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BIBLIOTHECA SACRA

ARTICLE I.

PRESENT ASPECTS OF THE RELATIONS BETWEEN SCIENCE AND REVELATION.[1]

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WHAT is called the conflict between science and revelation is largely a mere conflict between certain interpreters of nature and certain interpreters of Scripture. The interpreters of nature are no more infallible than are the interpreters of the Bible. Both are dealing with facts which have to be observed, interpreted, and coördinated. Broadly considered, also, science has as much to do with the facts of revelation as it has with the facts of nature. In all cases we should recognize the distinction between the facts themselves and that orderly arrangement and explanation of them which we call science.

The efforts which are persistently made to reduce physical and spiritual forces to a common denominator are no more successful at the present time than they were in the earlier periods of human history. The attempts to obliterate the distinction between the material and the vital forces of nature, and between the mental and physiological characteristics of man and those of animals, are like the persistent efforts which

[1] Address given at the dedication of New Science Hall of Heidelberg University, Tiffin, Ohio, June 11, 1913.

are made to square the circle or to produce perpetual motion. The argument is never more than that from "gradual approach." But this can never be effective to cover all distances. The attempts to bridge the "abyss" between man and the apes, and the "gulf" which yawns between living and non-living matter, are no more successful than was the attempt a few years ago to bridge the St. Lawrence by a single span. Beyond a certain point all efforts to strengthen the span by adding to its weight weakened rather than strengthened it. This may be illustrated by the limitations which are set to the speed of trotting horses. Fifty years ago the limit was reached at a mile in 2.40 minutes. Recently the distance was covered in 2.04 minutes. But no one argues from this that it will ever be reduced to nothing, or indeed, to much less than two minutes. In the words of the late John Fiske, "the antithesis [between thought and extension] is of God's own making, and no wit of man can undo it."

Mind and matter are not identical. Of this we are conscious in every act of our free wills. On the one hand we regard the physical forces of the universe as bound together by a law of cause and effect. A full knowledge of the effects in nature reveals the whole line of causation through which they have come into existence; while a full knowledge of the physical causes operative in any sphere is equivalent to a full knowledge of results. Not only is the tree known by its fruit, but the fruit is known by the tree. We do not expect to gather grapes from thorns or figs from thistles. But, on the other hand, regarding the actions of the human will, we have no such certain chain of reasoning. A moral motive does not draw like a locomotive. If we know the parentage of a child and of his ancestors, we may predict with some degree of probability the complexion of his countenance, the

color of his hair, and the strength and weakness of the various organs of his body. The leopard cannot change his spots, nor the Ethiopian his skin. But we cannot with any approach to certainty foretell what will be the development of his moral character. For that is determined by his own free will. The child of purest parentage, born into a home of sweetest and most persuasive influences, may, by his own perverse choice, develop into the very incarnation of evil. An Aaron Burr may proceed, and did proceed, from the family of a Jonathan Edwards. A Judas may resist, and did resist, all the sweet influences of his Divine Master, to become a traitor execrated by all the world.

It is important, also, to bear in mind that even in the physical sciences, where cause and effect are commensurate, the finite mind is never able by inference to arrive at absolute certainty; for it can never have a complete knowledge of the causes from which effects are inferred, or of the effects from which causes are inferred. Even the chemist is never absolutely sure that he knows all about the elements which are in his crucible. For example, until 1860 the elements cæsium and rubidium were unknown to chemists. Although it was known that the waters of Dürkheim in Germany had medical virtues which were produced by some unknown cause, it was not till forty tons of the water had been evaporated that there was sufficient residuum to enable Bunsen and Kirchhoff to discover the aforesaid elements. So powerful, however, were these elements, that they exhibited effects, though forming only one-five-millionth part of the medicinal water. The recent discovery of radium is even more remarkable. So rare and so difficult to obtain is this paradoxical element, that a single grain of it is valued at $150,000. By these and similar facts chemists have been taught humility. No longer do they

claim to know all about everything that is in the crucible. But the chemist is more nearly omniscient in his field than is any other man of science.

The astronomer with imperfect implements peers into regions so vast, and deals with dimensions so nearly infinite, that his inferences must be limited to a very narrow circle of time and a very contracted sphere of space. No telescope or timepiece is perfect, and no human observer is infallible. An error by Captain Cook's party in observing the transit of Venus, a hundred or more years ago, led to an error of more than a million miles in computing the distance of the sun. The error arose from the fact that the eyes of different observers vary as to the promptness with which they respond to the impact of light upon the visual nerve. Even now, with all the refinements of modern apparatus, astronomers allow for a probable error of two hundred thousand miles in their estimates of the distance of the sun. The moon, the planets, and a cloud of asteroids are all subject to the influence of unknown forces which disturb the regularity of their movements. The astronomer who would venture to predict, except provisionally, what will happen ten million years from now, would do so at the risk of losing his reputation for sanity.

Geology, though dealing with facts which are nearer at hand, can scarcely give a better account of itself. As a science it deals with the action of past physical forces too numerous, too vast, and too complicated to yield anything but inferences of more or less probability. Especially is this true with regard to the rate at which geological forces have accomplished their results. As a consequence, there are two rival schools in geology, known respectively as "uniformitarians" and "catastrophists." Under the lead of Sir Charles Lyell, whose "Principles of Geology" was published in 1830, the uni-

formitarians have demanded almost an infinite period of time for the accumulation of the sedimentary rocks, and an equal stretch of time for the slow development of the species of plants and animals that are now existing. Five hundred million years was regarded by Lyell as a small portion of geological time, and three hundred million years was thought by Darwin to be a "mere trifle." But in these later days Lord Kelvin, and Darwin's distinguished son, the late George H. Darwin, professor of mathematics in Cambridge, would limit all geologic time to less than fifty million years; while Alfred Russel Wallace, Darwin's great compeer, and Charles D. Walcott, late Director of the United States Geological Survey, would be content with a period of thirty million years. Both are very certain that it cannot be more than twice that length. It is now established beyond all controversy that periods of rapid evolution of geologic forces and of living forms have alternated with numerous periods of relatively quiescent conditions.

A striking illustration of this statement occurred in the floods in the Ohio Valley in the spring of 1913. Since records were kept, a continuous fall in the Ohio Valley of from seven to twelve inches of water over tens of thousands of square miles had not been known to occur. But when such a sheet of water came down in the short space of three days, respect for the Biblical conception of a firmament which divides "the waters which are under the firmament from the waters which are above the firmament" was greatly increased, and, in Biblical phrase, one could speak of the "windows of heaven" being opened, without criticizing the scientific accuracy of the figure. The meaning was plain enough.

A single illustration, drawn from this flood, of the extent of some of the breaks in the "uniformity of nature" will be

instructive. Where the city of Columbus spreads out over the lower terrace of the Scioto River, during the flood a vast sheet of water, a half mile or more in width, and ten or twelve feet in depth, poured over the terrace where floods had never reached before within the memory of man. In one place I saw where the surging current had excavated a hole thirty feet in depth and hundreds of feet in length, throwing up from the bottom bowlders two feet in diameter with the accompanying smaller material, and spreading it out on the level space beyond in a stratified deposit five feet in thickness. The floating of Elisha's axe in the torrent of the Jordan was a small matter compared with the floating of these glacial bowlders.

Speaking of glacial bowlders opens the way to say something further concerning the Glacial period itself and the catastrophes connected with it. Indeed, the Glacial period must be regarded as a world-wide catastrophe which scientific men up to the present time are totally unable to explain. For hundreds of thousands of years during the Tertiary period a warm climate existed over all the land area approaching the North Pole. A subtropical vegetation then flourished in Greenland and Spitzbergen. But climatic changes occurred and progressed until, not many tens of thousands of years ago, the present conditions of Greenland extended down beyond the New England coast, and in Ohio to the vicinity of Cincinnati. Again climatic changes took place which in a comparatively few thousand years drove the ice front back to Alaska on the west coast and to Greenland on the east. So rapidly did these changes occur that a large number of animal species, including the camel, the horse, the elephant, the rhinoceros, the hippopotamus, the megalonyx, and the tapir, became extinct in North America, where they had form-

erly flourished. The climatic changes to which these species were subjected on the Continent were greater and more rapid than they could endure, and so, as far as they were concerned, produced a catastrophe on a gigantic scale.

But the recent floods in the Ohio Valley are small affairs when compared with those which everywhere accompanied the closing stages of the Glacial period. During that period water accumulated in the Salt Lake basin to a depth of a thousand feet, expanding the lake from its present surface of two thousand square miles to an extent of twenty thousand square miles. Reaching this limit, it broke through a dirt dam at the northeastern corner and emptied the upper three hundred and seventy-five feet of this vast body of water into Snake River through the Port Neuf Valley, which is now threaded by an insignificant stream. Gilbert, of the United States Geological Survey, estimates that it would require twenty-five years for a stream as large as Niagara to draw off this body of water; and there is every evidence that for something like that period there was such a stream emptying through this little valley into the broader valley of the Snake River, deluging its lower portions with its sediment-laden currents, and forming deposits calculated to confound and lead astray the believer in the uniformity of nature, whose observations were limited to recent times.

The glacial floods in the Mississippi Valley were even more startling and abnormal. I have elsewhere produced ample evidence to show that in the closing stages of the Glacial period, and indeed while the region was occupied by man, the Missouri River had, during the summer, to dispose of twenty times its present annual flow, and I have presented positive proof that, for a considerable period, floods rising to a height of two hundred feet annually filled the lower part of the val-

ley. Professor Tarr and Dr. von Engeln from long and patient study of the facts make a more startling estimate concerning the Mississippi River; — asserting that, after being joined by the Missouri and the Ohio, it had, during the closing stages of the Glacial period, to dispose of sixty times its present annual flow! Let him who will, try in his imagination to comprehend such facts.

One of the most striking illustrations of the spasmodic manner in which natural forces operate is seen in the behaviour of the Muir Glacier in Alaska. In the twenty-five years following my original survey of the glacier, the front receded seven and a half miles, and the surface was lowered, by melting, seven hundred feet. Thus, in twenty-five years changes in this glacier are known to have taken place far greater than some of less extent in the Alps for which European glacialists demand several thousand years. It is thus that actual observations discredit even the most confident conclusions based on narrow fields of observation.

No, there is no such thing as uniformity in nature. Every day witnesses something new. An infinite variety of natural forces is combining to produce, in the future, results which it is beyond the power of man to foresee, and has been producing in the past a series of effects which man can only dimly infer. Geology is as far as possible from being an exact science.

Still more uncertain are the far-drawn inferences relating to the spread and development of living beings upon the earth. Life is a mystery which science is unable to penetrate. No mere mechanical explanation of life is sufficient. In the well-chosen words of Professor James Y. Simpson, "Life is not matter, nor is it exhausted by the concept of matter. In itself it occupies no space: it has no weight as we know gravity."

No one can predict what particular form the expenditure of living energy will take. For example, "the energy of a living cat flows along paths which are only indirectly determined by outside conditions." No study of these conditions can tell us "just how a cat will jump. . . . The fact that life shows itself always in some specific form would appear to negative completely the possibility of any merely chemical interpretation."

Still more emphatically is this true of the intellectual, the spiritual, and the moral nature of man. History cannot be brought within the dimensions of a physical science. The exalted nature of man opens to him the possibility, yes even the necessity, of intellectual and spiritual communion with his fellows both of the present and of the past, and of receiving direct spiritual influences from the divinity in whose image he is created.

The Christian religion rests on the belief that the Creator has revealed his purposes to man not merely through the diffused light which "lighteth every man which cometh into the world," but through the specific revelations made at various times and places to holy men and prophets. These revelations have been so incorporated into the history of mankind as to become the property of succeeding ages, and serve as the basis for further religious development. The culmination of this line of special revelation of God to man was reached when "the Word became flesh and dwelt among us" in the person of our Lord and Saviour Jesus Christ. It need not offend us that this revelation is said to be supernatural; for man himself in his higher nature is supernatural. As already remarked, the mind of man cannot be brought within the limits of the physical forces of nature. Man, indeed, has a physical nature. He has a body; but, added to

it, there is a spiritual nature which manifests its power in every individual determination of his will. The will power of the locomotive engineer which, according to his choice, directs the opening of the valve to move the massive train forward or backward, weighs nothing and has no length, nor breadth, nor thickness; and so, according to the first law of physics, could impart no motion to a body which possesses all these characteristics. How a thought imparted to an animal can produce movements in the physical world is a mystery which baffles all efforts of science to solve.

The fallibility of scientific men is not properly appreciated by the general public. White's "History of the Warfare of Science with Theology in Christendom" could be easily matched with a history of the civil wars of scientific men. Scientific men themselves have ever interposed the strongest opposition to new discoveries which supplant earlier theories. So far as theologians have joined in this opposition, they have usually taken their cue from contemporary scientific authorities. The most influential opposition to the Copernican system was made by the great astronomer Tycho Brahe and by Lord Bacon, the father of inductive science. The Newtonian theory of gravitation was bitterly opposed during the last part of the seventeenth and the first part of the eighteenth century by those eminent scientific authorities Huyghens, Bernoulli, Cassini, Leibnitz, and nearly all the disciples of Descartes. The Academy of Sciences in Paris, on theoretical grounds, discredited for a whole century the falling of meteorites from the skies. In many other respects this same eminent Society, by its skeptical narrow-mindedness, long hindered progress in modern studies of nature. Harvey's discovery of the circulation of the blood, Jenner's dis-

covery of vaccination, and Mesmer's discovery of animal magnetism were doubted, disputed, and explained away with all sorts of personal abuse by the scientific men of their time.

Not to speak of many other similar controversies which present themselves, we will limit ourselves to the statement of a few mistakes of scientific authorities relative to the antiquity and origin of man. As early as 1826 Rev. J. McEnery, a Roman Catholic priest, discovered in Kent's Hole, near Torquay in Devonshire, England, conclusive evidence of man's association with a large number of extinct animals. Ten or twelve years later Boucher de Perthes found similar evidence in the gravel terraces at Abbeville, in the valley of the Somme in France; but so powerful was the opposition of the eminent men of science, both in France and England, that this abundant mass of evidence could get no recognition until 1859; when theologians like Professor Charles Hodge and Professor William Henry Green were as prompt as the men of science in accepting the facts, and adjusting them to their interpretation of the Bible.

But since that time a constant warfare has waged, not so much between theologians and scientific men as between scientific men themselves, as to the significance of these facts. A certain school of scientific men have constantly exaggerated the estimates of the time which has elapsed since these species associated with man became extinct.

As the deposits associated with man are reckoned to be of glacial origin, it will be proper to give especial attention to the various extravagant estimates which have been widely current concerning the date of that period, but which, if not disproved, have been rendered so doubtful as to be of no scientific value. In 1842, Sir Charles Lyell, after visiting Niagara Falls, stated in a Lowell Institute lecture in Boston that

he believed the recession of the Falls could not have been greater than one foot a year and probably not greater than one foot in three years. As the time occupied in the recession is one of the best chronometers of the Glacial period, this estimate has assumed great importance in subsequent discussions. The distance which the Falls have receded is, in round numbers, seven miles, or 35,000 feet. This would give to the Falls, on the shortest estimate, an age of 35,000 years, or, according to what Lyell called his more probable estimate, an age of more than 100,000 years. But lo, from actual observations and measurements, it is now found that during the last seventy years the actual recession of the Horseshoe Fall has been at the average rate of nearly five feet a year, which would reduce the age to 7,000 years. The only way, therefore, of extending this age is by a circuitous path of reasoning drawn from other considerations of a speculative character.

Not long ago much was made in scientific circles of connecting links between man and apes which had been discovered. The Neanderthal man and the Man of Spy were put forth as connecting links between man and the ape. But later estimates of the Neanderthal skull show its brain capacity to have been larger than that of the average European of the present time, and none of the prehistoric skulls discovered in Europe have had a brain capacity smaller than that possessed by some existing races of men.

Much has also been published in high scientific quarters indorsing the evidence of the existence of Tertiary man. This evidence consisted largely of what seemed to be artificially chipped flints found abundantly in Tertiary strata in Belgium and in gravel deposits in England which were evidently of corresponding age. The most recent investigations, how-

ever, furnish convincing evidence that these chippings are not artificial but natural.

But perhaps the most widely published supposed evidence of Tertiary man was drawn from the *Pithecanthropus erectus* discovered by Dr. Dubois in Java in 1894. The skull was, indeed, a small one, but probably no smaller than that of some of the existing inhabitants of New Britain. The Tertiary age, however, of the deposits in which these remains were found, and of which much has been made, has been positively disproved by investigations which have recently come to light. Since 1906 two expeditions have been sent out from Germany to collect evidence bearing on the geological horizon of these deposits. Upon examination of these collections by Professor Schuster of Munich all the fossil plants are found to be of existing species, so that he concludes that they are not Tertiary but post-Tertiary.

This is sufficient to show that the general public needs to exercise great caution in accepting current statements about "scientific conclusions." There is no body of scientific men authorized, or competent, to give infallible judgments upon scientific theories. The greatest scientific men have oftentimes made the greatest mistakes; while scientific theories which have been held with great unanimity for a long period, have, time and again, been shown to be incorrect even if the theories displacing them have not been able to explain all the facts.

A few months ago the editor of a leading theological journal sent around to a large number of the professors of various sciences in the colleges and universities of the United States circulars asking a postal-card reply to the question "Do you believe in Evolution?" The futility of securing

light by such a process appears at once upon giving attention to the ambiguity which is attached in common use to the word "evolution." An orderly development in the natural world is denied by few. None are more urgent in maintaining it than are those who believe that in the beginning God created the heavens and the earth, and that subsequently he has been ever active in maintaining and directing its movements. But unfortunately there has crept into the word "evolution" an atheistic significance, which has led to much misunderstanding and confusion of thought. The real question regarding evolution with which theology connects itself is, Does the orderly development of the universe exclude the idea that at various times and places increments have been added by the Creator to the natural forces already in existence, and that during the whole course of the development there has been a divinity shaping its ends?

Now there is no logical way of denying the theistic view of the universe, except by making man himself an automaton, and denying that man can, and does, direct the resident forces of nature into new channels, and that he makes combinations that would not arise but for his interference. A house, a painting, a book, an organized commonwealth, none of them springs from the resident forces of nature, and yet they all are included in any reasonable conception which we have of the development of the universe. If one is to include these things in his theory of evolution he should rid the word of its ambiguity, and guard against the atheistic import which has become so generally incorporated into the word.

It is instructive at this point to note the attitude of Darwin's mind with regard to evolution, spontaneous generation, and kindred questions. Evolution was not a favorite word with Mr. Darwin. Indeed he rarely used it. Evolution was

preëminently Herbert Spencer's word, and Darwin had very little respect for Spencer's methods of arriving at conclusions. Writing to Alfred Russel Wallace, upon the subject of spontaneous generation, Darwin says of Mr. Bastian's effort to prove the theory, "I am not convinced, partly, I think, owing to the deductive cast of much of his reasoning; and I know not why, but I never feel convinced by deduction, even in the case of H. Spencer's writings." Again he writes to the same effect in a letter to John Fiske, who was a prominent expounder of Mr. Spencer, "I have long wished to know something about the views of the many great men whose doctrines you give. With the exception of special points I did not even understand H. Spencer's general doctrines; for his style is too hard work for me. . . . I find that my mind is so fixed by the inductive method, that I cannot appreciate deductive reasoning: I must begin with a good body of facts and not from a principle (in which I always suspect some fallacy) and then as much deduction as you please. This may be very narrow-minded; but the result is that such parts of H. Spencer as I have read with care impress my mind with the idea of his inexhaustible wealth of suggestion, but never convince me; and so I find it with others."

Again in a letter to Sir Joseph Hooker in 1866, speaking of Spencer's "Biology," Darwin says, "I have now read the last number of H. Spencer. I do not know whether to think it better than the previous number, but it is wonderfully clever, and I dare say mostly true. I feel rather mean when I read him: I could bear, and rather enjoy feeling that he was twice as ingenious and clever as myself, but when I feel that he is about a dozen times my superior, even in the master art of wriggling, I feel aggrieved. If he had trained himself to observe more, even if at the expense, by the law of

balancement, of some loss of thinking power, he would have been a wonderful man." In another letter to Sir Joseph Hooker, Darwin, speaking of his own theory of Pangenesis by which he would explain all the mysteries of heredity, writes: "H. Spencer says the view is quite different from his (and this is a great relief to me, as I feared to be accused of plagiarism, but utterly failed to be sure what he meant, so thought it safest to give my view as almost the same as his) and he says he is not sure he understands it."

The worst that could be said about Darwin would be to call him an agnostic. He was always careful, however, to say that his opinions were of no special value upon the ultimate questions of philosophy. But Darwin's agnosticism with regard to the question of design in nature impressed his friend and colaborer Asa Gray as unaccountable and surprising. To Darwin's question "If it is not impossible to imagine so many and nice coadaptations as we see in orchids being formed all by a chance blow?" Gray replies, "Yes, perfectly impossible to imagine (and much the same by any number of chance blows). So I turn the question back upon you. Is not the fact that the coadaptations are so nice next to a demonstration against their having been formed by chance blows at all, one or many? Here lies, I suppose, the difference between us. When you bring me up to this point, I feel the cold chill."

Science has no conclusive evidence which debars us from believing that the Creator has, at sundry times and places, injected new forces into the evolving scheme. One of these times was, as we may well believe, when he spake the word and said, "Let the earth bring forth grass, the herb yielding seed, and the fruit tree yielding fruit after his kind, whose seed is in itself, upon the earth: and it was so."

It is true that Huxley, when he thought he had traced the evolution of life through resident forces back to this point, while acknowledging "that at the present moment there is not a shadow of trustworthy direct evidence that abiogenesis [spontaneous generation] does take place, or has taken place, within the period during which the existence of life on the globe is recorded," yet asserted, that "the fact does not in the slightest degree interfere with any conclusion that may be arrived at deductively from other considerations that, at some time or other, abiogenesis [spontaneous generation] must have taken place. If the hypothesis of evolution is true, living matter must have arisen from not-living matter; for by the hypothesis, the condition of the globe was at one time such that living matter could not have existed in it, life being entirely incompatible with the gaseous state."[1] From this it clearly appears that the theory that life originated through spontaneous generation from the preëxistent resident forces of nature is not science at all, but philosophy, and bad philosophy at that.

The "abyss" which separates matter from mind is, if possible, broader and deeper than that separating non-living from living matter. Thought and matter are absolutely incommensurate. The transformation of the motion of physical particles into the sensations of living beings and the intellectual conceptions of the human mind is as deep a mystery as can be found anywhere in the universe. The clearest evidence of creative design and of the Creator's omnipotence is to be found in the power of man's mind to transform the motions in his physical system into the thoughts of his mental vision. And this power was possessed by primitive man as completely as it is by modern man.

[1] Encyclopædia Britannica (9th ed.), vol. iii. p. 689.

In estimating the antiquity of man, evolutionists greatly overestimate the relative advance which man has made in connection with modern discoveries and inventions. Primitive man, who invented language, who learned how to make fire and to chip implements out of flint, who domesticated animals, and invented the arts of spinning and weaving, and, highest of all, the art of conveying his thoughts to others through writing, made the greatest relative advance that has ever been made.

Nor has science done anything to weaken the main argument for the existence of God; for this rests upon none of the uncertainties of science but upon the marvelous facts of human nature which are known and experienced by all men. The Bible is right in assuming that every man knows that God is; and so the ablest thinkers in all ages have rightly assumed that every sane man looks directly from nature up to nature's God. Natural science deals only with secondary causes and makes no legitimate attempts to solve the ultimate mysteries of the universe. The distinguished preacher Robert Hall was correct when, in addressing his audiences in Cambridge, England, he presented and relied for conviction upon the argument for God's existence, drawn from the axiom that every effect must have an adequate cause, by showing that physical facts were but links in a chain of cause and effect which we were tracing upward to a starting-point. The longer the chain the greater its weight, and the greater the demand for a God to support it who was himself an Omnipotent First Cause.

The steam-engine is indeed wonderful, but it is far more wonderful that the food we eat can be transformed into muscular power. The printing press was a wonderful invention, but the original invention of written language was far greater.

The telegraph and the telephone are marvelous mechanical contrivances, but neither is as marvelous as the nervous system through which the impressions of the senses are conveyed to the brain. Wireless telegraphy seems the most surpassing of all wonders because its accomplishment is so recent. But the waves in the ether of space are no more mysterious than those which pulsate through the air and impress the mechanism of the ear. Moreover, all these things are *mechanical.* The click that goes into one end of the telegraph wire comes out a click at the other. The waves that are set in motion in the air and the ether end in simple waves as they began. The wonder of wonders is that these clicks and these waves of sound when transmitted to the brain are transmuted into thoughts. Up to that point the steps are regular and natural. But there an infinite leap is made, passing from the material to the immaterial. This transcendent leap every self-conscious person takes every moment of his waking life. We do not have to ascend to the heights above nor descend to the depths below to find the works of an Omnipotent Creator. They are in the very constitution of our composite nature of body and soul.

It is not to be denied that theologians have, from time to time, sympathized more or less with the obstructive views of their contemporary scientific coadjutors who have set up an unreasonable opposition to the introduction of new facts in science, and new conceptions concerning the course of nature. But it is equally true that, as a result of a clearer understanding both of the facts of revelation and the phenomena of the natural world, the warfare between science and revelation ceases and the supposed reasons for it disappear.

The true way to secure peace between the interpreters of the Bible and the interpreters of the physical phenomena of

the universe is to increase the knowledge of both parties. Unbelief is more often the daughter of ignorance than of knowledge. The Bible is a more reasonable book than many of the devotees of science are accustomed to assume. Much misunderstanding would be avoided if they would but study it more carefully and comprehensively.

Respecting both the natural sciences and the Bible, we may well say,

> "There are more things in heaven and earth, Horatio,
> Than are dreamed of in your philosophy."

The more fully one studies the complicated forces of nature, the easier is it for him to believe in the wonderful stories of the Bible. The African chief who discredited his English visitors, when he was told that in England water oftentimes became so solid that an elephant could walk on it without wetting his feet, only displayed a slightly greater degree of ignorance than is exhibited when many of the stories of the Bible are discredited because they contradict the knowledge of nature derived from our limited experience. Here, as elsewhere,

> "A little learning is a dangerous thing;
> Drink deep, or taste not the Pierian spring:
> There shallow draughts intoxicate the brain,
> And drinking largely sobers us again."

Instead of increasing the difficulty of believing in the main Biblical narratives, modern science has, in a large number of instances, diminished the difficulty by revealing the power of the secondary causes employed to bring about the events. The Noachian flood retains all its grandeur, while losing much of its incredibility after studying the facts of the Glacial period. The plagues of Egypt are relieved from many of their supposed improbabilities when we become familiar

with the natural history of the Nile. The crossing of the Red Sea, the destruction of Sodom and Gomorrah, the passage of the Jordan by Joshua, the falling of the walls of Jericho, the whirlwind which translated Elijah, the opening of the waters for Elisha, the swimming of the borrowed axe, the destruction of Sennacherib's host, and numerous narratives which have been the subject of much skepticism and ridicule, are readily believed when one understands what science teaches us concerning the physical forces involved in the production of the phenomena, and at the same time admits the existence of a God who foresees, even if he does not in fact foreordain, all events.

Thus has it ever come about that the great centers of theological study have also been centers where the physical universe, which has been well compared to the "garment of deity," has been studied with greatest assiduity and greatest success. Therefore it is that the friends of Heidelberg University rejoice in the generous contribution which has resulted in this commodious, well equipped, and beautiful temple of science. Within its walls it is to be hoped that faith and science will sit down side by side, and while extending far the realm of science will permit its devotees still without fear to walk by faith in the realm of the unseen and the eternal, and to follow the torch of revelation towards those realms of ultimate truth to which science may never attain.