Leviticus.

Dr. Murphy puts the vital question:

Whence comes the conception of pardon that so readily suggests itself in this awful predicament (of the sinner)? Simply, we submit, from the voice of revelation; a revelation as early as the fall, entwining itself with the memories of the race, descending as a tradition from father to son, and cherished as a fountain of hope in the valley of the shadow of death. But, apart from all revelation, reason could only assure us of the sentence of death upon the sinner; and we know not whether imagination could even suggest the possibility of pardon. Reason, at the most, can only tell us of justice and doom; revelation, when its voice is heard at all, speaks of mercy and peace.

“The inspiration of the Scriptures must be, by the very nature of the thing, verbal,

simply because the Scriptures to which this property is ascribed consists of words.”

The time at which the book of Genesis was written has an important bearing upon the constitution of the book itself; whether the first chapter was written with the rest of the book. It is evident that of these chapters the second is a continuation of the first; that it is a special description of that which for clearness of narrative had been stated generally: The minute method of making man, (1) out of the dust; (2) the breathing into him the breath of life; (3) man is placed in a garden. (4) His moral creation: God commands him—he may eat of every tree excepting one; and that life and death hung upon his obedience or disobedience. (5) God creates Eve out of man, and places her with him as a needed part of his life, a helpmeet. All this is evidently a natural and necessary explication of what is stated at large in the first chapter.

That the names of God—Jehovah Elohim, the LORD GOD—should be united in the second chapter and repeated twenty times in the second and third chapters, but that Jehovah all through subsequent chapters should be used conversely with the name Elohim, shows both unity and continuance of the record, easily apprehended. It all indicates that the same method of inspiration was used, and at the same time, to impart to Moses the information of God's creative and providential presence in all the preceding past. No part of this wonderful record demanded more precision than the first two verses of the first chapter, as they contained virtually all that follows, throughout not only Genesis and Exodus, but the entire canon, from Genesis to the Apocalypse. The commanding majesty and authority which distinguishes the Bible from all other books could not have been secured by mere tradition from the fathers, nor could the persons of the Trinity have been couched

in anything less than in words direct from the lips of God.

The time at which Moses wrote the book of Genesis could not have preceded the revelation made to him at the burning bush — “I AM THAT I AM.” Between the burning bush, the crossing the Red Sea, the giving the law on Sinai, there was scarcely sufficient historic pause to record anything. All these great events were referred to the setting up of the tabernacle in the wilderness, and the construction of the ark of the covenant, with its cherubim and its golden mercy seat. When these were completed, God spoke, from this lid of the ark, the whole sum of things in the past, “the beginning” of all things; of the laws of sacrifice and priesthood, so constantly then used; and of things arising from day to day in that vast host of Israel, requiring both the power and the wisdom of God for its support and guidance. The chapters in Exodus and Numbers already

quoted introduce us to the verbal inspiration by which Moses received these records and laws from the mouth of God; in which recording, Moses speaks of himself in the third person, saying, "as God commanded Moses." Cæsar's commentaries are all written as if speaking in the third person. Those minute Levitical directions demanded the most exact statement of the service of the altar, and of purification upon the part of the worshipers. Even now much study is necessary to estimate what was required of the thousands who approached the Holy One, and of those who mediated between him and the people of Israel.

The marvel of all is that whether it be the creation of worlds or the laws of sacrificial approach that are described in these books of Moses, all is couched in words most transparent, and with a pervading everyday common sense that constitutes these first books of the Bible as readable

and intelligible as the book written by men now living. At a morning family prayers the children and servants can be as fully interested in the making of a world, or in the sacrifice of Isaac, or in the story of Joseph and his brethren, or in the plagues of Egypt and the overthrow of Pharaoh, as they possibly could be by anything found in the "Talisman" of Walter Scott, in Mrs. Sherwood's "Lady of the Manor," or in Audubon's "Birds of America."

No books have such a perennial vitality as those spoken by God, and written by his prophets, judges, and evangelists. It is the all-sufficient evidence that the Infinite Mind is their author, and they were written for all the ages. Any book or scrap of ancient writing of the same date with these books of Moses is scarcely intelligible to the most learned. It is this tremendous common sense of the Scriptures that brings us "face to face" with God. It characterizes the parables, the Epistles, the Acts. The dealing of

God with St. Paul, St. Peter, St. Stephen, Philip, Barnabas, with David and Samuel and Joshua, with the patriarchs, was so personal that the distance of God in nature was scarcely felt by them. They talked with him as with a visible friend, though they feared him as the Mighty One.

Our knowledge of the wonders of nature, so high, so profound, so inscrutable, as those of the spectroscope, of the telephone, of the phonograph, of the telegraph, of electrical motion, and of electrical light without oxygen or combustion, and the multiplied discovery, by bromide plates, of millions more of galaxies, and of yet greater distances in the stellar universe, than those known to Newton, or Kepler, or Copernicus: these come in between us and our personal knowledge of God.

Only the common-sense appeal of God's word to the daily thoughts, fears, and wants of man can hold us secure from that unbelief which is man's easily besetting sin.

Supplemental Notes.

I.

The Duke of Argyll on Huxley and Darwin.

IN the January number of the *Nineteenth Century* for 1891 appeared an article from the pen of the duke of Argyll, entitled "Professor Huxley on the War-path." Its value in defense of the Scriptures and Christianity cannot be overstated. It demolishes the confident attitude of the great agnostic, published in 1890 in the *Nineteenth Century*, entitled "The Lights of the Church and the Light of Science."

"We may fairly say," writes the duke, "that this article is an open and avowed attack upon Christianity. . . Nor does he conceal the full sweep of the destructive work which he desires to accomplish. Not only the whole story of creation, the whole story of the fall, the whole story of the flood, the whole story of Abraham, and of any special mission to the Hebrew people, but even the glorious idea and hope of a Messiah—the whole Messianic doctrine which binds the Jewish and Christian Churches—all are relegated to the same category as the Greek myths about Theseus. As writers of the New Testament have believed these stories and dwelt upon them, the authority of those writers is denounced as a body of men who 'have not only accepted flimsy fictions for solid truths, but have built the very foundations of Christian dogma upon legendary quicksands.'" The duke

continues: "Creation, strictly speaking, is inconceivable to us. And yet creation is a fact. The system of visible things in which we live was certainly not the author of itself. If we are capable at all of receiving any mental impressions of its beginnings, we can only do so through modes of representation which are charged with allegory. . . . We have no experience to go upon. Of necessity, therefore, the very idea of a beginning must be dealt with in the language of metaphor.

"That the origin of species may be ascribed to something called 'nature' selecting things which did not yet exist, and could not therefore have been presented for selection, is among the mysteries of nonsense which are not uncommon in the history of the human mind. But even this delusion, prevalent as it has been, is breaking down, and assaults upon it, all too timid though they be, are nevertheless increasing day by day. . . . Professor Huxley quotes with approbation, and adopts, the grand generalization of John Hunter, that organization is not the cause of life, but life is the cause of organization; immense consequences are involved in this conception. Organizations are the habitations and the homes of life, but life must build them before it can settle in them and take possession. An organ is a structure for the discharge of function, but it must be shaped and made before the function can be discharged. This luminous

idea sends its searching light through and through the stupidities which confound between things made for use and things that are said to be made by use. Use as an intellectual aim must precede use as a physical cause. And so the prophetic interpretation of foetal development becomes the only possible interpretation of all organic growth, so far as is known to us.

. . . Shells, and particularly marine shells, may be called the time-medals of creation. Their comparative indestructibility, and the fact that the element in which their inmates live is the same element which preserves their habitations when they die, make it certain that in them geology keeps her oldest, most complete, and most authentic record. The Quaternary period is defined as that during which innovation was stopped as regards the development of shell-life—during which no new species was born—during which we find, with a few rare exceptions, no shell which is not also an existing and living species. The Quaternary is the age in which we ourselves are now living. And yet this is the very period during which the greatest novelty of all seems to have been introduced, for it is in this period that we can first detect the advent of man. . . . In our own Quaternary period multitudes of the vanishing beasts seem to have been destroyed by some great destruction, many of them leaving no descendants whatever to represent their antique and abandoned forms. Nature has simply

obliterated them altogether. . . . I cannot give, even in abstract, the astonishing facts which Quaternary geology has established respecting the death and preservation of what is called the Pliocene and Pleistocene mammalia—and this too both in the old and in the new world. They have been collected and marshaled with exhaustive research and with admirable ability by Mr. Haworth, M. P., in his book, 'The Mammoth and the Flood.' I observe that a most significant silence has been maintained respecting this array of facts and arguments, and that the old-school geologists have found it much more convenient to ignore than to answer it."

"The private letters of Charles Darwin, now published in his 'Life,' with all their frank and memorable confessions [writes the duke of Argyll in the April number of *Good Words*], will accelerate and complete the reaction which has already begun against the acceptance of his philosophy. They do not only reveal, but to some extent they explain, the contrast between his greatness as an observer and his weakness as an interpreter of the facts which he observed. All that was special in his hypothesis rested on one idea, and that idea was a bungle. The phrase in which it was expressed ('natural selection') was not only a metaphor, but it was a mixed metaphor, embodying confusion of alien and incongruous conceptions. It personified an abstraction. This is a resource which may indeed be

harmless, if only the abstract idea which is personified be a clear one and not a muddle. But natural selection, personified in the sense in which Darwin used it, was and is a muddle. It was essentially the image of mechanical necessity concealed under the clothes and parading in the mask of mental purpose. The word 'natural' suggested matter and the physical forces; the word 'selection' suggested mind and its powers of thought. Each element in the mixture commended itself to hazy and indiscriminating recognition. But the elements of meaning in it which made it most acceptable were precisely the meanings which its author did not intend it to convey. All this is now confessed."

II.

Tyndall on the Mystery of Life.

EXTRACT from Professor Tyndall's address before the British Association at Belfast, August 19, 1874:

"Believing as I do the continuity of nature, I cannot stop abruptly where our microscopes cease to be of use. Here the vision of the mind authoritatively supplements the vision of the eye. By an intellectual necessity I cross the boundary of the experimental evidence, and discern in that matter which we, in our ignorance of its latent powers and notwithstanding our professed reverence for its Creator, have hitherto cov-

ered with opprobrium, the promise and potency of terrestrial life.

“ In fact, the whole process of evolution is the manifestation of a Power absolutely inscrutable to the intellect of man. As little in our day as in the days of Job can man by searching find this Power out. Considered fundamentally, then, it is by the operation of an insoluble mystery that life on earth is evolved, species differentiated, and mind unfolded from their prepotent elements in the immeasurable past. There is, as you will observe, no very rank materialism here.” (Which we do *not* observe.)

The scientist who “ quits the microscope,” and substitutes for it “ the vision of the mind,” has transcended Bacon’s system of induction, and has substituted for it an idol of the imagination.

III.

The Egg and Evolution.

IN a recent number of the *Presbyterian Quarterly*, Professor Robert Watts, of the Assembly College, Belfast, reviews the leading assumptions of evolution. For instance, its claim to be equally well established with the law of gravitation; its claim that an egg is the type of their theory; the illustration of the tadpole, and their claim that evolution harmonizes with Christianity. We wish we had room for the whole

article. The manner in which the so-called science is pulverized will perhaps sufficiently appear from the following discussion of the egg theory:

“To begin at the beginning, our author takes ‘the egg as the type of evolution.’

“‘Every one,’ he says, ‘is familiar with the main facts connected with the development of an egg. We all know that it begins as a microscopic germ-cell, then grows into an egg, then organizes into a chick, and finally grows into a cock; and that the whole process follows some general, well-recognized law. Now, this process is evolution. It is more: it is *the* type of all evolution. It is that from which we get our idea of evolution. Whenever and wherever we find a process of change *more* or *less* resembling this, and following laws *similar* to those determining the development of an egg, we call it evolution.’ (Page 3.)

“Now, without remarking upon the unscientific character of the terms marked in italics—terms which are utterly out of place in scientific discussions—issue is at once joined with our author, and his chosen type of evolution shall furnish the battlefield. He begins with the egg. With all due deference, he shall not be permitted to begin with the egg, even in its incipient germ-cell form. No mortal eye ever discovered the germ-cell of an egg, or the egg itself, which did not come from an antecedent, parental, full-grown organism. Eggs are not orphans. They are not found

lying about loose on the theater of life. An egg, fitted for the process of development referred to by our author, is still less likely to be found without an adequate ancestry. 'Every one,' he says, 'is familiar with the main facts connected with the development of an egg.' The main facts—the determining facts in this controversy—are facts which precede and condition the formation of the egg. Not only must there be a parent organism, fully developed, to give being or birth to the egg, but there must be an arrangement for the fertilization of the egg. Apart from such antecedents, the egg would never 'organize' into either 'chick' or 'cock.' These are biological facts that cannot be gainsaid, and they raise a grave question for our evolutionary friends. The question they raise is, 'Which is first in the evolutionary chain, the perfect organism or the egg?' This question, of course, admits of but one answer—the mature organism gives being to the egg, and without it the egg had never been. This answer mars our author's chosen type. If the case of the egg is to decide the question at issue, his whole scheme is placed in imminent peril. According to our author, the development of the egg into a 'chick' or 'cock' presents us with the type of the genesis and development of the whole chain of life, from the mollusk to the man. The humblest phase of life appears first, and the highest last. But according to the biological facts presented in his

boasted type, the perfect organism antedates and gives being to the egg. If such be the law of the type, it must also be the law of the antitype. Our author's antitype, if his type means anything, must be the whole ascending series of organized life, from its first manifestations to the appearance of the human form divine. The law of the egg must have ruled throughout the series. But the law of the egg is that the perfect organism precedes the egg. Scientists talk of protoplasm and bioplasm, and the terms are not only not objectionable, but convenient, in the discussion of the science of life, but they must be used with a full understanding that there is no such thing as either protoplasm or bioplasm apart from antecedent living mature organism.

“To apply the principle now established: we are entitled to claim that, in every instance throughout the progressional series of the biological forms that have come into being on our globe, the mature organism appeared first. First the hen, and then the egg; and first in the chain of *specific* life, the perfect *specific* organism. If the case of the egg is to rule, a species could not spring from anything save a perfect organic form, possessing all the specific qualities and distinctive characteristics of its future progeny.”

IV.

“Paradise Found.”

IN 1885 this most admirable work from the pen of Dr. W. F. Warren, President of the Boston Univer-

sity, was published. For elaborate discussion, thorough investigation, comprehensive survey, and profound scholarship, it is worthy of the author and of the sublime and beautiful theme which he seeks to explore. Dr. Warren has collected in a volume the very best things that have been contributed to the solution of this fascinating problem, the original site of the Garden of Eden. The charm of his work may be felt in its opening paragraph:

“One of the most interesting and pathetic passages to be found in all literature is that in which Christopher Columbus announces to his royal patrons his supposed discovery of the ascent to the gate of the long-lost Garden of Eden. With what emotions must his heart have thrilled as, steering up this ascent, he felt ‘his ships smoothly rising toward the sky,’ the weather becoming ‘milder’ as he rose! To be near the Paradise of God’s own planting, to be the first discoverer of the way in which the believing world could at length, after so many ages, once more approach its sacred precincts, even if forbidden to enter—what an exquisite experience it must have been to the lonely spirit of the great explorer!”

The doctor adds further: “Theologians, Christian and Jewish, have in all ages differed, and irreconcilably differed, as to the location of the cradle of the human race. . . . They had many curious and conflicting opinions upon the subject. . . . Impa-

tient of such contradictions, Luther, in his own brusque way, rejected all attempts to locate the primeval garden, declaring that the deluge had so changed the face of the earth and the course of its original rivers that all search was fruitless. . . . Calvin, on the contrary, confidently affirmed that the writer of the Genesis narrative must be understood as locating the Garden of Eden near the mouth of the Euphrates. . . . At the present time the state of theological teaching respecting Eden is, if possible, a worse Babel than in any preceding age." ("Paradise Found," page 25.)

"Nearly two hundred years ago the learned Thomas Burnet said: 'We may safely say that none of the Christian fathers, Latin or Greek, ever placed Paradise in Mesopotamia. That is a conceit and innovation of some modern authors.'" (*Ibid.*, page 27.)

"It would be difficult to find any subject in the whole history of opinion which has so invited and at the same time so baffled conjecture as this. . . . The site of Eden will ever rank, with the quadrature of the circle and the interpretation of unfulfilled prophecy, among those unsolved and perhaps insoluble problems which possess so strange a fascination." (Smith's Dictionary of the Bible, page 32.)

After all this testimony, the reader will not be surprised that the probable location of Eden is treated in the foregoing pages as an open question. New and vastly important discoveries have been made in Amer-

ica since the writing of the above passages by their illustrious authors. That the adventures of the great Spanish navigator, the discoverer of the new world, should be crowned in the fact also of its being an Eden continent, would mitigate that history of sorrows, humiliations, and clouds which gathered about the last days of Columbus.

v.

**The Tonnage of Noah's Ark, Compared with that of the
"Oceanic."**

AN Old Subscriber: "Will the *Times - Democrat* please tell us the difference between the tonnage of the *Oceanic* and that of Noah's ark as described in the book of Genesis?"

There are many lengths given for the cubit, yet 2.002 feet, or practically two English feet, has been accepted as the length of the sacred cubit.

Assuming, then, that a cubit is two feet, the length of Noah's ark was 600 by 100 by 60 feet deep; and further assuming that the vessel would be loaded to forty feet, the displacement would be 2,400,000 cubic feet, equal to 75,000 tons.

The displacement of the steamship *Oceanic* at deep load line (32½ feet) is 28,500 tons, thus showing that the ark was nearly three times the tonnage of the

great steamship *Oceanic*.—*Times-Democrat*, New Orleans.

The new White Star Liner, the *Oceanic*, the biggest ship in the world, was a hollow shell a month ago when she was launched. To-day her vast interior is filled with framework, and she is being divided into stories like a house. There are nine of these stories from the stoke-holes to and including the officers bridge.

The *Oceanic* has been commented on mostly on account of her great length of 705½ feet over all, exceeding by fifty-five feet the largest steamship now in service, the *Kaiser Wilhelm der Grosse*.

The tremendous size of the *Oceanic* can now be best understood by the fact that she would extend three city blocks in length, and would be equal to a nine-story building covering that entire distance.

If the *Oceanic*, on her first trip to New York six months from now, could be hoisted up into Broadway at Twenty-third street, she would extend past the Fifth Avenue Hotel, the Hoffman House, the St. James building, and other buildings between them.

This ship will be able to accommodate more people than the big hotels and office buildings in the three blocks from Twenty-third to Twenty-sixth street, on Broadway.

She will have rooms for 410 first-cabin passengers, 300 second-class cabin, and 1,000 third-class. The offi-

cers, crew, and other members of the ship's company, will be 394, making a total of 2,104 persons aboard her. This is as many as a pretty good-sized suburban town has.—*New York Journal*.

VI.

The Higher Critics—Mr. Gladstone.

THERE is great pleasure in reading what you think is true, and still greater in reading that which you know is true. But outside of the Scriptures, can this be found? Certainly not in any history of wars, countries, people, or events of our own times.

What shall we think of one who sets himself to the work of invalidating the *Word of Truth*—that upon which the hopes of mankind have rested for five thousand years? Or, still worse, what of one who presents himself as defender of the faith siding with Wellhausen, the German, who doubts all inspiration?

Mr. Gladstone has the following sentence in his "Impregnable Rock," page 47: "The recorder of the creation story in Genesis I may designate by the name of Moses himself, or the Mosaist, or the Mosaic writer. This would not be reasonable if there were anything extravagant in the supposition that there is a groundwork of fact for the tradition which treats Moses as the author of the Pentateuch. But such a supposition, in whole or in part, is sustained by many and strong pre-

sumptions; and I bear in mind that Wellhausen, in giving Bleck's 'Introduction' to the world, stated it as his opinion that there is a strong Mosaic element in the Pentateuch."

We should have hesitated to quote such a sentence from so eminent a scholar, even in a note, but for the fact that it has been ground to chaff by Professor Green, of Princeton, New Jersey, and by the Bishop of Ely. (See "Genesis," in Speaker's Commentary.) Inasmuch as the Constitution of Great Britain, the House of Lords, and the Church of England have survived the great Commoner, so will the Pentateuch still be received as the history of Israel by Moses, as hitherto by all the ages, and by Christ himself.

VII.

H. H. Howarth, M. P., on the Flood.

"IN the Pleistocene beds we are arrested by the large number of young animals which occur. When nature puts a term to an animal's life in her normal way, it is exceedingly seldom she does so when the animal is young. Animals do not die naturally in crowds when young, and yet we find remains of quite young animals abounding in all classes from mammoths to mice. How are we to account for this fact, save by summoning an abnormal cause? How, again, can we account for the fact that the mummied animals

found in Siberia seem to have been in robust health, stout and strong? Is this again consistent with a natural death? Again, if the death was natural, and in an area where we know hyenas and other carnivorous animals abounded, would the corpses be left to the useless duties of decay, as they must have been, since the bones are ungnawed and (where the flesh is preserved) the flesh is uneaten? One cause, no doubt, of the scarcity of the remains of animals which are dying at present, where animal life abounds, is the diligence of these scavengers. What were they doing in Pleistocene times to pass by these myriads of corpses, and in so many cases not leave a tooth mark anywhere, and, in fact, to leave their own bones with the rest? Surely this points clearly and unmistakably to the fact that the animals, or the greater part of them, died together. If the remains were the silent chronicles of centuries of time and generations of life, we should assuredly have found that some, or a large portion, of the bones would have been broken and gnawed; but this is not the case, and it points strongly to their death having been more or less simultaneous.

“The most obvious cause we can appeal to as occasionally producing mortality on a wide scale among animals is a murrain or pestilence, but what murrain or pestilence is so completely unbiased in its action as to sweep away all forms of terrestrial life, including man, as we shall see presently, the fowls of the air

and the beasts of the fields, elephants and mice, rhinoceroses and frogs, bisons and snakes, tigers and land snails; and this not in one corner only, but, so far-as we know, over the whole length of two continents, irrespective of latitude or longitude? The problem has only to be stated thus to make it obvious that a murrain or pestilence is quite incompetent to meet our difficulties. Such a pestilence, again, would not collect herds of incongruous animals in the same places, and kill them all together, and then bury them; and if it did so, we should assuredly have some evidence of its work in the remains themselves where we find none, but rather that the animals died in full health, with their bodies strong and hearty.

“However ingeniously and with whatever subtlety we may deal with our evidence, the facts constrain us therefore to one inevitable conclusion, namely, that the mammoth and its companions perished by some widespread catastrophe which operated over a wide area, and not through the slow processes of the ordinary struggle for existence; and that the greater portion of the remains we find in Siberia and Europe are not the result of gradual accumulation under normal causes for untold ages, but the result of one of nature’s hecatombs on a grand and widespread scale, when a vast fauna perished simultaneously.

“This completes my survey of the evidence furnished by the mammoth itself, and I believe that not

only is it consistent with the conclusion that that animal and its companions were finally extinguished by a sudden catastrophe, involving a great diluvial movement over all the northern hemisphere from the Pyrenees to Behring Strait, but it is consistent with no other conclusion. The evidence is not only ample, but it is evidence which converges from all sides; and there is literally nothing on the other hand, so far as my wide reading enables me to judge, save a fantastic attachment to a theory of uniformity which revolts against anything in the shape of a catastrophe. Nay, it is more than this, for the facts are too many for such a theory to be held rigidly. It is rather the predicating of the simple general catastrophe constituted by a wide continental flood, instead of a complicated series of lesser catastrophes, involving violent changes of level, changes of climate, and deluges as well.

“So it is clear that at the time when the elephants and trunks of trees were heaped up together, one flood extends from the center of the continent to the farthest barrier existing in the sea as it now is. That flood may have poured down from the high mountains through the rocky valleys. The animals and trees which it carried off from above could sink but slowly in the muddy and rapid waves, but must have been thrown upon the older parts of Kotelnoi and New Siberia in the greatest number and with the greatest force, because these islands opposed the last bar to

the diffusion of the waters." ("The Mammoth and the Flood," by H. H. Howarth, M. P. See pages 178, 179, 183, 189, 191.)

VIII.

The Words Jehovah and Jehovah Elohim.

THE Commentary of Dr. Murphy, of Belfast, has the following valuable statement in respect to the use and meaning of the word "Jehovah" in the books of Moses and the Holy Scriptures: "This word occurs about six thousand times in Scripture. It is obvious from its use that it is, so to speak, the proper name of God. It never has the article; it is never changed for construction with another noun; it is never accompanied with a suffix; it is never applied to any but the true God." (Commentary, page 77.)

JEHOVAH ELOHIM.

"This word ('The Lord God') is here for the first time introduced (Genesis ii. 4). . . . The union of these two divine names indicates Him who was before all things, and by whom now all things consist. It also implies that he who is now distinguished by the new name Jehovah is the same who was before called Elohim. The combination of the names is specially suitable in a passage which records a concurrence of creation and development." (Commentary, page 81.)

IX.

The First Verse in Genesis.

OF this first verse Dr. Murphy says: "This simple sentence denies atheism; for it assumes the being of God. It denies polytheism, and, among its various forms, the doctrine of two eternal principles, the one good and the other evil; for it confesses the one Eternal Creator. It denies materialism; for it asserts the creation of matter. It denies pantheism; for it assumes the existence of God before all things, and apart from them. It denies fatalism; for it involves the freedom of the Eternal Being." ("Genesis," page 30.)

The Ecumenical, Calvinism, etc.



The Ecumenical of 1891.

THE Second Ecumenical Methodist Conference was held in Washington City in October, 1891. The topic of the fourth day was "The Church and Scientific Thought." Upon this theme there were presented an essay of Percy W. Bunting, entitled "The Influence of Modern Scientific Progress on Religious Thought"; an address by Rev. M. S. Terry, D.D., on "The Attitude of the Church Toward the Various Phases of Unbelief"; an address of the Rev. W. T. Davison, A.M., on the "Bible and Modern Criticism." After which there were speeches by the Rev. E. H. Dewart, of Canada; Rev. Frank Ballard, of the Wesleyan Methodist Church; Rev. J. M. Buckley; Rev. James Crabtree; and Rev. William Arthur, of the Wesleyan Methodist Church, pro and con. The Rev. Bishop J. C. Keener, of the Methodist Episcopal Church, South, made the following remarks:

"Mr. President, the paper of this morning, which was very elaborate and very able, said that a plain man in these days was not satisfied with the bare statement that evolution is not true. It is indeed a very difficult thing to conceive of the act of creation; and the mind, after many attempts and defeats, not being able to conceive the fact, passes off into a conception of growth, forgetting that growth itself is an important part of creation. Sir, I beg leave to read a verse which is

certainly in point, being found in the book of Genesis: 'These are the generations of the heavens, and of the earth, when they were created, in the day that the Lord made the earth and the heavens, and every plant of the field before it was in the earth, and every herb of the field before it grew.' Now, sir, there is creation; in the mind of God; in the highest conception and expansion of creation; which is the law of a continued being. To make a tree would be nothing unless there were planted in that tree the law of continuance. So this is the grand marvel: there is one Lawgiver. It is the law that is in the mind of God, that is chargeable with giving to us a conception, feeble or strong, of the great work of the Master.

"Mr. President, I cannot expect to go into any argument on this important subject, but I deprecate these apologetic views of the whole matter of creation. I take the Mosaic account squarely and fully, as positive, exact, and reasonable. I come entirely out of the region of speculation, and come into the region of positive truth. My brother says that, after all, the appeal is to the facts. But you cannot get facts into the mind of a man that has adopted a theory for twenty-five, thirty, forty, or fifty years. There is no clearer testimony of this than the statement of the duke of Argyll, that you may present a fact before the scientific world, no matter how plainly, and it passes by it as if it had not been presented.

“The Emperor William one day paid a visit to the great casting works of Krupp, and one of the managers was showing him the remarkable control they had of the steam hammer which forged the great cannon; that they could arrest it in a moment. The emperor took out his watch and put it under the hammer—” (Just at this instant, much to the amusement of the assembly, Dr. Arthur, of England, who was sitting in the altar, called the time on the bishop; and the hammer of the presiding officer came down—and saved the watch of the emperor!)

On the last day of the Conference, upon the topic of “The Outlook,” the bishop seized the opportunity and finished his speech, as follows:

“Mr. President, I have listened with great delight to everything I have been able to hear and understand in this august assembly, but have been very much disturbed in some directions, especially in that of ‘higher criticism.’ I was not prepared for the wonderful advances in that direction which seem to have taken place among the British Wesleyans. I presume they believe themselves to be far in advance of us. I mean our good friends who delivered the Fernley lectures—some indeed not confined to our own Church—such as Dr. Dallinger, Mr. Beet, Mr. Davison, and also Bishop Temple, Mr. Flint, and others I might mention, some of the Church of England, and others of the Free Church of Scotland.

“In order that I may save time and come to the heart of the subject, I would inform all these gentlemen that within twelve hours of this place, if they choose to go there, are beds—fossil beds—which contain the bones of every animal ever heard of; every animal, whether mentioned in geologies or natural histories, and not a few of them; for they comprise sixty-five per cent. of that vast deposit of phosphate of lime in the Ashley beds, evenly disposed, yielding eight hundred tons of this phosphate to the acre; and in the last three months four million tons. These beds have loaded the entire tonnage of the United States—river, ocean, and lake—two and a half times within the last ten years.

“In these beds are found the bones of the megatherium; the teeth of the beaver, of the horse; the horn of the Virginia deer; the gigantic shark teeth, six and a half inches long, indicating a length of body of one hundred and twenty feet. In the mouth of the shark there are one hundred and fifty-three teeth in one jaw, and one hundred and eighty-five in the other. These monstrous teeth belong to an extinct creature; and yet there, too, are the bones of the muskrat, of the opossum, of the gigantic saurians, of the mastodon, of the tiger, of the elephant, and of all those animals that live in the neighborhood of man; and also the corrolite of the ichthyosaurus. When Agassiz came to Charleston in 1853, and there was

handed to him a tray full of horses' teeth, he spent the entire night on the floor examining them, and exclaimed to Professor Holmes, "These old bones have set me crazy; they have destroyed the work of a lifetime!"

"Now, gentlemen, brethren, take these facts home with you. Get down and look at them. This is the watch that was under the steam hammer—the doctrine of evolution—and this steam hammer is the wonderful deposits of the Ashley beds. There is nothing in evolution, nothing in the Darwinian theory, if you take the *time* out of it. When you put the megatherium and the beaver together; the ichthyosaurus and the horse together—for there they are found together, there they died together, there they sleep together, there they lived together—it is evident they were created together. I say it takes the time out of evolution, and knocks higher criticism where the watch would have been if the steam hammer came down upon it.

"One cannot say very much in five minutes, but I am anxious to say this much: My brethren, the greatest thing about Mr. Wesley was, that he knew what to get rid of. Like wild steers from a Texan pen of cattle, he let out the Moravian because of doctrine; he let out the Calvinist because of Calvinism; he let out the men who advocated the doctrine of sanctification—Mr. Maxwell and four hundred with

him—because they invaded and warred against the connectional integrity of Methodism. I wish to say to my English friends now in this Conference, in all admiration for them—for no one admires these great men before me more than I do: Go home; get rid of this doctrine of evolution, that puts a nucleated vesicle—Winchell's *amœba*—at the bottom of the Pentateuch and the cosmogony of Moses. It will ruin you if you do not get rid of it. If you cannot get rid of the doctrine, get rid of the men and the institutions that teach it, no matter how dear they are to you, for they will blow you up if you don't. This is the first fissure in the Methodist faith. We have had many divisions on discipline, but none on doctrine. But this is a tremendous fissure in the faith of Wesleyan Methodism.

“These words are not speculation, but sober thought. I profess to know nothing beyond the knowledge of a ‘plain man’ in these sciences ‘falsely so called,’ but I do know that there is a bed one hundred miles in diameter, reaching from the Santee to the Savannah, which Agassiz pronounced to be ‘the greatest cemetery in the world, and looks as if all the creatures of the Postpliocene period had been summoned there to die.’ Take the *time* out of Darwinism, and there is absolutely nothing left of it; and these Ashley beds knock it out.”

The hour of adjournment having arrived, the doxology was sung, and the benediction was pronounced by the presiding officer, the Rev. Thomas Allen

Calvinism and Evolution.

FROM the semi-centennial number of the New Orleans *Christian Advocate* (July 5, 1900) we copy these two articles, which coincidentally illustrate that Calvinism has found a last resource in evolution:

PREDESTINATION—"MILK FOR BABES."

BY BISHOP KEENER.

"For whom he did foreknow, he also did predestinate to be conformed to the image of his Son." (Rom. viii. 29.)

I.

To create a universe of sons was the final cause of predestination. What a vast conception was this, to create a heaven, rather than a world, upon the model of his Son!—a region filled with persons, glorious in majesty, wisdom, and power; to be ultimately enthroned on the plane of Godhead! Those whom God foreknew were not only to be distinguished from nature in its loftiest moods, but were to be above all spirits, whether principalities, or powers, or thrones, or dominions in the heavenly places. So transcendent a scheme of love involved many steps: the Son making himself of no reputation; taking the form of a servant; being made in the likeness of men; humbling himself even as a man; becoming obedient unto

death, even to death on the cross. Then his exaltation at the right hand of God; a name given him above every name; every knee bowing, and every tongue confessing that Jesus Christ is Lord, to the glory of God the Father.

Sonship is the highest conceivable expression of personality. It is a personality we share with the Son; of which the Spirit makes us conscious in the instant of conversion—"the spirit of adoption, whereby we cry, Abba, Father."

With this sense of a new personality there comes a wonderfully distinct sense of the Creator; that he who forgives my sins is the one who made the world, which gives a new expression to nature, and fills it with delight.

So high personality as sonship would seem to be above all limitation. It would be tantamount to limiting the nature of the Son himself. Therefore "the having predestinated us unto the adoption of children by Jesus Christ to himself, according to the good pleasure of his will, to the praise of the glory of his grace, wherein he hath made us accepted in the beloved" (Ephesians i.) takes out all limitation from the word "predestinate."

If to "predestinate" is taken in the Calvinistic sense, of determining the elect and the non-elect, it substitutes "sovereignty" for personality, and there is left no room for faith. On the other hand, the fact

that faith is introduced as a condition of sonship proves sonship to be without any limit. And such is the fact, for "all things are possible to him that believeth." And it is this truth that St. Paul seeks to impress, that "all things work together for good to them that love God"; that in this relation there is the universal expression of a universal love. "If God be for us, who can be against us?"

Faith can afford to rely on it as a boundless promise, higher than the heavens, deeper than the sea, broader than the earth. Foreknowledge cannot narrow it, for it expresses the freedom of divine as well as human personality. It is the fixed and eternal law of freedom secured and centered in the gift of a Son; the very highest statement of divine love.

No wonder it thrilled the stars and the sons of God into song and shout when God laid the foundations of earth, and predestinated humanity to sonship! Who can measure the possibilities of such a relation? "Because ye are sons, God hath sent forth the spirit of his Son into your hearts, crying, Abba, Father; wherefore thou art no more a servant, but a son; and if a son, then an heir of God through Christ." (Galatians iv.)

Under the chart and arch of a universal predestination mankind is "called," is "justified," is "glorified." These constitute steps, not chains, of sequence, which begin in Christ and end in glory.

II.

It would seem that no human ingenuity could separate the threads of gold in the first chapter of Ephesians, or disturb the sublime statement in Romans viii., that the one great purpose of God in creating a world, to the glory of the Son, was "that he might be the firstborn among many brethren"; a world designed through Christ for Christ. This purpose controls all things. To this end "all things work together for good to them who love God, who are the called according to his purpose." This undivided purpose grasped an uncreated universe of persons, who were one in God's foreknowledge, one by creation, one in Adam's moral wreck, and one in predestination to an inheritance of sonship. In such community of life and death there would seem to be no room for election.

It was highly important that man's personality should be held intact from all invasion. The Calvinistic theory of sovereignty as a cause, independent of all else, constitutes an adamant limit. It is the cast-iron doctrine of Augustine—a sanctified fatalism that limits both God and man, dividing humanity into two distinct portions, the elect and the reprobate.

It is difficult to separate foreknowledge from divine responsibility where power is infinite, though knowledge is not necessarily influence. The one condition of faith in the divine scheme of predestination effect-

ually secures man's personality, because without it faith is impossible. Even God himself cannot invade this condition by any limitation without destroying man's responsibility. That he has conditioned life upon faith in his Son necessarily gives to predestination that quality of grace and love which embraces all mankind—"having predestinated us unto the adoption of children."

Faith is essential to a personal coöperation with God in the work of recovery. If man could be saved without any concurrent act, he would presently cease to have either consciousness or conscience, and would perish in the stupor of fatalism.

When the dark clouds of metaphysical speculation are lifted from these passages, the mind instinctively looks back to that glorious hour when "God spake, and it was done"; when amid rattling thunders and leaping fires all the mountains and floods and systems of worlds at his word fell into place; when nature saw his right hand, and heard his voice; when clouds and darkness gathered themselves away, and the whole world became a garden of God, rich in fruit and in the ripe gold of autumn.

The mystery and glory of Him who made all that was made oppress the thought of man, and the heart asks, "Why should God love, or even notice, me?" The inspired Word opens the depth and height of this mystery of love. That it was God's interest in the

Son that shaped earth and man to the sublime end of making a universe of sons, in which his Son should be preëminent; where myriads should bear witness to his eternal Godhead. "If ye believe not that I am, ye shall die in your sins." Then truly is my life involved in the honor and love of God's dear Son—"my life is hid with Christ in God." Without him I am nothing; in him I am "no more a servant, but a son; and if a son, then an heir of God through Christ." (Galatians iv. 7.)

Scriptural predestination elevates the whole race to a divine personality—that of sonship. It leaves out none. It brings all within the possibility of the divine nature. The element of personality is equally essential to faith, to hope, to love. To throw out all by non-election, or any, fatally invades human personality, and by so far makes a universe of sons an impossibility, because things essentially contradictory are not possible, even to God.

THE PASSING OF THE GIANTS.

BY BISHOP CANDLER.

MANY persons are inquiring, "What has become of our great men? Has our country ceased to produce giants like those who blessed and honored former generations?" If the complaint is justified by facts, we may find a partial answer, at least, in a passage written by Thomas Carlyle. He says:

“This is an age which, as it were, denies the existence of great men; denies the desirableness of great men. Show our critics a great man—a Luther, for example—they begin to what they call ‘account for him’; not to worship him, but to take the dimensions of him, and bring him out to be a very little kind of man. He was ‘the creature of the time,’ they say; the time called him forth; the time did everything; he did nothing but what we, the little critic, could have done, too! This seems to me but melancholy work. The time call forth? Alas! we have known times call loudly enough for their great man, but did not find him when they called! He was not there. Providence had not sent him. The time calling its loudest had to go down to confusion and wreck because he would not come when called.

“I liken common, languid times, with their unbelief, distress, perplexity; their languid, doubting character, impotently crumbling through ever worse distress into final ruin—all this I liken to dry, dead fuel, waiting for the lightning out of heaven which shall quicken it. The great man, with his free force direct out of God’s own hand, is the lightning. All blazes now around him. The critic thinks the dry, moldering sticks have called him forth. They wanted him greatly, no doubt; but as to calling him forth! They are critics of small vision, who think that the dead sticks have created the fire. To lose faith in God’s divine

lightning, and to retain faith only in dead sticks—this seems to me the last consummation of unbelief.”

This rugged Scotch surgeon seems to lay a strong hand on the seat of the disease which makes our times so barren of great men. At last it is a sterility produced by swallowing great draughts of disguised fatalism, which blunts a sense of responsibility and paralyzes courage—qualities without which no great man was ever produced.

We witness a strange condition of things in our day. We see the fatalistic creed of election and foreordination driven out of theology, apparently never to return, and all the world, including the scientists and the men of letters, applauding the expulsion of this black spirit of despair. At the same time we see all the world, including the same scientists and men of letters, welcoming the monster into new habitations, from which he may go forth and do evil among men as he never could, and never did, when housed in theology. We find the scientists talking of the evolution of men by processes of environment and heredity. What is this but the doctrine of election under a scientific name? We find the man of letters writing history, biography, novels, and even poetry (a most melancholy type), under the influence of this doctrine of despair. Out of all the mass of books being printed, there seeps through upon the people the corrupting notion that a man is but the product of his ancestry

and his surroundings, the last result of blind forces of which he is the offspring and not the master. This type of the philosophy of history is more widespread than any other, notwithstanding the perishing of Calvinism in the ecclesiastical world. But it is nothing under heaven but Calvinism stripped of its clerical apparel, imposing itself on the world in the garb of literature and science.

Its effects also are identically the same as when preached from the pulpit. It paralyzes men. The bite of the Gila monster does not more certainly benumb the system and destroy the life. Some of its victims expire in raptures of optimism, crying: "All's well with the world, and if it is not so, I have no responsibility for it. The times made me, and what have I to do that I should think or speak ill of my maker, or seek his reformation?" Others die in the agonizing throes of pessimism, bewailing in their delirium: "Everything is going to the bad. We have come from chaos, lived in disorder, and are going into outer darkness, if not into absolute nothingness, and none of us can help it."

How can great men be nourished by such teaching? The great man seeks the truth, but such a pursuit is a fool's errand, if the truth can work no change in the world, and, of course, no benign change is possible in a world dominated by heredity and environment. It is not worth while to investigate evolution even, for it

will grind out its results just as well when we are ignorant as when we are informed of how its machinery works.

The great man dares to believe that by asserting the truth he will make things better, and hence he takes the risk of proclaiming the truth he sees. He has courage—the courage of conviction, the courage to believe that truth is mighty, and will prevail; that it is absolutely feasible as nothing else is in God's earth. But this confident creed is flatly contradicted by the dogma that a man is the product of his times. If that dogma be accepted, we must believe that men like Moses and Paul and Luther and Wesley changed nothing. They were only puppets apparently agonizing to bring forth a new world, although in reality they were merely the natural outcome of an old world. We may get some greater-looking puppets than they to-morrow. Sufficient unto the day is the good thereof. Let us watch and wait.

Ah! we will get no more like them till we throw off the stupor induced by this diabolical anodyne of fatalism, which our modern materialists have injected into the social, political, scientific, philosophic, and literary veins of the world.

These great men knew they were free, and that they were not the victims, but the masters, of their times. Given the conditions in Egypt in the age of the exodus to find Moses, and you have an insolvable

problem. The burning bush, not the Nile mud, made him. Martin Luther was not in solution in the times of Leo X., waiting the touch of Tetzal to be precipitated. John Wesley broke in upon the dreary life of the eighteenth century, and startled it as with a voice from heaven. He was not molded by it. He fused it in the fires of God's truth, and shaped it to a nobler form.

It is time we had some more of the same sort of men. If the mere calling for them would fetch them, our times are calling loud enough to get them, in all conscience. The demand for great men was never more urgent, and the honors awaiting them were never so great. The world is so anxious to honor them that it runs with smothering loads of laurel for small men, if they do anything that bears the slightest semblance of greatness. In truth, our laurel has been so extravagantly used we sometimes find that we have scarcely enough to go around all the small heads nodding and begging for it. Witness the toy heroes of the Spanish-American war, with their contentions for titles, glories, and prize money.

But the desperate need for leaders in the mighty work set before the present generation will be met. Among us now, perhaps, they walk as unappreciated as Moses in the court of Pharaoh, or Luther in his early days. They will stand up presently and tell this lazy, listless, faithless world that it must quit drifting

and get about its business. And the world will obey them. It always obeys when a man speaks to it as one having authority, and not as the scribes. The world knows a king when it sees him, and minds him, whether with crown off or on. Wherefore real kings do not need crowns, and care little for them.

The succession of kingly men will never perish from the earth, though there be parched interregnums filled with pigmies between them. They will continue to come and reign and bless the earth as long as there are found any left who believe in truth and human freedom, and the power of truth to uplift a world inhabited by free agents. When this simple faith has perished from among men—if it shall ever perish—the wretched herd still on the planet at that time will do well to get off somewhere else, if they can, for the miserable thing will soon burn up of spontaneous combustion.

Perish this doctrine of devils, which, while holding that the fittest survive, makes creation to culminate in a race of slaves, chained by an invincible heredity to an ancestry shading ever toward brutality behind it, and bound to a posterity of unredeemable bondmen in front! It is a lie that scandalizes man, dishonors God, impoverishes the earth, and robs heaven. It is not a good working hypothesis even, for it leads to in glorious indolence and incompetency.

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