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ARTICLE I.

FORM OF GOVERNMENT OF THE APOSTOLIC CHURCH.

Philippians i. 1, 2: Paul and Timotheus, the servants of Jesus Christ, to all the saints in Christ Jesus which are at Philippi, with the bishops and deacons: grace be unto you, and peace from God our Father, and from the Lord Jesus Christ.

Macedonia, of which Philippi was one of the chief cities, was conspicuous among the ancient nations as the kingdom of Alexander the Great. According to Daniel's interpretation of Nebuchadnezzar's dream, Macedonia was represented by the brazen part of the great image, and destined to be the third of the four universal kingdoms, that should precede the kingdom of our Lord Jesus Christ.

Philippi was distinguished in profane history for the decisive battle between Mark Antony, Octavius, and Lepidus, the friends of Julius Cæsar, and the exponents of imperial power, on the one side; and Brutus and Cassius representing the Roman Senate, on the other. In ecclesiastical history, it is also celebrated as the seat of the first Christian Church in Europe. This Church was founded by the Apostle Paul, who was attracted thither by the vision of a man of Macedonia calling to him, in these words: "Come over into Macedonia and help us." The apostle went to Philippi, and began the work of founding a

ARTICLE III.

THE CAUTION AGAINST ANTI-CHRISTIAN SCIENCE
CRITICISED BY DR. WOODROW.

In May, 1869, (not 1866,) I addressed a memorial on theological education, not to the General Assembly, but to the Committee on Theological Seminaries. Called by the Church and Assembly to this work almost from my youth, I had devoted sixteen of my best years to their service as a teacher in one of the Assembly's schools of divinity. I was conscious that I had studied this great interest, and engaged in this labor, with all the zeal and attention of which my feeble powers were capable. It was obvious that our system of Seminary instruction was still, notwithstanding its valuable fruits, in several respects experimental. It had been borrowed, by Drs. A. Alexander and J. H. Rice mainly from Andover, then the only institution of this precise nature in America, for Princeton and Union Seminaries. But Andover was Congregational—we are Presbyterians. I saw that there was danger, lest features borrowed by these beloved fathers provisionally, should by unquestioned usage, harden into fixed precedents, (which they never desired,) when perhaps time might show that these features were unsuited, or not best suited to our policy and principles. As our Church was then, in God's providence, passing anew through a formative state, it seemed the right time to discuss these points of Seminary management. Who should evoke that discussion, if not the men to whom the Church has entrusted the business? I, though not an old man, was very nearly the oldest teacher in divinity in the service of the Church. Now, I might have sought moral support for my views by manœuvring to get some faculty, or colleague, or my Presbytery, or my Synod, or a majority thereof, to "father" them, in the form of an "overture" to the Assembly. But as I desired to speak out my whole mind respectfully, yet honestly, I preferred to have my views go before the Assembly unsupported by factitious props, and let

them receive only that assent to which their intrinsic merit might entitle them.

The memorial was not read in the Assembly of 1869, but was referred to the faculties and directors of Columbia and Union Seminaries, going first to the former. The authorities at Columbia disapproved all my views. The papers were then mislaid for a time among the officers and committee-men of the Assembly; I know not how. Finally another Committee of the Assembly reported, without ever having met as a Committee, or having seen my memorial advising that the subject be finally dropped, on the single ground that so decided a dissent of one Seminary would make it improper to attempt any improvements, whether valuable, or not. Thus the paper was consigned to "the tomb of all the Capulets;" and I was refused a hearing, when neither Church nor any of the Assemblies knew anything whatever of my recommendations, save from the version of my opponents. Had I demanded the privilege of dictating my views, this reception would have been just. But the humblest servant expects a *hearing*, when he comes to the most imperious master, in the spirit of humble zeal and fidelity, to inform that master of the interests of *his* property entrusted to the servant's care. That mere hearing was what I asked for; and only for my masters' good; not my own; (for the only result to me, of the adoption of my views, would have been increase of toil and responsibility,) but even a hearing has been refused me.

This, however, is a digression. One of the points made in this forgotten memorial was an objection to the introduction of chairs of natural science into our Seminaries. These sciences, and especially geology, have been so largely perverted to the interests of unbelief, that sundry friends of the Bible, in their uneasiness, came to think that our Seminaries should be provided with chairs to teach these sciences in their relation to inspiration, to all the pastors of the Church. I recognised the danger, but dissented from this mode of meeting it on three grounds which still seem to me perfectly conclusive. One was, that the amount of instruction which could be thus given on these intricate and extensive branches of knowledge, in con-

nexion with the arduous studies of a three years' course in divinity, would usually prove inadequate to the end proposed; whence I concluded that the defence of inspiration against the perversions of these sciences, would be better left to learned Christian laymen and to those pastors and teachers whose exceptional talents and opportunities fitted them for going thoroughly into such studies. My second point was, that the study of modern geology, especially, is shown by experience to be seductive, and to have a tendency towards naturalistic and anti-Christian opinions. Some, of course, must master these matters, notwithstanding any dangerous tendencies; but it would be more discreet not to place the Christian men especially devoted to these seductive pursuits, in the very schools where our pastors are all taught; and not to arm them with the Church's own power and authority for teaching an uninspired and fallible branch of knowledge *ex cathedra*, to all our pastors. Because, should that happen among us, at some distant day, which has so often happened to others, it would be far more detrimental to have the defection in a citadel of the Church than in an outpost. To show that I was not insinuating any doubt of any living man, I added: "*The undoubted soundness of all our present teachers and clergy, and their unfeigned reverence for inspiration, now blind us to the ulterior tendency of such attempts. It may be two or three generations before the evil comes to a climax.*" My third argument was the most conclusive of all. It was grounded in the fact that our Church and all its ecclesiastical powers are founded upon a doctrinal covenant—our Confession and Catechisms. Hence, I argued, the Church cannot by ecclesiastical power teach her presbyters *ex cathedra* in her Seminaries, (which, if they have any right to exist at all, are ecclesiastical institutions,) a set of opinions which are clear outside of our doctrinal covenants. And this was the more conclusive, because it was morally certain that any theory of adjustment between geology and Moses, which would be taught by any modern geologist, would contradict the express terms of our doctrinal covenants as they now stand. For each of these schemes of adjustment postulates the existence of a

pre-Adamite earth and living creatures; but our Confession, Chap. IV., Sec. I., expressly asserts the contrary. Now, this being the case, and some of our ministers holding one, and others holding a contrary scheme of adjustment, and others again, being like myself, committed to none, it must follow that, sooner or later, the attempt to inculcate one of these schemes by ecclesiastical authority must lead to strife among ourselves. How soon has this been verified! Dr. Woodrow's groundless apprehension, that I was seeking to inculcate a different scheme from his, has already verified it! Now, we do not regard our Confession as infallible. But it is our doctrinal covenant; and we are surely right, therefore, in expecting at least thus much, that those who believe they have detected positive error in it, ought candidly to move the Church to agree together upon the correction of that error; and they are the proper persons to show how to correct it, if they can.

But meantime, Judge Perkins had endowed a chair of "Natural Science in connection with Revealed Religion" in Columbia Seminary, and Dr. Woodrow was its incumbent. Is this critique his retaliation for my presuming to exercise my right of dissent? I carefully removed all provocation, by making, as I have recited, a most express and honorable exception in favor of him and all his colleagues and pupils. It will appear in the sequel, as though he were bent upon excepting himself from the benefit of my exception, and verifying in his own case the caution which I was too courteous to apply to him.

The first criticism which I notice is, the charge that I disallow and reject all physical science whatever; and that I do it upon the implied ground that Revelation can only be defended by disallowing it all; thus virtually betraying the cause of the Bible with all intelligent men. This misconception of my aim will be so astonishing to all impartial readers, that perhaps they will be slow to believe Dr. Woodrow has really fallen into it. Hence I quote a few of his own words. *Review*, p. 328: "Dr. D. . . . has been keeping up for a number of years an unremitting warfare against Physical Science." [There must be a good many remissions when Dr. W.'s zeal can find but three blows in seven

years.] Page 333: "Dr. D. endeavors to excite hostility against Physical Science," etc. Page 336: "Having taught . . . that physical science is vain and deceitful philosophy," etc. Page 337: "If he had confined himself to saying that 'the tendency of much of so-called modern science is sceptical,' he might easily have substantiated this assertion. But . . . he maintains no such partial proposition," etc.

But this is precisely the proposition which I do maintain; having stated and defined it precisely thus in my own words. I presume that Dr. Woodrow is the only reader who has so misconceived me. My *last* and chief publication, the sermon in Lynchburg, is entitled, *A Caution Against Anti-Christian Science*. Why may I not be credited as understanding and meaning what I said? Dr. Woodrow exclaims, as he cites from my own words, my respectful appeal to the physical science of Drs. Bachman and Cabell, or to the refutation of the evolution hypothesis of Darwin, etc., by Agassiz and Lyell, or to the proof of actual, new creations of *genera* by fossil-geology: "Is Saul among the prophets?" Why may it not be supposed that I was not an ignoramus, and so, was consistent with myself, and knew what I was saying? The anti-Christian science which I disallow was here expressly separated from this sound physical science. But again: In the introduction of the sermon I hasten to separate and define the thing I attack. On page 2, I tell my readers that it is the "prevalent, vain," physical philosophy. Now every one knows that it is the materialistic philosophy of Lamarck, Chambers, ("vestiges,") Darwin, Hooker, Huxley, Tyndal, Herbert Spencer, Büchner, which is now the "prevalent" one. That is, these and their followers, like the frogs in the fable, who made more fuss in the meadow than the whole herd of good bullocks, are notoriously "prevalent" upon the surface of the current literature. It is these whom people called "intelligent," now usually read in the journals of the day. They hear of Darwin and his friends a thousand times, and do not hear of Dr. Woodrow's sound and safe science at all. I presume that there was not a gentleman in my audience in Lynchburg who did not see that I opposed these materialistic

physicists, and them alone. I further defined the thing I opposed as that which affects "positivism;" which attempts to construct a "sensualistic" psychology; which refers every thing, as effects, to the laws of material nature and of animal life. One would think that the materialistic school of Darwin, Huxley, etc., was in these words defined beyond the possibility of mistake to the well-informed hearer. All such would moreover clearly understand me as meaning these, because they knew that I knew it was precisely this school of physicists which was making nearly all the noise and trouble in the popular literature of the day, described by me in subsequent passages of the sermon.

But Dr. Woodrow, rather than give me the benefit of my own definition of my own object, on page 335 of his *Review*, launches out into the most amazing misunderstanding and contradictions. Indeed the passage is to me unintelligible, except that his astounding denial of the attempt made by the followers of Hume, and of Auguste Comte, to give a "sensualistic" explanation of the "mind's philosophy," betrays the fact that he has wholly failed to apprehend what I was speaking of. Had I learned manners in the school of Dr. Woodrow, I should here be warranted in retorting some of his very polite language on pages 368 to 370, and "prove that *he* is acquainted neither with the method nor the ends of" *mental* "science;" that he "has refused to learn" about the history of psychology "what boys in colleges can understand," or that he "is ignorant of the difference between true science" of mind "and the errors uttered in its name," etc., etc. But instead of doing so, I shall simply beg Dr. Woodrow's attention to some very familiar facts in the history of philosophy, which I trust will enable him to see my meaning. Be it known then, that especially since the days of Hartley in England, and Condillac in France, there have been in those countries, schools of philosophers, whose main characteristic is, that they ascribe to the human mind no *original* functions save those of sensibility and sense-perception. They deny all *a priori* powers to the reason, and disbelieve the existence, in our thinking, of any really primitive judgments of

reason. They teach that all logical principles are empirical. They hold in its sweeping and absolute sense the old scholastic maxim: "*Nihil in intellectu quod non prius in sensu.*" The consistent result of so false an analysis was foreseen to be materialism; and so it resulted. Now, the term employed to denote this school of psychology, from the days of the great and happy reaction under Royer Collard and others in Paris, and Emmanuel Kant in Konigsberg, was *sensualistic*, (sometimes spelled by the English philosophers, as Morell, *sensationalistic*,) and the name is appropriate, because the school sought to find all the sources of cognition in the *senses*. This common error characterised the deadly philosophy of Hume, the scheme of Auguste Comte, termed by himself *positivism*, and the somewhat diverse systems of Buckle, John Stuart Mill, and of Darwin and Huxley; who, while disclaiming *positivism* in that they do not adopt some of Comte's crotchets, yet hold this main error, and consequently reach, more or less fully, the result, blank materialism. One of the worst characteristics of the type of physical science now so current through the writings of these men, is the union of this "sensualistic" psychology with their physical speculations, whence there results almost inevitably a practical atheism, or at least a rank infidelity. I hope that Dr. Woodrow is now relieved, and begins to see what was the "anti-Christian science" which I opposed in my sermon and other writings.

I will now add, that at the end of last April, (two months before the publication of Dr. Woodrow,) he did me the honor to write me very courteously, at the prompting of a good man, a friend of peace, notifying me of his intended critique. I wrote him, the first of May, a polite and candid reply, in which occurred the following sentences:

"REV. AND DEAR SIR:

"Your courtesy in advertising me of your article deserves a thankful acknowledgment. I beg leave to tax your kindness with a few remarks before you finally commit your MS. to the press. The few words which passed between us in Richmond showed me that I had not been so fortunate as to convey the real extent and meaning of my views to you. This misconcep-

tion I will make one more effort to remove, in order to save you and the public from discussions aside from the real point. . . :

“I conceive that there is but one single point between you and me, which is either worthy or capable of being made a subject of scientific discussion. It is this: I hold that to those *who honestly admit a Creator anywhere in the past, the a posteriori argument from naturalness of properties to a natural (as opposed to a creative or supernatural) origin of the structures examined, can NO LONGER BE UNIVERSALLY VALID.* That is, really, the only point I care for. Now let me appeal to your candor to disencumber it of misapprehensions and supposed monstrous corollaries, and where is the mighty mischief?

“But (you may say) Dr. Dabney is understood as holding the above in such a sense, as to involve the assumption that all save the ‘*pleistocene*’ fossils are shams; that is, that the older fossil remains of animal life never were alive, but that God, in creating the world, created them just as they are, probably for the purpose of ‘humbugging’ the geologists. Now, I have never said nor implied any such thing, and do not believe it. *Search and see.* You may return to the charge with this inferential argument; that the doctrine means this, or else it has no point to it. *It does not mean it* in my hands, and I will show you what point I think it has. Let that ugly bugaboo, I pray you, be laid.

“Again: You will find, if you will search my Notes and Sermon, that I have not committed myself for or against any hypothesis held by truly devout, Christian geologists. I have not said that I rejected, or that I adopted, the older scheme of a pre-Adamite earth, as held by Drs. Chalmers, Hodge, Hitchcock, etc. I have not committed myself for or against the hypothesis of Cardinal Wiseman, and Dr. Gerald Molloy of Maynoote. No man can quote me as for or against the ‘uniformitarian’ scheme of Sir Charles Lyell, as compared with the opposite scheme of Hugh Miller. As to the other propositions advanced in my Notes and Sermon, I presume they can hardly be made the subjects of scientific debate between us, even if of difference. We shall hardly dispute whether sham-science, disparaging Moses, is, or is not, wholesome reading for the children of the Church. We shall hardly differ about the propriety of carrying that solemn conscience into physical speculation which sinners usually feel when they come to die. It can hardly be made a point for scientific inquiry, whether your larger or my smaller admiration for the fascinating art of the mineralogist is the more just.

“The only real point which remains then, is my humble attempt to fix the ‘metes and bounds’ of physical *a posteriori* reasonings when they inosculate with the divine science. Obviously, atheistic physicists wholly neglect those metes and bounds. Obviously again, many theistic physicists (as Hitchcock, *Relig. of Geol.*) dazzled by the fascination of facts and speculations, are overlooking those metes and bounds. Now, that inquiry may proceed in a healthy way, and the ground be prepared for safe hypothesis, it is all-important that a first principle be settled here. I offer my humble mite, by proving that, to the theistic reasoner, (I have no debate here with atheists,) *the proposition cannot hold universally true* that an analogous naturalness of properties in a structure proves an analogous natural origin. I do not care to put it in any stronger form than the above.

“But when cleared of misconceptions, this proposition, to the theist, becomes irresistible. Geologists” (meaning of course the ones defined in the previous paragraph) “refuse all limitations of analogical, *a posteriori* arguments, claiming that ‘like causes always produce like effects,’ which, say they, is the very corner-stone of all inductive science. But the real proposition they employ is the converse of this, viz.: ‘Like effects always indicate like causes.’ Now, first, must I repeat the trite rule of logic, That the converse of a true proposition is not necessarily true? Secondly: The theist has *expressly admitted another cause*, namely, an infinite, personal Creator, confessedly competent to any effect he may choose to create. Hence, the theist is compelled to allow that this converse will not hold universally here. Thirdly: A wise Creator, creating a structure to be the subject of natural laws, will *of course* create it with traits of naturalness. Hence, whenever the mineralogist meets with one of these created structures, he must be prepared to find in it every trait of naturalness, like other structures of the class which are originated naturally. Fourthly: To the theist this argument is perfect, when applied to all vital organism. The first of the species *must* have received from the supernatural, creative hand every trait of naturalness, else it could not have fulfilled the end for which it was made, viz., to be the parent of a species, and to transmit to subsequent generations of organisms the specific nature. And, fifthly and lastly: To deny this would compel us still to assign a natural parent, *before the first created parent*, of each species of generated organism; which would involve us in a multitude of infinite *series*, without causes out-

side of themselves. But this notion science herself repudiates as a self-contradictory absurdity. etc.

“*What use* is to be made of this conclusion, if admitted? First, to save us from being betrayed into some theory of cosmogony virtually atheistic. Secondly, to make you and me, those who love geology, and those who are jealous of it, modest in constructing hypotheses. To remind us, when examining the things which disclose ‘eternal power and Godhead,’ how possibly we may have gotten into contact with the immediate *Hand*, who ‘giveth no account to any man of his matters.’

“Very faithfully, yours,

“R. L. DABNEY.”

As to my argument in this letter, on the main point, we shall see anon. Now, of course it was impossible for me to foresee the amazing misapprehensions into which Dr. Woodrow had fallen. But had I been prophet enough to foresee them, I could hardly have chosen terms more exactly adapted to remove them, and to demonstrate that I did not attack all physical science; that I did not recommend universal scepticism of all but mathematics and the Bible; that I did not teach God had created a lie in putting fossils into the rocks, etc. But probably it did not avail to change one word; Dr. Woodrow was not to be thus balked of the pleasure of printing a slashing criticism of one who had given no provocation to him. Leaving it to the reader to characterise this proceeding, I would only ask, if I was not entitled to the benefit of my own exposition with the public. May I not claim the poor right, never denied even to the indicted felon, of speaking my own speech and defining my own defence. Had Dr. Woodrow deemed my statements in my letter inconsistent with those in my Sermon, he might at least have given me the benefit of a change towards what he considers the better mind.

I shall be reminded that the misconception of my scope was justified by such language from me as this: “The tendencies of geologists are atheistic.” “These sciences are arrayed in all their phases on the side of scepticism,” etc. These statements are all true, and consistent with my high respect for all true physical sciences. All of them are arrayed, by some of their

professed teachers, on the side of scepticism. Or, as I defined my meaning in the Sermon, page 2, these sciences of geology, natural history, and ethnology, now exciting so much popular attention, "always have some tendency to become anti-theological." I believe this to be true. They always have this tendency, but not always this effect. A tendency is a partial *drift* towards a certain result. It may exist, and yet in a multitude of cases, it may have no effect, because countervailed by opposing tendencies; or better still, opposing causes. Thus it appears clearly to be the doctrine of Scripture, that the possession of wealth always has, with frail man, a *tendency* towards carnality. Yet, all rich Christians are not carnal. Witness Abraham, the father of the faithful, yet a mighty man of riches; and the prince of Uz, Job. Hence a good man may, for valid reason, own riches, and may even seek riches. Yet, until he is perfectly sanctified, their pursuit is doubtless attended with a certain element of spiritual danger. If he does his duty in prayer and watchfulness this danger will be counterpoised and he will remain safe. Now it is precisely in this sense that I hold these studies always to have some tendency to become anti-theological. Yet it may be even a duty to pursue them, prayerfully and watchfully; and many good men, like Dr. Woodrow, may thus escape their drift towards rationalism, though like Abraham, acquiring great store of these scientific riches.

I assigned as I thought, very perspicuously, the reasons of this tendency. First: It is both the business, and the boast of physical science to resolve as many effects as possible into their second causes. Repeated and fascinating successes in these solutions gradually amount to a temptation to the mind, to look less to the great First Cause. The experience of thousands, who were not watchful and prayerful, has proved this. Again: Geology and its kindred pursuits have this peculiarity, that they lead inquiry full towards the great question of the *Αρχη*, the fountain head of beings. Now let a mind already intoxicated by its success in finding the second causes for a multitude of phenomena which are to meaner minds inexplicable, and in addition, secretly swayed by that native hostility, which the

Scripture declares lurks in all unconverted men, "not liking to retain God in their knowledge," let such a mind push its inquiries up to this question of the beginning of beings, there will be very surely some anti-theological tendency developed in him. Is it asked why all other human sciences, as law, chemistry, agriculture, are not chargeable with the same tendency? The answer is: Because they do not come so much into competition with the theistic solution of the question of the origin of things. Is it denied that geology does this; and are we told that Dr. Dabney has betrayed his scientific ignorance, by supposing that geology claims to be a cosmogony? Well, we know very well that Sir Charles Lyell, in the very outset of his "Principles of Geology," (London, 1850,) has denied that geology interferes with questions of cosmogony. And we know equally well, that if this be true of his geology, it is not true of geology generally, as currently obtruded on the reading public in our day. I thought that "cosmogony" meant the genesis of the cosmos; that cosmos is distinguished from chaos. So, when modern geology, in anti-theological hands, (which are the hands which rather monopolize geology now in our periodicals, viz., Huxley, Hooker, Tyndal, Büchner, etc.,) undertakes to account for the *origin of existing structures*, it is at least virtually undertaking to teach a *cosmo-gony*. In this judgment I presume all men of common sense concur with me. "Geology *ought* not to assume to be a cosmogony?" Very true; and I presume Dr. Woodrow's does not. But unfortunately, in this case, the frogs out-sound the good, strong bullocks. It is the assuming, anti-theistic, cosmogonic geology of which the Christian world chiefly hears; and *hence my protest*.

On page 352 Dr. Woodrow says: "All speculations as to the origin of forces and agents operating in nature are incompetent to natural science. It examines how these operate, what effects they produce; but in answer to the questions: Is there a personal, spiritual God, who created these forces? or did they originate in blind necessity? or are they eternal? *natural science is silent.*"

That is to say: Dr. Woodrow's natural science is silent. But

is Drs. Darwin's and Huxley's natural science silent about them? Notoriously it is not. When these men endeavor to account for existing beings by "natural selection," a physical law as the "original force" and "operating agent;" when *many* recent writers endeavor to use the modern doctrine of the "correlation of forces" for the purpose of identifying God's power with force, *their* natural science does not behave at all as Dr. Woodrow's behaves. And *this is our quarrel with them*. Nor can we assent fully to Dr. Woodrow's view, that true natural science "is silent" about all these questions. She ought not to be silent. Her duty is to evolve, as the crown and glory of all her conclusions, the natural, teleological argument for the being, wisdom, and goodness of a personal God. Such was the natural science of Lord Bacon, of Sir Isaac Newton, of Commodore Matthew Maury.

It is urged, I should not have said these physical sciences have an anti-theistic tendency; because, where men have perverted them to unbelief, the evil "tendency was in the student, and not in the study." This, I reply, is a half-truth. The evil tendency is in the student *and* the study; I have shown that the study itself has its peculiar elements of danger. But I might grant that it is in the student, rather than the study; and still assert the generality of this lurking tendency. For, the quality in the student, which constitutes the tendency is, alas! inborn, and universal among the unrenewed, namely: alienation from God—a "not liking to retain him in the knowledge"—a secret desire to have him afar off.

And now, when we turn to current facts, do they not sorrowfully substantiate my charge against these perverted sciences? Every Christian journal teems with lamentations over the wide and rapid spread of unbelief flowing from this source. Such men as Dr. McCosh fly to arms against it. Such men as Dr. Woodrow have so profound an impression of the power and audacity of the enemy, as to be impelled to wage the warfare continuously, even in an inappropriate *arena*. It is notorious that these physical speculations have become, in our day, the common, yea, almost the sole sources of scepticism. We have

infidel lawyers and physicians; but they are infidels, not because of their studies in jurisprudence, therapeutics, or anatomy; but because they have turned aside to dabble in geology and its connections.

But we see stronger, though less multiplied, instances of this tendency, in the cases where it sways devout believers to positions inconsistent with their own faith. Thus, Hugh Miller was a good Presbyterian, the representative and organ of the Scotch Free Church, yet he was misled by geology, to adopt a theory of exposition for the first chapter of Genesis, which Dr. Woodrow strongly disapproves. And Dr. Woodrow, though "believing firmly in every word of the Bible as inspired by the Holy Ghost," is betrayed in this critique, by the same seductive "tendency," into two positions inconsistent with his sound faith. This will appear in the sequel. In this connexion a remark should also be made upon the attempt to veil the prevalence of unbelief in America, by condemning my reference to the reported sentiments of many members of the Indianapolis meeting of 1870. He thinks it quite slanderous in me to allude to the published testimony of an eye-witness, without having required that person to put these slandered members through a very full and heart-searching catechism, as to all their thoughts and doings, and the motives of them. Somehow, I find my conscience very obtuse upon this point. Obviously, I only gave the published testimony of this reporter for what it was worth. That I was clearly entitled to do so, seems very plain from this fact: that he (and I know not how many other prints) had already *given it to the public*. He had made it the public's; he had made it mine, as an humble member of the public, to use it for what it might be worth. The currency given to the statement, by its mention in my poor little sermon, was but as a bucket to that ocean of publicity into which it had already flowed, through the mighty Northern press.

The second point requiring correction in Dr. Woodrow's critique is the equally surprising statement, that I inculcate universal scepticism in every branch except the Bible and mathe-

matics. Here again, his mistake is so surprising, that it is necessary to state it in his own words. Page 330, of *Review*: "He," (Dr. D.) "*recommends scepticism* as to the results of the application of our God-given reason to the works of God's hands." Page 331, I am represented as teaching that "we must regard ourselves as *incapable of arriving at a knowledge of the truth,*" and, farther on, "that we *can never become certain of anything* in geology or other branches of natural science." I am represented on page 332, as claiming "that our reason *could not form one correct judgment* on any subject without divine guidance." On page 338, I am represented as attempting to show that "physical science *never can reach* undoubted truth." On page 337, I am made to teach "that the systematic study of God's works always tends to make us disbelieve his Word." Whereas, the very point of my caution is, that the sort of pretended study of God's works which makes so many people disbelieve his Word, *is not systematic*. That is, it is not conducted on a just system.

There is, then, no mistake in my charging this misrepresentation, that the Reviewer really does impute to me a sweeping disbelief of *all* that physical science teaches, except in the "exact sciences." And neither is there, with the attentive reader, any mistake in the verdict that this charge is a sheer blunder. The very passage quoted to prove the charge from my sermon, disproves it in express words. I state that "the human *mind*, as well as heart, is *impaired* by the fall," not destroyed. (I do not go any farther, certainly, than our Confession. Why did not Dr. Woodrow assail and ridicule that?) Again: "The Christian need never expect that uninspired science will be *purged of uncertainty and error,*" etc. The metaphor is taken from therapeutics, in which a "purge" is given with the aim of bringing away certain morbid elements bearing a very small ratio to the body purged. And still more definitely, I say: "Even if the *organon* were absolute, pure truth, its application by fallen minds must always insure in the results *more or less of error,*" etc. On page 8 of Sermon, I add, speaking of the industry and ingenuity of the infidel physicists themselves, that even "*they*

have deduced *many* useful conclusions." Dr. Woodrow remarks, very simply, p. 331: "It is singular that Dr. Dabney should have fallen into this error," etc. Yes; so very singular, as to be incredible. And I presume that he is the only attentive reader of my words in America, who has "fallen into the error" of imputing this error to me. As Dr. Woodrow says, I condemn it in my Lectures. I repudiate it by honoring certain learned votaries of physical science. I repudiate it by appealing to certain well-established conclusions of physical science. I expressly limit my charge of fallibility in physical science, to the presence of "*more or less of error*" mingled with its many truths.

But as Dr. Woodrow's misconception evinces that it was possible for one man to fail to understand my position, I will state it again with a plainness which shall defy a similar result.

The perverted physical science which I oppose, contradicts revelation. We believe that the Bible is infallible. Now, my object is to claim the advantage for the Bible of infallibility as against something that is not infallible, in any actual or possible collision between science (falsely so called) and the Scriptures. This is plain. Now as Dr. Woodrow and all the good people for whom I spoke, believe, with me, that the Bible is infallible, all that remains to be done, to give us this advantage, is, to show that physical science, and especially anti-Christian physical science is not infallible. Where now is the murder? Does Dr. Woodrow wish to assert that these human speculations are infallible? I presume not. Then he has no controversy with me here. That obvious and easy thesis I supported, by noting, first, that while the Fall left man a reasonable creature, the intellect of his sinful soul was no longer a perfect instrument for reasoning; and we may expect it to be specially imperfect on those truths against which the prejudices of a heart naturally alienated from God are interested. Then, alluding to the fact that these infidel physicists usually assume the arrogant air of treating their science as certain, and the Bible as uncertain; and alluding to the claim that however fallible the ancient and the mediæval physics, the adoption of the inductive method has now

made the conclusions of modern physics certain, I proceeded to contest that claim in part, asserting that we must expect some error still in modern physics. This I proved (a), by the principle, that ancient and modern men are of the same species, and so should be expected to have the same natures and infirmities; but modern physicists convict their predecessors of a number of errors, whence it is arrogant in the former to assume that posterity will not convict them of any. I showed (b), that it was not true the inductive method was first invented and used in science from Lord Bacon's day, because Aristotle is said to have described the method; and whether *any* logician described and analysed it or not, nature had taught men of common sense, in all ages, to make some use of it. I asserted (c), that even the inductive method had not saved modern physics from all error, perfect as that method might be, because in fact modern physicists do not always stick to it faithfully; they sometimes, at least, yield to the same temptations which seduced the mediæval physicists. I showed (d), that modern physics had not yet reached infallibility, because *it is still correcting itself*. And I remarked (e), that infallibility could be approximated in the exact sciences only, in pursuing which, the fewness of premises and exactness of predications may, by the help of care, bring entire certainty within the reach even of fallible intellects. Now, a great many scholars have concurred with me in applying this name, "exact sciences," to the knowledge of magnitudes and number. They must have thought that the others were in some sense "inexact sciences." Yet they never dreamed they were guilty of recommending *universal scepticism of everything save the Bible and mathematics*. I presume they thought thus: That these "inexact sciences," true sciences to a certain extent, notwithstanding their inexactness, should be valued and should be used as far as was safe, but should be pressed with caution, and especially that they should be modest when they came in competition with exact science or infallible revelation.

Now Dr. Woodrow would reply, at this showing of the matter, that I must be clear, before I required the "inexact science" to succumb to the theological proposition, that the

latter was indeed God's infallible meaning, and not merely my human supposition about it. I grant it fully. And I take him to witness that I did not require my hearers to commit themselves to the interpretation of the Westminster Assembly, nor to that of Dr. Pye Smith, Chalmers, etc., nor to that of Mr. Taylor Lewis, etc., nor to my own interpretation of what Moses really meant to teach about the date and mode of creation. I did not even intimate whether I had any interpretation of my own. Indeed, I behaved with a reserve and moderation which, for so rash a person, was extremely commendable. But I must claim another position: I must assume that Moses did mean *something*, and when we are all honestly and certainly convinced by a sufficiently careful and mature exposition, what that something is; then we have the infallible testimony of the Maker himself, and fallible human science must bow to it.

But from Dr. Woodrow's next step I must solemnly dissent. It is that in which he degrades our knowledge of God and redemption through revelation to the level of our fallible, human knowledge of the inexact physical sciences. He is attempting, page 331, to refute my inference from the fall of man, (which he misrepresents as a commendation of absolute scepticism,) to the imperfection of his speculations. To do this, he claims "that *theology* is as much a human science, as geology or any other branch of natural science." "The facts which form the basis of the science of theology are found in God's Word; those which form the basis of the science of geology are found in his works; but the *science* in both cases is the work of the human mind." To ensure us that he is deliberate in propounding this startling doctrine, he repeats: "Still the science of theology as a science is equally *human* and *uninspired* with the science of geology; the facts in both cases are divine, the sciences based upon them human." He then proceeds expressly to extend this *human* and *uninspired* quality to "*our knowledge of the great central truths of theology!*"

The grave error of this is unmasked by a single question: Is then the work of the geologist, in constructing hypotheses, inductions, inferences, merely hermeneutical? All that the stu-

dent of the divine science properly does, is to interpret God's words, and compare and arrange his teachings. Is this all that geology undertakes? The world had to wait many centuries for a Kepler and a Newton to expound the laws of the stars; God tells us himself that his Word is for his people, and so plain that all may understand, and the wayfaring man though a fool, need not err therein. Again, this degrading view of theology misrepresents the reality. The "facts of geology," are simply phenomenal, material substances. The facts of theology, which Dr. Woodrow admits to be divine, are *didactic propositions*, introducing us into the very heart of divine verities. "God is a spirit." "The Word was God." "The wages of sin is death." "Being justified by faith." Here are the matured and profoundest truths of the divine science set down for us in God's own clear words. Does he teach the laws of geology thus? This difference is too clear to need elaboration. Once more: The critic's view, whether right or wrong, is unquestionably condemned by his Confession of Faith and his Bible. The former, Chap. I., § 5, says: "Our full persuasion and assurance of the infallible truth and divine authority thereof is from the inward work of the Holy Spirit, bearing witness by and with the Word in our hearts." And Chap. XIV., § 2: "By this faith a Christian believeth to be true whatsoever is revealed in the Word, *for the authority of God himself speaking therein*," etc. The Scripture says: An Apostle's preaching "was not with enticing words of man's wisdom, but in demonstration of the Spirit and of power; that your faith should not stand in the wisdom of men, but in the power of God." (1 Cor. ii. 4, 5.) The apostle John promises to Christians, (1 John ii. 20 and 27): "But ye have an unction from the holy one; and ye know all things." "The *same anointing* teacheth you of *all things*, and is truth, *and is no lie*."

Dr. Woodrow, perceiving how obnoxious his position might be shown to be to these divine principles, seeks an evasion in the claim, that the children of God are as much entitled to ask and enjoy spiritual guidance when they study God's works, as when they study his Word. He reminds us that the heavens declare

the glory of God, etc., and asks whether Christians forfeit his guidance when they seek a fuller knowledge of that glory in the heavens and the firmament. Unfortunately for this evasion, we have to remind him of a subsequent page of his essay, where he heaps scorn upon the idea that physical science has any theological tendency, and declares that it is only ignorance which ascribes to it either a pro-Christian, or an anti-Christian character. The physicist, then, is not seeking God's glory in his study of *strata* and fossils; if he does, he has become, like Dr. Dabney, unscientific; he is seeking only "the observable sequences" of second causes and effects. Farther, the physicists whom I had in view never seek God anywhere, never pray, and do not believe there is any spiritual guidance, being infidel and even atheistic men.

If, then, the "science of theology" is as human and uninspired as the science of geology; and if, as Richard Cecil has so tersely expressed it, the meaning of the Bible is practically the Bible; the ground upon which we are invited in the gospel to repose our immortal, irreparable interests, is as fallible as geology. How fallible this is, we may learn from its perpetual retractions and amendments of its own positions, and from the differences of its professors. Is the basis of a Christian's faith no better? Is this the creed taught to the future pastors of the Church by Dr. Woodrow? As was remarked at the outset, when we predicted such results in the distant future, from the attempt to teach fallible human science in a theological chair, we still-courteously excepted Dr. Woodrow from all applications of this caution. The reader can judge whether my critic has not deprived himself, in this point, of the benefit of this exception, and verified my prophecy two generations earlier than I myself claimed.

The third general topic requiring my notice in this critique, is, the outspoken charge of culpable ignorance. It is said, page 368, that I am "acquainted with neither the methods nor the ends of physical science, with neither its facts nor its principles," etc.; and of this assertion many supposed specimens are

given, served up to the reader with the abundant sauce of disdain and sarcasm. On this I have, first, two general remarks to make. If it was only intended to prove that I am not a technical geologist, like Dr. Woodrow, (which is not necessary to enable a plain Christian to perceive and resist the tendencies of infidel physics) this end might have been quickly reached, without fifty-two dreary pages of criticism, by quoting my own words, Sermon, page 8: "We may be possessed neither of the knowledge nor ability for entering that field, as I freely confess concerning myself." The other remark is, that all these specimens of imputed ignorance would have been passed over by me in absolute silence, did they not involve instances and illustrations of important principles. For I presume the Presbyterian public is very little interested in the negative of that question: "Is Dr. Dabney an ignoramus," the affirmative of which Dr. Woodrow finds so much interest in arguing.

But it is asserted that I understand "neither the methods nor the ends" of physical science, because I speak of some such (professed) science as "anti-Christian," and suspect it of atheistic tendencies. Page 353: "Natural science is itself incapable of inquiring into the origin of forces . . . and it is impossible for it to be either religious or anti-religious." Page 354, it is claimed as a "fact," that the "results reached are not in the slightest degree affected by the religious character of its students." Page 351, I am criticised for asking whether the theological professor of "natural science in connection with revealed religion" traces geologic forces up to a Creator, and it is charged as a "grievous mistake to suppose that natural science has anything whatever to do with the doctrine of creation." Well, I reply, if even a mere physicist had not, we presume that a Christian divine, put into a theological school to teach the Church's pastors the "connection of natural science with revealed religion," ought to have something to do with that "connection." This, as the attentive reader will perceive, was the question in that passage of my writing. Hence it is a sheer error to cite this place as proof of an "utter failure to recognise the province of natural science."

But in truth, physics, simply as natural science, have a theo-

logical relation; these studies deal with the very forces, from whose ordering natural theology draws the *a posteriori* argument for the existence of a Creator. It is not a "fact," that these studies are unrelated to the religious views of their students. Were this so, it would not have happened that a Newton always travelled by astronomical science to the recognition of a God; and a La Place declared, as the result of his *Mechanique Celeste*, that a theory of the heavens could be constructed without a Creator. It would not have happened, that while Dr. Woodrow always traces natural laws up to the great First Cause, Dr. Thos. Huxley should see in Darwin's physical theory of evolution by natural selection a perfect annihilation of the whole teleological argument for the being of a God. Dr. Woodrow says in one place, that because the business of natural science is with second causes, it has no business with first causes. (Because the fisherman is at one end of the pole, he has no business with the hook and the fish that are at the opposite end of the line!) Fortunately, on pages 343 and 344, Dr. Woodrow himself contradicts this error. There he defends his view of a creation by evolution, by claiming that the structure produced by second causes is as truly God's creation as a first supernatural structure could be. If that is so, then the study of the second cause is surely a study of a creation, and so of a Creator. So also Dr. Woodrow's friend, Lord Bacon, contradicts him, and justifies me in the very place quoted, (*Review*, page 374): "It is an assured truth and a conclusion of experience, that a little or superficial knowledge of philosophy may incline the mind of man to atheism; but a farther *proceeding* THEREIN *doth bring the mind back again to religion*; for in the entrance of philosophy, when the second causes, which are next unto the senses, do offer themselves unto the mind of man, if it dwell and stay there it may induce some oblivion of the highest cause," (just the "tendency" towards unbelief, described by me); "but when a man passeth on farther, and seeth the dependence of causes, and the works of Providence, then, according to the allegory of the poets, he will easily believe that the highest link of nature's chain must needs be tied to the foot of Jupiter's chair." Thus,

according to Bacon, natural science has a religious relationship. What is it indeed but hypercriticism to object to the phrase, "anti-Christian science" and the like, that natural science is properly neither Christian nor anti-Christian? when everybody but the critic understood that the terms were used in the sense of "natural science perverted against religion." So fully are such phrases justified by use, and so well understood, that Dr. Duns actually entitles his gigantic volumes on Physical Science, "*Biblical Natural Science.*" What a target, in that title, for such objections?

On page 372, the Reviewer finds an evidence of ignorance in the passing allusion which I made to the new questions touching the relative order of *strata* raised by the results of recent deep-sea soundings. "All of which," declares Dr. Woodrow, "evinces an utter misapprehension of the real import of the discoveries in question." That is to say: Dr. Woodrow happens not to be pleased with that view of the import of these recent discoveries which I advanced, derived from competent scientific sources. Therefore the apprehension which happens not to suit him is all "misapprehension." We shall see, before we are done, that it is rather a permanent illusion with the Reviewer, to account that his opinion is true science, and true science his opinion. But we beg his pardon; we do not purpose to be dogmatised out of our common sense; nor to allow the reader to be dogmatised out of his. Let these facts be reviewed then in the light of common sense. It is the current theory of Dr. Woodrow's friends, the geologists, that the stratified and fossil-bearing rocks are the result of the action of water, formed of sediment at the bottom of seas and oceans, and then lifted out of the water by upheavals. Now geologists have assigned a regular succession of lower and upper, and uppermost, to these *strata*; determined, as Lyell remarks, by three guides: the composition of the *strata*, the species of fossil life enclosed in them, and the observation of actual position, where two or more of the *strata* co-exist. Now then, should some new upheaval lift up the bottom of the North Atlantic, for instance, what is now the surface of the sea bottom, would, immediately after the upheaval, be the top-*stratum* of the

land upheaved. But the deep-sea plummet and the self-registering thermometer have proved, that species of animal life hitherto determined by the rules of stratigraphy to be *successive*, are in fact *cotemporaneous* now on the sea bottoms, and considerable differences of temperature (determining different species of aquatic life) are found, unaccountably, in neighboring tracts of the same ocean at depths not dissimilar. Is it not evident that, in case of such an upheaval, we might have, side by side, formations of equal recency? But geologists would have decided, by previous lights, that they were not equally recent; that one was much older than the other. The prevailing stratigraphy may, consequently, be very probably wrong. Let the reader take an instance: Microscopists have been telling us, with great pride, that English chalk is composed in large part of the minute shells of an animalcule, which they name *Globogerina*. They say that the cretaceous deposits rank as *mesozoic*, below the *pliocene*, *eocene*, and *miocene* in order, and consequently older in origin. That is, Sir Chas. Lyell says so, in his most recent work, (if he is any authority with Dr. Woodrow.) But the microscopists also tell us, that the slime brought up from the depths of the North Atlantic by the plummet, of a whitey-grey color when dried, is also composed chiefly of the broken shells of the tiny *Globogerinae*, many of them so lately dead, that the cells still contain the jelly-like remains of their organic parts. If this is true, then chalk-formations *are now making*, and should an upheaval occur, there would be a chalk bed as really new, as post tertiary, as the bed of alluvial mud on the banks of New Foundland! May it not be, then, that some other chalk-beds, on or near the top of the ground, may be less ancient than the established stratigraphy had claimed? Such was our point touching these deep-sea soundings; and we rather think that sensible men will not agree with Dr. Woodrow that it can be pooh-poohed away. But as we are nobodies in science, we will refer him to a testimony of Dr. Carpenter, of London, late President of the British Association, who is recognised as perhaps the first physicist in Great Britain. He says:

“Whilst astronomy is of all sciences that which may be con-

sidered as most nearly representing nature as she really is, geology is that which most completely represents her as she is seen through the *medium* of the interpreting mind; *the meaning of the phenomena that constitute its data being, in almost every instance, open to question, and the judgments passed upon the same facts being often different, according to the qualifications of the several judges.* No one who has even a general acquaintance with the history of this department of science, can fail to see that the geology of each epoch has been *the reflection of the minds by which its study was then directed.* "The whole tendency of the ever-widening range of modern geological inquiry has been *to show how little reliance can be placed on the so-called "laws" of stratigraphical and palæontological successions.*"

Abating the euphemism, Dr. Carpenter seems as bad as Dr. Dabney. He will soon require the chastisement due to the heresy, that the Woodrow opinion is not precisely the authoritative science of the case. His testimony is peculiarly significant as to the worthlessness of "the so-called 'laws' of stratigraphy," because he had himself been especially concerned in the examination of this chalk-mud from the deep-sea soundings.

Dr. Woodrow sees proof of ignorance of even the nomenclature of natural science, in my use of the word *naturalism* to describe (what he obviously apprehends I designed to describe) that school which attempts to substitute Nature for God as the ultimate goal of their research. The very passage quoted from my printed Notes by him defined my meaning. "This therefore," (meaning obviously the unwillingness of this school to recognise any supernatural cause back of the earliest natural cause) "is the eternity of naturalism; it is Atheism." Dr. Woodrow thinks this an antiquated and therefore an improper use of the word. On both points I beg leave to dissent. If I need an expressive term, why may I not revive an ancient one, if I define its sense? Is not this better than coining a new one, and being obliged to define that? But my term is not antiquated. *Naturalismus* holds its place to-day in German lexicons; and Webster (surely he is "new-fangled" enough) gives the word in my sense. But the concrete noun, "*naturalist*," ought to be used in the sense of a *student of nature*; not:

in my meaning of an *advocate of naturalism* (in my evil sense.) So it is usually employed. But in the only place where I use it in the bad sense, I distinguish it sufficiently by the epithet, "proud naturalist," whose theory of nature is a "form of scepticism." Here again I am comforted by the belief that Dr. Woodrow is the only man in America embarrassed by my nomenclature.

On page 339 of the *Review*, supposed evidence is found, that I believed, in my ignorance, that the idea of a pre-Adamite earth was first suggested within the memory of the older members of the Synod of Virginia; and a great deal of rather poor wit is perpetrated as to the age of these members. Having read, for instance, the introductory chapters of Lyell's *Principles of Geology*, twenty years ago, in which quite a full sketch of all the speculations about this matter is given from ancient times, I was in no danger of falling into that mistake; nor did I give expression to it. My brethren doubtless understood the words, "this modern impulse," in the sense I designed, namely: as a popular impulse, given by the comparatively recent diffusion of geological knowledge, and felt in the minds of the people. And it is substantially true, that just one generation ago, it had not generally gone farther in the speculations then prevalent among Americans, than the claim of a pre-Adamite earth in such a sense as might be reconciled with the Mosaic cosmogony upon the well known scheme of Dr. Pye Smith. Since that day many other and more aggressive postulates, standing in evil contrast with the first and comparatively scriptural and tolerable one, have been diffused among our people by irreligious men of science. Some of the latter I also enumerated; intimating that, while we might, if necessary, accept the first, along with such sound Christians as Dr. Pye Smith, Dr. Chalmers, and Dr. Woodrow, *all of the latter* we certainly could not accept consistently with the integrity of the Bible. So that my charge of anti-Christian character was, at least to a certain extent, just, against this set of physicists.

Another evidence of my ignorance, upon which Dr. Woodrow is exceedingly funny, upon pages 367 and 368, is my classifi-

cation of the rocks: as lowest and earliest the *primary* rocks all *azoic*; next above them, the *secondary* rocks, containing remains of life *palæozoic* and *meiocene*; third, the *tertiary* rocks and clays containing the *pleiocene* fossils; and fourth, the *alluvia*. Dr. Woodrow then presents a classification, which he says is "REAL GEOLOGY;" differing from the brief outline I gave, chiefly (not only) by using more subdivisions. The meaning of the assertion, that this is the "Real Geology," it must be presumed, is: that this is Dr. Woodrow's geology; for his classification is not identical with Dana's, or Lyell's, any more than mine is. But it is not true that Dr. Dabney "comes forward as a teacher of this science." In that very lecture I state expressly that I "do not presume to teach technical geology." My avowed, as my obvious, purpose, was only to cite the theory of the geologists, in its briefest outline, unencumbered with details and minor disputes of its teachers among themselves, sufficiently to make my argument intelligible to ordinary students of theology. For this object details and differences were not necessary, and I properly omitted them. Dr. Gerald Molloy, of Maynooth, (a writer of almost unequalled perspicuity and intelligence), with precisely the same end in view, goes no farther in the way of classification, than to name, as his three divisions, *igneous*, *metamorphic*, and *aqueous* rocks. Here is a still greater suppression of details. Dr. Woodrow may now set this exceedingly rudimentary division over against his detailed "Real Geology," and represent Dr. Molloy also, as ignorant of what he speaks of.

But, it is presumed, Dr. Woodrow would add, that my rudiments of a classification were partly wrong, namely: that I call the igneous rocks (granite, trap, etc.) *primary*, and that I apply the term *azoic* to all rocks devoid of fossils; whereas it has seemed good in the eyes of the Woodrow-geology, [the only "real geology,"] not to call the igneous rocks *primary*, and to restrict the term *azoic* technically to a very small segment of the *azoic* rocks, viz., to the sedimentary rocks which have no fossils.

Well, the Woodrow geology is entitled to choose its own no-

menclature, we presume; and so are the majority of geologists, who differ from it, entitled to choose theirs; and I have a right to follow that majority. Dr. Woodrow, as he intimates, chooses to follow Sir Chas. Lyell in his crotchet of refusing to call the "igneous" rocks "*primary*." (The latter uses the word "*primary*" as synonymous with the palæozoic group.) But Dr. Woodrow also knows, that this freak of Lyell's is prompted by a particular feature of his "*uniformitarian*" scheme, and is a *departure* from the ordinary nomenclature of the earlier geologists. He knows also, that many geologists apply the term *azoic* to all the crystalline rocks, and not to the non-fossiliferous *strata* of sedimentary rocks only. Thus, Duns, "following competent men of science," divides thus: 1st, *Azoic*; 2d, *Primary*, equivalent to the palæozoic; then, *secondary*, equivalent to the mesozoic; and fourth, *tertiary*, or *cainozoic*. So Dana states his division thus: "I. *Azoic* time. II. *Palæozoic* time. III. *Mesozoic* time. IV. *Cainozoic* time. V. The age of mind." And what can be more true than that the igneous rocks, ordinarily styled *primary*, may be also termed *azoic*; when the absence of fossil remains of life in them is at least as uniform and prominent a trait in them as any other? But the reader will feel that this is an exceedingly small business.

The specimen of ignorance which amuses Dr. Woodrow perhaps most of all, is my notice of some geologists' "*nebular hypothesis*," criticised on pages 344 and 345 of the *Review*. This idea (that our solar system was, first, a vast mass of rotating, incandescent vapor, and then a sun and a set of planets, of which the latter, at least, had been cooled first to a molten liquid, and then to a solid subsistence on their surfaces,) is said to have been suggested first, by La Place, as a mere hypothesis; and the only seeming fact giving it even a show of solid support, was the existence of those faint, nebulous spots of light among the stars which no telescope had as yet made anything of. Now every one who reads infidel books of science observes how glibly they prate of this supposition, as though there were some certainty that it gave the true origin of our earth. Meantime, Sir William Herschell first, and then Lord Rosse, applied more powerful

magnifiers to them. The effect of Herschell's telescope was to resolve some of the *nebulae* into distinct clusters of stars. He then divided them into the three classes of the *resolved*, the *resolvable*, and the *unresolved*, suggesting that a still more powerful instrument would probably resolve the second class. Lord Rosse has, in our own day, constructed a still larger reflector, and the result is, that more of the *nebulae*, when sufficiently magnified, are now seen to be clusters of stars. Now, must not every sober mind admit with me, that "the chief ground of plausibility is thus removed" from the atheistic supposition? The probability is, that the other *nebulae* are, what all are shown to be, which have been resolved. Then the evidence of fact is lacking, that the heavens ever contained planetary matter in that form. For the only other luminous and nebulous bodies known to astronomy are the comets, and they evidently are not cosmic or planetary matter, *i. e.*, not matter which can be cooled into a solid as large as a world, because, however vast their discs and trains, their quantity of matter is so amazingly small that they produce no appreciable perturbations in the orbits of the planets near them. But Dr. Woodrow exclaims, that the newly discovered *spectroscope* has taught us the chemistry of the heavens, and has shown that some *nebulae* are incandescent gases. Well, let us see about this *spectroscope* of which we have heard a great deal these latter years. One thing which we have heard, is the following sensible caution from Dr. Carpenter. Speaking of the assumption founded on the *spectroscope*, that the sun's chromosphere is incandescent hydrogen, he says: "Yet this confidence is based entirely on the assumption, that a certain line which is seen in the *spectrum* of a hydrogen flame, means hydrogen also, when seen in the *spectrum* of the sun's chromosphere. . . . It is by no means inconceivable that the same line might be produced by some other substance at present unknown." Dr. Carpenter then proceeds to administer a similar caution to Dr. Huggins, one of the professed authorities with the *spectroscope*. Such is the scepticism of England's greatest physicist about its revelations. But to be more particular: Its friends tell us that the *spectra* of luminous rays passing from incandescent solids

through a gaseous *medium* have certain dark lines in them; whereas, when the incandescent gases are themselves the sources of the rays, the *spectra* have the cross-lines in different places. Now hear how Dr. Roscoe tells this story of Dr. Huggins, about the *nebulae* in the spectroscope, in the great work of the former on *spectrum analysis*. "He," (Dr. Huggins) "instead of having a band of light intersected by dark lines, indicating the physical constitution of the body to be that corresponding to the stars, found the light from this *nebulae* consisted simply of *three insulated bright lines*," etc. The sober reader will be apt to think with me, and with Dr. Carpenter, that so minute a result, and so unlike the other results of more distinct *spectrum analyses*, gives no basis for any conclusion whatever. And this will be confirmed when he hears Mr. Lockyer, another friend of the *spectroscope* say: "The light of some of those *nebulae* visible in a moderately large instrument has been estimated to vary from 1-1,500 to 1-20,000th of the light of a single sperm candle consuming 158 grains of material per hour, viewed at a distance of a quarter of a mile. That is, *such a candle a quarter of a mile off, is twenty thousand times more brilliant than the nebula!*" Let the reader now consider what likelihood there is, that any art can ever separate all the stray beams of other light diffused through our atmosphere, from this almost infinitely slender beam, so as to be sure that it is dealing with the rays of the *nebula* alone. But a *microscopic shadow* of this almost invisible ray, is the "conical ball of the chassepot gun" on which Dr. Woodrow relies, to pierce the solid steel of common sense! This is, to our view, shooting with rays of "moonshine," in the thinnest of its metaphorical senses.

The last of these specimens is that noted on page 366 of the *Review*. I had shown that the first structures made by God, though supernaturally produced, had every trait of naturalness. This was then illustrated by me, by reference to one of the trees of paradise. To this Dr. Woodrow makes the very singular objection, that I ought not to found scientific arguments upon surmises! He overlooks the simple fact, that this surmise about the tree of paradise with annual rings, *was not my argument at*

all, but only my illustration of it! Had he read the previous paragraph of my "Notes," or pages 13 and 14 of my Sermon with attention, he would have found *there* my argument, founded, not on *suppositions* about a possible tree or bone, but on impregnable principles of natural science itself. Does not Dr. Woodrow know, that every parable is, in its nature, a supposition? Yet parables are excellent illustrations. When Jotham, the son of Gideon, in the 9th chapter of Judges, answered the men of Shechem with his parable of the trees, Dr. Woodrow would have put this reply in the mouths of Abimelech's faction: That Jotham was exceedingly illogical, for the reason that the actual utterance of words by olive and fig trees, vines and brambles, was a "phenomenon not known to exist."

On page 335 of his *Review*, Dr. Woodrow prepares the way for his charges of ignorance and inconsistency against me, by the following illustration: "Just as leading Presbyterian theologians, *personally known to Dr. Dabney*, have taught that 'every obstacle to salvation, arising from the character and government of God, is actually removed, and was intended to be removed, that thus every one of Adam's race might be saved,' and that 'the Father covenants to give to the Son, as a reward for the travail of his soul, *a part* of those for whom he dies.'" To many readers, it has doubtless appeared unaccountable that so "far-fetched" an illustration was sought. The clerical readers of the *Southern Presbyterian Review*, and the *Southern Presbyterian*, can easily recall the clue of association which suggested it. They will remember that nine and a half years ago, these two periodicals, which have now been made the vehicles of the charge of scientific heresy against me, contained articles which insinuated against me the very charge of theological heresy, viz., an indefinite design in Christ's atonement, which is here introduced, by Dr. Woodrow, as an illustration. [The occasion of that charge was my action, in obedience to the General Assembly as chairman of a Committee for conference and union with the United Synod of the South. That Committee proposed to the Presbyteries a declaration of doctrinal agreement, of which I happened to be the penman. The conductors of the

two presses in Columbia, opposing the union, sought to prevent it, in part, by criticising the orthodoxy of the doctrinal propositions, and intimating the doctrinal unsoundness of them and their writer in no indistinct terms. True, this intimation remained without effect, as might have been supposed, when aimed equally against the orthodoxy of my obscure self, and of such well-known and learned Old School theologians as Dr. Wm. Brown, Col. J. T. L. Preston, Dr. J. B. Ramsey, and Dr. McGuffey—the last two concurring as informal members of the Committee.] We see, when reminded of this history, how natural it was that Dr. Woodrow, seeking for a biting illustration, should recall this one. And the clerical readers of the *Review* have doubtless, almost as naturally, understood him as insinuating that “the leading Presbyterian theologian, personally known to Dr. Dabney,” was no other than Dr. Dabney himself. If the words bear this construction, all I have to say is, that I never wrote or uttered the statements enclosed in the quotation marks.

But I find these very words ascribed by Dr. B. M. Palmer, in a controversial piece against the United Synod, to Dr. H. H. Boyd, a distinguished minister of that body. Doubtless, Dr. Palmer quoted them correctly. Grant now, that the insinuation against me, which seemed to lie so obviously in Dr. Woodrow's reference, was not intended by him, and that he also meant to designate Dr. Boyd; the question recurs, Why was so peculiar and remote an illustration selected? The only answer is this: That an intimation of Dr. Dabney's untrustworthiness might be given, from his intimate association with a theological comrade, so erroneous as Dr. Boyd was esteemed at Columbia. To this again I have to say, that Dr. Boyd was not “personally known” to me; that I never spoke to him save once, on the steps of a hotel, as I was passing to the cars; that I never heard him preach, nor read one line of his theological writings, save the few quoted by Dr. Palmer, and thus had no personal knowledge of his unsoundness or orthodoxy. My whole knowledge on this point was a statement received through acquaintances, which I believed to be authentic, coming from Dr. Boyd himself. And

that statement was, that when our Lynchburg Declaration appeared, Dr. Boyd, counselling with his own brethren in his Presbytery, earnestly advised them to accept the union on those terms, although, as he declared, that joint Declaration was, in his view, purely an Old School document, and distinctly condemnatory of whatever was peculiar in his own theological views. For, he said, the best interests of the churches demanded union; and inasmuch as his brethren were doctrinally already upon this Old School platform, he did not desire selfishly to gratify his own peculiar doctrinal preferences, at the cost of obstructing their comfort and usefulness; his points of difference from the platform not being, in his view, vital.

The fourth, and far most important vindication which remains, is of the fundamental position of my Sermon on Anti-Christian Science. That position has been seen by the reader, in the extracts given in this reply (pages 545-8 above) from my letter of May 1st, last to Dr. Woodrow. That position may be thus re-stated: The structures of nature around us cannot present, by their traits of naturalness, a universally demonstrative proof of a natural, as against a supernatural origin, upon any sound, theistic theory. Because, supposing a Creator, originating any structures and organisms supernaturally, he also must have conferred on his first things equal traits of naturalness. Hence, should it be found that this Creator has uttered *his testimony* to the supernatural origin of any of them, that testimony fairly supersedes all natural arguments *a posteriori* from natural analogies to a natural origin. My arguments for this position are briefly stated in those extracts inserted above (pages 545 to 548.) The reasoning, though brief, will be sufficient for the candid reader, and I shall not weary him by repeating it.

But Dr. Woodrow, *Review*, pages 365 and 366, impugns one of my points. He will not admit it as proven, that a wise Creator, producing a first organism to come under natural law, and be the parent of a species of like organisms, must have made it natural. He says, "he does not know, and he thinks it likely that Dr. Dabney does not know either." And he pro-

ceeds very facetiously, to speak of my imagination about the rings in the tree of paradise as the sole basis of my argument. The tree was only an illustration. That basis I will state again. If theism is right, as Dr. Woodrow believes, then the Creator is doubtless voluntary, knowing, and wise. While it is often very unsafe philosophy to surmise that the creative mind must have been prompted by this or that *final cause*, it is always very safe to say that he was prompted by *some* final cause, and that a consistent and intelligent one. For this is but saying that he is wise, and what he has effected is a disclosure of what he designed to effect, so far as it is completed. Now, God, in producing his first organisms by creation, must have designed them to exist under the reign of natural law; because we see that he uniformly *places them under that law*. That is to say: What he does is what he intends to do. But natural law could not govern that which remained contra-natural in qualities as well as origin; therefore God must have created his first organisms, while supernatural in origin, yet natural in traits. This argument is, if possible, still more demonstrative when applied to the first living organisms, vegetable and animal, because these were made by God to be the *parents of species* propagated by the first, and thenceforward in successive generations. Now, not only does Revelation say that these supernatural first organisms "yielded seed *after their kind*," natural science tells us most clearly, that the true notion of propagation, perpetuating a given species, is the parents' conveying into the progeny all their own essential, specific qualities. So true is this notion, that the most scientific definition of *species* is now stated substantially thus by the greatest living natural historians. A given species *denotes just that aggregate of properties which every individual thereof derives by its natural propagation*. Hence it is certain that the first organism (supernaturally produced) possessed every essential quality natural to its species; otherwise it could not have been a parent of species.

Suppose then, that by any possibility, a physicist should examine the very remains of one of those first organisms, he would find in it the usual traits of naturalness; yet he could not infer

thence a natural origin for it, because it was a *first thing*. Hence it is concluded, with a mathematical rigidity, that, granted a Creator anywhere in the past, the argument from naturalness of structure to naturalness of origin *cannot be universally conclusive*. And supposing the structure under examination to be one of which Revelation asserts a divine origin, then, in that case, this testimony of the Almighty Maker absolutely cuts across and supersedes the opposing inference from natural analogies. Such was the doctrine of my Notes and Sermon. Dr. Woodrow seems to conclude that, in such a case, God's workmanship would teach a lie, by seeming to be natural in origin, when it was not. The solution of his embarrassment is simple. It is not God who teaches the lie, but perverted science going out of her sphere; and that this question of *αρχη* is out of her sphere, Dr. Woodrow has himself taught with a fortunate inconsistency, on page 352 of his *Review*.

But as I know nothing about science, I beg leave to fortify my position by three scientific testimonies. The first shall be that of Dr. Büchner, the German materialist and Atheist. He declares in a recent work, that the ideas of *God*, and of *science*, are incompatibles; in this sense, that just to the degree a divine action is postulated, the conclusions of science are to that extent estopped. Now, what is this but confessing that the only evasion from my argument is Atheism? The second testimony shall be from a more friendly source. Dr. Carpenter, in the inaugural speech referred to above, uses the following closing words. When we make allowance for a certain *euphemism*, prompted by his attitude, as president of a body purely scientific, many of whose members are avowed infidels, and by the occasion of his speech which was wholly non-religious, we shall see that his testimony is very decided. After showing that every physical law, correctly interpreted, tells us of one, single, almighty, intelligent Cause, the supreme, spiritual God, he says: "The science of modern times, however, has taken a more special direction. Fixing its attention exclusively on the *order* of nature, it has separated itself wholly from theology, whose function it is to seek after its cause. In this science is fully

justified." . . . "But when science, passing beyond its own limits, assumes to take the place of theology, and sets up its conception of the order of nature as a sufficient account of its *cause*, it is invading a province of thought to which it has no claim; and *not unreasonably provokes the hostility* of those who ought to be its best friends."

The third witness is Prof. F. H. Smith, who fills the chair of Natural Science in the University of Virginia. His long experience, vast learning, subtle and profound genius, and well known integrity and caution of mind, entitle his scientific opinions to a weight second to none on this side of the Atlantic. He makes, in two letters to me, the following statements :

"The transcendent importance of the subject of the letter with which you lately honored me, forbade any response, which was not deliberate.

"The 'naturalness' of the new-created world is, in my judgment, conclusively established in your recent letter to me. You wholly demolish the argument of the infidel, who deduces from such continued and uninterrupted naturalness, the eternity and self-existence of nature. To me it is simply inconceivable, that the physical world should have ever borne marks of recent creation, or that it shall ever present signs of impending annihilation. Nay, granting the existence of such inconceivable signs, I do not see how we could interpret them. If they were possible, they must be unintelligible.

"The beginning of a universe, regulated by mechanical laws, must have been some 'configuration,' to which it *might* have been brought by the operation of the same mechanical laws from an antecedent configuration, mathematically assignable. I undertook to illustrate this truth to my class last session, by this simple example: The undisturbed orbit of a planet is an ellipse, described with a velocity periodically varying by a definite law. The planet passes any given point of its orbit with the same velocity, and in the same direction, in each recurring round. If it were arrested there, and then projected with that velocity in that direction, it would resume identically the same orbit. The actual motion at each point of the orbit is, therefore, the necessary projectile motion of the new-created planet at that point. Hence, wherever created and projected, its initial motion *might* have been the result of centrifugal action. Thus the elliptical circulation presents no marks of a beginning or of an end. As

regards the terms of its existence, the phenomenon is dumb. The lesson it teaches is not the shallow sophism that it has no beginning or end; but that whatever information we derive on these points, we must seek from a source other than nature.

“When this great truth was first apprehended by me, it filled me with the glow of a new discovery. You may smile at the confession; for to one well acquainted with the history of philosophy, the statement may appear to be one of venerable antiquity. Indeed, I found it myself, subsequently, ably set forth in an article* on geology, which appeared in the *Southern Quarterly Review*, (Columbia, S. C.) in 1861. I believe that Mr. P. H. Gosse, a British Naturalist, advanced substantially the same idea in a book quaintly called ‘*Omphalos*’; the name and key-note of which were suggested by the probable fact, that Adam had a navel, though he was never united to a mother by an umbilical cord.”

“Be the history of the doctrine what it may, none the less acceptable and timely is the irresistible logic by which you have established it. Most heartily do I agree with you in affirming that the formula, ‘Like effects imply like causes,’ fails for the initial state of the world, and cannot, therefore, logically be used to disprove a beginning,” etc.

“All the astronomer’s statements,” (calculating possible past or future eclipses,) “as to the past or the future, are limited by the qualification, either overt or covert, *nisi Deus intersit*.”

We claim, that a case of what lawyers call “circumstantial evidence,” in a court of justice, is a fair illustration of the logical rules which ought to govern in all these hypothetic geological arguments to a natural origin for given structures. The science of law has exactly defined the proper rules for such evidence. These rules require the prosecution to show that their hypothesis, viz.: the guilt of the man indicted, not only may possibly, or may very probably, satisfy all the *circumstantiæ* which have been proved to attend the crime, but that it is the *only possible hypothesis* which does satisfy them all. And the defence may test this in the following way: if they can suggest *any other hypothesis*, invented, surmised, or imagined, even, which is naturally possible, and which also satisfies all the circumstances, then

* An article which appeared anonymously, but was written by R. L. Dabney.

the judge will instruct the jury that the hypothesis of guilt is not proven, and the accused is acquitted. Such is the rule of evidence to which logical science has been brought by a suitable sense of the sacredness and value of a human life. Now, the conditions of scientific *hypotheses* are logically parallel; *they are cases of "circumstantial evidence."* Suppose, then, for argument's sake, that some such hypothesis, in the hand of an infidel physicist, should put our Bible upon its trial for veracity. It is the time-honored belief of the Christian world that the truth of that Bible is the only hope of immortal souls. Surely the issue should be tried under at least as solemn a sense of responsibility, and as strict logical requirements, as an indictment against a single life!

But, I carry this parallel further. Grant the existence of a Creator God, "of eternal power and godhead," then we of the defence *have always the alternative hypothesis*, which is always naturally possible, viz.: that any original structure, older than all human observations, which is brought by anti-Christian science into one of her "circumstantial" arguments, may possibly have been of direct divine origin. Hence it follows, that should, perchance, the Bible contradict any scientific hypothesis of the origin of things, science is incapable, from the very conditions of the case, of convicting the Bible of falsehood upon such an issue. [The thoughtful reader can now comprehend the polemic prejudice which prompts Büchner to say, that the very idea of God is an intrusion into the rights of science; and Huxley to argue that the evidence from design for the existence of a God is annihilated by the evolution scheme of Darwin. These infidels have perspicacity enough to see that the theistic position vacates their pretended scientific deductions as to the origin of structures and organisms.] Let us explain. A murder has been committed in secret; there is no parole testimony, apparently, to unfold the mystery. The prosecutors therefore proceed, with exceeding industry, care, patience, and ingenuity, to collect the materials for a circumstantial argument, to fix the guilt upon Mr. X. Y. Z., against whom a vague suspicion has arisen. These lawyers note even

the most trivial matters, the direction of the shot, the smell of gunpowder upon the garments of the corpse, the scrap of blackened paper which formed a part of the wadding of the gun, and a thousand other circumstances. They weave them into their hypothesis of X. Y. Z.'s guilt, with a skill which is apparently demonstrative. But there now steps forth a new witness, named L. M., and testifies that *he saw* the murder committed by another man, named A. B., who had not been hitherto connected with the event. Now, there is, naturally, no antecedent impossibility that A. B. might commit a murder, or this murder. Let us suppose that such was the case. Every lawyer knows that the issue would now turn *solely upon the competency and credibility* of L. M. as a witness. If the prosecution desire still to sustain the proposition that X. Y. Z. is the murderer, they now have but one course open to them; they must successfully impugn the competency or credibility of L. M. If they admit these fully, their case against X. Y. Z. is naught; their circumstantial hypothesis falls to the ground, without a farther blow. That hypothesis was exceedingly plausible; the antecedent probabilities of its truth were great, or even almost conclusive? Yes. Still, if L. M. is true, they now conclude nothing. They show that X. Y. Z. *might have killed* the murdered man. L. M. shows that *actually he did not*. The conditions of the argument of infidel science against the Bible and the creative agency of God, are exactly parallel. Their hypothesis may be, naturally speaking, every way probable; but the Bible comes in as a parole-witness, and testifies that God, and not nature, was the agent of this given work. Now, we believe that the Bible is a competent and credible witness. Hence its voice supercedes the "circumstantial evidence" here.

It is complained, that when we thus refuse to allow the maxim, "Like effects imply like causes," to thrust itself into competition with the testimony of Revelation upon these questions of first origin of the world, we deprive mankind of its use in every scientific induction, and in all the experimental conclusions of practical life. Dr. Woodrow is not satisfied with the reply, that within the sphere of natural induction, where we are entitled to

assume the absence of the supernatural, his canon is valid. He attempts to quote me against myself, as saying, on the 15th page of my Notes: "*It is not experience* which teaches us that every effect has its cause; but the *a priori* reason." Very true. Intuition, not mere experience, teaches us that every effect has *its* cause. That intuition is: "Had there been *no cause*, there would have been no effect." Had my doctrine been attended to, as developed in my 6th Lecture, these words would have been found on p. 49: "The doctrine of common sense here is, that when the mind sees an effect, it intuitively refers it to *some cause*." For instance, when we come upon a stratified rock, intuition necessarily refers its existence to *some cause*, either to God, or to watery action, or some other adequate natural agency. But the question is: *Which cause?* If we are practically assured of the absence of the supernatural cause, then of course we must assign the effect to one or another natural cause. But *if we have good reason to think that the supernatural cause may possibly have been present*, then the attempt to confine that effect to a natural cause, upon the premise, that "similar effects imply the same causes," obviously becomes an invalid induction. Now, should it appear that Revelation testifies to the presence of the supernatural cause at a given juncture, that would be good reason to think, at least, its possible presence; and then the naturalistic induction becomes invalid. It obviously comes then into that class which Bacon stigmatises as worthless for the purpose of complete demonstration, under the term, "*Inductio simplicis enumerationis*." Nov. Organum. Lib. I. § 105. *Inductio enim, quæ procedit per enumerationem simplicem, res puerilis est, et precario concludit, et periculo exponitur ab instantia contradictoria,*" etc. Yes; in the case in hand, the *instantia contradictoria* would be the instance of a supernatural origin, competently testified by Revelation. Hear even the sensualistic philosopher, Mill. (Logic. p. 187.) "But although we have always a propensity to generalise from unvarying experience, we are not always warranted in doing so. Before we can be at liberty to conclude that something is universally true because we have never known an instance to the contrary,

it must be proved to us, that if there were in nature any instances to the contrary, we should have known of them," etc. This is, so far, sound logic. But now, should it be that the Bible testifies to structures supernaturally originated in a pre-Adamite time, it is obvious that we should *not* have known of them, for the simple reason that no human witness was extant. The universal reference of all structures to natural causes would be, according to Mill himself, in that case, the very induction we "were not warranted" in making. What can be plainer?

Dr. Woodrow cites as an instance the wine made of water by Christ, at Cana. He says, p. 359: "Had one of the guests been questioned as to its origin, he would unhesitatingly have said that it was the expressed juice of the grape. But by unexceptionable testimony, it could have been proved that it had been water a few minutes before, and had never formed part of the grape at all. Now, in view of this fact, according to Dr. Dabney's reasoning, we are forever debarred from concluding that wine is the juice of the grape, unless we shall have first *proved the absence* of God's *intervening* power," etc. I reply: Not so. My position is, that we would be "debarred from concluding" that a given vessel of wine "was the juice of the grape," in the particular case where "unexceptionable testimony" had "first proved the PRESENCE of God's *intervening* power." This one word removes all the confusions and misconceptions of the subsequent pages of his critique. Indeed, I desire no better instance than Dr. Woodrow's admission touching this wine of Cana, to exemplify my view. Any sensible man, drinking good wine under ordinary circumstances, would of course suppose that it came from grapes. But if competent testimony showed that, in this case, a miracle-worker had been present, who had infinite power, and a benevolent motive, to make *this wine* without grapes, his good sense would not lead him, admitting the testimony, to argue that this must also have come from grapes, because all natural wine uniformly comes from that source. And my position is precisely parallel. We examine numerous structures, whose beginning we did not ourselves see, and they all wear, seemingly, the appearance of full and equal

naturalness. We were about to ascribe them all, very naturally, to a natural source. But should "unexceptionable testimony" come in, asserting that some among them had a supernatural origin, we should then conclude precisely as the man of "common sense" at Cana had to conclude: That *in this particular case, the inference from naturalness of qualities to a natural origin, did not hold.* This is all I have ever asked. Dr. Woodrow concedes it.

But he argues that if I hold on this ground, that there never was any pre-Adamite earth, (as he understands me to hold,) then I must also hold that the fossils, in all deposits older than the Adamic, are a species of shams; that they never were alive; and that the existence of these portions of matter would be absolutely unaccountable. Indeed, he thinks I should be driven to the belief, that the visible works of God are a lie; which is as disastrous as believing his Word a lie. But if, on the other hand, I do admit an earth existing one fortnight before Adam, the Scriptures are, upon my view of them, as fatally impugned as though an earth had existed a million of years before Adam. Hence, he thinks my main position would be useless, were it not false. Let us inspect the two horns of this cruel dilemma. As to the first: he will not allow me to say of the fossils, "We have no occasion to deny their organic character." He thinks my "whole argument rests upon the supposition that the fossils may have been created as we find them." He cannot see what else I mean by saying that if many of "these rocks" may have been created, then the pre-Adamite date of fossils falls also. He can only understand it in this way: either that the fossils never were anything but rock, or that God thrust them into the rocks after they had died, and after the rocks were made, which would be very preposterous.

Had Dr. Woodrow attended to my meaning, when I spoke of many of "these rocks" as possibly created, he would have understood me. He seems to suppose that I meant the fossiliferous rocks. In fact, I was speaking of the stratified but *non-fossiliferous* rocks—the *azoic* of his nomenclature. That geologists recognise quite a large mass of these, is plain from the

fact that they have a separate division and name for them. Now they teach us that these *azoic*, but truly stratified rocks, were the work of the same sedimentary action which has through long ages produced the fossiliferous stratified rocks. I trust my meaning will now be seen. It is this: Suppose it should be found that Revelation testified these *azoic* sedimentary rocks (so called) were not growing through long ages by deposition from water, but, along with some other things, were made by the almighty word of God. If that were granted, then the "law (so called) of stratigraphic succession," as established by geology, are without adequate proof; and it again becomes an open question (to which Scripture may possibly testify) when and how the living creatures, which are now fossils, did live; and when and how the deposits containing their remains were formed. I say, in that case, the geologists' present arrangement of stratigraphical succession is unproved. As I have stated, the *data* from which they claim to have settled this order (proving as they suppose that some fossils are such ages upon ages older than some others) are of three kinds: The observed order of *strata* where they are actually in juxtaposition; the kinds of organic life they contain; and the material and structure of the *stratum* itself. Now, in the case supposed, this last *datum* has become inconclusive. One stone is lost from their arch of evidence, and the whole arrangement of the stratigraphic succession becomes unsettled. For the reasoning in support of it now involves a vicious circle. For instance: The geologist has concluded that the non-fossiliferous clay-slate is a very old stratified rock, because without fossils. Again, he has concluded that a certain species of fossil life is old, because formed in some *stratum* very near that very old slate. Then he concludes that some other *stratum* is also old, because that old species of fossil is found in it. But the basis of all these inferences is lacking in the case I have supposed, and the reasoning proceeds in a circle.

The other horn of the dilemma made for me is equally unstable. It was urged that if I had to admit the existence of an earth one fortnight older than Adam the interpretation placed on the Scriptures by the Westminster Assembly is as violently

outraged as though that pre-Adamite earth were millions of years older than Adam; whence Dr. Woodrow supposes it to follow that my main position, if it were not false, would be useless. I have shown that it is not false: I will now show that, as with Prof. F. H. Smith, with so many other learned men, judges, it is of vital use, after we admit a pre-Adamite earth. Its use is, that it alone can save Dr. Woodrow and us from an endless *regressus* into a naturalistic atheism. Let us review that naturalistic argument, as the evolutionists and the atheist Büchner insist on using it, and as Dr. Woodrow claims it ought to be used, untrammelled by my position. The maxim, "Like effects imply like causes," must be pushed, say they, universally: if restricted by my rule, the very basis of experimental science is gone. But now, theism says that there were first things, somewhere in the past, created, and not evolved naturally. There was a first man, not naturally born of a mother, but created, the father of subsequent men. Yet this first man must also have been *natural* in all his organisation, in order to be the father of men. But had these physicists subjected his frame to their experimental investigation, they would have concluded that, because his organisation was natural, his origin must have been natural. He, therefore, by their logic, was not the first man, but had a natural father. Who does not see that the same process of reasoning applies equally well to that supposed earlier man, and then to his father? Who does not see that the same logic, consistently followed, runs us back into an infinite natural series, without any first term, or first cause? Dr. Woodrow, then, must cease to oppose my doctrine, in order to save himself from the infidel evolution theory. And the evolutionist must accept my doctrine, in order to save himself from that absolute "eternity of naturalism, which is atheism." But if my doctrine is squarely accepted, then, on every question of the *αρχη* of things, of *the when* and *the how* of the origin of nature, the testimony of Revelation properly and reasonably supersedes all natural inferences contradictory thereto, when once that testimony is clearly understood.

But *how* should that testimony of the Bible be understood?

It would appear that I have been much misapprehended here, in spite of the caution with which I refrained from dogmatising on this point. It has been supposed that my whole argument involves the assumption of that sense placed upon the Mosaic record by the Westminster Assembly, totally denying a pre-Adamite earth. I will therefore attempt to place my meaning beyond possible misconception. I say then, first, that I *have not postulated* the interpretation of the Westminster Assembly as the true one, and that I have not asked any one to commit himself to a denial of a pre-Adamite world in all forms. It may very well be, that the science of Bible-exegesis is not yet dispassionate and mature enough on this point to authorise us to commit ourselves finally to *any* exposition of it, as I am very sure that such a final decision is not at all essential to our defence of the integrity and supreme authority of Revelation. And it may also be true, that the inquiries and conclusions of geology are not yet mature enough for it to venture on the construction of a scientific theory of that point. I say, secondly, that if the supposition be made for argument's sake, that the interpretation of the Westminster divines turned out some day to be the only scriptural one—the only one faithful to the inspired text—then my principles would still enable me to uphold the full authority of my Bible, reasonably, consistently, and philosophically, notwithstanding the seeming, natural analogies for an older date of the world. Note, dear reader, that I do not make that supposition, and I have no craving to do so. But let us, for argument's sake, look at it, as one may surmise it to return upon us. Suppose, I say, that after all the *pros* and *cons*, friends and enemies of Moses' inspiration should settle down to this conclusion, that his language can in fairness mean only what the Westminster divines supposed, viz., that there was no pre-Adamite earth at all. Let us suppose that, while honest reverence led believers, like Dr. Woodrow and me, to this conclusion, that *all* the "scientists" had also settled down to the same, so far as to say, (disdainfully), "Your Moses, obviously, can mean nothing but that, if he means anything; and it is therefore *we* reject him totally." Let us also represent to ourselves

by what plausibilities a person who, like Mr. David N. Lord, holds this view, would support his assertion, that to this issue the universal opinion must come at last. He would remind us, that the great body of Christians certainly understood Moses so, while unbiassed by the *stress* of this geological view; that while a few of the fathers and the Reformers understood Moses differently, yet, the new interpretation (as he would call it) was in fact suggested and dictated by that geological stress, which was a little suspicious; that the Christian geologists, when driven by that stress, are vacillating and contradictory in their exegesis, which is again suspicious; that the Westminster divines, while probably very poor geologists, were exceedingly able and faithful expositors; and especially, that *Moses' enemies are coming more and more openly to the position, that no such new interpretation can save his credit for inspiration.* Our imaginary expositor certainly has the facts with him on this last point. The tone of the scientific infidels is changing in this direction, manifestly. Formerly they studied decency, and professed to be quite obliged to the Pye Smiths and Chalmers, who saved the consistency of the venerable Book with their science, by means of the new interpretation. But now their *animus* is very different. They disdain to trouble themselves about these old literary remains of "Hebrew barbarians" and ignoramuses. No sense placed on them is of any importance to the scientific mind. Let the Westminster sense be the true one, (which they think is most probably the only consistent one, for the man who is fool enough to believe in the documents), these "scientists" easily disencumber themselves, by kicking the whole aside as rubbish. Such is Huxley's mode, for instance.

Suppose now, for argument's sake, that we should at last be all compelled to settle down upon the Westminster construction. Then I, from my position, could still save my Bible, and do it consistently. Dr. Woodrow could not. I could say this Bible is established by its own, impregnable, independent evidences, moral, prophetic, historical, miraculous, to be a competent and credible witness to the supernatural agency of an Almighty Creator. I could say this Omnipotent agency is competent to

any result whatsoever. I could bring in my position, that in such a case the divine testimony logically supersedes the circumstantial evidence for a natural hypothesis, no matter how plausible; and my conclusion would not be superstition, but true logic and true science. If the unbelieving geologists thrust at me his difficulty about the seemingly ancient fossils, I could say, first, that the Divine Witness does not stand in need of an explanatory hypothesis from man to entitle him to be believed. I should say, secondly, that it was always possible that Infinite Wisdom might find a motive, and Infinite Power a means to effectuate results very unaccountable to my mind. It might be, for instance, that this Omnipotent and Infinite Wisdom, working during the six days, and during the long antediluvian years, during the flood, and during the years succeeding, in times and places where there was no human witness, saw fit to construct these *strata*, and to sow them with vegetable and animal life with a prodigal profusion now unknown; and to hurry the maturing of *strata*, and the early death and entombment of these thronging creatures, with a speed very different from the speculations of geology; and all for profound motives good to His infinite wisdom, but beyond my weak surmises. I might also add, that possibly this is what Revelation meant, when it said, (Gen. i. 20): "God said, let the waters bring forth *abundantly*," etc. I might point to the fact, that such a divine working would not be wholly unwonted; that, for instance, he causes thousands of embryos of animal life to be produced and to perish without their proper development, for one that grows; that he sows the earth prodigally with vegetable germs which, if they ever sprout, sprout only to perish; that he sheds millions of rain-drops, such as are adapted by nature to water the herbs upon the barren wastes of ocean; that he gives to millions upon millions of flowers in the wilderness, destined only to be cropped by the irrational brute, the same æsthetic arrangement of color, shape, and perfume, which he has conferred on the flowers of our gardens, for the purpose of giving to rational, observing man, the thrilling pleasures of taste. Why this seeming, prodigal waste? It is no duty of mine to account for it. But God acts so! So, if he

had told me that he had done a similar thing at the world's creation, I should be ready to believe it. But *I should believe it on the authority of God's express testimony, not on the strength of a mere hypothesis and a set of analogies which I have just described.*

I repeat again, I have no mission at this time to assert this Westminster construction of Moses as the only true one. It may be asked, Why then do I argue its possibility? Why did I, in my former arguments, seem to imply that this might be the issue between the Bible and science? I answer: Because I wished to illustrate the full value of this saving principle, by showing how, even in that aspect of the debate, it would defend us against infidelity.

And now I close. I beg the reader's pardon for detaining him so long, excusing myself by the honest plea, that my chief object is, not the vindication of any poor credit I may personally have, but the exposition of vital principles, which will, sooner or later, be found precious to all Christians. As against my rigid critic, my purpose has been solely defensive; and if my haste or carelessness has let slip one word, which to the impartial reader savors of aggression or retaliation, I desire that word to be blotted from memory. None can accord to Dr. Woodrow more fully than I do, the honor of sincere devotion of purpose to the truth; or can join more cordially than I do, in the wish, that he may soon return home with recruited energies and prosperous health, to the work of defending truth.

ARTICLE IV.

THE GENERAL ASSEMBLY OF 1873.

GENERAL OBSERVATIONS.

The number of Commissioners present during the sittings of the General Assembly at Little Rock, Arkansas, was over one hundred—making one of the largest Assemblies since our or-