

The Interpreters of Genesis and the Interpreters of Nature

By Thomas Henry Huxley

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Our fabulist warns "those who in quarrels interpose" of the fate which is probably in store for them; and, in venturing to place myself between so powerful a controversialist as Mr. Gladstone and the eminent divine whom he assaults with such vigour in the last number of this Review, I am fully aware that I run great danger of verifying Gay's prediction. Moreover, it is quite possible that my zeal in offering aid to a combatant so extremely well able to take care of himself as M. Reville may be thought to savour of indiscretion.

Two considerations, however, have led me to face the double risk. The one is that though, in my judgment, M. Reville is wholly in the right in that part of the controversy to which I propose to restrict my observations, nevertheless he, as a foreigner, has very little chance of making the truth prevail with Englishmen against the authority and the dialectic skill of the greatest master of persuasive rhetoric among English-speaking men of our time. As the Queen's proctor intervenes, in certain cases, between two litigants in the interests of justice, so it may be permitted me to interpose as a sort of uncommissioned science proctor. My second excuse for my meddlesomeness is, that important questions of natural science--respecting which neither of the combatants professes to speak as an expert--are involved in the controversy; and I think it is desirable that the public should know what it is that natural science really has to say on these topics, to the best belief of one who has been a diligent student of natural science for the last forty years.

The original "Prolegomenes de l'Histoire des Religions" has not come in my way; but I have read the translation of M. Reville's work, published in England under the auspices of Professor Max Muller, with very great interest. It puts more fairly and clearly than any book previously known to me, the view which a man of strong religious feelings, but at the same time possessing the information and the reasoning power which enable him to estimate the strength of scientific methods of inquiry and the weight of scientific truth, may be expected to take of

the relation between science and religion.

In the chapter on "The Primitive Revelation" the scientific worth of the account of the Creation given in the book of Genesis is estimated in terms which are as unquestionably respectful as, in my judgment, they are just; and, at the end of the chapter on "Primitive Tradition," M. Reville appraises the value of pentateuchal anthropology in a way which I should have thought sure of enlisting the assent of all competent judges, even if it were extended to the whole of the cosmogony and biology of Genesis:--

As, however, the original traditions of nations sprang up in an epoch less remote than our own from the primitive life, it is indispensable to consult them, to compare them, and to associate them with other sources of information which are available. From this point of view, the traditions recorded in Genesis possess, in addition to their own peculiar charm, a value of the highest order; but we cannot ultimately see in them more than a venerable fragment, well-deserving attention, of the great genesis of mankind.

Mr. Gladstone is of a different mind. He dissents from M. Reville's views respecting the proper estimation of the pentateuchal traditions, no less than he does from his interpretation of those Homeric myths which have been the object of his own special study. In the latter case, Mr. Gladstone tells M. Reville that he is wrong on his own authority, to which, in such a matter, all will pay due respect: in the former, he affirms himself to be "wholly destitute of that kind of knowledge which carries authority," and his rebuke is administered in the name and by the authority of natural science.

An air of magisterial gravity hangs about the following passage:--

But the question is not here of a lofty poem, or a skilfully constructed narrative: it is whether natural science, in the patient exercise of its high calling to examine facts, finds that the works of God cry out against what we have fondly believed to be His word and tell another tale; or whether, in this nineteenth century of Christian progress, it substantially

echoes back the majestic sound, which, before it existed as a pursuit, went forth into all lands.

First, looking largely at the latter portion of the narrative, which describes the creation of living organisms, and waiving details, on some of which (as in v. 24) the Septuagint seems to vary from the Hebrew, there is a grand fourfold division, set forth in an orderly succession of times as follows: on the fifth day

1. The water-population;
 2. The air-population;
- and, on the sixth day,
3. The land-population of animals;
 4. The land-population consummated in man.

Now this same fourfold order is understood to have been so affirmed in our time by natural science, that it may be taken as a demonstrated conclusion and established fact" (p. 696).

"Understood?" By whom? I cannot bring myself to imagine that Mr. Gladstone has made so solemn and authoritative a statement on a matter of this importance without due inquiry--without being able to found himself upon recognised scientific authority. But I wish he had thought fit to name the source from whence he has derived his information, as, in that case, I could have dealt with [143] his authority, and I should have thereby escaped the appearance of making an attack on Mr. Gladstone himself, which is in every way distasteful to me.

For I can meet the statement in the last paragraph of the above citation with nothing but a direct negative. If I know anything at all about the results attained by the natural science of our time, it is "a demonstrated conclusion and established fact" that the "fourfold order" given by Mr. Gladstone is not that in which the evidence at our disposal tends to show that the water, air, and land-populations of the globe have made their appearance.

Perhaps I may be told that Mr. Gladstone does give his authority--that he cites Cuvier, Sir John Herschel, and Dr. Whewell in support of his case. If that has been Mr. Gladstone's intention in mentioning these eminent names, I may remark that, on this particular question, the only relevant authority is that of Cuvier. But great as Cuvier was, it is to be remembered that, as Mr. Gladstone incidentally remarks, he cannot now be called a recent authority. In fact, he has been dead more than half a

century; and the palaeontology of our day is related to that of his, very much as the geography of the sixteenth century is related to that of the fourteenth. Since 1832, when Cuvier died, not only a new world, but new worlds, of ancient life have been discovered; and those who have most faithfully carried on the work of the chief founder of palaeontology have done most to invalidate the essentially negative grounds of his speculative adherence to tradition.

If Mr. Gladstone's latest information on these matters is derived from the famous discourse prefixed to the "Ossements Fossiles," I can understand the position he has taken up; if he has ever opened a respectable modern manual of palaeontology, or geology, I cannot. For the facts which demolish his whole argument are of the commonest notoriety. But before proceeding to consider the evidence for this assertion we must be clear about the meaning of the phraseology employed.

I apprehend that when Mr. Gladstone uses the term "water-population" he means those animals which in Genesis i. 21 (Revised Version) are spoken of as "the great sea monsters and every living creature that moveth, which the waters brought forth abundantly, after their kind." And I presume that it will be agreed that whales and porpoises, sea fishes, and the innumerable hosts of marine invertebrated animals, are meant thereby. So "air-population" must be the equivalent of "fowl" in verse 20, and "every winged fowl after its kind," verse 21. I suppose I may take it for granted that by "fowl" we have here to understand birds--at any rate primarily. Secondly, it may be that the bats and the extinct pterodactyles, which were flying reptiles, come under the same head. But whether all insects are "creeping things" of the land-population, or whether flying insects are to be included under the denomination of "winged fowl," is a point for the decision of Hebrew exegetes. Lastly, I suppose I may assume that "land-population" signifies "the cattle" and "the beasts of the earth," and "every creeping thing that creepeth upon the earth," in verses 25 and 26; presumably it comprehends all kinds of terrestrial animals, vertebrate and invertebrate, except such as may be comprised under the head of the "air-population."

Now what I want to make clear is this: that if the terms "water-population," "air-population," and "land-population" are understood in the senses here defined, natural science has nothing to say in favour of the proposition that they succeeded one another in the order given by Mr. Gladstone; but that, on

the contrary, all the evidence we possess goes to prove that they did not. Whence it will follow that, if Mr. Gladstone has interpreted Genesis rightly (on which point I am most anxious to be understood to offer no opinion), that interpretation is wholly irreconcilable with the conclusions at present accepted by the interpreters of nature--with everything that can be called "a demonstrated conclusion and established fact" of natural science. And be it observed that I am not here dealing with a question of speculation, but with a question of fact.

Either the geological record is sufficiently complete to afford us a means of determining the order in which animals have made their appearance on the globe or it is not. If it is, the determination of that order is little more than a mere matter of observation; if it is not, then natural science neither affirms nor refutes the "fourfold order," but is simply silent.

The series of the fossiliferous deposits, which contain the remains of the animals which have lived on the earth in past ages of its history, and which can alone afford the evidence required by natural science of the order of appearance of their different species, may be grouped in the manner shown in the left-hand column of the following table, the oldest being at the bottom:--

Formations	First known appearance of
Quaternary.	
Pliocene.	
Miocene.	
Eocene.	Vertebrate <i>air</i> -population (Bats).
Cretaceous.	
Jurassic.	Vertebrate <i>air</i> -population (Birds and Pterodactyles).
Triassic.	
Upper Palaeozoic.	
Middle Palaeozoic.	Vertebrate <i>land</i> -population (Amphibia, Reptilia [?]).
Lower Palaeozoic.	
Silurian.	Vertebrate <i>water</i> -population (Fishes). Invertebrate <i>air</i> and <i>land</i> -population (Flying Insects and Scorpions).
Cambrian.	Invertebrate <i>water</i> -population (much earlier, if <i>Eozoon</i> is animal).

In the right-hand column I have noted the group of strata in which, according to our present information, the *land*,

air, and *water* populations respectively appear for the first time; and in consequence of the ambiguity about the meaning of "fowl," I have separately indicated the first appearance of bats, birds, flying reptiles, and flying insects. It will be observed that, if "fowl" means only "bird," or at most flying vertebrate, then the first certain evidence of the latter, in the Jurassic epoch, is posterior to the first appearance of truly terrestrial *Amphibia*, and possibly of true reptiles, in the Carboniferous epoch (Middle Palaeozoic) by a prodigious interval of time.

The water-population of vertebrated animals first appears in the Upper Silurian. Therefore, if we found ourselves on vertebrated animals and take "fowl" to mean birds only, or, at most, flying vertebrates, natural science says that the order of succession was water, land, and air-population, and not--as Mr. Gladstone, founding himself on Genesis, says--water, air, land-population. If a chronicler of Greece affirmed that the age of Alexander preceded that of Pericles and immediately succeeded that of the Trojan war, Mr. Gladstone would hardly say that this order is "understood to have been so affirmed by historical science that it may be taken as a demonstrated conclusion and established fact." Yet natural science "affirms" his "fourfold order" to exactly the same extent--neither more nor less.

Suppose, however, that "fowl" is to be taken to include flying insects. In that case, the first appearance of an air-population must be shifted back for long ages, recent discovery having shown that they occur in rocks of Silurian age. Hence there might still have been hope for the fourfold order, were it not that the fates unkindly determined that scorpions--"creeping things that creep on the earth" *par excellence*--turned up in Silurian strata nearly at the same time. So that, if the word in the original Hebrew translated "fowl" should really after all mean "cockroach"--and I have great faith in the elasticity of that tongue in the hands of Biblical exegetes--the order primarily suggested by the existing evidence--

2. Land and air-population;

1. Water-population;

and Mr. Gladstone's order--

3. Land-population;

2. Air-population;

1. Water-population;

can by no means be made to coincide. As a matter of fact, then, the statement so confidently put forward turns out to be devoid of foundation and in direct contradiction of the evidence at present at our disposal.

If, stepping beyond that which may be learned from the facts of the successive appearance of the forms of animal life upon the surface of the globe, in so far as they are yet made known to us by natural science, we apply our reasoning faculties to the task of finding out what those observed facts mean, the present conclusions of the interpreters of nature appear to be no less directly in conflict with those of the latest interpreter of Genesis.

Mr. Gladstone appears to admit that there is some truth in the doctrine of evolution, and indeed places it under very high patronage.

I contend that evolution in its highest form has not been a thing heretofore unknown to history, to philosophy, or to theology. I contend that it was before the mind of Saint Paul when he taught that in the fulness of time God sent forth His Son, and of Eusebius when he wrote the "Preparation for the Gospel," and of Augustine when he composed the "City of God" (p. 706).

Has any one ever disputed the contention, thus solemnly enunciated, that the doctrine of evolution was not invented the day before yesterday? Has any one ever dreamed of claiming it as a modern innovation? Is there any one so ignorant of the history of philosophy as to be unaware that it is one of the forms in which speculation embodied itself long before the time either of the Bishop of Hippo or of the Apostle to the Gentiles? Is Mr. Gladstone, of all people in the world, disposed to ignore the founders of Greek philosophy, to say nothing of Indian sages to whom evolution was a familiar notion ages before Paul of Tarsus was born? But it is ungrateful to cavil at even the most oblique admission of the possible value of one of those affirmations of natural science which really may be said to be "a demonstrated conclusion and established fact." I note it with pleasure, if only for the purpose of introducing the observation that, if there is any truth whatever in the doctrine of evolution as applied to animals, Mr. Gladstone's gloss on Genesis in the

following passage is hardly happy:--

God created

- (a) The water-population;
- (b) The air-population.

And they receive His benediction (v. 20-23).

6. Pursuing this regular progression from the lower to the higher, from the simple to the complex, the text now gives us the work of the sixth "day," which supplies the land-population, air and water having been already supplied (pp. 695, 696).

The gloss to which I refer is the assumption that the "air-population" forms a term in the order of progression from lower to higher, from simple to complex--the place of which lies between the water-population below and the land-population above--and I speak of it as a "gloss," because the pentateuchal writer is nowise responsible for it.

But it is not true that the air-population, as a whole, is "lower" or less "complex" than the land-population. On the contrary, every beginner in the study of animal morphology is aware that the organisation of a bat, of a bird, or of a pterodactyle presupposes that of a terrestrial quadruped; and that it is intelligible only as an extreme modification of the organisation of a terrestrial mammal or reptile. In the same way winged insects (if they are to be counted among the "air-population") presuppose insects which were wingless, and, therefore, as "creeping things," were part of the land-population. Thus theory is as much opposed as observation to the admission that natural science endorses the succession of animal life which Mr. Gladstone finds in Genesis. On the contrary, a good many representatives of natural science would be prepared to say, on theoretical grounds alone, that it is incredible that the "air-population" should have appeared before the "land-population"--and that, if this assertion is to be found in Genesis, it merely demonstrates the scientific worthlessness of the story of which it forms a part.

Indeed, we may go further. It is not even admissible to say that the water-population, as a whole, appeared before the air and the land-populations. According to the Authorised Version, Genesis especially mentions, among the animals created on the

fifth day, "great whales," in place of which the Revised Version reads "great sea monsters." Far be it from me to give an opinion which rendering is right, or whether either is right. All I desire to remark is, that if whales and porpoises, dugongs and manatees, are to be regarded as members of the water-population (and if they are not, what animals can claim the designation?), then that much of the water-population has, as certainly, originated later than the land-population as bats and birds have. For I am not aware that any competent judge would hesitate to admit that the organisation of these animals shows the most obvious signs of their descent from terrestrial quadrupeds.

A similar criticism applies to Mr. Gladstone's assumption that, as the fourth act of that "orderly succession of times" enunciated in Genesis, "the land-population consummated in man."

If this means simply that man is the final term in the evolutionary series of which he forms a part, I do not suppose that any objection will be raised to that statement on the part of students of natural science. But if the pentateuchal author goes further than this, and intends to say that which is ascribed to him by Mr. Gladstone, I think natural science will have to enter a *caveat*. It is not by any means certain that man--I mean the species *Homo sapiens* of zoological terminology--has "consummated" the land-population in the sense of appearing at a later period of time than any other. Let me make my meaning clear by an example. From a morphological point of view, our beautiful and useful contemporary--I might almost call him colleague--the horse (*Equus caballus*), is the last term of the evolutionary series to which he belongs, just as *Homo sapiens* is the last term of the series of which he is a member. If I want to know whether the species *Equus caballus* made its appearance on the surface of the globe before or after *Homo sapiens*, deduction from known laws does not help me. There is no reason, that I know of, why one should have appeared sooner or later than the other. If I turn to observation, I find abundant remains of *Equus caballus* in Quaternary strata, perhaps a little earlier. The existence of *Homo sapiens* in the Quaternary epoch is also certain. Evidence has been adduced in favour of man's existence in the Pliocene, or even in the Miocene epoch. It does not satisfy me; but I have no reason to doubt that the fact may be so, nevertheless. Indeed, I think it is quite possible that further research will show that *Homo sapiens* existed, not only before *Equus caballus*, but before many other of the existing forms of animal life; so that, if all the species of

animals have been separately created, man, in this case, would by no means be the "consummation" of the land-population.

I am raising no objection to the position of the fourth term in Mr. Gladstone's "order"--on the facts, as they stand, it is quite open to any one to hold, as a pious opinion, that the fabrication of man was the acme and final achievement of the process of peopling the globe. But it must not be said that natural science counts this opinion among her "demonstrated conclusions and established facts," for there would be just as much, or as little, reason for ranging the contrary opinion among them.

It may seem superfluous to add to the evidence that Mr. Gladstone has been utterly misled in supposing that his interpretation of Genesis receives any support from natural science. But it is as well to do one's work thoroughly while one is about it; and I think it may be advisable to point out that the facts, as they are at present known, not only refute Mr. Gladstone's interpretation of Genesis in detail, but are opposed to the central idea on which it appears to be based.

There must be some position from which the reconcilers of science and Genesis will not retreat, some central idea the maintenance of which is vital and its refutation fatal. Even if they now allow that the words "the evening and the morning" have not the least reference to a natural day, but mean a period of any number of millions of years that may be necessary; even if they are driven to admit that the word "creation," which so many millions of pious Jews and Christians have held, and still hold, to mean a sudden act of the Deity, signifies a process of gradual evolution of one species from another, extending through immeasurable time; even if they are willing to grant that the asserted coincidence of the order of Nature with the "fourfold order" ascribed to Genesis is an obvious error instead of an established truth; they are surely prepared to make a last stand upon the conception which underlies the whole, and which constitutes the essence of Mr. Gladstone's "fourfold division, set forth in an orderly succession of times." It is, that the animal species which compose the water-population, the air-population, and the land-population respectively, originated during three distinct and successive periods of time, and only during those periods of time.

This statement appears to me to be the interpretation of Genesis which Mr. Gladstone supports, reduced to its simplest

expression. "Period of time" is substituted for "day"; "originated" is substituted for "created"; and "any order required" for that adopted by Mr. Gladstone. It is necessary to make this proviso, for if "day" may mean a few million years, and "creation" may mean evolution, then it is obvious that the order (1) water-population, (2) air-population, (3) land-population, may also mean (1) water-population, (2) land-population, (3) air-population; and it would be unkind to bind down the reconcilers to this detail when one has parted with so many others to oblige them.

But even this sublimated essence of the pentateuchal doctrine (if it be such) remains as discordant with natural science as ever.

It is not true that the species composing any one of the three populations originated during any one of three successive periods of time, and not at any other of these.

Undoubtedly, it is in the highest degree probable that animal life appeared first under aquatic conditions; that terrestrial forms appeared later, and flying animals only after land animals; but it is, at the same time, testified by all the evidence we possess, that the great majority, if not the whole, of the primordial species of each division have long since died out and have been replaced by a vast succession of new forms. Hundreds of thousands of animal species, as distinct as those which now compose our water, land, and air-populations, have come into existence and died out again, throughout the aeons of geological time which separate us from the lower Palaeozoic epoch, when, as I have pointed out, our present evidence of the existence of such distinct populations commences. If the species of animals have all been separately created, then it follows that hundreds of thousands of acts of creative energy have occurred, at intervals, throughout the whole time recorded by the fossiliferous rocks; and, during the greater part of that time, the "creation" of the members of the water, land, and air-populations must have gone on contemporaneously.

If we represent the water, land, and air-populations by *a*, *b*, and *c* respectively, and take vertical succession on the page to indicate order in time, then the following schemes will roughly shadow forth the contrast I have been endeavouring to explain:

Genesis (as interpreted by Nature (as interpreted by

Mr. Gladstone).	natural science).
<i>b b b</i>	<i>c1 a3 b2</i>
<i>c c c</i>	<i>c a2 b1</i>
<i>a a a</i>	<i>b a1 b</i>
	<i>a a a</i>

So far as I can see, there is only one resource left for those modern representatives of Sisyphus, the reconcilers of Genesis with science; and it has the advantage of being founded on a perfectly legitimate appeal to our ignorance. It has been seen that, on any interpretation of the terms water-population and land-population, it must be admitted that invertebrate representatives of these populations existed during the lower Palaeozoic epoch. No evolutionist can hesitate to admit that other land animals (and possibly vertebrates among them) may have existed during that time, of the history of which we know so little; and, further, that scorpions are animals of such high organisation that it is highly probable their existence indicates that of a long antecedent land-population of a similar character.

Then, since the land-population is said not to have been created until the sixth day, it necessarily follows that the evidence of the order in which animals appeared must be sought in the record of those older Palaeozoic times in which only traces of the water-population have as yet been discovered.

Therefore, if any one chooses to say that the creative work took place in the Cambrian or Laurentian epoch, in exactly that manner which Mr. Gladstone does, and natural science does not, affirm, natural science is not in a position to disprove the accuracy of the statement. Only one cannot have one's cake and eat it too, and such safety from the contradiction of science means the forfeiture of her support.

Whether the account of the work of the first, second, and third days in Genesis would be confirmed by the demonstration of the truth of the nebular hypothesis; whether it is corroborated by what is known of the nature and probable relative antiquity of the heavenly bodies; whether, if the Hebrew word translated "firmament" in the Authorised Version really means "expanse," the assertion that the waters are partly under this "expanse" and partly above it would be any more confirmed by the ascertained facts of physical geography and meteorology than it was before; whether the creation of the whole vegetable world, and especially of "grass, herb yielding seed after its kind, and

tree bearing fruit," before any kind of animal, is "affirmed" by the apparently plain teaching of botanical palaeontology, that grasses and fruit-trees originated long subsequently to animals all these are questions which, if I mistake not, would be answered decisively in the negative by those who are specially conversant with the sciences involved. And it must be recollected that the issue raised by Mr. Gladstone is not whether, by some effort of ingenuity, the pentateuchal story can be shown to be not disprovable by scientific knowledge, but whether it is supported thereby.

There is nothing, then, in the criticisms of Dr. Reville but what rather tends to confirm than to impair the old-fashioned belief that there is a revelation in the book of Genesis (p. 694).

The form into which Mr. Gladstone has thought fit to throw this opinion leaves me in doubt as to its substance. I do not understand how a hostile criticism can, under any circumstances, tend to confirm that which it attacks. If, however, Mr. Gladstone merely means to express his personal impression, "as one wholly destitute of that kind of knowledge which carries authority," that he has destroyed the value of these criticisms, I have neither the wish nor the right to attempt to disturb his faith. On the other hand, I may be permitted to state my own conviction, that, so far as natural science is involved, M. Reville's observations retain the exact value they possessed before Mr. Gladstone attacked them.

Trusting that I have now said enough to secure the author of a wise and moderate disquisition upon a topic which seems fated to stir unwisdom and fanaticism to their depths, a fuller measure of justice than has hitherto been accorded to him, I retire from my self-appointed championship, with the hope that I shall not hereafter be called upon by M. Reville to apologise for damage done to his strong case by imperfect or impulsive advocacy. But, perhaps, I may be permitted to add a word or two, on my own account, in reference to the great question of the relations between science and religion; since it is one about which I have thought a good deal ever since I have been able to think at all; and about which I have ventured to express my views publicly, more than once, in the course of the last thirty years.

The antagonism between science and religion, about which we hear so much, appears to me to be purely factitious--fabricated, on the one hand, by short-sighted religious people who confound a certain branch of science, theology, with religion; and, on the other, by equally short-sighted scientific people who forget that science takes for its province only that which is susceptible of clear intellectual comprehension; and that, outside the boundaries of that province, they must be content with imagination, with hope, and with ignorance.

It seems to me that the moral and intellectual life of the civilised nations of Europe is the product of that interaction, sometimes in the way of antagonism, sometimes in that of profitable interchange, of the Semitic and the Aryan races, which commenced with the dawn of history, when Greek and Phoenician came in contact, and has been continued by Carthaginian and Roman, by Jew and Gentile, down to the present day. Our art (except, perhaps, music) and our science are the contributions of the Aryan; but the essence of our religion is derived from the Semite. In the eighth century B.C., in the heart of a world of idolatrous polytheists, the Hebrew prophets put forth a conception of religion which appears to me to be as wonderful an inspiration of genius as the art of Pheidias or the science of Aristotle.

"And what doth the Lord require of thee, but to do justly, and to love mercy, and to walk humbly with thy God?"

If any so-called religion takes away from this great saying of Micah, I think it wantonly mutilates, while, if it adds thereto, I think it obscures, the perfect ideal of religion.

But what extent of knowledge, what acuteness of scientific criticism, can touch this, if any one possessed of knowledge, or acuteness, could be absurd enough to make the attempt? Will the progress of research prove that justice is worthless and mercy hateful; will it ever soften the bitter contrast between our actions and our aspirations; or show us the bounds of the universe and bid us say, Go to, now we comprehend the infinite? A faculty of wrath lay in those ancient Israelites, and surely the prophet's staff would have made swift acquaintance with the head of the scholar who had asked Micah whether, peradventure, the Lord further required of him an implicit belief in the accuracy of the cosmogony of Genesis!

What we are usually pleased to call religion nowadays is, for

the most part, Hellenised Judaism; and, not unfrequently, the Hellenic element carries with it a mighty remnant of old-world paganism and a great infusion of the worst and weakest products of Greek scientific speculation; while fragments of Persian and Babylonian, or rather Accadian, mythology burden the Judaic contribution to the common stock.

The antagonism of science is not to religion, but to the heathen survivals and the bad philosophy under which religion herself is often well-nigh crushed. And, for my part, I trust that this antagonism will never cease; but that, to the end of time, true science will continue to fulfil one of her most beneficent functions, that of relieving men from the burden of false science which is imposed upon them in the name of religion.

This is the work that M. Reville and men such as he are doing for us; this is the work which his opponents are endeavouring, consciously or unconsciously, to hinder.

FOOTNOTES

(1) *The Nineteenth Century*.

(2) [Earlier, if more recent announcements are correct.]

(3) It may be objected that I have not put the case fairly inasmuch as the solitary insect's wing which was discovered twelve months ago in Silurian rocks, and which is, at present, the sole evidence of insects older than the Devonian epoch, came from strata of Middle Silurian age, and is therefore older than the scorpions which, within the last two years, have been found in Upper Silurian strata in Sweden, Britain, and the United States. But no one who comprehends the nature of the evidence afforded by fossil remains would venture to say that the non-discovery of scorpions in the Middle Silurian strata, up to this time, affords any more ground for supposing that they did not exist, than the non-discovery of flying insects in the Upper Silurian strata, up to this time, throws any doubt on the certainty that they existed, which is derived from the occurrence of the wing in the Middle Silurian. In fact, I have stretched a point in admitting that these fossils afford a colourable pretext for the assumption that the land and air-population were of contemporaneous origin.

