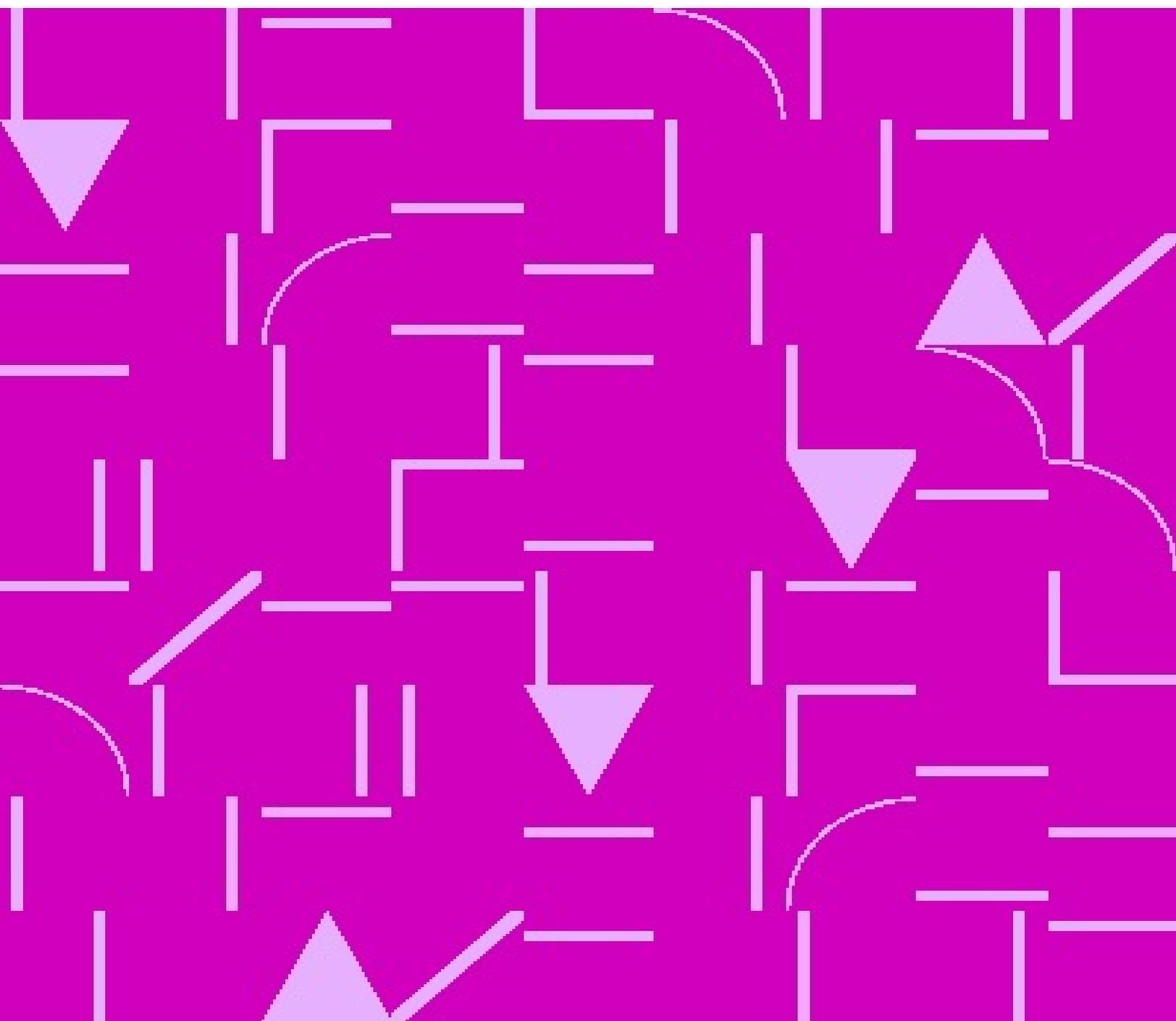


The Lights of the Church and the Light of Science

Essay #6 from "Science and Hebrew Tradition"

Thomas Henry Huxley



Rights for this book: [Public domain in the USA](#).

This edition is published by Project Gutenberg.

Originally [issued by Project Gutenberg](#) on 2001-05-01. To support the work of Project Gutenberg, visit their [Donation Page](#).

This free ebook has been produced by [GITenberg](#), a program of the [Free Ebook Foundation](#). If you have corrections or improvements to make to this ebook, or you want to use the source files for this ebook, visit [the book's github repository](#). You can support the work of the Free Ebook Foundation at their [Contributors Page](#).

The Project Gutenberg EBook of The Lights of the Church and the Light of Science, by Thomas Henry Huxley

This eBook is for the use of anyone anywhere at no cost and with almost no restrictions whatsoever. You may copy it, give it away or re-use it under the terms of the Project Gutenberg License included with this eBook or online at www.gutenberg.org

Title: The Lights of the Church and the Light of Science
Essay #6 from "Science and Hebrew Tradition"

Author: Thomas Henry Huxley

Release Date: December 3, 2008 [EBook #2632]
Last Updated: January 22, 2013

Language: English

*** START OF THIS PROJECT GUTENBERG EBOOK LIGHTS OF THE CHURCH ***

Produced by D. R. Thompson, and David Widger

THE LIGHTS OF THE CHURCH AND THE LIGHT OF SCIENCE

ESSAY #6 FROM "SCIENCE AND HEBREW TRADITION"

By Thomas Henry Huxley

[Previous Volume](#)

FOOTNOTES:

There are three ways of regarding any account of past occurrences, whether delivered to us orally or recorded in writing.

The narrative may be exactly true. That is to say, the words, taken in their natural sense, and interpreted according to the rules of grammar, may convey to the mind of the hearer, or of the reader an idea precisely correspondent with one which would have remained in the mind of a witness. For example, the statement that King Charles the First was beheaded at Whitehall on the 30th day of January 1649, is as exactly true as any proposition in mathematics or physics; no one doubts that any person of sound faculties, properly placed, who was present at Whitehall throughout that day, and who used his eyes, would have seen the King's head cut off; and that there would have remained in his mind an idea of that occurrence which he would have put into words of the same value as those which we use to express it.

Or the narrative may be partly true and partly false. Thus, some histories of the time tell us what the King said, and what Bishop Juxon said; or report royalist conspiracies to effect a rescue; or detail the motives which induced the chiefs of the Commonwealth to resolve that the King should die. One account declares that the King knelt at a high block, another that he lay down with his neck on a mere plank. And there are contemporary pictorial representations of both these modes of procedure. Such narratives, while veracious as to the main event, may and do exhibit various degrees of unconscious and conscious misrepresentation, suppression, and invention, till they become hardly distinguishable from pure fictions. Thus, they present a transition to narratives of a third class, in which the fictitious element predominates. Here, again, there are all imaginable gradations, from such works as Defoe's quasi-historical account of the Plague year, which probably gives a truer conception of that dreadful time than any authentic history, through the historical novel, drama, and epic, to the purely phantasmal creations of imaginative genius, such as the old "Arabian Nights" or the modern "Shaving of Shagpat." It is not strictly needful for my present purpose that I should say anything about narratives which are professedly fictitious. Yet it may be well, perhaps, if I disclaim any intention of derogating from their value, when I insist upon the paramount necessity of recollecting that there is no sort of relation between the ethical, or the aesthetic, or even the

scientific importance of such works, and their worth as historical documents. Unquestionably, to the poetic artist, or even to the student of psychology, "Hamlet" and "Macbeth" may be better instructors than all the books of a wilderness of professors of aesthetics or of moral philosophy. But, as evidence of occurrences in Denmark, or in Scotland, at the times and places indicated, they are out of court; the profoundest admiration for them, the deepest gratitude for their influence, are consistent with the knowledge that, historically speaking, they are worthless fables, in which any foundation of reality that may exist is submerged beneath the imaginative superstructure.

At present, however, I am not concerned to dwell upon the importance of fictitious literature and the immensity of the work which it has effected in the education of the human race. I propose to deal with the much more limited inquiry: Are there two other classes of consecutive narratives (as distinct from statements of individual facts), or only one? Is there any known historical work which is throughout exactly true, or is there not? In the case of the great majority of histories the answer is not doubtful: they are all only partially true. Even those venerable works which bear the names of some of the greatest of ancient Greek and Roman writers, and which have been accepted by generation after generation, down to modern times, as stories of unquestionable truth, have been compelled by scientific criticism, after a long battle, to descend to the common level, and to confession to a large admixture of error. I might fairly take this for granted; but it may be well that I should entrench myself behind the very apposite words of a historical authority who is certainly not obnoxious to even a suspicion of sceptical tendencies. [1](#)

Time was—and that not very long ago—when all the relations of ancient authors concerning the old world were received with a ready belief; and an unreasoning and uncritical faith accepted with equal satisfaction the narrative of the campaigns of Caesar and of the doings of Romulus, the account of Alexander's marches and of the conquests of Semiramis. We can most of us remember when, in this country, the whole story of regal Rome, and even the legend of the Trojan settlement in Latium, were seriously placed before boys as history, and discoursed of as unhesitatingly and in as dogmatic a tone as the tale of the Catiline Conspiracy or the Conquest of Britain....

But all this is now changed. The last century has seen the birth and growth of a new science—the Science of Historical Criticism.... The whole world of profane history has been revolutionised....

If these utterances were true when they fell from the lips of a Bampton lecturer in 1859, with how much greater force do they appeal to us now, when the immense labours of the generation now passing away constitute one vast illustration of the power and fruitfulness of scientific methods of investigation in history, no less than in all other departments of knowledge.

At the present time, I suppose, there is no one who doubts that histories which appertain to any other people than the Jews, and their spiritual progeny in the first century, fall within the second class of the three enumerated. Like Goethe's *Autobiography*, they might all be entitled "Wahrheit und Dichtung"—"Truth and Fiction." The proportion of the two constituents changes indefinitely; and the quality of the fiction varies through the whole gamut of unveracity. But "Dichtung" is always there. For the most acute and learned of historians cannot remedy the imperfections of his sources of information; nor can the most impartial wholly escape the influence of the "personal equation" generated by his temperament and by his education. Therefore, from the narratives of Herodotus to those set forth in yesterday's "Times," all history is to be read subject to the warning that fiction has its share therein. The modern vast development of fugitive literature cannot be the unmitigated evil that some do vainly say it is, since it has put an end to the popular delusion of less press-ridden times, that what appears in print must be true. We should rather hope that some beneficent influence may create among the erudite a like healthy suspicion of manuscripts and inscriptions, however ancient; for a bulletin may lie, even though it be written in cuneiform characters. Hotspur's starling, that was to be taught to speak nothing but "Mortimer"

into the ears of King Henry the Fourth, might be a useful inmate of every historian's library, if "Fiction" were substituted for the name of Harry Percy's friend.

But it was the chief object of the lecturer to the congregation gathered in St. Mary's, Oxford, thirty-one years ago, to prove to them, by evidence gathered with no little labour and marshalled with much skill, that one group of historical works was exempt from the general rule; and that the narratives contained in the canonical Scriptures are free from any admixture of error. With justice and candour, the lecturer impresses upon his hearers that the special distinction of Christianity, among the religions of the world, lies in its claim to be historical; to be surely founded upon events which have happened, exactly as they are declared to have happened in its sacred books; which are true, that is, in the sense that the statement about the execution of Charles the First is true. Further, it is affirmed that the New Testament presupposes the historical exactness of the Old Testament; that the points of contact of "sacred" and "profane" history are innumerable; and that the demonstration of the falsity of the Hebrew records, especially in regard to those narratives which are assumed to be true in the New Testament, would be fatal to Christian theology.

My utmost ingenuity does not enable me to discover a flaw in the argument thus briefly summarised. I am fairly at a loss to comprehend how any one, for a moment, can doubt that Christian theology must stand or fall with the historical trustworthiness of the Jewish Scriptures. The very conception of the Messiah, or Christ, is inextricably interwoven with Jewish history; the identification of Jesus of Nazareth with that Messiah rests upon the interpretation of passages of the Hebrew Scriptures which have no evidential value unless they possess the historical character assigned to them. If the covenant with Abraham was not made; if circumcision and sacrifices were not ordained by Jahveh; if the "ten words" were not written by God's hand on the stone tables; if Abraham is more or less a mythical hero, such as Theseus; the story of the Deluge a fiction; that of the Fall a legend; and that of the creation the dream of a seer; if all these definite and detailed narratives of apparently real events have no more value as history than have the stories of the regal period of Rome—what is to be said about the Messianic doctrine, which is so much less clearly enunciated? And what about the authority of the writers of the books of the New Testament, who, on this theory, have not merely accepted flimsy fictions for solid truths, but have built the very foundations of Christian dogma upon legendary quicksands?

But these may be said to be merely the carpings of that carnal reason which the profane call common sense; I hasten, therefore, to bring up the forces of unimpeachable ecclesiastical authority in support of my position. In a sermon preached last December, in St. Paul's Cathedral, [2](#) Canon Liddon declares:—

"For Christians it will be enough to know that our Lord Jesus Christ set the seal of His infallible sanction on the whole of the Old Testament. He found the Hebrew canon as we have it in our hands to-day, and He treated it as an authority which was above discussion. Nay more: He went out of His way—if we may reverently speak thus—to sanction not a few portions of it which modern scepticism rejects. When He would warn His hearers against the dangers of spiritual relapse, He bids them remember 'Lot's wife.' [3](#) When He would point out how worldly engagements may blind the soul to a coming judgment, He reminds them how men ate, and drank, and married, and were given in marriage, until the day that Noah entered into the ark, and the Flood came and destroyed them all. [4](#) If He would put His finger on a fact in past Jewish history which, by its admitted reality, would warrant belief in His own coming Resurrection, He points to Jonah's being three days and three nights in the whale's belly (p. 23)." [5](#)

The preacher proceeds to brush aside the common—I had almost said vulgar—apologetic pretext that Jesus was using *ad hominem* arguments, or "accommodating" his better knowledge to popular ignorance, as well as to point out the inadmissibility of the other alternative, that he shared the popular ignorance. And to those who hold the latter view sarcasm is dealt out with no niggard hand.

But they will find it difficult to persuade mankind that, if He could be mistaken on a matter of such strictly religious importance as the value of the sacred literature of His

countrymen, He can be safely trusted about anything else. The trustworthiness of the Old Testament is, in fact, inseparable from the trustworthiness of our Lord Jesus Christ; and if we believe that He is the true Light of the world, we shall close our ears against suggestions impairing the credit of those Jewish Scriptures which have received the stamp of His Divine authority. (p. 25)

Moreover, I learn from the public journals that a brilliant and sharply-cut view of orthodoxy, of like hue and pattern, was only the other day exhibited in that great theological kaleidoscope, the pulpit of St. Mary's, recalling the time so long passed by, when a Bampton lecturer, in the same place, performed the unusual feat of leaving the faith of old-fashioned Christians undisturbed.

Yet many things have happened in the intervening thirty-one years. The Bampton lecturer of 1859 had to grapple only with the infant Hercules of historical criticism; and he is now a full-grown athlete, bearing on his shoulders the spoils of all the lions that have stood in his path. Surely a martyr's courage, as well as a martyr's faith, is needed by any one who, at this time, is prepared to stand by the following plea for the veracity of the Pentateuch:—

"Adam, according to the Hebrew original, was for 243 years contemporary with Methuselah, who conversed for a hundred years with Shem. Shem was for fifty years contemporary with Jacob, who probably saw Jochebed, Moses's mother. Thus, Moses might by oral tradition have obtained the history of Abraham, and even of the Deluge, at third hand; and that of the Temptation and the Fall at fifth hand....

"If it be granted—as it seems to be—that the great and stirring events in a nation's life will, under ordinary circumstances, be remembered (apart from all written memorials) for the space of 150 years, being handed down through five generations, it must be allowed (even on more human grounds) that the account which Moses gives of the Temptation and the Fall is to be depended upon, if it passed through no more than four hands between him and Adam." [6](#)

If "the trustworthiness of our Lord Jesus Christ" is to stand or fall with the belief in the sudden transmutation of the chemical components of a woman's body into sodium chloride, or on the "admitted reality" of Jonah's ejection, safe and sound, on the shores of the Levant, after three days' sea-journey in the stomach of a gigantic marine animal, what possible pretext can there be for even hinting a doubt as to the precise truth of the longevity attributed to the Patriarchs? Who that has swallowed the camel of Jonah's journey will be guilty of the affectation of straining at such a historical gnat—nay, midge—as the supposition that the mother of Moses was told the story of the Flood by Jacob; who had it straight from Shem; who was on friendly terms with Methuselah; who knew Adam quite well?

Yet, by the strange irony of things, the illustrious brother of the divine who propounded this remarkable theory, has been the guide and foremost worker of that band of investigators of the records of Assyria and of Babylonia, who have opened to our view, not merely a new chapter, but a new volume of primeval history, relating to the very people who have the most numerous points of contact with the life of the ancient Hebrews. Now, whatever imperfections may yet obscure the full value of the Mesopotamian records, everything that has been clearly ascertained tends to the conclusion that the assignment of no more than 4000 years to the period between the time of the origin of mankind and that of Augustus Caesar, is wholly inadmissible. Therefore the Biblical chronology, which Canon Rawlinson trusted so implicitly in 1859, is relegated by all serious critics to the domain of fable.

But if scientific method, operating in the region of history, of philology, of archaeology, in the course of the last thirty or forty years, has become thus formidable to the theological dogmatist, what may not be said about scientific method working in the province of physical science? For, if it be true that the Canonical Scriptures have innumerable points of contact with civil history, it is no less true that they have almost as many with natural history; and their accuracy is put to the test as severely by the latter as by the former. The origin of the present state of the heavens and the earth is a problem which lies strictly within

the province of physical science; so is that of the origin of man among living things; so is that of the physical changes which the earth has undergone since the origin of man; so is that of the origin of the various races and nations of men, with all their varieties of language and physical conformation. Whether the earth moves round the sun or the contrary; whether the bodily and mental diseases of men and animals are caused by evil spirits or not; whether there is such an agency as witchcraft or not—all these are purely scientific questions; and to all of them the Canonical Scriptures profess to give true answers. And though nothing is more common than the assumption that these books come into conflict only with the speculative part of modern physical science, no assumption can have less foundation.

The antagonism between natural knowledge and the Pentateuch would be as great if the speculations of our time had never been heard of. It arises out of contradiction upon matters of fact. The books of ecclesiastical authority declare that certain events happened in a certain fashion; the books of scientific authority say they did not. As it seems that this unquestionable truth has not yet penetrated among many of those who speak and write on these subjects, it may be useful to give a full illustration of it. And for that purpose I propose to deal, at some length, with the narrative of the Noachian Deluge given in Genesis.

The Bampton lecturer in 1859, and the Canon of St. Paul's in 1890, are in full agreement that this history is true, in the sense in which I have defined historical truth. The former is of opinion that the account attributed to Berosus records a tradition—

not drawn from the Hebrew record, much less the foundation of that record; yet coinciding with it in the most remarkable way. The Babylonian version is tricked out with a few extravagances, as the monstrous size of the vessel and the translation of Xisuthros; but otherwise it is the Hebrew history *down to its minutiae*. (p. 64).

Moreover, correcting Niebuhr, the Bampton lecturer points out that the narrative of Berosus implies the universality of the Flood.

It is plain that the waters are represented as prevailing above the tops of the loftiest mountains in Armenia—a height which must have been seen to involve the submersion of all the countries with which the Babylonians were acquainted (p. 66).

I may remark, in passing, that many people think the size of Noah's ark "monstrous," considering the probable state of the art of shipbuilding only 1600 years after the origin of man; while others are so unreasonable as to inquire why the translation of Enoch is less an "extravagance" than that of Xisuthros. It is more important, however, to note that the Universality of the Deluge is recognised, not merely as a part of the story, but as a necessary consequence of some of its details. The latest exponent of Anglican orthodoxy, as we have seen, insists upon the accuracy of the Pentateuchal history of the Flood in a still more forcible manner. It is cited as one of those very narratives to which the authority of the Founder of Christianity is pledged, and upon the accuracy of which "the trustworthiness of our Lord Jesus Christ" is staked, just as others have staked it upon the truth of the histories of demoniac possession in the Gospels.

Now, when those who put their trust in scientific methods of ascertaining the truth in the province of natural history find themselves confronted and opposed, on their own ground, by ecclesiastical pretensions to better knowledge, it is, undoubtedly, most desirable for them to make sure that their conclusions, whatever they may be, are well founded. And, if they put aside the unauthorised interference with their business and relegate the Pentateuchal history to the region of pure fiction, they are bound to assure themselves that they do so because the plainest teachings of Nature (apart from all doubtful speculations) are irreconcilable with the assertions which they reject.

At the present time, it is difficult to persuade serious scientific inquirers to occupy themselves, in any way, with the Noachian Deluge. They look at you with a smile and a shrug, and say they have more important matters to attend to than mere antiquarianism. But it was not so in my youth. At that time, geologists and biologists could hardly follow to the end any path of inquiry without finding the way

blocked by Noah and his ark, or by the first chapter of Genesis; and it was a serious matter, in this country at any rate, for a man to be suspected of doubting the literal truth of the Diluvial or any other Pentateuchal history. The fiftieth anniversary of the foundation of the Geological Club (in 1824) was, if I remember rightly, the last occasion on which the late Sir Charles Lyell spoke to even so small a public as the members of that body. Our veteran leader lighted up once more; and, referring to the difficulties which beset his early efforts to create a rational science of geology, spoke, with his wonted clearness and vigour, of the social ostracism which pursued him after the publication of the "Principles of Geology," in 1830, on account of the obvious tendency of that noble work to discredit the Pentateuchal accounts of the Creation and the Deluge. If my younger contemporaries find this hard to believe, I may refer them to a grave book, "On the Doctrine of the Deluge," published eight years later, and dedicated by its author to his father, the then Archbishop of York. The first chapter refers to the treatment of the "Mosaic Deluge," by Dr. Buckland and Mr. Lyell, in the following terms:

Their respect for revealed religion has prevented them from arraying themselves openly against the Scriptural account of it—much less do they deny its truth—but they are in a great hurry to escape from the consideration of it, and evidently concur in the opinion of Linnaeus, that no proofs whatever of the Deluge are to be discovered in the structure of the earth (p. 1).

And after an attempt to reply to some of Lyell's arguments, which it would be cruel to reproduce, the writer continues:—

When, therefore, upon such slender grounds, it is determined, in answer to those who insist upon its universality, that the Mosaic Deluge must be considered a preternatural event, far beyond the reach of philosophical inquiry; not only as to the causes employed to produce it, but as to the effects most likely to result from it; that determination wears an aspect of scepticism, which, however much soever it may be unintentional in the mind of the writer, yet cannot but produce an evil impression on those who are already predisposed to carp and cavil at the evidences of Revelation (pp. 8-9).

The kindly and courteous writer of these curious passages is evidently unwilling to make the geologists the victims of general opprobrium by pressing the obvious consequences of their teaching home. One is therefore pained to think of the feelings with which, if he lived so long as to become acquainted with the "Dictionary of the Bible," he must have perused the article "Noah," written by a dignitary of the Church for that standard compendium and published in 1863. For the doctrine of the universality of the Deluge is therein altogether given up; and I permit myself to hope that a long criticism of the story from the point of view of natural science, with which, at the request of the learned theologian who wrote it, I supplied him, may, in some degree, have contributed towards this happy result.

Notwithstanding diligent search, I have been unable to discover that the universality of the Deluge has any defender left, at least among those who have so far mastered the rudiments of natural knowledge as to be able to appreciate the weight of evidence against it. For example, when I turned to the "Speaker's Bible," published under the sanction of high Anglican authority, I found the following judicial and judicious deliverance, the skilful wording of which may adorn, but does not hide, the completeness of the surrender of the old teaching:—

"Without pronouncing too hastily on any fair inferences from the words of Scripture, we may reasonably say that their most natural interpretation is, that the whole race of man had become grievously corrupted since the faithful had intermingled with the ungodly; that the inhabited world was consequently filled with violence, and that God had decreed to destroy all mankind except one single family; that, therefore, all that portion of the earth, perhaps as yet a very small portion, into which mankind had spread was overwhelmed with water. The ark was ordained to save one faithful family; and lest that family, on the subsidence of the waters, should find the whole country round them a desert, a pair of all the beasts of

the land and of the fowls of the air were preserved along with them, and along with them went forth to replenish the now desolated continent. The words of Scripture (confirmed as they are by universal tradition) appear at least to mean as much as this. They do not necessarily mean more." [7](#)

In the third edition of Kitto's "Cyclopaedia of Biblical Literature" (1876), the article "Deluge," written by my friend, the present distinguished head of the Geological Survey of Great Britain, extinguishes the universality doctrine as thoroughly as might be expected from its authorship; and, since the writer of the article "Noah" refers his readers to that entitled "Deluge," it is to be supposed, notwithstanding his generally orthodox tone, that he does not dissent from its conclusions. Again, the writers in Herzog's "Real-Encyclopadie" (Bd. X. 1882) and in Riehm's "Handwörterbuch" (1884)—both works with a conservative leaning—are on the same side; and Diestel, [8](#) in his full discussion of the subject, remorselessly rejects the universality doctrine. Even that staunch opponent of scientific rationalism—may I say rationality?—Zockler [9](#) flinches from a distinct defence of the thesis, any opposition to which, well within my recollection, was howled down by the orthodox as mere "infidelity." All that, in his sore straits, Dr. Zockler is able to do, is to pronounce a faint commendation upon a particularly absurd attempt at reconciliation, which would make out the Noachian Deluge to be a catastrophe which occurred at the end of the Glacial Epoch. This hypothesis involves only the trifle of a physical revolution of which geology knows nothing; and which, if it secured the accuracy of the Pentateuchal writer about the fact of the Deluge, would leave the details of his account as irreconcilable with the truths of elementary physical science as ever. Thus I may be permitted to spare myself and my readers the weariness of a recapitulation of the overwhelming arguments against the universality of the Deluge, which they will now find for themselves stated, as fully and forcibly as could be wished, by Anglican and other theologians, whose orthodoxy and conservative tendencies have, hitherto, been above suspicion. Yet many fully admit (and, indeed, nothing can be plainer) that, as a matter of fact, the whole earth known to him was inundated; nor is it less obvious that unless all mankind, with the exception of Noah and his family, were actually destroyed, the references to the Flood in the New Testament are unintelligible.

But I am quite aware that the strength of the demonstration that no universal Deluge ever took place has produced a change of front in the army of apologetic writers. They have imagined that the substitution of the adjective "partial" for "universal," will save the credit of the Pentateuch, and permit them, after all, without too many blushes, to declare that the progress of modern science only strengthens the authority of Moses. Nowhere have I found the case of the advocates of this method of escaping from the difficulties of the actual position better put than in the lecture of Professor Diestel to which I have referred. After frankly admitting that the old doctrine of universality involves physical impossibilities, he continues:—

All these difficulties fall away as soon as we give up the universality of the Deluge, and imagine a *partial* flooding of the earth, say in western Asia. But have we a right to do so? The narrative speaks of "the whole earth." But what is the meaning of this expression? Surely not the whole surface of the earth according to the ideas of *modern* geographers, but, at most, according to the conceptions of the Biblical author. This very simple conclusion, however, is never drawn by too many readers of the Bible. But one need only cast one's eyes over the tenth chapter of Genesis in order to become acquainted with the geographical horizon of the Jews. In the north it was bounded by the Black Sea and the mountains of Armenia; extended towards the east very little beyond the Tigris; hardly reached the apex of the Persian Gulf; passed, then, through the middle of Arabia and the Red Sea; went southward through Abyssinia, and then turned westward by the frontiers of Egypt, and inclosed the easternmost islands of the Mediterranean (p. 11).

The justice of this observation must be admitted, no less than the further remark that, in still earlier times, the pastoral Hebrews very probably had yet more restricted notions of what constituted the "whole earth." Moreover, I, for one, fully agree with Professor Diestel that the motive, or generative incident, of the whole story is to be sought in the occasionally excessive and desolating floods of the Euphrates and

the Tigris.

Let us, provisionally, accept the theory of a partial deluge, and try to form a clear mental picture of the occurrence. Let us suppose that, for forty days and forty nights, such a vast quantity of water was poured upon the ground that the whole surface of Mesopotamia was covered by water to a depth certainly greater, probably much greater, than fifteen cubits, or twenty feet (Gen. vii. 20). The inundation prevails upon the earth for one hundred and fifty days and then the flood gradually decreases, until, on the seventeenth day of the seventh month, the ark, which had previously floated on its surface, grounds upon the "mountains of Ararat" [10](#) (Gen. viii. 34). Then, as Diestel has acutely pointed out ("Sintflut," p. 13), we are to imagine the further subsidence of the flood to take place so gradually that it was not until nearly two months and a half after this time (that is to say, on the first day of the tenth month) that the "tops of the mountains" became visible. Hence it follows that, if the ark drew even as much as twenty feet of water, the level of the inundation fell very slowly—at a rate of only a few inches a day—until the top of the mountain on which it rested became visible. This is an amount of movement which, if it took place in the sea, would be overlooked by ordinary people on the shore. But the Mesopotamian plain slopes gently, from an elevation of 500 or 600 feet at its northern end, to the sea, at its southern end, with hardly so much as a notable ridge to break its uniform flatness, for 300 to 400 miles. These being the conditions of the case, the following inquiry naturally presents itself: not, be it observed, as a recondite problem, generated by modern speculation, but as a plain suggestion flowing out of that very ordinary and archaic piece of knowledge that water cannot be piled up like in a heap, like sand; or that it seeks the lowest level. When, after 150 days, "the fountains also of the deep and the windows of heaven were stopped, and the rain from heaven was restrained" (Gen. viii.2), what prevented the mass of water, several, possibly very many, fathoms deep, which covered, say, the present site of Bagdad, from sweeping seaward in a furious torrent; and, in a very few hours, leaving, not only the "tops of the mountains," but the whole plain, save any minor depressions, bare? How could its subsistence, by any possibility, be an affair of weeks and months?

And if this difficulty is not enough, let any one try to imagine how a mass of water several perhaps very many, fathoms deep, could be accumulated on a flat surface of land rising well above the sea, and separated from it by no sort of barrier. Most people know Lord's Cricket-ground. Would it not be an absurd contradiction to our common knowledge of the properties of water to imagine that, if all the mains of all the waterworks of London were turned on to it, they could maintain a heap of water twenty feet deep over its level surface? Is it not obvious that the water, whatever momentary accumulation might take place at first, would not stop there, but that it would dash, like a mighty mill-race, southwards down the gentle slope which ends in the Thames? And is it not further obvious, that whatever depth of water might be maintained over the cricket-ground so long as all the mains poured on to it, anything which floated there would be speedily whirled away by the current, like a cork in a gutter when the rain pours? But if this is so, then it is no less certain that Noah's deeply laden, sailless, oarless, and rudderless craft, if by good fortune it escaped capsizing in whirlpools, or having its bottom knocked into holes by snags (like those which prove fatal even to well-built steamers on the Mississippi in our day), would have speedily found itself a good way down the Persian Gulf, and not long after in the Indian Ocean, somewhere between Arabia and Hindostan. Even if, eventually, the ark might have gone ashore, with other jetsam and flotsam, on the coasts of Arabia, or of Hindostan, or of the Maldives, or of Madagascar, its return to the "mountains of Ararat" would have been a miracle more stupendous than all the rest.

Thus, the last state of the would-be reconcilers of the story of the Deluge with fact is worse than the first. All that they have done is to transfer the contradictions to established truth from the region of science proper to that of common information and common sense. For, really, the assertion that the surface of a body of deep water, to which no addition was made, and which there was nothing to stop from running into the sea, sank at the rate of only a few inches or even feet a day, simply outrages the most ordinary and

familiar teachings of every man's daily experience. A child may see the folly of it.

In addition, I may remark that the necessary assumption of the "partial Deluge" hypothesis (if it is confined to Mesopotamia) that the Hebrew writer must have meant low hills when he said "high mountains," is quite untenable. On the eastern side of the Mesopotamian plain, the snowy peaks of the frontier ranges of Persia are visible from Bagdad, [11](#) and even the most ignorant herdsmen in the neighbourhood of "Ur of the Chaldees," near its western limit, could hardly have been unacquainted with the comparatively elevated plateau of the Syrian desert which lay close at hand. But, surely, we must suppose the Biblical writer to be acquainted with the highlands of Palestine and with the masses of the Sinaitic peninsula, which soar more than 8000 feet above the sea, if he knew of no higher elevations; and, if so, he could not well have meant to refer to mere hillocks when he said that "all the high mountains which were under the whole heaven were covered" (Genesis vii. 19). Even the hill-country of Galilee reaches an elevation of 4000 feet; and a flood which covered it could by no possibility have been other than universal in its superficial extent. Water really cannot be got to stand at, say, 4000 feet above the sea-level over Palestine, without covering the rest of the globe to the same height. Even if, in the course of Noah's six hundredth year, some prodigious convulsion had sunk the whole region inclosed within "the horizon of the geographical knowledge" of the Israelites by that much, and another had pushed it up again, just in time to catch the ark upon the "mountains of Ararat," matters are not much mended. I am afraid to think of what would have become of a vessel so little seaworthy as the ark and of its very numerous passengers, under the peculiar obstacles to quiet flotation which such rapid movements of depression and upheaval would have generated.

Thus, in view, not, I repeat of the recondite speculations of infidel philosophers, but in the face of the plainest and most commonplace of ascertained physical facts, the story of the Noachian Deluge has no more claim to credit than has that of Deucalion; and whether it was, or was not, suggested by the familiar acquaintance of its originators with the effects of unusually great overflows of the Tigris and Euphrates, it is utterly devoid of historical truth.

That is, in my judgment, the necessary result of the application of criticism, based upon assured physical knowledge to the story of the Deluge. And it is satisfactory that the criticism which is based, not upon literary and historical speculations, but upon well-ascertained facts in the departments of literature and history, tends to exactly the same conclusion.

For I find this much agreed upon by all Biblical scholars of repute, that the story of the Deluge in Genesis is separable into at least two sets of statements; and that, when the statements thus separated are recombined in their proper order, each set furnishes an account of the event, coherent and complete within itself, but in some respects discordant with that afforded by the other set. This fact, as I understand, is not disputed. Whether one of these is the work of an Elohist, and the other of a Jehovist narrator; whether the two have been pieced together in this strange fashion because, in the estimation of the compilers and editors of the Pentateuch, they had equal and independent authority, or not; or whether there is some other way of accounting for it—are questions the answers to which do not affect the fact. If possible I avoid *a priori* arguments. But still, I think it may be urged, without imprudence, that a narrative having this structure is hardly such as might be expected from a writer possessed of full and infallibly accurate knowledge. Once more, it would seem that it is not necessarily the mere inclination of the sceptical spirit to question everything, or the wilful blindness of infidels, which prompts grave doubts as to the value of a narrative thus curiously unlike the ordinary run of veracious histories.

But the voice of archaeological and historical criticism still has to be heard; and it gives forth no uncertain sound. The marvellous recovery of the records of an antiquity, far superior to any that can be ascribed to the Pentateuch, which has been effected by the decipherers of cuneiform characters, has put us in possession of a series, once more, not of speculations, but of facts, which have a most remarkable

bearing upon the question of the truthworthiness of the narrative of the Flood. It is established, that for centuries before the asserted migration of Terah from Ur of the Chaldees (which, according to the orthodox interpreters of the Pentateuch, took place after the year 2000 B.C.) Lower Mesopotamia was the seat of a civilisation in which art and science and literature had attained a development formerly unsuspected or, if there were faint reports of it, treated as fabulous. And it is also no matter of speculation, but a fact, that the libraries of these people contain versions of a long epic poem, one of the twelve books of which tells a story of a deluge, which, in a number of its leading features, corresponds with the story attributed to Berossus, no less than with the story given in Genesis, with curious exactness. Thus, the correctness of Canon Rawlinson's conclusion, cited above, that the story of Berossus was neither drawn from the Hebrew record, nor is the foundation of it, can hardly be questioned. It is highly probable, if not certain, that Berossus relied upon one of the versions (for there seem to have been several) of the old Babylonian epos, extant in his time; and, if that is a reasonable conclusion, why is it unreasonable to believe that the two stories, which the Hebrew compiler has put together in such an inartistic fashion, were ultimately derived from the same source? I say ultimately, because it does not at all follow that the two versions, possibly trimmed by the Jehovistic writer on the one hand, and by the Elohist on the other, to suit Hebrew requirements, may not have been current among the Israelites for ages. And they may have acquired great authority before they were combined in the Pentateuch.

Looking at the convergence of all these lines of evidence to the one conclusion—that the story of the Flood in Genesis is merely a Bowdlerised version of one of the oldest pieces of purely fictitious literature extant; that whether this is, or is not, its origin, the events asserted in it to have taken place assuredly never did take place; further, that, in point of fact, the story, in the plain and logically necessary sense of its words, has long since been given up by orthodox and conservative commentators of the Established Church—I can but admire the courage and clear foresight of the Anglican divine who tells us that we must be prepared to choose between the trustworthiness of scientific method and the trustworthiness of that which the Church declares to be Divine authority. For, to my mind, this declaration of war to the knife against secular science, even in its most elementary form; this rejection, without a moment's hesitation, of any and all evidence which conflicts with theological dogma—is the only position which is logically reconcilable with the axioms of orthodoxy. If the Gospels truly report that which an incarnation of the God of Truth communicated to the world, then it surely is absurd to attend to any other evidence touching matters about which he made any clear statement, or the truth of which is distinctly implied by his words. If the exact historical truth of the Gospels is an axiom of Christianity, it is as just and right for a Christian to say, Let us "close our ears against suggestions" of scientific critics, as it is for the man of science to refuse to waste his time upon circle-squarers and flat-earth fanatics.

It is commonly reported that the manifesto by which the Canon of St. Paul's proclaims that he nails the colours of the strictest Biblical infallibility to the mast of the ship ecclesiastical, was put forth as a counterblast to "Lux Mundi"; and that the passages which I have more particularly quoted are directed against the essay on "The Holy Spirit and Inspiration" in that collection of treatises by Anglican divines of high standing, who must assuredly be acquitted of conscious "infidel" proclivities. I fancy that rumour must, for once, be right, for it is impossible to imagine a more direct and diametrical contradiction than that between the passages from the sermon cited above and those which follow:—

What is questioned is that our Lord's words foreclose certain critical positions as to the character of Old Testament literature. For example, does His use of Jonah's resurrection as a type of His own, depend in any real degree upon whether it is historical fact or allegory?... Once more, our Lord uses the time before the Flood, to illustrate the carelessness of men before His own coming.... In referring to the Flood He certainly suggests that He is treating it as typical, for He introduces circumstances—"eating and drinking, marrying and giving in marriage"—which have no counterpart in the original

narrative. (pp. 358-9).

While insisting on the flow of inspiration through the whole of the Old Testament, the essayist does not admit its universality. Here, also, the new apologetic demands a partial flood:

But does the inspiration of the recorder guarantee the exact historical truth of what he records? And, in matter of fact, can the record with due regard to legitimate historical criticism, be pronounced true? Now, to the latter of these two questions (and they are quite distinct questions) we may reply that there is nothing to prevent our believing, as our faith strongly disposes us to believe, that the record from Abraham downward is, in substance, in the strict sense historical (p. 351).

It would appear, therefore, that there is nothing to prevent our believing that the record, from Abraham upward, consists of stories in the strict sense unhistorical, and that the pre-Abrahamic narratives are mere moral and religious "types" and parables.

I confess I soon lose my way when I try to follow those who walk delicately among "types" and allegories. A certain passion for clearness forces me to ask, bluntly, whether the writer means to say that Jesus did not believe the stories in question, or that he did? When Jesus spoke, as of a matter of fact, that "the Flood came and destroyed them all," did he believe that the Deluge really took place, or not? It seems to me that, as the narrative mentions Noah's wife, and his sons' wives, there is good scriptural warranty for the statement that the antediluvians married and were given in marriage; and I should have thought that their eating and drinking might be assumed by the firmest believer in the literal truth of the story. Moreover, I venture to ask what sort of value, as an illustration of God's methods of dealing with sin, has an account of an event that never happened? If no Flood swept the careless people away, how is the warning of more worth than the cry of "Wolf" when there is no wolf? If Jonah's three days' residence in the whale is not an "admitted reality," how could it "warrant belief" in the "coming resurrection?" If Lot's wife was not turned into a pillar of salt, the bidding those who turn back from the narrow path to "remember" it is, morally, about on a level with telling a naughty child that a bogey is coming to fetch it away. Suppose that a Conservative orator warns his hearers to beware of great political and social changes, lest they end, as in France, in the domination of a Robespierre; what becomes, not only of his argument, but of his veracity, if he, personally, does not believe that Robespierre existed and did the deeds attributed to him?

Like all other attempts to reconcile the results of scientifically-conducted investigation with the demands of the outworn creeds of ecclesiasticism, the essay on Inspiration is just such a failure as must await mediation, when the mediator is unable properly to appreciate the weight of the evidence for the case of one of the two parties. The question of "Inspiration" really possesses no interest for those who have cast ecclesiasticism and all its works aside, and have no faith in any source of truth save that which is reached by the patient application of scientific methods. Theories of inspiration are speculations as to the means by which the authors of statements, in the Bible or elsewhere, have been led to say what they have said—and it assumes that natural agencies are insufficient for the purpose. I prefer to stop short of this problem, finding it more profitable to undertake the inquiry which naturally precedes it—namely, Are these statements true or false? If they are true, it may be worth while to go into the question of their supernatural generation; if they are false, it certainly is not worth mine.

Now, not only do I hold it to be proven that the story of the Deluge is a pure fiction; but I have no hesitation in affirming the same thing of the story of the Creation. [12](#) Between these two lies the story of the creation of man and woman and their fall from primitive innocence, which is even more monstrously improbable than either of the other two, though, from the nature of the case, it is not so easily capable of direct refutation. It can be demonstrated that the earth took longer than six days in the making, and that the Deluge, as described, is a physical impossibility; but there is no proving, especially to those who are perfect in the art of closing their ears to that which they do not wish to hear, that a snake did not speak, or that Eve was not made out of one of Adam's ribs.

The compiler of Genesis, in its present form, evidently had a definite plan in his mind. His countrymen, like all other men, were doubtless curious to know how the world began; how men, and especially

wicked men, came into being, and how existing nations and races arose among the descendants of one stock; and, finally, what was the history of their own particular tribe. They, like ourselves, desired to solve the four great problems of cosmogeny, anthropogeny, ethnogeny, and geneogeny. The Pentateuch furnishes the solutions which appeared satisfactory to its author. One of these, as we have seen, was borrowed from a Babylonian fable; and I know of no reason to suspect any different origin for the rest. Now, I would ask, is the story of the fabrication of Eve to be regarded as one of those pre-Abrahamic narratives, the historical truth of which is an open question, in face of the reference to it in a speech unhappily famous for the legal oppression to which it has been wrongfully forced to lend itself?

Have ye not read, that he which made them from the beginning made them male and female, and said, For this cause shall a man leave his father and mother, and cleave to his wife; and the twain shall become one flesh? (Matt. xix. 5.)

If divine authority is not here claimed for the twenty-fourth verse of the second chapter of Genesis, what is the value of language? And again, I ask, if one may play fast and loose with the story of the Fall as a "type" or "allegory," what becomes of the foundation of Pauline theology?—

For since by man came death, by man came also the resurrection of the dead. For as in Adam all die, so also in Christ shall all be made alive (1 Corinthians xv. 21, 22).

If Adam may be held to be no more real a personage than Prometheus, and if the story of the Fall is merely an instructive "type," comparable to the profound Promethean mythus, what value has Paul's dialectic?

While, therefore, every right-minded man must sympathise with the efforts of those theologians, who have not been able altogether to close their ears to the still, small, voice of reason, to escape from the fetters which ecclesiasticism has forged; the melancholy fact remains, that the position they have taken up is hopelessly untenable. It is raked alike by the old-fashioned artillery of the churches and by the fatal weapons of precision with which the *enfants perdus* of the advancing forces of science are armed. They must surrender, or fall back into a more sheltered position. And it is possible that they may long find safety in such retreat.

It is, indeed, probable that the proportional number of those who will distinctly profess their belief in the transubstantiation of Lot's wife, and the anticipatory experience of submarine navigation by Jonah; in water standing fathoms deep on the side of a declivity without anything to hold it up; and in devils who enter swine—will not increase. But neither is there ground for much hope that the proportion of those who cast aside these fictions and adopt the consequence of that repudiation, are, for some generations, likely to constitute a majority. Our age is a day of compromises. The present and the near future seem given over to those happily, if curiously, constituted people who see as little difficulty in throwing aside any amount of post-Abrahamic Scriptural narrative, as the authors of "Lux Mundi" see in sacrificing the pre-Abrahamic stories; and, having distilled away every inconvenient matter of fact in Christian history, continue to pay divine honours to the residue. There really seems to be no reason why the next generation should not listen to a Bampton Lecture modelled upon that addressed to the last:—

Time was—and that not very long ago—when all the relations of Biblical authors concerning the whole world were received with a ready belief; and an unreasoning and uncritical faith accepted with equal satisfaction the narrative of the Captivity and the doings of Moses at the court of Pharaoh, the account of the Apostolic meeting in the Epistle to the Galatians, and that of the fabrication of Eve. We can most of us remember when, in this country, the whole story of the Exodus, and even the legend of Jonah, were seriously placed before boys as history; and discoursed of in as dogmatic a tone as the tale of Agincourt or the history of the Norman Conquest.

But all this is now changed. The last century has seen the growth of scientific criticism to its full strength. The whole world of history has been revolutionised and the mythology which

embarrassed earnest Christians has vanished as an evil mist, the lifting of which has only more fully revealed the lineaments of infallible Truth. No longer in contact with fact of any kind, Faith stands now and for ever proudly inaccessible to the attacks of the infidel.

So far the apologist of the future. Why not? *Cantabit vacuus.*



FOOTNOTES

- 1 ([return](#))
[*Bampton Lectures* (1859), on "The Historical Evidence of the Truth of the Scripture Records stated anew, with Special Reference to the Doubts and Discoveries of Modern Times," by the Rev. G. Rawlinson, M.A., pp. 5-6.]
- 2 ([return](#))
[*The Worth of the Old Testament*, a Sermon preached in St. Paul's Cathedral on the second Sunday in Advent, 8th Dec., 1889, by H. P. Liddon, D.D., D.C.L., Canon and Chancellor of St. Paul's. Second edition revised and with a new preface, 1890.]
- 3 ([return](#))
[St. Luke xvii. 32.]
- 4 ([return](#))
[St. Luke xvii. 27.]
- 5 ([return](#))
[St. Matt. xii. 40.]
- 6 ([return](#))
[*Bampton Lectures*, 1859, pp. 50-51.]
- 7 ([return](#))
[*Commentary on Genesis*, by the Bishop of Ely, p. 77.]
- 8 ([return](#))
[*Die Sintflut*, 1876.]
- 9 ([return](#))
[*Theologie und Naturwissenschaft*, ii. 784-791 (1877).]
- 10 ([return](#))
[It is very doubtful if this means the region of the Armenian Ararat. More probably it designates some part either of the Kurdish range or of its south-eastern continuation.]
- 11 ([return](#))
[So Reclus (*Nouvelle Geographie Universelle*, ix. 386), but I find the statement doubted by an authority of the first rank.]
- 12 ([return](#))
[So far as I know, the narrative of the Creation is not now held to be true, in the sense in which I have defined historical truth, by any of the reconcilers. As for the attempts to stretch the Pentateuchal days into periods of thousands or millions of years, the verdict of the eminent Biblical scholar, Dr. Riehm (*Der biblische Schöpfungsbericht*, 1881, pp. 15, 16) on such pranks of "Auslegungskunst" should be final. Why do the reconcilers take Goethe's advice seriously?—

"Im Auslegen seydt frisch und munter!
Legt ihr's nicht aus, so legt was unter."]

[Next Volume](#)

*** END OF THIS PROJECT GUTENBERG EBOOK LIGHTS OF THE CHURCH ***

***** This file should be named 2632-h.htm or 2632-h.zip *****
This and all associated files of various formats will be found in:
<http://www.gutenberg.org/2/6/3/2632/>

Produced by D. R. Thompson, and David Widger

Updated editions will replace the previous one--the old editions
will be renamed.

Creating the works from public domain print editions means that no
one owns a United States copyright in these works, so the Foundation
(and you!) can copy and distribute it in the United States without
permission and without paying copyright royalties. Special rules,
set forth in the General Terms of Use part of this license, apply to
copying and distributing Project Gutenberg-tm electronic works to
protect the PROJECT GUTENBERG-tm concept and trademark. Project
Gutenberg is a registered trademark, and may not be used if you
charge for the eBooks, unless you receive specific permission. If you
do not charge anything for copies of this eBook, complying with the
rules is very easy. You may use this eBook for nearly any purpose
such as creation of derivative works, reports, performances and
research. They may be modified and printed and given away--you may do
practically ANYTHING with public domain eBooks. Redistribution is
subject to the trademark license, especially commercial
redistribution.

*** START: FULL LICENSE ***

THE FULL PROJECT GUTENBERG LICENSE
PLEASE READ THIS BEFORE YOU DISTRIBUTE OR USE THIS WORK

To protect the Project Gutenberg-tm mission of promoting the free
distribution of electronic works, by using or distributing this work
(or any other work associated in any way with the phrase "Project
Gutenberg"), you agree to comply with all the terms of the Full Project
Gutenberg-tm License (available with this file or online at
<http://gutenberg.org/license>).

Section 1. General Terms of Use and Redistributing Project Gutenberg-tm
electronic works

1.A. By reading or using any part of this Project Gutenberg-tm
electronic work, you indicate that you have read, understand, agree to
and accept all the terms of this license and intellectual property
(trademark/copyright) agreement. If you do not agree to abide by all
the terms of this agreement, you must cease using and return or destroy
all copies of Project Gutenberg-tm electronic works in your possession.
If you paid a fee for obtaining a copy of or access to a Project
Gutenberg-tm electronic work and you do not agree to be bound by the
terms of this agreement, you may obtain a refund from the person or
entity to whom you paid the fee as set forth in paragraph 1.E.8.

1.B. "Project Gutenberg" is a registered trademark. It may only be
used on or associated in any way with an electronic work by people who
agree to be bound by the terms of this agreement. There are a few
things that you can do with most Project Gutenberg-tm electronic works
even without complying with the full terms of this agreement. See
paragraph 1.C below. There are a lot of things you can do with Project
Gutenberg-tm electronic works if you follow the terms of this agreement
and help preserve free future access to Project Gutenberg-tm electronic
works. See paragraph 1.E below.

1.C. The Project Gutenberg Literary Archive Foundation ("the Foundation"
or PGLAF), owns a compilation copyright in the collection of Project
Gutenberg-tm electronic works. Nearly all the individual works in the
collection are in the public domain in the United States. If an
individual work is in the public domain in the United States and you are
located in the United States, we do not claim a right to prevent you from
copying, distributing, performing, displaying or creating derivative
works based on the work as long as all references to Project Gutenberg
are removed. Of course, we hope that you will support the Project

Project Gutenberg-tm mission of promoting free access to electronic works by freely sharing Project Gutenberg-tm works in compliance with the terms of this agreement for keeping the Project Gutenberg-tm name associated with the work. You can easily comply with the terms of this agreement by keeping this work in the same format with its attached full Project Gutenberg-tm License when you share it without charge with others.

1.D. The copyright laws of the place where you are located also govern what you can do with this work. Copyright laws in most countries are in a constant state of change. If you are outside the United States, check the laws of your country in addition to the terms of this agreement before downloading, copying, displaying, performing, distributing or creating derivative works based on this work or any other Project Gutenberg-tm work. The Foundation makes no representations concerning the copyright status of any work in any country outside the United States.

1.E. Unless you have removed all references to Project Gutenberg:

1.E.1. The following sentence, with active links to, or other immediate access to, the full Project Gutenberg-tm License must appear prominently whenever any copy of a Project Gutenberg-tm work (any work on which the phrase "Project Gutenberg" appears, or with which the phrase "Project Gutenberg" is associated) is accessed, displayed, performed, viewed, copied or distributed:

This eBook is for the use of anyone anywhere at no cost and with almost no restrictions whatsoever. You may copy it, give it away or re-use it under the terms of the Project Gutenberg License included with this eBook or online at www.gutenberg.org

1.E.2. If an individual Project Gutenberg-tm electronic work is derived from the public domain (does not contain a notice indicating that it is posted with permission of the copyright holder), the work can be copied and distributed to anyone in the United States without paying any fees or charges. If you are redistributing or providing access to a work with the phrase "Project Gutenberg" associated with or appearing on the work, you must comply either with the requirements of paragraphs 1.E.1 through 1.E.7 or obtain permission for the use of the work and the Project Gutenberg-tm trademark as set forth in paragraphs 1.E.8 or 1.E.9.

1.E.3. If an individual Project Gutenberg-tm electronic work is posted with the permission of the copyright holder, your use and distribution must comply with both paragraphs 1.E.1 through 1.E.7 and any additional terms imposed by the copyright holder. Additional terms will be linked to the Project Gutenberg-tm License for all works posted with the permission of the copyright holder found at the beginning of this work.

1.E.4. Do not unlink or detach or remove the full Project Gutenberg-tm License terms from this work, or any files containing a part of this work or any other work associated with Project Gutenberg-tm.

1.E.5. Do not copy, display, perform, distribute or redistribute this electronic work, or any part of this electronic work, without prominently displaying the sentence set forth in paragraph 1.E.1 with active links or immediate access to the full terms of the Project Gutenberg-tm License.

1.E.6. You may convert to and distribute this work in any binary, compressed, marked up, nonproprietary or proprietary form, including any word processing or hypertext form. However, if you provide access to or distribute copies of a Project Gutenberg-tm work in a format other than "Plain Vanilla ASCII" or other format used in the official version posted on the official Project Gutenberg-tm web site (www.gutenberg.org), you must, at no additional cost, fee or expense to the user, provide a copy, a means of exporting a copy, or a means of obtaining a copy upon request, of the work in its original "Plain Vanilla ASCII" or other form. Any alternate format must include the full Project Gutenberg-tm License as specified in paragraph 1.E.1.

1.E.7. Do not charge a fee for access to, viewing, displaying, performing, copying or distributing any Project Gutenberg-tm works unless you comply with paragraph 1.E.8 or 1.E.9.

1.E.8. You may charge a reasonable fee for copies of or providing access to or distributing Project Gutenberg-tm electronic works provided

that

- You pay a royalty fee of 20% of the gross profits you derive from the use of Project Gutenberg-tm works calculated using the method you already use to calculate your applicable taxes. The fee is owed to the owner of the Project Gutenberg-tm trademark, but he has agreed to donate royalties under this paragraph to the Project Gutenberg Literary Archive Foundation. Royalty payments must be paid within 60 days following each date on which you prepare (or are legally required to prepare) your periodic tax returns. Royalty payments should be clearly marked as such and sent to the Project Gutenberg Literary Archive Foundation at the address specified in Section 4, "Information about donations to the Project Gutenberg Literary Archive Foundation."
- You provide a full refund of any money paid by a user who notifies you in writing (or by e-mail) within 30 days of receipt that s/he does not agree to the terms of the full Project Gutenberg-tm License. You must require such a user to return or destroy all copies of the works possessed in a physical medium and discontinue all use of and all access to other copies of Project Gutenberg-tm works.
- You provide, in accordance with paragraph 1.F.3, a full refund of any money paid for a work or a replacement copy, if a defect in the electronic work is discovered and reported to you within 90 days of receipt of the work.
- You comply with all other terms of this agreement for free distribution of Project Gutenberg-tm works.

1.E.9. If you wish to charge a fee or distribute a Project Gutenberg-tm electronic work or group of works on different terms than are set forth in this agreement, you must obtain permission in writing from both the Project Gutenberg Literary Archive Foundation and Michael Hart, the owner of the Project Gutenberg-tm trademark. Contact the Foundation as set forth in Section 3 below.

1.F.

1.F.1. Project Gutenberg volunteers and employees expend considerable effort to identify, do copyright research on, transcribe and proofread public domain works in creating the Project Gutenberg-tm collection. Despite these efforts, Project Gutenberg-tm electronic works, and the medium on which they may be stored, may contain "Defects," such as, but not limited to, incomplete, inaccurate or corrupt data, transcription errors, a copyright or other intellectual property infringement, a defective or damaged disk or other medium, a computer virus, or computer codes that damage or cannot be read by your equipment.

1.F.2. LIMITED WARRANTY, DISCLAIMER OF DAMAGES - Except for the "Right of Replacement or Refund" described in paragraph 1.F.3, the Project Gutenberg Literary Archive Foundation, the owner of the Project Gutenberg-tm trademark, and any other party distributing a Project Gutenberg-tm electronic work under this agreement, disclaim all liability to you for damages, costs and expenses, including legal fees. YOU AGREE THAT YOU HAVE NO REMEDIES FOR NEGLIGENCE, STRICT LIABILITY, BREACH OF WARRANTY OR BREACH OF CONTRACT EXCEPT THOSE PROVIDED IN PARAGRAPH F3. YOU AGREE THAT THE FOUNDATION, THE TRADEMARK OWNER, AND ANY DISTRIBUTOR UNDER THIS AGREEMENT WILL NOT BE LIABLE TO YOU FOR ACTUAL, DIRECT, INDIRECT, CONSEQUENTIAL, PUNITIVE OR INCIDENTAL DAMAGES EVEN IF YOU GIVE NOTICE OF THE POSSIBILITY OF SUCH DAMAGE.

1.F.3. LIMITED RIGHT OF REPLACEMENT OR REFUND - If you discover a defect in this electronic work within 90 days of receiving it, you can receive a refund of the money (if any) you paid for it by sending a written explanation to the person you received the work from. If you received the work on a physical medium, you must return the medium with your written explanation. The person or entity that provided you with the defective work may elect to provide a replacement copy in lieu of a refund. If you received the work electronically, the person or entity providing it to you may choose to give you a second opportunity to receive the work electronically in lieu of a refund. If the second copy is also defective, you may demand a refund in writing without further opportunities to fix the problem.

1.F.4. Except for the limited right of replacement or refund set forth in paragraph 1.F.3, this work is provided to you 'AS-IS' WITH NO OTHER WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PURPOSE.

1.F.5. Some states do not allow disclaimers of certain implied warranties or the exclusion or limitation of certain types of damages. If any disclaimer or limitation set forth in this agreement violates the law of the state applicable to this agreement, the agreement shall be interpreted to make the maximum disclaimer or limitation permitted by the applicable state law. The invalidity or unenforceability of any provision of this agreement shall not void the remaining provisions.

1.F.6. INDEMNITY - You agree to indemnify and hold the Foundation, the trademark owner, any agent or employee of the Foundation, anyone providing copies of Project Gutenberg-tm electronic works in accordance with this agreement, and any volunteers associated with the production, promotion and distribution of Project Gutenberg-tm electronic works, harmless from all liability, costs and expenses, including legal fees, that arise directly or indirectly from any of the following which you do or cause to occur: (a) distribution of this or any Project Gutenberg-tm work, (b) alteration, modification, or additions or deletions to any Project Gutenberg-tm work, and (c) any Defect you cause.

Section 2. Information about the Mission of Project Gutenberg-tm

Project Gutenberg-tm is synonymous with the free distribution of electronic works in formats readable by the widest variety of computers including obsolete, old, middle-aged and new computers. It exists because of the efforts of hundreds of volunteers and donations from people in all walks of life.

Volunteers and financial support to provide volunteers with the assistance they need, is critical to reaching Project Gutenberg-tm's goals and ensuring that the Project Gutenberg-tm collection will remain freely available for generations to come. In 2001, the Project Gutenberg Literary Archive Foundation was created to provide a secure and permanent future for Project Gutenberg-tm and future generations. To learn more about the Project Gutenberg Literary Archive Foundation and how your efforts and donations can help, see Sections 3 and 4 and the Foundation web page at <http://www.pglaaf.org>.

Section 3. Information about the Project Gutenberg Literary Archive Foundation

The Project Gutenberg Literary Archive Foundation is a non profit 501(c)(3) educational corporation organized under the laws of the state of Mississippi and granted tax exempt status by the Internal Revenue Service. The Foundation's EIN or federal tax identification number is 64-6221541. Its 501(c)(3) letter is posted at <http://pglaf.org/fundraising>. Contributions to the Project Gutenberg Literary Archive Foundation are tax deductible to the full extent permitted by U.S. federal laws and your state's laws.

The Foundation's principal office is located at 4557 Melan Dr. S. Fairbanks, AK, 99712., but its volunteers and employees are scattered throughout numerous locations. Its business office is located at 809 North 1500 West, Salt Lake City, UT 84116, (801) 596-1887, email business@pglaf.org. Email contact links and up to date contact information can be found at the Foundation's web site and official page at <http://pglaf.org>

For additional contact information:
Dr. Gregory B. Newby
Chief Executive and Director
gnewby@pglaf.org

Section 4. Information about Donations to the Project Gutenberg Literary Archive Foundation

Project Gutenberg-tm depends upon and cannot survive without wide spread public support and donations to carry out its mission of increasing the number of public domain and licensed works that can be

freely distributed in machine readable form accessible by the widest array of equipment including outdated equipment. Many small donations (\$1 to \$5,000) are particularly important to maintaining tax exempt status with the IRS.

The Foundation is committed to complying with the laws regulating charities and charitable donations in all 50 states of the United States. Compliance requirements are not uniform and it takes a considerable effort, much paperwork and many fees to meet and keep up with these requirements. We do not solicit donations in locations where we have not received written confirmation of compliance. To SEND DONATIONS or determine the status of compliance for any particular state visit <http://pglaf.org>

While we cannot and do not solicit contributions from states where we have not met the solicitation requirements, we know of no prohibition against accepting unsolicited donations from donors in such states who approach us with offers to donate.

International donations are gratefully accepted, but we cannot make any statements concerning tax treatment of donations received from outside the United States. U.S. laws alone swamp our small staff.

Please check the Project Gutenberg Web pages for current donation methods and addresses. Donations are accepted in a number of other ways including checks, online payments and credit card donations. To donate, please visit: <http://pglaf.org/donate>

Section 5. General Information About Project Gutenberg-tm electronic works.

Professor Michael S. Hart is the originator of the Project Gutenberg-tm concept of a library of electronic works that could be freely shared with anyone. For thirty years, he produced and distributed Project Gutenberg-tm eBooks with only a loose network of volunteer support.

Project Gutenberg-tm eBooks are often created from several printed editions, all of which are confirmed as Public Domain in the U.S. unless a copyright notice is included. Thus, we do not necessarily keep eBooks in compliance with any particular paper edition.

Most people start at our Web site which has the main PG search facility:

<http://www.gutenberg.org>

This Web site includes information about Project Gutenberg-tm, including how to make donations to the Project Gutenberg Literary Archive Foundation, how to help produce our new eBooks, and how to subscribe to our email newsletter to hear about new eBooks.