

THE SOUTHERN PRESBYTERIAN REVIEW.

VOL. XXIV.—NO. 3.

JULY, MDCCCLXXIII.

ARTICLE I.

AN EXAMINATION OF CERTAIN RECENT ASSAULTS ON PHYSICAL SCIENCE.

Theological Education. A Memoir for the consideration of the General Assembly of 1866, in Memphis. *Central Presbyterian*, Oct. 3, 10, 17, 24, and 31, 1866.

Memorial from the Rev. Robert L. Dabney, D.D., on Theological Education. Presented to the General Assembly at Mobile, May 21st, 1869.

Syllabus and Notes of the Course of Systematic and Polemic Theology taught in Union Theological Seminary, Virginia. By R. L. DABNEY, D. D. Published by the Students. Richmond: Shepperson & Graves, Printers. 1871.

A Caution against Anti-Christian Science. A Sermon on Colossians ii. 8. Preached in the Synod of Virginia, October 20, 1871, by ROBERT L. DABNEY, D. D. This sermon is printed by request of Lieutenant-Governor John L. Marye, Major T. J. Kirkpatrick, George D. Gray, J. N. Gordon, F. Johnson, and others, elders of the Presbyterian Church. Richmond: James E. Goode, Printer. 1871.

The "Memoir" on Theological Education published in the *Central Presbyterian* as intended for the consideration of the Memphis General Assembly, was not brought to the notice of that body; but in a somewhat modified form was presented as a "Memorial" to the General Assembly which met at Mobile in

VOL. XXIV., NO. 3—1.

1869. It was respectfully received by the Assembly, but was not read. On the recommendation of the Committee on Theological Seminaries, it was referred to the Faculties and Directors of the Columbia and Union Theological Seminaries, with the request that they report the results of their deliberations to the Assembly of 1870. The Columbia Faculty prepared and submitted a report; but nothing was ever brought before the Assembly on the subject, until at last, in 1872, a committee to which it had been intrusted was at its own request discharged. The titles of the other two publications named sufficiently indicate their general nature.

In these Memorials, Lectures, and Sermon, their author, the Rev. Dr. Dabney, Professor of Theology in Union Theological Seminary, has been keeping up for a number of years an unremitting warfare against Physical Science. In the weekly journal, in a memorial presented to our highest ecclesiastical court, in lectures to those who are to be ministers in our Church, in the stately volume now published which contains the substance of these lectures, in a sermon preached before the large and influential Synod of Virginia, a sermon which at the request of leading gentlemen in that Synod has been sent forth in printed form to thousands who did not hear it delivered with the living voice—in all these and in other ways he has been sounding forth the alarm, calling upon the Church, as far as his voice and pen can reach, to rise in arms against Physical Science as the mortal enemy of all the Christian holds dear, and to take no rest until this infidel and atheistic foe has been utterly destroyed. With the exception of a notice of the sermon published in the *Central Presbyterian*, not a word has been publicly uttered in opposition to his views during all these years; and therefore it would not be strange if they should come to be regarded by multitudes as the doctrines of our Church and of Christianity universally, seeing they are proclaimed with such persistent earnestness, by one occupying so high an official position in the Church, and almost without being called in question. Looking upon Physical Science, as Dr. Dabney does, as “vain, deceitful philosophy,” by which “incautious souls are in danger of being

despoiled of their redemption," he deserves commendation for his zeal in seizing every opportunity and every channel of access to the minds of men to warn them of their danger, and thus to endeavor to save them from being despoiled of eternal life by Physical Science. Whether this commendation should be confined to his zeal, and whether it may not be a zeal without knowledge, can better be determined after a careful examination of his teachings.

Believing that Dr. Dabney's views respecting Physical Science, as set forth in these writings, are not only not true, but also dangerous, because certain to lead to the rejection of the Sacred Scriptures so far as he is here regarded as their true interpreter, the writer feels impelled to utter his dissent, and to attempt to show that true Christianity does not allow us to accept such championship. To one who believes firmly in every word of the Bible as inspired by the Holy Ghost, as the writer does with all his heart, its truth is too precious to allow him to be indifferent to a professed defence of this truth which is based upon principles which must inevitably lead to its rejection. It is with the sincerest reluctance that an examination of these principles is now entered on, seeing the result must be to prove them wholly erroneous and fraught with peril to all who adopt them and logically follow them to their necessary results. It would be vastly more gratifying to coöperate with Dr. Dabney in defending the truth against assaults from without; but external assaults against our impregnable citadel are harmless in comparison with these efforts on the part of those within, which, if it were possible for them to be successful, would undermine its walls and tear up its foundations, reducing the fair and hitherto unshaken structure to a mass of shapeless ruins. Hence there seems to be no course left but for the truth's sake to show the unsoundness of Dr. Dabney's opinions, however much the writer would prefer to stand by his side making common cause with him against error wherever found.

Dr. Dabney's attacks on Physical Science in the different publications named, are not made in the same order; hence in the present examination of their real strength, they will be taken

up without special reference to the order followed in any one of them.

In the Sermon, before reaching the main subject, Dr. Dabney refers to the sad consequences of the fall of man; and with the intention of preventing our belief in Physical Science, insists that fallen minds can never reach results free from uncertainty and error, except in the "exact sciences of magnitudes." He says:

"Every Christian should be familiar with the fact that the human mind, as well as heart, has been impaired by the fall. Men, 'so became dead in sin, and wholly defiled in all the faculties and parts of soul and body.' From the nature of the case, the misguided intellect is unconscious of its own vice; for consciousness of it would expel it. Its nature is to cause him who is deceived to think that error is truth, and its power is in masking itself under that honest guise. Why, then, need we wonder that every age must needs have its vain and deceitful philosophy, and 'oppositions of science, falsely so-called?' And how can the Christian expect that uninspired science will ever be purged of uncertainty and error, by any *organon* of investigation invented by man? Even if the *organon* were absolute, pure truth, its application by fallen minds must always insure in the results more or less of error, except in those exact sciences of magnitudes, where the definiteness of the predications and fewness of the premises leave no room for serious mistake." Sermon, p. 1.

He then illustrates these principles by referring to the admitted fallibility of Church courts, and justly extols the Prophet and Teacher, Christ, as an infallible guide.

In all that he says on this point, there is some truth; as, indeed, there is always some truth in every dangerous error. But before settling down in despair of ever being able to gain uninspired knowledge, before yielding to the agony of universal doubt with regard to everything except mathematical truth, it becomes us to inquire whether these are true principles, or errors rendered dangerous to the unsuspecting by the intermixture of truth which they contain.

Perhaps the easiest way to see that Dr. Dabney misapplies the doctrine of the fall is to observe that if we embrace the scepticism which he recommends as to the results of the applica-

tion of our God-given reason to the works of God's hands, we must be equally sceptical as to God's word. The Sacred Scriptures, we assert and believe, are absolutely true in every part; but are not the facts presented to us in God's works, which "uninspired" science investigates, equally true? When it is admitted that the facts in themselves are absolutely true, but that we are so liable to misunderstand their real meaning that we cannot trust our conclusions, we ask wherein we are differently situated with reference to the Holy Scriptures. Our minds are equally fallen when we inquire into the meaning of statements in the Scriptures, and when we inquire into the meaning of facts in nature—that is, in God's material universe; and if we must regard ourselves as incapable of arriving at a knowledge of the truth, if we must be sceptics in the one case, we must be in the other also. It is to be observed 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. The Bible was indeed given specifically for the instruction of man, while the material universe was not so directly created for this purpose; and the lessons taught in the Bible are of infinitely higher value than those which we learn from nature; but 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. Unless, therefore, we are ready to give up the certainty of our knowledge of the great central truths of Theology, we must reject the suggestion that we can never become certain of anything in Geology, or other branches of Natural Science. With such grounds for thinking that Dr. Dabney misapplies the doctrine of the fall, it is not necessary to show that it is clearly implied in a large part of the Bible's teachings that we are capable of gaining a knowledge of the truth by the use of our reason.

It is singular that Dr. Dabney should have fallen into this error, since he has so properly condemned it in his Lectures.

Speaking of Natural Theology, which is the science that treats of the nature and attributes of God as revealed in the same works which all Natural Science investigates, Dr. Dabney says: "Some old divines were wont to deny that there was any science of Natural Theology, and to say that without revelation man would not naturally learn its first truth. . . . These divines seem to fear, lest, by granting a Natural Theology, they should grant too much to natural reason; a fear ungrounded and extreme. They are in danger of a worse consequence: reducing man's capacity for receiving divine verities so low that the rational sceptic will be able to turn upon them, and say: 'Then by so inept a creature, the guarantees of a true revelation cannot be certainly apprehended.' . . . Some profess to disbelieve axioms, as Hume that of causation; but this is far from proving man incapable of a natural science of induction." *Lectures on Theology*, p. 6.

Dr. Dabney here so satisfactorily disproves the doctrine of his Sermon that we might perhaps safely leave this point without further remark. But as he intimates in the second paragraph that we have "infallible guidance" in the one case which we lack in the other, this intimation must be briefly noticed. The question will not be discussed whether the heathen are really "without excuse" for having failed rightly to apply capacities which they do not possess, or whether "the invisible things of God from the creation of the world" can be "clearly seen" by unregenerate men without the guidance of the Holy Ghost. But granting that our reason could not form one correct judgment on any subject without divine guidance, would Dr. Dabney maintain that God denies this guidance to his children when they devoutly seek it in the investigation of his works? Do they become orphans, do they forfeit their right to their Father's guidance, when they seek to know more fully how the heavens declare the glory of God, how the firmament sheweth his handywork? when they eagerly listen as day unto day uttereth speech, and strive to gain a fuller measure of the knowledge which night unto night sheweth, though there is no speech nor language, and though they utter no audible voice? Surely he would not take

this ground. Let us not fear to "speak to the earth," for "it shall teach us;" even "the fishes of the sea shall declare" the truth to us. If indeed the "Lord rejoices in his works," and if he would have us "sing praise to him as long as we live," contemplating his glory as reflected in them, he will not refuse us his fatherly hand as we walk forth seeking to drink in more and more of the wisdom in which he has made them all, or to see more and more clearly the value of the riches of which his earth is full.

Thus it appears that there is no reason why we should be blighted by the cheerless scepticism which Dr. Dabney inculcates; on the contrary, we can with certainty know something, and as loving children we should labor to know much, of the glorious workmanship of our heavenly Father, of the wonderful creation which he has brought into existence through his Son.

After his attempt to show that we can know nothing with certainty except mathematics and the Christian religion, Dr. Dabney endeavors to excite hostility against Physical Science by showing the wicked and dangerous character of something else which has nothing whatever in common with Physical Science. He very correctly describes the vain and deceitful philosophy against which the Apostle Paul warns the Colossians, as "a shadowy philosophic theory—a mixture of Oriental, Rabbinical, and Greek mysticism, which peopled heaven with a visionary hierarchy of semi-divine beings, referred the Messiah to their class, and taught men to expect salvation from their intercession, combined with Jewish asceticisms and will-worship." He says further, that "the Apostle solemnly reminded them that this philosophy was vain and deceitful; and, moreover, that the price of preferring it to the Christian system was the loss of the soul." All that he says on this point is very true: the vain philosophy condemned had no observed facts for its basis, and even its assumptions were not connected together by principles according to which right reason acts; therefore it should be rejected by all who love the truth. And as it was not only not true, but was also deadly in its effects upon all who embraced it, inasmuch as it taught them to look for salvation elsewhere

than to the only Saviour of mankind, the warnings against it could not be too earnest.

But how does Dr. Dabney apply all this to the subject of his discourse? In a most remarkable way—by nicknaming physical science “vain, deceitful philosophy.” Although the false and deadly philosophy which is spoken of by St. Paul confessedly had no observed facts for its foundation, while physical science is based exclusively upon facts which any one may verify for himself; and although in the former case the fantastic guesses were woven into a fanciful and visionary scheme in defiance of reason, while physical science arranges its facts and deduces inferences from them in accordance with intuitive principles which are believed by all—yet Dr. Dabney warns us against physical science because the philosophy which was seeking to spoil the Colossians was vain and deceitful! It is as if one should prove to us the deceitful and deadly character of the Christian religion by depicting to us the abominable rites of some ancient Pagan religion, or the absurdities and atrocities of false religions which still enslave myriads of our race in the dark places in the earth. It is even worse; for there is no religion so utterly false that it does not contain some truths taught by Christianity; but physical science has not one single point in common with that with which Dr. Dabney classes it. He could not possibly have made a greater mistake than he has done in regarding as similar two things which are so utterly unlike.

Dr. Dabney concludes his introduction, which is devoted to exciting prejudice against physical science, as follows:

“The prevalent vain, deceitful philosophy of our day is not mystical, but physical and sensuous. It affects what it calls ‘positivism.’ It even makes the impossible attempt to give the mind’s philosophy a sensualistic explanation. Its chief study is to ascertain the laws of material nature and of animal life. It refers everything to their power and dominion; and from them pretends to contradict the Scriptural account of the origin of the earth and man. Does it profess not to interfere with the region of spiritual truth, because concerned about matter? We find, on the contrary, that physical science always has some tendency to become anti-theological. This tendency is to

be accounted for by two facts: One is, that man is a depraved creature, whose natural disposition is enmity against God. Hence this leaning away from him, in many worldly minds, perhaps semi-conscious, which does 'not like to retain God in its knowledge.' The other explanation is, that these physical sciences continually tend to exalt naturalism—their pride of success in tracing natural causes, tempts them to refer everything to them, and thus to substitute them for a spiritual, personal God. Again, then, is it time for the watchman on the walls of Zion to utter the Apostle's 'beware.' Again are incautious souls in danger of being despoiled of their redemption by 'vain, deceitful philosophy.'" Sermon, p. 2.

In this paragraph it is correctly stated that the chief study of natural science is "to ascertain the laws of material nature and animal life." Beyond this there is hardly an accurate statement in it. It is true, indeed, that the students of this science do use their senses to ascertain facts; they do not invent them, or guess at them, as we shall hereafter see is Dr. Dabney's habit when he is acting the part of a natural philosopher. If it is meant by "sensuous" and "sensualistic" that the senses are used in observation, then no objection can be made. But if, as many readers would understand them, these words are intended to convey a meaning involving the condemnation of physical science, nothing could be more inexact. Further, his statement that it "makes the impossible attempt to give the mind's philosophy a sensualistic explanation," is equally without foundation. It is doubtless true that students of physical science have made the attempt here attributed to them; 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." But as this is not the doctrine of Presbyterians, so physical science does not undertake to "give the mind's philosophy a sensualistic explanation," even though some scientific men may have attempted this impossibility. On the contrary, the leading

representatives of natural science maintain that the connexion between mind and matter lies wholly beyond the limits of that science; that it does not now know, and it can never hereafter know, anything concerning this subject. The doctrine of scientific men was well stated last August by Professor Du Bois-Reymond, a leading professor in the University of Berlin, in a discourse before the German Association of Men of Science assembled at Leipzig. No one who knows this eminent man of science will suspect him of an inclination to claim too little for Natural Science, or anything at all for Revelation. He says: "That it is utterly impossible, and must ever remain so, to understand the higher intellectual processes from the movements of the brain-atoms, supposing these to have become known, need not be further shown. Yet, as already observed, it is not at all necessary to refer to the higher forms of mental activity in order to give greater weight to our arguments. . . . In this we have the measure of our real capacity, or rather of our weakness. Thus our knowledge of nature is inclosed between these two boundaries, which are eternally imposed upon it: on the one side by the inability to comprehend matter and force, and on the other to refer mental processes to material conditions. Within these limits the student of nature is lord and master; he analyses and he reconstructs, and no one knows the boundaries of his knowledge and his power; beyond these limits he goes not now, nor can he ever go." *Ueber die Grenzen des Naturerkennens. Zweite Auflage*, pp. 27-29. Thus modestly and truthfully is the real position of science set forth.

It cannot fail to be the cause of amazement as well as of deep regret, that Dr. Dabney should maintain the position which is to be next noticed. Having taught that we can never arrive at any certain knowledge of nature, that physical science is vain and deceitful philosophy ready to despoil incautious souls of their redemption, he caps the climax by asserting that "physical science always has some tendency to become anti-theological" (Sermon, p. 2); that the "tendencies of geologists" are "atheistic" (Lectures, p. 178); that the "spirit of these sciences is essentially infidel and rationalistic; they are arrayed, in all

their phases, on the side of scepticism" (Memoir in *Central Presbyterian*, October 31, 1866); "this is, therefore," he says, "the *eternity of Naturalism—it is Atheism*. And such is the perpetual *animus* of material science, especially in our day" (Lectures, p. 179). If he had confined himself to saying that "the tendency of much of so-called modern science is sceptical," (Sermon, p. 5,) he might easily have substantiated this assertion. But from the passages quoted, it is seen that he maintains no such partial proposition; he does not limit himself to the assertion that "much of *so-called*" but not real "modern science is sceptical," but boldly proclaims that "the *spirit* of these sciences is *essentially* infidel and rationalistic;" that "they are arrayed, *in all their phases*, on the side of scepticism;" that "their *perpetual animus*" is towards "*atheism*." What assertions could be made more damaging to belief in the Scriptures which are the source of theology, and in the existence of God himself? What frightful consequences must necessarily flow from the general reception of Dr. Dabney's teachings on this subject! That a firm believer in the Bible could say that the systematic study of God's works always tends to make us disbelieve his word, and even his existence, would seem incredible but for the sad evidence here presented. In such an opinion of God's works may perhaps be found an explanation of the contemptuous scorn of the epithets which Dr. Dabney employs in speaking of the "musty" and "rotten" fossils. Sermon, pp. 7 and 19. Should we not instead listen to the words, "Remember that thou magnify his work which men behold;" and see in these "musty" "rotten" fossils rather the "medals of creation," and from them and all the other wonderful things which God has made, reverently and humbly learn his glory and power?

Surely the statement of Dr. Dabney's teaching on this point carries with it its own refutation, so as to render further arguments to refute it unnecessary. It has often before been asserted that "ignorance is the mother of devotion," but this has been repelled as a slanderous attack upon our faith made by the unbeliever; it could not have been anticipated that it would receive such support from an enlightened teacher of our holy and true religion.

The "two facts" by which Dr. Dabney would account for the supposed evil tendency of physical science—depravity and pride—are of universal application to all men, whatever their pursuits. Those who study natural science, equally with metaphysicians, theologians, lawyers, physicians, farmers, etc., are *men*; and men unrenewed by the Spirit of God have a "natural disposition which is enmity against God." So "pride" is among the "evil thoughts which proceed out of the heart of men." And since students of physical science are men, whatever may be truly said of the human race may be said of them. But what right has Dr. Dabney to single out this class and represent it as made up of sinners above all other men? It would be just as fair and as true to assert the anti-Christian tendency of a careful study of the Bible, of theology, and of the evidences of Christianity, and to attempt to prove the assertion by quoting the example of Renan, De Wette, Ewald, Theodore Parker, Strauss, Baur, and a host of others like them, as it is to assert the anti-theological and atheistic tendency of the study of physical science because infidel sentiments may be found in the writings of some diligent students of nature—it would be no more fair or true, and no less. It is very strange that it should have escaped the notice of Dr. Dabney that the dangerous tendency is not at all in the study, but wholly in the student.

Having shown, as he supposes, that physical science never can reach undoubted truth and that its study in various ways endangers the soul's salvation, Dr. Dabney proceeds in his Sermon to enumerate some of the "continual encroachments" which "physicists" are "making upon the Scripture teachings." He says:

"I perceive this in the continual encroachments which they make upon the Scripture teachings. Many of you, my brethren, can remember the time when this modern impulse did not seek to push us any farther from the old and current understanding of the Bible cosmogony, than to assert the existence of a Pre-Adamite earth, with its own distinct *fauna* and *flora*, now all entombed in the fossiliferous *strata* of rocks. * * *

"But now, we are currently required by Physicists to admit, that the six days' work of God was not done in six days, but in six vast tracts of time.

“That the deluge did not cover ‘all the high hills which were under the whole heaven,’ but only a portion of central Asia.

“That man has been living upon the globe, in its present dispensation, for more than twenty thousand years, to say the least, as appears by some fossil remains of him and his handiwork; and that the existence of the species is not limited to the five thousand nine hundred years assigned it by the Mosaic Chronology.

“That the ‘nations were not divided in the earth after the flood by the families of the sons of Noah;’ and that God did not ‘make of one blood all nations of men for to dwell on all the face of the earth;’ but that anatomy and ethnology show there are several distinct species having separate origins.

“That God did not create a finished world of sea and land, but only a fire-mist, or incandescent, rotating, nebulous mass, which condensed itself into a world.

“And last, that man is a development from the lowest type of animal life.” Sermon, pp. 3, 4.

Before examining in detail the points embraced in this enumeration, it may be remarked that the Synod of Virginia, before which the Sermon was delivered, must have contained many patriarchs of almost antediluvian years, since their memories reached back to the time when only one of the alleged “encroachments” had been made. Bishop Stillingfleet, in the seventeenth century, maintained the opinion that the flood had not “been over the whole globe of the earth;” more than sixty years ago both the development hypothesis and the nebular hypothesis had their vigorous supporters; and for ages the antiquity of man has been believed by some persons to be greater than the commonly received Mosaic Chronology would allow. Hence, Dr. Dabney either had many most venerable patriarchs among his hearers, or else he was attributing to them no small amount of ignorance as to the extent of this “modern impulse,” in a way which was not very flattering to their intelligence.

It is not a little surprising that Dr. Dabney, supposing him to have some acquaintance with physical science, should have erred so signally in this formal statement of what he regards as the teachings of science. He is right as to the first point—geology does teach, as proved beyond the possibility of reasonable doubt, that the earth was in existence for at least more than a week

before Adam ; and this pre-Adamite time may be subdivided into six, or sixty, or any other number of tracts, without affecting the geological truth. But when it is divided into six parts, it is not geology that makes the division, but interpreters of the Bible, who think (erroneously, in our opinion) that the narrative in the first chapter of Genesis refers to certain periods of geological history. But science does not "require us to admit" one other proposition here presented. We do not say that certain scientific men have not made the statements in question ; they have done so, just as certain Christian theologians have taught that bread is every day changed into the real body of Christ, that Jesus Christ is not God, that God will not punish sinners, that the Bible is not inspired, etc. But what would be thought of one who would caution us against believing in the Christian religion, and who would enforce the caution by the statement that "we are currently required by Christian theologians to admit" these doctrines ? We are now concerned only with Dr. Dabney's similar statement as to the teachings of science—not even turning aside to inquire as to the amount of possible truth in each or any of the propositions.

The question as to the extent of the deluge is one of Biblical interpretation, and does not belong to any department of natural science. It is true that, if the Bible narrative leaves it undecided, natural science may be able to help us to determine which interpretation is the more probable ; and we may properly ask its help, just as we may ask the help of geography in deciding the situation of Melita, if it is not clearly pointed out in the narrative of Paul's shipwreck on the coast of that island.

How long man has been living upon the globe, science has not yet succeeded in determining. This question has been under discussion amongst scientific men for a long time ; and within the last twenty or thirty years many facts have been observed which may aid in answering it ; but no conclusion has yet been reached which commands the assent of the scientific world, and which can therefore be regarded as taught by science.

Further, science does not teach the plural origin of the human family. It is true that many eminent men of science do main-

tain that there are several distinct human species ; but there are many others, of at least equal eminence and authority, who maintain the unity of the human species on purely scientific grounds. Not to refer to others, a recent writer, whose rank as a scientific man is shown by his position as President of the French Academy of Science, M. de Quatrefages, has written an admirable work to prove this unity on these grounds. (*Unité de l'Espèce Humaine*, 1861.) But it is hardly worth while to proceed with the proof that the plurality of origin is not taught by science when Dr. Dabney tells us in almost the next paragraph that science teaches that not only all men, but all animals of whatever grade, have a common origin !

That science does not teach the nebular hypothesis, is sufficiently evident from the use of the term "hypothesis." "Hypothesis" is exactly equivalent to "supposition;" and by speaking of Herschel's and Laplace's suggestions as to the possible origin of the universe as a "supposition," scientific men have shown their great care to avoid having these suggestions regarded in any other light. Of course Dr. Dabney knows the meaning of this anglicised Greek word ; and therefore it is surprising that he should represent "physicists as requiring us to admit" what they are careful to call a mere "supposition." He is fully aware that this is the term applied, as he shows by his own use of it in his Lectures and Sermon. Lectures, p. 178, line 33 ; Sermon, p. 10, line 25.

Similar remarks would apply to the last item in Dr. Dabney's enumeration of anti-Christian errors—the development hypothesis. But to prove that "Physicists do not require us to admit" this supposition, it may be enough in this instance to quote the following truthful observations from Dr. Dabney's Lectures : "The attempt to account for them" (namely, "the beginning of *genera*") "by the development theory (Chambers or Darwin), is utterly repudiated by even the better irreligious philosophers ; for if there is anything that Natural History has established, it is that organic life is separated from inorganic forces, mechanical, chemical, electrical, or other, by inexorable bounds ; and that *genera* may begin or end, but never transmute

themselves into other *genera*." Lectures, pp. 17, 18. Surely this is conclusive on this head.

It thus appears that the only "encroachment which physicists make upon Scripture teachings" is in their doctrine that the world was in existence at least ten days or a fortnight before any human being. This they certainly do teach. We say ten or fourteen days, because it makes not the slightest difference, as regards the supposed "encroachment," whether the pre-Adamite earth existed only ten days, or ten thousand million myriads of centuries. The "encroachment" is as great when it is shown that the earth existed six days and five minutes before Adam, as if the longest time were admitted that could enter into the imagination of man. Hence is manifest the irrelevancy of all discussions relating to the length of time during which the pre-Adamite earth existed, after the fortnight or the six days and five minutes have been admitted or proved. Whether the doctrine of geology, that the earth was in existence at least a fortnight before man, is an encroachment upon Scripture teaching, or upon a old and "current [mis-]understanding of the Bible, will not be discussed here. The doctrine itself is very easily proved; and it is also very easily proved that it is vastly more reasonable to believe both the Bible and geology to be true than to disbelieve either. While not disposed usually to rely upon mere authority in scientific matters, and, as perhaps need hardly be said, not inclined ordinarily to accept Dr. Dabney as the highest geological authority, yet in this case it may be best to prove the geological heresy in question by accepting his teachings respecting it. In Lecture II, on the "Existence of God," he asks, "Can the present universe be the result of an infinite series of organisms?" He shows that "metaphysical answers" to the error of those who would reply affirmatively to this question are "invalid;" and then proceeds to give "the true answers to the atheistic hypothesis." The fifth "true answer" is: "(5.) Science exalts experience above hypothesis even more than testimony. Now, the whole state of the world bears the appearance of *recency*. The recent discovery of new continents, the great progress of new arts since the historic era began, and the partial

population of the earth by man, all belie the eternity of the human race. BUT STRONGER STILL, GEOLOGY PROVES THE CREATION, IN TIME, OF RACE AFTER RACE OF ANIMALS, AND THE COMPARATIVELY RECENT ORIGIN OF MAN, BY HER FOSSIL RECORDS." Lectures, p. 17. Surely after reading this decisive testimony, which we have sought to make duly prominent by capitals, no one who regards Dr. Dabney as a safe teacher can hesitate to accept the only doctrine which is really taught by science among the "encroachments" enumerated by him. But is Saul also among the prophets? is Dr. Dabney also among the geologists? So it would appear. The difficulty does remain, it must be admitted, which it is not for us to attempt to remove, of explaining how he can, consistently with fairness and logic, on page 178 of his Lectures maintain that the "tendencies of geologists" are "atheistic," and on page 17 prove the existence of God by the teachings of these same atheistic geologists.

We have stated that the hypothesis of Herschel and Laplace, that the matter of the universe once existed in a nebulous condition, is not taught by science as an established truth, but is still held only as an hypothesis; and perhaps it can never be either completely proved or disproved. But suppose we should believe it to be true, how would this belief "encroach upon Scripture teachings?" As soon as the earth is shown to be older than Adam by ten days, and this is perceived to be not contradictory of Scripture teachings, it becomes a matter of no consequence as regards the interpretation of the Bible how much more than ten days the time may have been. Nor does it concern us as students of God's holy word *how* he created the world—whether he "created a finished world of sea and land," (whatever that may mean,) or nebulous matter which he endowed with properties such that it would pass through successive changes until it reached the condition in which we now see it. Is God less truly the Creator of the magnificent oak which to-day adorns the forest because he did not by a word bring it into its present condition, but endowed the tiny acorn with the wonderful properties that caused it to become the stately tree which

we behold? And is he less truly the Creator of this oak than of the one that produced the acorn from which it sprang? And are we dishonoring God or trying to exclude him from our thoughts, are we practical atheists, when we trace with admiring awe the laws by which he produces the development of the embryo into the full-grown organism? If not, how are we atheists, or how are we dishonoring God, if we suppose he may have brought the universe into its present state by a gradual process instead of by an instantaneous act? If it be replied that we thereby deny the truth of his word, the answer is: His word gives us no information on the subject; it informs us that he created the world, but it does not tell us *how* he created it. Until it is proved that his word teaches the method as well as the fact, there is no reason for regarding the nebular hypothesis as dangerous or atheistic, merely because one of those who first suggested it was an unbeliever—"the atheistic astronomer, La Place." Sermon, p. 10.

It is in connexion with this hypothesis that we first have occasion to observe Dr. Dabney on the field as a physical philosopher. He certainly exhibits great boldness, and is ready to break a lance with all comers. But we are apprehensive that he has proved neither his lance nor the joints of his harness. With a single touch of his spear's point, he flatters himself that he has unhorsed this hypothesis, and has made its bloody remains roll lifeless on the turf. He tells us that "Lord Rosse's telescope has dissolved the only shadow of a probability for it, in resolving the larger *nebulæ*." (Lectures, p. 178, and Sermon, p. 10.) This statement will no doubt create great surprise, if not amusement, in the minds of all who know that while Lord Rosse's telescope resolved some *nebulæ*, many others have been brought to view which show no sign of being resolvable. The surprise will be all the greater to those who have really studied the reasons for thinking that the hypothesis may be true; and who therefore know that, although *nebulæ* in the sky may have first suggested the hypothesis to Sir William Herschel, the reasons in its favor would be almost if not quite as strong if every nebula should be seen to consist of completed stars. And although the Lectures

and Sermon are dated 1871, their author does not give any indication of his having heard of the amazing discoveries of Bunsen and Kirchhoff about fifteen years ago, or of the applications of the spectroscope with which they have enriched the world—an instrument by which not only the chemistry of the heavenly bodies can to some extent be ascertained, but by which incandescent gases—nebulous matter—can be distinguished from solids and liquids. Therefore, though Dr. Dabney's demolition of the nebular hypothesis may be satisfactory to those patriarchs who can remember when it did not exist, it will be necessary now to use other arguments. Ancient weapons are of no avail in modern warfare; and the mediæval armor of the most gallant knight is no protection against a conical ball projected from the chassepot or needle-gun.

Closely connected with Dr. Dabney's erroneous statement of the teachings of science, and with the errors into which he is betrayed by his want of acquaintance with physical science, are his groundless assertions respecting the aims and motives of students of science. In his Lectures, he says :

“TENDENCIES OF GEOLOGISTS ATHEISTIC.—Again; why should the Theistic philosopher desire to push back the creative act of God to the remotest possible age, and reduce his agency to the least possible *minimum*, as is continually done in these speculations? What is gained by it? Instead of granting that God created a KOSMOS, a world, they strive continually to show that he created only the rude germs of a world, ascribing as little as possible to God, and as much as possible to *natural law*. *Cui bono*; if you are not *hankering* after Atheism?” Lectures, p. 178.

In his Sermon, he says :

“And I ask, with emphasis, if men are not in fact reaching after *atheism*; if their real design is not to push God clean out of past eternity; why this craving to show his last intervention as Creator so remote? Why are they so eager to shove God back six millions of years from their own time rather than six thousand? Is it that ‘they do not like to retain God in their knowledge?’ It is not for me to make that charge. But have I not demonstrated that the validity of their scientific logic, in reality, gains nothing by this *regressus*?” Sermon, pp. 16, 17.

It is to be earnestly hoped that no one who is inquiring as to the truth of Christianity will regard these as the means by which that truth is maintained. The world must always suspect the justness of a cause when its advocates resort to virulent abuse of their opponents by attributing to them unworthy motives. Not by such weapons can our holy religion be defended. Every student of science who is worthy of the name the world over, will reject with indignation the imputation here made of such designs; and no more fatal stab could be given to Christianity, wherever Dr. Dabney is regarded as its faithful representative. The geologist is guilty of no such crime against the sovereign majesty of truth as is here laid to his charge. He examines the materials of which the accessible part of the globe is composed, he studies their arrangement, he investigates the laws by which God brings about such arrangement of such materials; and then he accepts as true the conclusions to which he is in this way led. He does not undertake to determine beforehand what the conclusion shall be, and then ransack nature for seeming facts to defend his opinion; he does not dictate to God what his works shall teach; but asking only what is true and indifferent to all else, he goes forward cautiously, yet fearlessly, and accepts as true whatever the phenomena of nature combined according to the God-given laws of his mind may require. The true student of nature does just what is done by every true student of the Bible who believes, as he should do, in the plenary inspiration and consequent truth of that holy volume. Such a one does not go to the sacred word for proofs of his preconceived opinions; he seeks cautiously, yet fearlessly, to know what is taught, and that he accepts with unquestioning faith. Just so far as any other method is adopted in either case, just so far is there manifest dishonesty. That there are those who profess to be students of nature who are merely narrow-minded partisans, indifferent to truth and eager only to support what they wish to be true, may well be believed in view of the number of those who profess to be students of Scripture who are of similar character. But Dr. Dabney does not limit his charges to these. He is indeed charitable enough to say that he does "not charge

infidelity upon all physicists." Sermon, p. 5. But of course in his opinion it is only by being illogical that they can be believers; for he insists in his "Memoir" on "Theological Education," as we have seen, that the "spirit of these sciences is essentially infidel and rationalistic; they are arrayed, in all their phases, on the side of scepticism." Hence, nothing but the want of mental capacity can preserve one imbued with their spirit, as every true student of nature is, from being an infidel and rationalist.

This charitable admission that all physicists are not infidels, does not extend to all who profess that they are not; for Dr. Dabney tells us that many who really "disclaim inspiration" are base enough to "profess a religion which they do not believe." He tells us not merely that many students of science are infidels, as might be expected if his assertions respecting its spirit and tendency are correct, but that many of them are hypocrites as well. He says:

"We have the explicit testimony of an eye-witness in the scientific association of the year (held at Indianapolis), that the great majority of the members from the Northern States openly or tacitly disclaimed inspiration; and this, while many of them are pew-holders, elders—yea, even ministers—in Christian churches. When asked why they continued to profess a religion which they did not believe, some answered that the exposure and discussion attending a recantation would be inconvenient; some, that it would be painful to their friends; some, that Christianity was a good thing for their sons and daughters, because of its moral restraints." Sermon, p. 6.

Does Dr. Dabney think he has sufficient evidence to sustain charges so grave? Surely his evidence ought to be very decisive before he permits himself to say from the pulpit and to publish to the world that many "pewholders, elders, even ministers, in Christian churches" are living and acting a lie. If indeed he has the "explicit testimony" of which he speaks, he ought fearlessly to declare what he knows and to prove it to the world, that the mask may be torn from the hypocrites whom he describes, and that all true men may be on their guard against them. But if he has been betrayed by warmth of zeal into an unconsidered

assertion, he surely will lose no time in retracting it. As he states the evidence, it certainly does not seem sufficient to convict the culprits arraigned. The "eye-witness," it would seem, must have inquired of each of the members of the American Association for the Advancement of Science which met at Indianapolis as to his belief in our religion, and must have received as a reply from many of the ministers of that religion and elders in Christian churches that they did not believe it; whereupon the "eye-witness," naturally enough amazed, must have inquired as to the cause of this hypocrisy, and then the different causes were assigned which Dr. Dabney mentions in his Sermon. Without this examination or a similar one, the statement could not be justified. Now, the probability that the "eye-witness" pursued no such course, and that the hypocrites in question would not so readily proclaim their baseness, is so strong, that we may be pardoned for failing to give full credence to testimony so indirectly reaching us. Let it be hoped for the sake of all concerned that this charge will be either substantiated or speedily withdrawn.

From the importance attached by Dr. Dabney to the alleged attempt to push "back the creative act of God to the remotest possible age," to "shove God back six millions of years" or more, it might be supposed that the firmness of our belief in God as Creator varies inversely as the length of time which has elapsed since he began to exercise his creative power. Otherwise it is very difficult to understand on what ground he objects to the student of science going back as far as facts or even probabilities may lead him. As regards any supposed contradiction of Scripture, the contradiction is as complete when we admit with Dr. Dabney "the comparatively recent origin of man" (Lectures, p. 17) as when we suppose that he originated the matter of the universe more millions of years ago than human arithmetic can numerate. Therefore it is hard to see why he lays so much stress on this point, when he himself teaches the geological doctrine at least far enough to involve the only supposable contradiction; unless indeed, as before suggested, it is because the law of this belief is like the law of attraction of gravitation, which diminishes as distance increases. But is it

true that we to-day believe less firmly in a Creator than we did yesterday, or than the men of last century, or the men of two thousand years ago, or of the days of Methuselah? And if a thousand million centuries hence, we shall be permitted to examine some part of God's creation now in existence where changes are in progress which are leaving indications of the time they occupy, and as the result of this examination we shall say that here is evidence of the lapse of some millions of years, must we expect some future Dr. Dabney to attribute to us "insane pride of mind" (Lectures, p. 178,) "rationalism," "infidelity," "atheism"? Will the evidence of creative power and wisdom be then less clear than it is now, or than it was when first the morning stars sang together and all the sons of God shouted for joy? Hence, apart from the fact before stated, that true students of science do not desire to "shove God back," but desire simply to know the truth, it is reasonable to suppose that they are endowed with at least sufficient intellect, however dishonest, to see that, if they wish to promote atheism, it cannot be done by any amount of "pushing" or "shoving" in the manner and in the direction attributed to them by Dr. Dabney in his Sermon and his Lectures.

We have already alluded to Dr. Dabney's use of the terms "sensuous" and "sensualistic" in connexion with physical science in a way fitted to excite groundless prejudice against it in the minds of those who are likely to be reminded of "earthly, sensual, devilish," on hearing the words, and who do not know there may be a sense assigned to them which would convey a very different idea. He may have intended no injustice in employing the terms in question. But he has been more unfortunate in using the terms "naturalist," "naturalistic," and "naturalism." On pages 12, 15, and 16, of the Sermon, and pages 176 and 177 of the Lectures, he properly applies the first two of these terms to the investigation of facts and the drawing of inferences from them in accordance with the intuitive belief in the law of uniformity; but on pages 18 and 19 of the Sermon, and page 179 of the Lectures, he uses them all in a way which conveys a totally different meaning. He says:

"The best antidote, my hearers, for this naturalistic unbelief is to remember your own stake in the truth of redemption; and the best remedy for the soul infected is conviction of sin. 'Beware lest any man despoil you through a vain, deceitful philosophy.' Of what will they despoil you? Of a divine redemption and a Saviour in whom dwell the divine wisdom, power, love, and truth, in all their fulness; of deliverance from sin and guilt; of immortality; of hope. Let naturalism prove all that unbelief claims, and what have you? This blessed Bible, the only book which ever told perishing man of an adequate salvation, is discredited; God, with his providence and grace, is banished out of your existence. . . . Naturalism is a virtual atheism; and *atheism is despair*. Thus saith the apostle: they who are 'without God in the world' are 'without hope.' Eph. ii. 12. Young man, does it seem to you an alluring thought, when appetite entices or pride inflates, that this false science may release you from the stern restraints of God's revealed law? Oh, beware, lest it despoil you thus of hope and immortality. . . .

"Look back, proud Naturalist, upon history; your form, and all other forms of scepticism, have been unable to hold their ground, even against the poor fragments and shreds of divine truth, which met you in Polytheism, in Mohammedanism, in Popery. Man, however blinded, will believe in his spiritual destiny, in spite of you. Let proud Naturalism advance, then, and seek its vain weapons groping amidst pre-Adamite *strata* and rotten fossils. The humble heralds of our Lord Christ will lay their hands upon the heartstrings of living, immortal man, and find there always the forces to overwhelm unbelief with defeat." Sermon, pp. 18, 19.

In these passages, the modern meaning of the term "naturalist" is entirely lost sight of; and Dr. Dabney could justify the amazing assertions and warnings uttered only by saying that the words as used some hundreds of years ago had the signification which he here wishes to convey. It is true that centuries ago it would have been proper to say that a "naturalist" was one who held the doctrine of "naturalism" taught by Leucippus, Democritus, and others, among the ancients, and by some unbelieving philosophers of later days. That "naturalism" was "virtual atheism," indeed it was professed atheism; for it attributed the phenomena of nature to a blind force acting necessarily. But the ancient "naturalist" and the modern "natural-

ist" have nothing in common. How, then, can Dr. Dabney justify his passing from the modern meaning of these words to the ancient and obsolete one, without giving his readers and hearers notice that he had done so? If he were to say that he uses them in the same sense throughout, and that he intends to assert that the "naturalist" of to-day is one who embraces the "naturalism" of the atheist, he would take a position to which the self-respect of a modern naturalist would forbid any reply to be made.

Perhaps the whole difficulty on these points arises from Dr. Dabney's utter failure to recognise the province of natural science. That he is not aware of the limits of this province is very evident from the following passages:

"Does the professor of natural science say of geology, that because the fact which it attempts to settle by empirical deduction, is the fact of a creation, the work of an omnipotent agent, therefore in the very approach to this question the validity of such deductions fails, and all such speculations are superseded; because this fact of a supernatural creation, if it has occurred, has transcended all natural law?—Does he hence briefly infer, as I do, that such speculations about the mode and date of creation must, by a logical necessity, always be incompetent to natural science, no matter how extended?" *Memoir*, October 31, 1866.

"Because geology is virtually a theory of *cosmogony*, and cosmogony is but the *doctrine* of creation, which is one of the modes by which God reveals himself to man, and one of the prime articles of every revealed theology." *Lectures*, p. 175.

It is a grievous mistake on Dr. Dabney's part to suppose that natural science has anything whatever to do with the "doctrine of creation." If he should become acquainted with geology, he would learn that it is not a "theory of cosmogony," either virtually or really. The truth is that natural science is neither Christian nor anti-Christian, neither theistic nor atheistic, any more than the multiplication table. When we can speak of a Christian law of gravitation, or an infidel law of definite proportions, or a rationalistic order of succession in the strata composing the accessible part of the earth, then we shall be able to speak of Christian and atheistic natural science, and not until then. For

what is natural science? Dr. Dabney gives us a sufficiently good description when he says: "Its chief study is to ascertain the laws of material nature and of animal life." Sermon, p. 2. (Dr. Dabney does not profess to be defining natural science here, but is describing what he calls "the prevalent vain deceitful philosophy of our day;" but this is merely his not very flattering way of speaking of what others mean by natural science.) Accepting this description, then, is it not clear that the consideration of creation is necessarily excluded? For what are "laws of nature?" Dr. Reid replies, as almost every other philosopher would do, that the "laws of nature are the rules according to which effects are produced." Accordingly, the student of natural science, by experiment and observation, seeks to learn what these rules are; he watches the order of sequence in nature; and thus he gains the knowledge he desires—in no other way can he gain it. This knowledge cannot pass beyond what may be observed. And it is only the order of sequence in nature that can be observed. Hence everything that lies beyond the observable order of sequence lies beyond the province of natural science. Now, how will natural science proceed to ascertain either the fact or the mode of creation? Can the order of sequence in creation be observed? Has man ever been able to see what the regular steps in that process are? If not, all "speculations about the mode of creation must always be incompetent to natural science," as Dr. Dabney rightly says.

In like manner, 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. It humbly declares that such questions transcend its highest powers; it shows what truths it has gathered, and with free hand delivers them over to a higher philosophy or to natural theology as useful materials with which to construct arguments demonstrating the being and wisdom of a personal God; but such demonstra-

tions lie wholly beyond its humbler sphere. And should any one, whether theologian or student of natural science, infidel or Christian, represent his discussions respecting the existence and attributes of God as belonging in any way to natural science, it would show clearly that he has yet to begin to learn what its rightful province is. And it would be as unjust to hold science responsible for the infidel views respecting the Bible and its teachings proclaimed by a Vogt, a Moleschott, a Büchner, a Tyndall, or a La Place, as to hold the Bible responsible for the astonishing views respecting natural science proclaimed by Dr. Dabney.

While natural science is itself incapable of inquiring into the origin of the forces which produce the phenomena it studies, and while it is impossible for it to be either religious or irreligious (anti-religious rather) any more than mathematics, or grammar, or logic, or farming; yet by the truths which it brings to light, it not only enables natural theology to illustrate the wisdom and power and greatness of God as nothing else can, but also illimitably expands the significance of multitudes of passages in the Scriptures where the meaning is already clear, and sometimes aids in gaining a clearer insight into that meaning where it is obscure. To the most ignorant peasant the heavens declare the glory of God; but in how infinitely higher a degree to the astronomer, who knows something of the real magnitudes, motions, constitution, and relations of the heavenly bodies. And the earth showeth his handywork to the stupidest savage; but with what vastly greater clearness and impressiveness to the geologist, who knows, however imperfectly, at least some parts of its wonderful past history. Every department of natural science sets forth truths which must fill the loving heart of the child of God with new emotions of admiration and reverence towards his Father whose thoughts he sees expressed in his works. But on the other hand, the scoffing unbeliever may pervert the truths discovered by natural science, just as the unbelieving farmer may pervert the fruits of his successful labor by using them to promote every kind of wickedness. It would hardly be proper, however, in this latter case, to begin a series of sermons, memo-

rials, etc., cautioning the Church against anti-Christian corn and cotton.

That natural science is neither atheistic nor Christian in itself, may be seen further from the fact that the results reached are not in the slightest degree affected by the religious views or character of its students. Two chemists, the one an atheist and the other a Christian, who study side by side in a laboratory and examine the same substances, will see the same chemical changes and arrive at a knowledge of the same laws. Their religious differences will have no more effect than the differences in their stature or the color of their hair. So if they go to the mountain's side as geologists, they will see the same strata in the same order filled with the same fossils, and they will draw the same conclusions from what they see. Perhaps when the atheist retires to his study, and, putting off the character of student of science, begins to discuss the origin of things, he may say that he believes that the fossils he had seen are the result of a fortuitous concourse of atoms, and that the order and constitution of the strata are one of the possible combinations brought about by blind chance. And the Christian, in like manner, when the glorious workmanship of God is no longer before his eyes, may strive to persuade himself that the forms which he had seen had never been parts of living beings, but for some reason unknown to him had been created as they now are by the God whom he had just been worshipping as the God whose truth endureth for ever, and of whom he had exultingly exclaimed: "The word of the Lord is right; and all his works are done in truth." But when again atheist and Christian return together to their investigations in the light of day, the former is as far from uttering his absurdities respecting the power of chance as the Christian from repeating the horrible thought that perhaps the God of truth had created these fragments of bone, and shells, and decayed wood, and dead leaves, in the condition in which they are now before him. But we are not left to speculation as the only means of reaching the truth on this point, when we see the Christian Newton and the unbeliever La Place teaching the very same astronomical truths, and when we see that in every branch

of science the same results are reached, whatever the religious views of the investigators. Even among the hypotheses outside of the ascertained truth, by which every branch of science is surrounded, no line could be drawn which would separate Christians from infidels, any more than one which would separate Americans and Frenchmen from Germans and Englishmen.

Dr. Dabney's argument, which is next to be noticed, is that on which he lays most stress to prove that there can be no certain conclusions reached respecting the antiquity of the globe and similar questions. It is this: "The admission of the possibility of a creation destroys the value of every analogy to prove the date and mode of the production. The creative act (which, if it ever occurred, may have occurred at any date, when once we get back of historical testimony) has utterly superseded and cut across all such inferences." Lectures, p. 177. The remarks above made with reference to the universal scepticism necessarily resulting from Dr. Dabney's effort to show that we cannot possibly reach the truth because we are fallen beings, here apply with special force. If we adopt his principle, we shall be sure not to believe anything. But since he speaks of it as the most vital point in his argument, it is proper that it should now be stated more fully. He says:

"Finally, no naturalistic argument from observed effects to their natural causes, however good the induction, have any force to prove a natural origin for any structure older than authentic, human history, except upon atheistic premises. The argument usually runs thus: We examine, for instance, the disposition which natural forces now make of the sediment of rivers. We observe that when it is finally extruded by the fluvial current into the lake or sea where it is to rest, it is spread out horizontally upon the bottom by the action of gravity, tidal waves, and such like forces. The successive deposits of annual freshets we find spread in strata, one upon another. Time, pressure, and chemical reactions gradually harden the sediment into rock, enclosing such remains of plants, trees, and living creatures, as may have fallen into it in its plastic state. The result is a bed of stratified stones. Hence, infers the geologist, *all stratified and fossil-bearing beds of stone have a sedimentary origin*, (or other such like natural origin). Hence winds and waters must have been moving on this earth, long enough to account for all

the beds of such stone on the globe. Such is the argument in all other cases.

"Grant now that an infinite, all-wise, all-powerful Creator has intervened anywhere in the past eternity, and then this argument for a natural origin of any structure, as against a supernatural, creative origin, becomes utterly invalid the moment it is pressed back of authentic human history. The reason is, that the possible presence of a different cause makes it inconclusive....

"It may be asked: 'Must we then believe, of all the pre-Adamite fossils, that they are not, as they obviously appear, organized matter; that they never were alive; that they were created directly by God as they lie?' The answer is: That we have no occasion to deny their organic character; but that the proof of their pre-Adamite date is wholly invalid, when once the possibility of creative intervention is properly admitted, with its consequences. For the assumed antiquity of all the rocks called sedimentary, is an essential member of the argument by which geologists endeavor to prove the antiquity of these fossils. But if many of these rocks may have been created, then the pre-Adamite date of fossils falls also. Moreover, when we are confronted with an infinite Creator, honesty must constrain us to admit, that amidst the objects embraced in his vast counsels, there may have been considerations, we know not what, prompting him to create organisms, in numbers, and under conditions very different from those which we now term natural. After the admission of that possibility, it is obviously of no force for us to argue: 'These organisms must have been so many ages old, supposing they were produced, and lived, and died, under the ordinary conditions known to us.' This is the very thing we are no longer entitled to suppose." Sermon, pp. 12, 13, 14.

"Our modern geologists find that wherever stratified rocks are formed, since the era of human observation, the cause is *sedimentary action*. They jump to the conclusion that therefore the same natural cause produced all the sedimentary rocks, no matter how much older than Adam. I reply: 'Yes, provided it is proved beforehand, that *no other adequate cause was present*.' Unless you are an atheist, you must admit that another cause, *creative power*, may have been present; and *present anywhere prior to the ages of authentic historical testimony*. Thus, the admission of the theistic scheme absolutely cuts across and supercedes all these supposed natural arguments for the origin and age of these structures." Lectures, pp. 175, 176.

"OBJECTION FROM FOSSILS ANSWERED.—Another objection, supposed to be very strong, is drawn from the fossil remains of

life. The geologists say triumphantly, that however one might admit my view as to the mere *strata*, it would be preposterous when applied to the remains of plants and animals buried in these *strata*, evidently alive thousands of ages ago. The reply to this is very plain, in two ways. First: How is it proved that it was thousands of ages ago that these fossil creatures, now buried in the *strata*, were alive? Only by assuming the gradual, sedimentary origin of all the *strata*! So that the reasoning runs in a circle. Second: Concede once (I care not where in the unknown past) *an almighty Creator of infinite understanding*, (as you must if you are not an Atheist,) and then both *power* and *motive* for the production of these living structures at and after a supernatural creation become infinitely possible. It would be an insane pride of mind, which should conclude that, because it could not comprehend the motive for the production, death, and entombment of all these creatures under such circumstances, therefore it cannot be reasonable for the *infinite mind* to see such a motive. So that my same *formula* applies here also. Once concede an infinite Creator, and all inferences as to the necessarily natural origin of all the structures seen, are fatally sundered." Lectures, pp. 177, 178.

Before discussing the main argument presented in these passages, it will be proper to notice two questions incidentally introduced. The first is Dr. Dabney's statement when speaking of fossils, that "we have no occasion to deny their organic character." It is very difficult to see what he can mean by this statement; for his whole argument rests on the supposition that the fossils may have been created as we find them. He says: "If many of these rocks may have been created, then the pre-Adamite date of fossils falls also." But if the rocks may have been created with the fossils in them, then certainly we are very decidedly "denying their organic character." It may be presumed that even Dr. Dabney would not wish to be understood as representing God as thrusting the fossils into the previously-made rocks, after the death of the animals and plants of which the fossils are the remains. But perhaps it would be rash to say that any one does not mean this who can believe that God may have directly created the fossil-bearing rocks at all. He is clearly right in one particular—that the only way to escape the conclusion that the fossils are pre-Adamite is to assume the

"possibility of creative intervention." But he cannot assume this without so far forth "denying their organic character." It surely would have been more consistent with logical propriety if he had not sought to escape the consequences of the assumption of creative intervention by saying we have no occasion to deny what is by that assumption directly denied.

The next preliminary point is Dr. Dabney's anxiety to escape the consequences of his principles by insisting again and again on restricting the range of natural science to the period embraced within human history. Now our belief in the laws of nature has nothing whatever to do with human history. He himself teaches the truth on this point very clearly in his second and sixth Lectures. He says: "*It is not experience* which teaches us that every effect has its cause, but the *a priori* reason. Neither child nor man believes that maxim to be true in the hundredth case because he has experienced its truth in ninety-nine; he instinctively believed it in the first case. It is not a true canon of inductive logic that the tie of cause and effect can be asserted only so far as experience proves its presence. If it were, *would induction ever teach us anything we did not know before?* Would there be any inductive science? Away with the nonsense!" Lectures, p. 15. (The italics are Dr. Dabney's.) "It thus appears that this intuitive belief [that 'every effect has its own cause, which is regular every time it is produced,' page 53,] is essential beforehand to enable us to convert an experimental induction into a demonstrated general law. Could anything more clearly prove that the original intuition itself cannot have been an experimental induction?" Lectures, p. 53. In these passages he very clearly and correctly sets forth the exact truth. The fundamental beliefs in natural science are intuitive; they are entirely independent of experience, which, when recorded, becomes human history. Dr. Dabney would have been more logically accurate, if in this crusade against physical science he had adhered to his own teachings in his second and sixth Lectures.

Let us now endeavor to ascertain whether it is true that creative intervention supersedes and cuts across all inferences such

as the student of God's works draws respecting the formation of fossil-bearing layers of rock. Of course every believer in a personal God believes that he can produce in an extraordinary way just such effects as he ordinarily produces by the usual laws by which he governs his material universe—the laws of nature; and every believer of the Bible believes that he has often done so. The numerous miracles recorded are suspensions of the laws of nature as we know them, deviations from the ordinary “rules according to which effects are produced.” It is not necessary here to inquire whether miracles are “violations” or “suspensions” of the laws of nature, or are the regular results of other and higher laws of nature than those with which we are acquainted; for whatever view may be held respecting their character, all would agree that they are at least deviations from the ordinary order of sequence. Now, does this admission that effects have been produced in such unusual ways vitiate all inductive science, which is certainly based upon the belief in the uniformity of the laws of nature? Does the admission that fire on some occasions has not burned, render us incapable of believing that fire does burn? Does it vitiate all conclusions based on this belief? We can best learn what common sense and the right use of reason teach us by examining a few cases in detail.

On one occasion, at a marriage festival, wine was presented to the guests, which was pronounced to be of excellent quality—it was real wine. 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. Is this the dictate of common sense?

One of the laws of nature with which we think we are best acquainted, is, that fire burns, and that it consumes wood, flesh, or any other organic substance. And yet, once a bush burned with

fire, and was not consumed. On another occasion, there was a burning fiery furnace, exceeding hot, which had no power over the bodies of three men who were cast into it, and could not even singe a hair of their head. Now, with regard to our daily application of the law that fire burns, Dr. Dabney would have us remain in perpetual doubt; he would tell us that "honesty must constrain us to admit, that amidst the objects embraced in his vast counsels, there may have been considerations, we know not what, prompting him" to give to fire the next time we wish to kindle it on the hearth properties "very different from those which we now term natural"—in short, such properties that it will no longer burn. He has done so in the past; and "after the admission of that possibility, it is obviously of no force for us to argue": This wood must burn, and roast so much flesh, etc., "under the ordinary conditions known to us. This is the very thing we are no longer entitled to suppose." Sermon, p. 14. We must first "ascertain the absence of the supernatural," before we can be sure that fire will produce the effects we had been anticipating. In like manner, we cannot be sure that every rod we see will not change to a serpent; that iron will not swim upon water, or that we cannot walk upon water, or that water will not stand in heaps as a wall; we cannot be sure that an inscription on a stone tablet in the grave-yard is the work of human hands; we cannot be sure that the strangers we meet were not dead at one time; for we cannot have forgotten the rods of Moses and Aaron, the passage of the Red Sea and of Jordan, the axe of Elisha's pupil, or the writing on the two tables of stone; we cannot have forgotten the son of the widow of Nain, and Lazarus, and Jairus's daughter, and the Shunamite's son, and others who were dead but afterwards came to life.

What conclusion must every right-thinking person reach from the examination of these instances? Must he not insist on believing that wine is the juice of the grape, except where the contrary is proved by competent testimony? He cannot give up his belief that fire burns because it has not always done so—he will not wait to have the rule further proved, he reasonably asks that the extraordinary exception shall be proved; he believes that water

as long as it has existed and shall exist, has had and will have its present properties, but yet is ready to believe any proved exception ; he is not afraid to say that he knows that not one of all the human beings he has seen during his whole life was ever dead, while he readily accepts the evidence which informs him that there have been exceptions to the ordinary law of mortality.

Is it not clear, then, that the rule cannot be that on which Dr. Dabney insists—that we must be able to prove the “absence of the supernatural” before we have a right to attribute an effect to the operation of God’s ordinary laws? On the contrary, are we not required by the very constitution of mind which God has given us, to believe that every effect we see has been produced by God’s ordinary laws, until we have valid testimony to the contrary?

If we adopt Dr. Dabney’s principle, we are at once landed in absolute and complete scepticism—we cannot know anything whatever with certainty ; we are condemned to perpetual torturing universal doubt. It is true he seeks to escape this conclusion by what he says of “authentic human history ;” but it has been shown that history has nothing to do with the laws of belief. The possibility of proving the truth of the Bible is at once destroyed. A copy of the Bible is placed before us, documentary and other evidence is submitted to show its genuineness ; but how can we tell that this is a book, or that these are really documents? We have been taught that for some reason unknown to us God may have created skeletons that never belonged to animals, shells that were never inhabited ; that he may have created the world just as we see it with all the numberless minute marks of having been produced by processes which he has permitted us to learn and forced us to believe—marks which prove just as clearly that these rocks with their fossils were produced by these processes as that this Bible consists of sheets of paper manufactured by man, with marks upon them which seem to us to be letters and words and sentences printed by man. But since, as Dr. Dabney says, it is possible that the rocks may have been created, notwithstanding these minute marks of not having been created, we must equally admit that that which seems to be a

Bible with its supporting testimony, may equally have been created, and has no such meaning as we must have believed, until Dr. Dabney taught us better. Once admit this principle, and we are landed in scepticism in comparison with which that of Hume, or Berkeley, or Pyrrho, was confident belief.

Dr. Dabney frequently insists that his argument must be admitted by all who are not atheists. Is it not rather to be feared that all who accept his exposition of the theistic argument, will be driven towards the denial of a God, certainly of a God of truth? Speaking of rocks called by geologists sedimentary, which includes the entire fossil-bearing series, he says: "The admission of the theistic scheme absolutely cuts across and supersedes all these supposed natural arguments for the origin and age of these structures." Here the choice is presented: Either believe in a God who may have created these rocks in such a way that they are certain to deceive you; or else deny the existence of such a God. If the denial of *such* a God is atheism, little is hazarded in expressing the opinion that all who know aught of the earth's structure are *atheists*—they can and do believe in no such God. But they can and great multitudes do believe in and love the God of the Bible, all whose works are done in truth; and they are too jealous for the honor of his name calmly to hear attributed to him the possibility of such gigantic, unlimited deception, and especially when this is done in the house of his friends, and in that which is intended as a defence of his glorious and true word.

It is quite possible that Dr. Dabney's opposition to physical science arises from his want of acquaintance with it. In this opposition he is unhappily the representative of but too many who have in all ages claimed to be defenders of the faith; and familiarity with the thing opposed has never been a characteristic of those whom he here represents. This want of acquaintance with its real value may also account for his determined efforts to exclude it from the course of study to be pursued in theological seminaries. In his Memoir on Theological Education, his Memorial, and his Lectures, he strenuously insists that it should be rigorously excluded from such a course. He says:

"In conclusion, the relations of those sciences (as geology) which affect the credit of inspiration, would be studied by divinity students, on the right footing. It is desirable that at least a part of our clergy be well informed upon these subjects. But to make the study of them therefore a part of a divinity course, in a school strictly ecclesiastical, appears to me extremely objectionable, for several reasons.

"First: when thrust thus into a divinity course, the instruction upon these extensive and intricate sciences must needs be flimsy and shallow, a mere sketch or outline. The result will be that our young ministers will not be made natural historians; but conceited smatterers in these branches of knowledge. There is no matter in which Pope's caution should be uttered with more emphasis.

" 'Drink deep; or, taste not the Pierian spring.'

"The great lights of those sciences, armed with the results of lifelong study, are not to be silenced, if perchance infidel, by a class of men who make it a by-play to turn aside from their own vocation, and pick up a scanty outline of this foreign learning. These clerical smatterers will only make matters worse, by displaying their own ignorance; and their so-called defences of inspiration will provoke the contempt and sneers of their assailants. If Christianity needs to be defended against the assaults of natural science, with the weapons of natural science, it must be done by competent Christian laymen, or by the few ministers who, like Dr. Bachman, are enabled to make natural science a profound study. Let our Cabells defend the "unity of the race," while our pastors preach the simple gospel.

"Second. The tendencies of such a course will be mischievous, as to both the professor and his pupils. The latter will be found more inclined to mere human learning, and to the conceit which usually attends it, and which always attends a small degree of it; babbling the language of geology and ethnology, with a great deal more zest than they recite their catechism. The professor will be found, in nine instances out of ten (mark the prediction,) wounding the very cause he is bound to defend, by diligently teaching some scheme of his pet science, which involves a covert infidelity. Again; we solemnly declare, that it will be found that the most mischievous scepticism, and the most subtle doctrines of anti-Christian science, will be just those propagated from these church schools of natural science; and after a time, the Church will have more trouble with her defenders, than with her assailants. For the spirit of these

sciences is essentially infidel and rationalistic ; they are arrayed, in all their phases, on the side of scepticism. Memoir, *Central Presbyterian*, October 31, 1866.

“Without presuming to teach technical geology (for which I profess no qualification ; and which lies, as I conceive, wholly outside the functions of the Church teacher), I wish, in dismissing this subject, to give you some cautions and instructions touching its relations with our revealed science.” Lectures, p. 173.

Who could have expected, after these protests against the introduction of physical science into the course of study to be pursued by theological students, that Dr. Dabney himself should forthwith proceed to teach it from his own theological chair ? Equally unexpected is the introduction of so much of physical science, as he understands it, into a sermon in which he says, “It is not necessary for the theologian to leave his own department, and launch into the details of these extensive, fluctuating, and fascinating physical inquiries ; nor shall I, at this time, depart from my vocation as the expounder of God’s word, to introduce into this pulpit the curiosities of secular science. We have no occasion, as defenders of that word, to compare or contest any geologic or biologic theories. We may be possessed neither of the knowledge nor ability for entering that field, as I freely confess concerning myself.” Sermon, pp. 7, 8. But surely after confession, it was not necessary to prove and illustrate it by specimens of what he would teach as natural science ; and it could not have been expected that so much of the Sermon should be taken up with what he well terms “*curiosities* of secular science.”

That those who are to be defenders of our faith should carefully study natural science, Dr. Dabney proves, first, by his direct assertion respecting geology, “THIS SUBJECT MUST CONCERN THEOLOGIANS.—1. There must always be a legitimate reason for church teachers adverting to this subject” (Lectures, p. 173) ; secondly, by his own example in teaching his students as shown in many of his Lectures, but especially in Lecture xxi. and its Appendix ; and lastly, by the sad effects of undertaking to teach that for which he is obliged to “profess no qualification.”

If we examine the character of the natural science which he teaches, we may be able to discover still more clearly the reasons why he opposes it and regards its conclusions with distrust. Let us begin with a sample of his botany. Speaking of the trees of Paradise, he says :

"But now a naturalist of our modern school investigates affairs. He finds towering oaks, with acorns on them ! Acorns do not form by nature in a day ; some oaks require two summers to mature them. But worse than this : His natural history has taught him that one summer forms but one ring in the grain of a tree's stock. He cuts down one of the spreading monarchs of the garden, and counts a hundred rings. So he concludes the garden and the tree must be a hundred years old, and that Adam told a monstrous fib, in stating that they were made last week." Lectures, p. 176.

Now, compare this with real natural history. Dr. Dabney *supposes* the oaks in the garden of Eden had acorns hanging from their boughs ; he *supposes* that on cutting one down, the section would show a hundred rings. How does he know these things ? He does not know them ; he *guesses* at his facts, and then proceeds to reason upon his fanciful guesses. The real naturalist on the other hand does not begin his reasoning until he knows what the facts are. As to the oaks in Paradise, he candidly confesses he does not know whether there were acorns on them or not, or whether the cross section of one of them would have shown a hundred year-rings or not ; and he has too high a regard for true science to base any part of it on guesses. He might add that his observation of facts has led him to refer the rings seen in trunks of trees to more or less complete cessation of growth, which cessation in our climate occurs once a year ; but that he cannot apply this knowledge to the trees of Paradise. If asked what must have been the appearance of the cross section of a Paradise oak, he will doubtless say he does not know, and that he thinks it likely that Dr. Dabney does not know either ; but if he must express an opinion, he thinks that, as all the marks he has ever seen on any plants indicate the truth, so God did not impress any marks on the trees of Paradise to deceive either Adam or his posterity ; that the God of truth did

not create scars, or broken branches, or chips, or stumps, or decaying logs, or anything else to lead astray those whom he created in his own image.

Let us next take a sample of Dr. Dabney's physiological chemistry, a branch of science to which he seldom refers. He does not present his "law" as anything more than a "surmise;" but he asserts, notwithstanding, that it is not without "plausible evidence." He says:

"Let me assume this hypothesis, that it may be a physiological law, that a molecule, once assimilated and vitalized by a man (or other animal), undergoes an influence which renders it afterwards incapable of assimilation by another being of the same species. This, indeed, is not without plausible evidence from analogy; witness, for instance, the fertility of a soil to another crop, when a proper rotation is pursued, which had become barren as to the first crop too long repeated." Lectures, Part II., pp. 275, 276.

He here violates two fundamental requirements of true science; namely, first, that in framing an hypothesis, the causes assumed must be known to exist—must be real causes; and second, that the phenomena to be explained must also be known to exist. Now, in this case, he guesses at his cause, and guesses at the facts to be explained; and still further, guesses most amusingly at the evidence by which he sustains his surmise—the source of the advantage resulting from rotation of crops. Is it any wonder that Dr. Dabney should have little respect for physical science, when he thinks this is the way it investigates nature and undertakes to discover laws and causes; when such "plausible evidence" as he adduces may be taken as sober argument?

But it is chiefly geology that he attacks and casts out as "atheistic." Let us therefore examine Dr. Dabney as a geologist; for notwithstanding his modest disclaimer, he comes forward as a teacher of this science. Here is a sample of his instructions on the subject:

"Lowest in order and earliest in age, are the primary rocks, all *azoic*. Second come the secondary rocks, containing remains of life *palæozoic* and *meiocene*. Third come the tertiary rocks

and clays, containing the *pleiocene* fossils. Fourth come the *alluvia*, containing the latest, and the existing genera of life. Now the theory of the geologists is, that only the primary azoic rocks are original; the rest are all results of natural causes of disintegration, and deposition, since God's creation. And hence: that creation must have been thousands of ages before Adam.

"a.) Because the primary rocks are all very hard, were once liquid from heat, and evidently resulted from gradual cooling," etc. Lectures, p. 170.

In order that Dr. Dabney's geological subdivisions may be the more easily compared with the subdivisions made by those who are acquainted with geology, the two are here presented side by side—giving the geological classification which really comes nearest to the one intended by the teacher under examination:

DR. DABNEY.	REAL GEOLOGY.
4. Alluvia—Existing genera.	4. Cainozoic { Recent. Pleiocene Meiocene Eocene } Tertiary.
3. Tertiary—Pleiocene.	3. Mesozoic.
2. Secondary { Meiocene. Palæozoic.	2. Palæozoic.
1. Primary or Azoic.	1. Azoic.

The difference between Dr. Dabney's classification and real geological classification becomes apparent on comparing the above. He regards the secondary as embracing the whole of the palæozoic and a subdivision of the tertiary; and the tertiary as equivalent to one of its parts. It is as if he had given us this geographical definition: "The bodies of water on the surface of the globe are oceans, gulfs—including the Caspian Sea—lakes, and the Appomattox river." He is no more fortunate in his statement of the "theories of geologists." For they do *not* hold that the "primary azoic rocks are original"—the azoic rocks belong to the sedimentary stratified layers which are certainly not original, but in which either no traces or very doubtful traces of life have been found. Nor do they hold that they "were once liquid and evidently resulted from gradual cooling." It is true that rocks so formed are "azoic," that is, they do not contain the remains of plants and animals; but the term

“azoic” in geology has a technical signification, as one acquainted with the science would have known. When you look at Mont Blanc and the neighboring mountains, or still better when you stand on the Gorner-Grat and look at the magnificent range before you, including the Cima di Jazzi, Monte Rosa, the Twins, the Breithorn, and the Matterhorn, you see mountains which are white—very white indeed. But what would be thought of the geographer who would gravely inform his pupils, utterly forgetful of the claims of New Hampshire, that the White Mountains are in central Europe along the northern border of Italy? This is precisely similar to what the “geologist” has done, whose claims are now before us. But it cannot be necessary to continue this examination; it is perfectly evident that the profession of want of qualification to teach geology had reasons for being sincere, and ought to have restrained from every attempt to exercise that function. The only thing to be added here is the recommendation that, before a second edition of the Lectures shall be issued, the author learn what naturalists mean by “genera;” for in a large number of cases he employs the term “genera” where one acquainted with natural history would have used “species.”

In view of these specimens of Dr. Dabney’s scientific attainments, which prove that he is acquainted with neither the methods nor the ends of physical science, with neither its facts nor its principles, is it not reasonable to hesitate to accept his opinions and conclusions respecting that science? Why should his warnings against it be heeded, when he knows neither what it is nor what it does? They should not be heeded, any more than the warning uttered by Professor Tyndall that we should not believe what God has told us of himself as a hearer of prayer because natural science has not been able to discover how he hears and answers.

In the following passages, Dr. Dabney complains of the unreasonableness of geologists in resenting the animadversions of some theologians:

“Not a few modern geologists resent the animadversions of theologians, as of an incompetent class, impertinent and ignorant.

Now I very freely grant that it is a very naughty thing for a parson, *or a geologist*, to profess to know what he does not know. But all logic is but logic; and after the experts in a special science have explained their premises in their chosen way, it is simply absurd to forbid any other class of educated men to understand and judge their deductions. What else was the object of their publications? Or do they intend to practise that simple dogmatism, which in us religious teachers they would so spurn? Surely when geologists currently teach their system to *boys* in colleges, it is too late for them to refuse the inspection of an educated class of *men*. When Mr. Hugh Miller undertook, by one night's lecture, to convince a crowd of London mechanics of his pet theory of the seven geologic ages, it is too late to refuse the criticism of theologians trained in philosophy!" Lectures, p. 173.

Some distinctions ought surely to be made here. It can hardly be fairly said that it is the animadversions of theologians as an "incompetent class" that geologists resent. No geologist can forget that many of these "parsons," as Dr. Dabney calls them, have been and are most accomplished members of the geologist "class"—as for example the recently deceased Sedgwick, and Buckland, and Hitchcock, not to mention a multitude of others. It is not theologians as a class, but individual theologians who are ignorant of the subject discussed, whose animadversions are not always treated with very great respect. Dr. Dabney himself acts just as those do of whom he complains, when he says that he "freely grants that it is a very naughty thing for a parson, *or a geologist*, to profess to know what he does not know." Every science has a right to claim that, if judged, it shall be judged by those who know what it is. And if "theologians trained in philosophy" refuse to learn what "*boys* in colleges" can understand, and then denounce as atheistic those who have acted otherwise, it is certainly "a very naughty thing."

It must be apparent to all, then, that it is of great importance that theological students should be instructed with reference to the class of questions under consideration. Not that such topics should be discussed in the pulpit; but neither should Hebrew Grammar or the details of Church History be discussed there;

and yet Hebrew Grammar and Church History must be studied by theological students. Nothing should ever be preached from the pulpit except the gospel. But if the candidate for the ministry cannot be adequately instructed elsewhere on the points in question, it must be the duty of the Church to provide that instruction in her training schools. And Dr. Dabney ought not so strenuously to object to such provision, merely because he has not himself felt called upon to seek and obtain accurate knowledge with reference to these subjects. There never was a time when it was more imperatively necessary that all teachers of our religion should be well acquainted with natural science. It is in the falsely-assumed name of this science that fierce attacks upon vital truth are made. The defenders of Christian truth, ignorant of the difference between true science and the errors uttered in its name, greatly err if they think they can effect anything by proclaiming that the "spirit of these sciences is essentially infidel and rationalistic," and by denouncing as atheistic what every reasonable man must believe. They thus merely expose themselves to derision. This might be of slight consequence, but for the fact that inquirers after the truth of Christianity may be led, in their summary rejection of such arguments, into an error similar to that made by some "theologians," namely, that of confounding the untenable defence with the thing defended.

Is it not worth while to consider whether the past history of the Church of Christ does not sufficiently illustrate the divine power of the truth to survive such defences? That history in this respect is a very sad one. In the fourth century, Lactantius was one of the foremost of these defenders. The third Book of his "Divine Institutions" treats of the "False Science of Philosophers." In the twenty-fourth chapter of this caution against Anti-Christian Science, he asks, speaking of the infidel doctrine that there are antipodes: "Who is so silly as to believe that there are men whose feet are higher than their heads? . . . that crops of grain and trees grow downwards? that rain, snow, and hail fall up toward the earth? . . . We must explain the origin of this error also. For they are always

led astray in the same way. When they have assumed a false principle, influenced by the appearance of truth, it is necessary that they follow it out to its consequences. Thus they fall into many ridiculous errors. . . . If you ask those who defend these wonderful statements, how it happens that all things do not fall into the lower part of the sky, they reply that it is the nature of things that heavy bodies are borne toward the centre, and that all things are connected with the centre as we see the spokes in a wheel. . . . I do not know what I should say of these persons, who, when they have once gone astray, constantly persevere in their folly, and defend their vain statements by vain reasons." Passing by similar teachings on the part of Chrysostom and many others, in the eighth century Virgilius of Salzburg was publicly condemned by Pope Zacharias for maintaining the existence of the same antipodes; and centuries later, it was taught that the hypothesis of an antipodal region is "inconsistent with our faith; for the gospel had been preached throughout all the habitable earth; and, according to this opinion, such persons (the antipodes) could not have heard it," etc. Every one knows how the astronomical truths again brought to light by Copernicus and confirmed and illustrated by Galileo were received by multitudes of theologians who set themselves forward as special defenders of the faith; and that, not only by the Roman Catholics, but by leading Protestants as late as the seventeenth century. In the same century it was maintained, just as it now is, that "God at the beginning of creation caused coal, vegetable and animal forms, to grow in the rocks, just as he caused grass and other plants to grow upon the earth;" and that opinions contrary to this "are partly atheistic, partly ridiculous, and without foundation." But this sad history has been followed far enough. Christianity based upon a firm belief in the Bible has survived it all. Surely it would be difficult to give a stronger proof of its truth than that such defences have not caused it to be utterly rejected. The similar defences made by Dr. Dabney will be alike powerless to destroy the Bible; but is there not danger that many persons, taking it for granted that he would not place

unnecessary obstacles in the way of belief in the Bible, may think it necessary either to adopt his principles or reject Christian belief? and finding it repugnant to right reason and common sense to accept what he teaches on these points, may thereby be led to reject the sacred and true Scriptures?

It can hardly be necessary to examine minutely what Dr. Dabney says further on these topics; as, for example, the reasons he adduces to support his statement that "the assumption that henceforth physical science is to be trusted, and to be free from all uncertainty and change, is therefore simply foolish." As one proof of this, he alludes to the "deep sea soundings which have lately" been made, as showing that "formations determined (as was asserted) to be older and newer lie beside each other in the ocean contemporaneously"—all of which evinces an utter misapprehension of the real import of the discoveries in question. He further refers to the changes in chemistry as illustrating the untrustworthiness of science. It would be tedious to go into details here on these points; it is enough to say that if the conclusions of physical science are to be rejected on such grounds, we must also reject the Bible because opinions vary as to whether the Book of Job was written by Moses or not; because the exact time when this book was written has not been ascertained; and because it has not been decided in the theological world whether Moses, under the guidance of the Holy Ghost, compiled the Pentateuch from previously existing documents, or under the same guidance embodied in it the traditions handed down from father to son without being committed to writing, or wrote words immediately dictated to him by the Spirit. Dr. Dabney's objections bear the same relation to belief in physical science that these objections would do to belief in the Sacred Scriptures.

Such warnings against science are not new; and unhappily it is not new that they are uttered by theologians, who ought all to be the most earnest promoters of knowledge of every kind, as multitudes of them have been. It is painful that in this day as well as in that of Lord Bacon, there should be theologians who deserve the rebuke so sternly administered by that master

of thought. Let his words be again heard, and let them be heeded by all who profess to love the truth. In his immortal work on the Advancement of Learning, he says :

“In the entrance to the former of these, to clear the way, and, as it were, to make silence, to have the true testimonies concerning the dignity of learning to be better heard, without the interruption of tacit objections : I think good to deliver it from the discredits and disgraces which it hath received, all from ignorance, but ignorance severally disguised ; appearing sometimes in the zeal and jealousy of divines ; sometimes in the severity and arrogancy of politicians ; and sometimes in the errors and imperfections of learned men themselves.

“I hear the former sort say, that knowledge is of those things which are to be accepted of with great limitation and caution ; that the aspiring to over-much knowledge, was the original temptation and sin, whereupon ensued the fall of man ; that knowledge hath in it somewhat of the serpent, and therefore where it entereth into a man it makes him swell ; ‘Scientia inflat :’ that Solomon gives a censure, ‘That there is no end of making books, and that much reading is a weariness of the flesh ;’ and again in another place, ‘That in spacious knowledge there is much contristation, and that he that increaseth knowledge increaseth anxiety ;’ that St. Paul gives a caveat, ‘That we be not spoiled through vain philosophy ;’ that experience demonstrates how learned men have been arch-heretics, how learned times have been inclined to atheism, and how the contemplation of second causes doth derogate from our dependance upon God, who is the first cause.

“To discover then the ignorance and error of this opinion, and the misunderstanding in the grounds thereof, it may well appear these men do not observe or consider, that it was not the pure knowledge of nature and universality, a knowledge by the light whereof man did givenames unto other creatures in Paradise, as they were brought before him, according unto their proprieties, which gave the occasion to the fall ; but it was the proud knowledge of good and evil, with an intent in man to give law unto himself, and to depend no more upon God’s commandments, which was the form of the temptation. Neither is it any quantity of knowledge, how great soever, that can make the mind of man to swell. . . And as for that censure of Solomon, concerning the excess of writing and reading books, and the anxiety of spirit which redoundeth from knowledge ; and that admonition of St. Paul, ‘That we be not seduced by vain philosophy ;’ let

those places be rightly understood, and they do indeed excellently set forth the true bounds and limitations, whereby human knowledge is confined and circumscribed; and yet without any such contracting or coarctation, but that it may comprehend all the universal nature of things. For these limitations are three: the first, that we do not so place our felicity in knowledge, as we forget our mortality. The second, that we make application of our knowledge, to give ourselves repose and contentment, and not distaste or repining. The third, that we do not presume by the contemplation of nature to attain to the mysteries of God. . . And as for the third point, it deserveth to be a little stood upon, and not to be lightly passed over: for if any man shall think by view and inquiry into these sensible and material things to attain that light, whereby he may reveal unto himself the nature or will of God, then indeed is he spoiled by vain philosophy: for the contemplation of God's creatures and works produceth (having regard to the works and creatures themselves) knowledge; but having regard to God, no perfect knowledge, but wonder, which is broken knowledge. . . And as for the conceit that too much knowledge should incline a man to atheism, and that the ignorance of second causes should make a more devout dependence upon God which is the first cause; First, it is good to ask the question which Job asked of his friends: 'Will you lie for God, as one man will do for another, to gratify him?' For certain it is that God worketh nothing in nature but by second causes; and if they would have it otherwise believed, it is mere imposture, as it were in favor towards God; and nothing else but to offer to the Author of truth the unclean sacrifice of a lie. But farther, 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 to the mind of man, if it dwell and stay there, it may induce some oblivion of the highest cause; 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. To conclude therefore, let no man, upon a weak conceit of sobriety, or an ill-applied moderation, think or maintain, that a man can search too far, or be too well studied in the book of God's word, or in the book of God's works: divinity or philosophy; but rather let men endeavour an endless progress or proficiencie in

both ; only let men beware that they apply both to charity, and not to swelling ; to use, and not to ostentation ; and again, that they do not unwisely mingle or confound these learnings together." Pp. 7-13.

The remark made at the outset, we would repeat in closing this examination of Dr. Dabney's assaults, that it would have been vastly more gratifying to have stood by his side defending sacred truth, than it has been to point out the deadly character of his teachings. Nothing but a sense of duty, requiring the exposure of these errors that the truth might be upheld, would have been a sufficient motive to perform a task in many respects so painful. His design is most praiseworthy—the defence of Christian truth. But unfortunately, zeal and laudable intentions are not enough if unaccompanied with the requisite degree and kind of knowledge. The most zealous and patriotic soldier whose sight is defective, may mistake a friend or a non-combatant for an armed foe.

It affords us real satisfaction, before we close, heartily to commend one caution uttered by Dr. Dabney, namely, the deliberation which he enjoins on pages 173 and 174 of his Lectures, where he says :

“ DELIBERATION ENJOINED.—Let me urge upon you a wiser attitude and temper towards the new science than many have shown, among the ministry. Some have shown a jealousy and uneasiness, unworthy of the stable dignity of the cause of inspiration. These apparent difficulties of geology are just such as science has often paraded against the Bible ; but God's word has stood firm, and every true advance of science has only redounded to its honor. Christians, therefore, can afford to bear these seeming assaults with *exceeding coolness*. Other pretended theologians have been seen advancing, and then as easily retracting new-fangled schemes of *exegesis*, to suit new geologic hypotheses. The Bible has often had cause here to cry, ‘Save me from my friends.’ Scarcely has the theologian announced himself as sure of his discovery that *this* is the correct way to adjust Revelation to the prevalent hypotheses of the geologists, when these mutable gentlemen change their hypothesis totally. The obsequious divine exclaims : ‘Well, I was in error then ; but now I have certainly the right exposition to reconcile Moses to

the geologists.' And again the fickle science changes its ground. What can be more degrading to the authority of Revelation! As remarked in a previous lecture, unless the Bible has *its own* ascertainable and certain law of exposition, it cannot be a rule of faith; our religion is but rationalism. I repeat, if any part of the Bible must wait to have its real meaning *imposed upon it* by another, and a human science, that part is at least meaningless and worthless to our souls. It must expound itself independently; making other sciences ancillary, and not dominant over it."

Of course it is only the injunction of deliberation that is here commended, without any expression of opinion as to the tone and style in which it is conveyed. The main thought is so important that this article cannot be better concluded than by repeating it in the words of the late distinguished Sir John Herschel:

"Nothing, then, can be more unfounded than the objection which has been taken, *in limine*, by persons, well meaning perhaps, certainly narrow-minded, against the study of natural philosophy, and, indeed, against all science,—that it fosters in its cultivators an undue and overweening self-conceit, leads them to doubt the immortality of the soul, and to scoff at revealed religion. Its natural effect, we may confidently assert, on every well constituted mind, is and must be the direct contrary. No doubt, the testimony of natural reason, on whatever exercised, must of necessity stop short of those truths which it is the object of revelation to make known. . .

"But while we thus vindicate the study of natural philosophy from a charge at one time formidable from the pertinacity and acrimony with which it was urged, and still occasionally brought forward to the distress and disgust of every well constituted mind, we must take care that the testimony afforded by science to religion, be its extent or value what it may, shall be at least independent, unbiased, and spontaneous. We do not here allude to such reasoners as would make all nature bend to their narrow interpretations of obscure and difficult passages in the sacred writings: such a course might well become the persecutors of Galileo and the other bigots of the fifteenth and sixteenth centuries, but can only be adopted by dreamers in the present age. But, without going these lengths, it is no uncommon thing to find persons earnestly attached to science, and anxious for its promotion, who yet manifest a morbid sensibility on points of this kind,—who exult and applaud when any fact starts up ex-

planatory (as they suppose) of some scriptural allusion, and who feel pained and disappointed when the general course of discovery in any department of science runs wide of the notions with which particular passages in the Bible may have impressed themselves. To persons of such a frame of mind it ought to suffice to remark, on the one hand, that truth can never be opposed to truth, and, on the other, that error is only to be effectually confounded by searching deep and tracing it to its source. Nevertheless, it were much to be wished that such persons, estimable and excellent as they for the most part are, before they throw the weight of their applause or discredit into the scale of scientific opinion on such grounds, would reflect, first, that the credit and respectability of *any* evidence may be destroyed by tampering with its *honesty*; and, secondly, that this very disposition of mind implies a lurking mistrust in its own principles, since the grand and indeed only character of truth is its capability of enduring the test of universal experience, and coming unchanged out of every possible form of *fair* discussion." Discourse on the Study of Natural Philosophy, pp. 6, 7, 8.

ARTICLE II.

MISSIONS TO THE ORIENTAL CHURCHES.

History of the Mission of the American Board of Commissioners for Foreign Missions to the Oriental Churches. By Rev. RUFUS ANDERSON, D. D., LL.D., late Foreign Secretary of the Board, in two volumes. Congregational Publishing Society, Boston, Mass. 1872.

These volumes constitute the second of a series of histories of the different missions that have been carried on by the American Board of Commissioners for Foreign Missions in various parts of the unvangelised world during the present century. The venerable author, now more than three score and ten, was Secretary of that Board for more than forty years, and of consequence, had more to do in founding and shaping their general course than any other man, dead or living. During the earlier periods of these missionary operations, the Presbyterian Church