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## THE BIBLE AND SCIENCE.

AN ADDRESS DELIVERED BEFORE THE SOCIETIES OF IOWA COLLEGE,  
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*U. S. Senator-elect.*

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*Mr. President and Members of the Societies of Iowa College:*

**W**AS the world made in six days? A question implies doubt. Doubt excites discussion. Discussion resolves conclusions. Conclusions establish beliefs. Beliefs are our rules of life. We do not always observe them. We violate them almost as often as we obey. Disobedience implies doubt. This character of doubt is, generally, the effect of immediate attendant circumstances. A man does wrong because the conditions surrounding him seem to promise a personal advantage. Another fails to maintain his convictions because he dreads conflict with opposing forces. In either case they temporarily

doubt the imperative character of the rule of right. These are not the kind of men who were the Martyrs of the Faith.

The world is full of doubt and discussion concerning the question which I have put. It was once the simple faith of every Christian mind that the world was made in six days. The literal statement of the Bible was accepted as the exact truth. But in these days, when some scientists assault the foundations of the Book, and modern culture attacks its text, that faith is losing its force, and men look into each other's faces and see either positive disbelief, or at least that uncertain thing we call doubt.

I repeat the question, Was the world made in six days? My answer is, "I do not know." Who does know? Some scientists say they know, and can demonstrate, that it was not made in six days. But there are still some believers in the inspiration of the Bible, who insist that the world was made in six days. Here are two classes who have definite beliefs. The former claims that science has demonstrated the impossibility of the earth's creation in the time and manner given in the literal rendering of the Mosaic account. The latter affirms that it occurred as related in the Bible, because it is so written therein. These positions are both dogmatic. Dogmatism admits of no discussion. But while we may not discuss with a dogmatist, we may examine the foundations on which his dogma rests. If we find them defective, or composed of fallacious or immaterial things, we may content ourselves with the belief that he will have his error discovered to him in due season, and in the natural order of events. His present attitude is wholly immaterial to the solution.

And here let me say that we are apt to become involved in doubt by giving too much attention to immaterial things. What difference does it make as to the truth of the Bible whether the world was made in six days of twenty-four hours each, or in as many periods of time stretching through innumerable millions of years? The great fact involved in the Biblical account of creation is the omnipotence of the Creator. Outside of this, all else concerning the creation of the world is quite immaterial. When we assent to that fact, we dissipate mystery and solve the problem so far as belief in the

Bible is concerned. But what does this imply? Why, that the world might have been made in one way or another—in six days or in a thousand millions of years. Is this absurd? So, then, is a belief in an omnipotent Creator absurd. And this is the material fact in the case. When I say that I do not know whether or not the world was made in six days, I recognize the omnipotent power which the Bible affirms; for my declaration implies that it could have been so created, without denying that it may have been done as science declares. Whoever denies this alternative position challenges the doctrine of omnipotence. And right here occurs a danger into which too many religious teachers and defenders of the Bible as an inspired book have fallen. So persistent and so plausible have been the attacks of scientists on the Mosaic account of creation, that man after man in the ranks of the defenders of the faith have lost the courage of their convictions, and become involved in admissions which surrender the material fact of the case—the omnipotence of the Creator. When the geologist tells them that the testimony of the rocks renders it impossible for the Mosaic account of the creation to be true, they forget to insist upon the importance of the possibility of its truth in their haste to establish a consistency between it and the geological conclusion. And so we have from them at once the assertion that the time given in the Mosaic record is not actual but geological time; that the days mean periods indefinite in extent; and that the old Christian world was mistaken in its belief. But what if this assumption is not true? What if Moses meant to be understood just as he wrote? What then? Did Moses make a mistake? If he did, what becomes of the doctrine of the inspiration of his writings? And what becomes of the doctrine of the omnipotence of God, if it has been demonstrated that he could not have made the world, as Moses affirms he did? Is it not possible that that record was made for two purposes? The first to give an account of the creation which may be placed in harmony with geological facts, and the other to place before us a record which, taken literally, seems so antagonistic to those facts as of necessity to suggest the exertion of omnipotent power, and to put upon us the obligation of believing

that, in either way, God could have made the world. And may it not be true that the Biblical record in this particular, and in every other, wherein it is beyond our comprehension, was so made for the very purpose of declaring His omnipotence, and exacting our belief therein? Hence, to me the idea which I am endeavoring to impress upon your minds is of supreme importance. It cannot be met by saying that there are some things impossible to Omnipotence, because they would contravene His laws, and that this is necessary to His own existence. We are not dealing with such a case. It may be said that God cannot make a sphere and a cube out of the same matter at the same time, and have them occupying exactly the same space at the same time. What of it? That does not meet our case; for the reason stated that it is contrary to His law. But it is not contrary to His law for Him to quicken or modify its operation. And that is all there is in the case I am presenting, as I shall attempt to show presently.

I do not object to an acceptance of the nebular theory of the creation of the earth. That theory is beautiful, absorbingly interesting, and it may be true; but it is well to remember that it has had its difficulties and its doubters. When La Place projected that theory, it rapidly grew into favor. But improved telescopes placed a doubt upon it. The invention of the spectroscope and the nebular discoveries which followed again restored it to rank and acceptance. Now, to accept that theory as true, is one thing; but to assert that the creation of the world could have occurred in no other way, is quite another and different thing. Nor does that theory remove the difficulties out of the way of those who declare that they cannot believe anything which they do not understand. The theory tells us that the earth was formed out of nebulous matter. Suppose we grant this, how does it help us to solve the mystery of creation? Whence came this nebulous matter? Where does this question bring us but to the common platform where all men, no matter how opposed in their views concerning this interesting subject, come at last—faith?

We are now at a point where there can be no conflict between religion and science. It antedates the Bible and religion and science. The Mosaic account of creation,

the geological record in general, and the testimony of the rocks in particular, are all wanting. We are in the midst of nebulous matter. Whence came it? One faith says, "God created it." This is a sturdy faith, and will live. Another faith says, "Something made it, or it may have existed forever, I do not know." This is a weak faith, and is periodically breaking down. They both come on down through several stages of creation, and struggle on with the changes of the earth's conditions, as presented by the nebular theory, until they reach our time. Now ask them, whence came all these wonders which surround us? Still the sturdy faith says, "'The heavens declare the glory of God, and the firmament showeth his handiwork;' whatever is came of Him." The other faith still says, "I do not know."

Now which is the more rational belief? Which the most satisfying? And here let me say that this last suggested element of the case is not to be overlooked or treated lightly. That which is most satisfactory after centuries of trial is most likely to be true. And no suppositious conflict between religion and science can disturb this axiomatic principle. Let the two faiths present such supports as they may have gathered in their progress through the ages since we supposed them to be looking out upon the nebular existences and answering whence they came on down to the present time, and what do they give us? The first says: "Here is my support; it is the Bible; and God has spoken to me through it; therefore I know that I am right." The other says: "I bring the geological record, and show by the testimony of the rocks that the Bible cannot be true, even though I be still in doubt as to the origin of material things." The former maintains the omnipotence of the Creator. The latter eliminates this element from the case. Will you tell me that this makes no difference? Let us see. The Bible says that God made the world by His omnipotent power. Granting that He is omnipotent, could He not have done just what the Bible says He did do? What is matter without law and modes of action? If matter was created, so were the laws which govern it established. What results are to be produced from matter and its laws depend upon the attendant conditions.

A brick-maker, with clay, water, and fire, so changes the character of the crumbling material he digs from the earth that it will resist the attacks of the elements of fire, water, and frost for ages. This result required in its production intelligent manipulation. When that is applied, we have a result wholly different from such as would have come from the natural action of the water upon the clay or upon the fire. Without the requisite intelligent manipulation, the water would wash the clay away and put the fire out. Bricks never could be made in that way. Some intelligence must control the matter, direct the laws and formulate the processes necessary to produce a given result. A chemist with carbon and heat has produced artificial diamonds. Ordinarily heat brought into contact with carbon produces ashes. What makes the difference in these results? Simply intelligent manipulation. A current of air will scatter one of the results beyond reclamation. The other presents the purest and most enduring crystal. There are thousands of illustrations quite as pertinent as these of what intelligent manipulation of matter and its laws may accomplish. And we are constantly discovering something new in this most interesting field of investigation and progress; and yet, withal, how little do we know of matter and its laws. The fact that so many things new to us are transpiring in this busy world through simple changes of conditions, ought to make us cautious in forming conclusions as to the lines within which Omnipotence must act. If we may do these things, shall we say that He who created matter, established its laws and directs their operations may not have done all that the Bible records? If a chemist may make a diamond, why may not the Creator have made a sandstone or a granite rock, and do it in as short a time? And if this, why may He not have precipitated the entire strata of the earth's crust in six days as well as to have occupied millions of years in doing it? I do not say that He did it in the one period or the other; but if at all, why not in either? Remember that I am proceeding on the hypothesis that God's omnipotence is admitted. And this being so, what answer is there to the suggestion that He may have created the world in either of the ways suggested? Does the answer come to me that the

science of geology and the record that it has found in the earth's crust demonstrate that He could not have made the world in six days, as the literal rendering of the text of the Mosaic account affirms? My answer is, first, that this eliminates omnipotence from the case; and, secondly, that the geological record presented is not infallible. Its faults in this respect are numerous and often amusing. The age of no geological formation can be determined accurately unless the calculation be based on a knowledge of the conditions which attended it through all stages.

The absence of accurate knowledge in this regard has caused scientists to make many humiliating blunders. Persons given to special lines of investigation are apt to establish rules and declare principles for the promotion of their purposes rather than for the test of details by determining first the conditions under which they transpired. No conclusion reached by this method can be accepted as a scientific fact. Take the case of the specialist whose investigations have been turned to the purpose of establishing the antiquity of man, in opposition to the Biblical account of his more recent origin. In their explorations of caves for the discovery of remains of men who were dwellers in the caverns of the earth, it has been common for them to determine the antiquity of their findings by calculating the time required for the formation of the layers of stalagmite covering them. This is wholly inadmissible, unless the calculation be based on a knowledge of the conditions attending each given case during the entire period covered by the formation of the layer of stalagmite examined. Water alone will not dissolve the limestone without which stalagmite is not deposited. Something else is needed. There must be a supply of carbonic acid. Supply the water with this, and give it limestone to act on, and a deposit of stalagmite follows. If all these things are constant and plentiful, the deposit is rapid. When they are not plentiful and constant the deposit is very slowly made. Owing to the conditions surrounding the lead caves near Dubuque, stalactites have been formed at the rate of one foot a year. In other localities the annual formation may be almost imperceptible. And what occurs in the formation of stalac-

tites has its correlation in the deposit of stalagmite. So that the finding of human remains in caves, and under layers of stalagmite a hundred feet thick, proves nothing in the matter of the antiquity of man; nor does it tend to prove that Moses made a mistake in his record. Given the human remains and the stalagmite floor, the conditions being absent, the result is valueless. The Biblical doctrine of the recent origin cannot be overturned in this way. The geological record presented in this test does not belong to the archives of science; and so, in this respect, there is no conflict between the Bible and science. An interesting theory, an attractive speculation may do well enough for amusement, but the practical value of either in establishing antagonism to the truth of the Bible is not appreciable.

Not human remains alone are found under the stalagmite floors, but stone implements are discovered in company therewith, and we are at once told that not only is man of great antiquity, but that civilization is recent; and that this is a scientific determination in contradiction of record of the Bible, which represents man at his first appearance on earth as in a high state of intelligence. We are introduced to man in the Stone Age. Well, what of the Stone Age? Why, we are told that it was man's first estate, and that it covered periods of time in the history of the human race that can be determined with so great definiteness as to be divided into two sections — the palæolithic and the neolithic. The former being indicated by the rude character of the stone implements employed by man, and the latter by the greater perfection attained in their manufacture. There are two or three difficulties confronting this theory. The first is that the Stone Age exists to-day, in the same state that it did ages ago. On the island of New Guinea, the largest on the globe, the inhabitants are now living in the Stone Age. There the Papuan wields his stone axe, uses his stone chisel, and brings down his game with his flint arrow-head, as did the barbarian of Europe, in the remote age indicated by the discoveries made in the oldest palæolithic station into which scientific research has been prosecuted in that now civilized continent. And while this is true, there stands to-day on an eminence in Cen-

tral Park, New York, that majestic witness of an historic civilization of more than 3,000 years ago, the Obelisk, now twice removed from the place of its original erection. There it stands looking down upon a wondrous civilization which has conquered a continent where barbarism was supreme when it, our latest and greatest immigrant from the long gone centuries, took position on its base at Heliopolis, about 1500 B. C. What do these two facts indicate? Why, that civilization and barbarism have co-existed all through historic and pre-historic times, and, doubtless, ever since the confusion of tongues dispersed the human race, and subjected its several sections to the effects of different conditions.

Another difficulty with which this theory has to contend is that the division of the Stone Age into palæolithic and neolithic periods is purely speculative. Implements ascribed to the former and those assigned to the latter, are found mingled in common deposits in many, if not a majority, of the stations that have been examined. It has been attempted to explain away this feature of the case by ascribing it to a lap of the two periods. This explanation is unsatisfactory from the frequency of its happening; and it is far more rational to say that instead of difference in the character of the implements being an indication of two distinct periods, each covering a great stretch of time, they simply evidence a variety of conditions established in the communities which existed where these remains are found. But suppose we admit that the difference in the character of the implements mark two eras in the history of the human race — the fact that they are found together establishes the other, which is that there was at least an over-lap. How far back this over-lap may extend, no one can tell. It may cover the greater part of the palæolithic period, and it cannot be determined that it does not cover it all. This uncertainty destroys the theory. Where the rude and perfect implements are found together, this may simply indicate the different degrees of skill in the workman that made them. They may show even less than this. The same workman may have made both, and the difference in the character of the product of his skill may prove no more than that men in those days purchased in accordance with their

ability to pay, just as they do now. Undoubtedly, then as now, degrees of wealth existed in society. Doubtless there were rich men and poor men, and others between these extremes, not, of course, as we have them in civilized communities, but still corresponding distinctions prevailed. The cost of an article then, as now, doubtless, represented the amount and value of labor involved in its production. The perfect implement cost the greater sum, and was bought and used by the man of most abundant means. The ruder article was purchased by the person of more moderate means. This is what we see going on every day, and our experience in this regard is most likely but a repetition of that of other men in all ages. It marks a difference in conditions, and does not indicate divisions of time, much less of great periods of time. Every person in this audience has marched abreast of greater changes in the character of the implements used in the industries of men than can be found in the entire range of the Stone Age, and from these several considerations it is not difficult to understand that the conclusions, called facts, presented by the investigators in this department of science are exceedingly unreliable. Nor is it an improbable thing that the specialist, who delights in efforts at cutting away the foundations of the Bible with a stone axe, has undertaken a task which he cannot accomplish. A written language is pretty conclusive evidence of an advanced civilization. The Bible has come down to us in that form. It could have been transmitted in no other way. Every day of its existence stands as a witness against the deductions attempted to be established by the theory of the Stone Age.

The time which I may consume on this occasion will not allow me to enter upon a discussion of the errors and uncertainties involved in the claims advanced relative to the Bronze Age and the Iron Age. They do not mark distinctive periods. In fact the three Ages have co-existed as did the supposed two periods of the Stone Age, and as all have with the conditions of civilization; and Dr. Schliemann's excavations at Troy and Mycenæ seem to have made a sort of conglomerate of them all. Nor have I time now to notice that other system of assault upon the Mosaic account of the

creation of man, which operates through the preposterous lines of the theory of evolution. When you accompany the advocates of that theory from the perfectly developed man of the present back through the ages of human existence on earth, and on down to the lowest order and appearance of life, you but come to a fact quite as mysterious as the one from which you started. Life itself is the mystery, not the man. The power which put life upon the earth could have ordered it in the form of man, in the state ascribed to him by the Bible, as well as in the protoplasm. The latter is the supreme wonder, not the former. It is the thing called life which confounds us, not the organisms through which it acts. The development theory is curious and interesting, but it is a record of assumptions and mistakes. What a dreary hunt there has been for a connecting link! What persistent and constantly disappointed search has been made for that ape which was something more than an ape, and yet not quite a man! But on the long line from protoplasm to most perfect man, no such existence has been found. Apes reproduce apes, and man reproduces man, and whoever writes to the contrary records a mistake. This is science, because it is a fact. Science is nothing but fact, and whatever is not fact is not science, and so we must not be surprised when theorists record mistakes in the name of science; for speculation is not science. Nor need we be alarmed when speculators advance in the garb of science and attack the Bible. They will do no harm. Every one who reads and thinks will soon ascertain that the so-called "mistakes of Moses" will stand when others fall.

True science is entitled to our reverence. It is like the voice of God speaking to us out of the depths of the mysteries of His creation. It acts as His hand, turning leaf by leaf the wondrous records which He has written. The men who conscientiously pursue it are benefactors of our race. Whosoever adds to its gathered treasures is worthy of highest commendation. Without it, how bewildering would be our situation, and how little we should know, and yet how comparatively insignificant is its knowledge! No one has a keener appreciation of this than the profoundest scientist. He may

rightly challenge our admiration as he steps from planet to planet, and passes from star to star in the severe blackness of uttermost space, touching each object with his mathematical wand as he goes, reducing to orderly record its weight, its motion, its importance in the maintenance of the exact and preservative action of the illimitable universe. If we are confounded by the result which he places before us, how much more so is he. The scientist who knows the most is apt to be the humblest. It is the pretender who assumes not to be bewildered. The man who has closest communion with the works and ways of Omnipotence, is the one who most clearly understands that there is a limit to human knowledge, and that there is a point where all men fall at the feet of Faith. When he deals with the awful power which we call the force of gravitation, he feels the hand of God upon him. He does not come back to us from that majestic presence and say that he knows that the Bible is false, and that it cannot be the word of Him whose hand has been upon him. But with his hand on that Book, and his mind contemplating the inexpressible grandeur and confusing magnitude of the works of the Creator, and dwelling upon the intricacy, the power and the exact operations of the laws which preserve them, he utters that prayer most appropriate for us all, of whatever estate or condition: "Guide me, Oh thou great Jehovah!"

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## BEE-HUNTERS OF EARLY IOWA.

BY HON. A. R. FULTON.

**M**Y own personal experience and observation in Iowa only extends back over a period of thirty-two years. Within that time, however, it has been my good fortune and pleasure to receive from the lips of many of the earlier settlers, detailed accounts of their pioneer adventures and experiences. Some of these incidents I noted down at the time, and preserved, with the thought that they might prove of interest to the successors of those who braved the perils of pioneer life. There

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