

# The Scientific Revolution and Today's Apologetic

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The quickening of the mental pulse which came with the Renaissance was destined to bring in its wake changes more drastic than most of its significant characters themselves realized. Outstanding among its effects was that of introducing the secular element into the complexion of society, which had for centuries subsumed all phases of thought and activity under the general caption of "sacred."

It is easy to over-generalize our concept of medieval life. On one hand, this tendency takes the form of denoting the medieval period the "Dark Ages." Against this, some have given undue emphasis to the enlightening and integrating influence of the Church upon the pattern of life in the Middle Ages. It is, however, essential to grasp one central feature of Medievalism: that the entire social structure was of a religious character. Thus, intellectual life, as well as social and economic life, was dominated by the ecclesiastical system.

A derivative of this state of affairs was that the processes of investigation were forced into subservience to ecclesiastical dogmatism. Meanwhile, Scholasticism had unduly "streamlined" the body of knowledge. Certain views of the universe had been associated with dogma, and the interrelations had become so intimate that to attack the one was to imperil the status of the other. As we shall observe, the stage was set for a scene marked by confusion and tragedies.<sup>1</sup>

Thus the Renaissance precipitated intellectual conflict. It would be incorrect, however, to assume that the conflict originated in this period. For,

as Pupin points out,

The conflict is very old, as old as Christian theology. It was during its early history a part, only, of the general conflict between ecclesiastical autocracy and individualism. Ecclesiastical reformation was the first manifestation of this historic conflict, and its success paved the way for the assertion of the inherent individualism in all activities of the Christian civilization, and particularly in those of science.<sup>2</sup>

Various reasons have been advanced for the disintegration of Scholasticism. Some attribute it to the collapse of the medieval social structure, due to the rise of nationalism, etc. Others find the reason for it in the decline of the Papacy, while yet others feel that Scholasticism was exhausted as a philosophy.<sup>3</sup> De Wulf feels, however, that "the sterility of the period in question is to be laid at the doors of the philosophers, rather than of the philosophy."<sup>4</sup>

In any case, the Renaissance brought the new inquiry into conflict with a system which had been untrained in the scientific method,<sup>5</sup> and which had preferred to proceed *a priori*. And when a system has decided what must in the nature of things be, without regard to the inductive method, the intrusion of the *a posteriori* method, and the findings thereby

<sup>1</sup> Maritain, Jacques: "Science, Philosophy and Faith" in *Science, Philosophy and Religion a Symposium*. New York: Conference on Science, Philosophy and Religion, Inc., 1941, p. 162.

<sup>2</sup> Pupin, M.: *The New Reformation*. New York: Scribners, 1928, p. 3.

<sup>3</sup> Rickaby, J.: *Scholasticism*, p. 65.

<sup>4</sup> De Wulf, M.: *Scholastic Philosophy*. London: Longmans 1910, p. 145.

<sup>5</sup> Hardwick, J. C.: *Religion and Science*. London: SPCK, p. 12.

obtained, may well prove explosive.

There will necessarily be a margin of error in determining the exact effects of the Scientific Revolution upon orthodox Christianity, due to the impossibility of ascertaining precisely what orthodoxy was at any given period. This study seeks, however, to determine the general manner in which the impact of modern scientific thinking was felt by historic Christianity, and the type of response which it elicited. These findings will themselves be treated as a guide toward a possible constructive apologetic for our times.

### I.

Before considering in detail the more recent aspects of the question in hand, we need to notice several facts in connection with the rise of orthodox Protestantism. Not only is it necessary to observe the attitude of early Reformed Christianity toward the science of its day; but also some attention must be given to the relation of orthodoxy to medieval Christianity.

To discover the true character of any religious system, it is necessary first to determine its ultimate datum, and its fundamental seat of authority. An investigation of orthodoxy, then, must largely follow these lines.

To ascertain the norm in the religion of the Middle Ages it is necessary only to look at the Church. While nominally the Scriptures were considered normative, their status as such was, in the last analysis, determined by the Church. Therefore, what the Church by its councils declared to be authoritative was for the Middle Ages the *regula*.

This gave to the processes of the medieval mind a unity which is not always easy for us to understand.<sup>6</sup> Not that there was absolute uniformity within Scholasticism; for within the

system there existed the two parallel trends, the Voluntaristic and the Intellectualistic, represented in general by the Franciscan and Dominican schools respectively.<sup>7</sup> Yet there was an essential agreement, in that both held that knowledge was a unit, and that nothing in science could properly conflict with revealed truth. Implicit in this intellectual monism was the principle, that many of the basic tenets of Revelation could be deduced from the constitution of things by the unaided Reason, and that "Faith in the incomprehensible confers upon rational knowledge its perfection and crowning completion."<sup>8</sup>

The extent to which Scholasticism was decadent is a matter of opinion. In his *First Critique*, Kant attacks its basic premises, and challenges the ability of "pure reason" to accomplish the feats attributed to it by the Schoolmen.<sup>9</sup> De Wulf differs, both in his analysis of the reasons for its decline, and in his estimate of the extent of its collapse.<sup>10</sup>

But the fact remains that the Scientific Revolution challenged the very foundation of the Scholastic system, "this *principle* of the convergence of philosophy and the sciences, as understood in the Middle Ages. . . ."<sup>11</sup> For a corollary of the new thought was a separation of religious from scientific thought. Thus, the mediaeval concept of the "unity and solidarity [of] the various departments of human knowledge"<sup>12</sup> was challenged.

However decadent, Scholasticism was far from dead. Under attack it became the more vehement. It was

<sup>7</sup> Taylor, Henry O.: *Mediaeval Mind*, Vol. II, p. 402, 441, 515.

<sup>8</sup> Gilson, Étienne: *Philosophy of St. Thomas Aquinas*, Cambridge: Heffer, 1924, pp. 22f.

<sup>9</sup> Kant, Immanuel: *Critique of Pure Reason*, (Tr. by Max Müller), pp. 477ff.

<sup>10</sup> De Wulf, M.: *op. cit.* pp. 145ff.

<sup>11</sup> *Ibid.*, p. 86.

<sup>12</sup> *Ibid.*, pp. 86f.

<sup>6</sup> Russell, Bertrand: *Religion and Science*, New York: Holt, 1935, pp. 8f.

here that the prime blunder of the Schoolmen became apparent. This "unity and solidarity" had manifested itself in previous blunders of the most grave sort. By *a priori* methods, the Scholastics had decided upon and given official sanctity to views concerning the natural world which could not bear the application of the new principles of the scientific method. The very unity of their system became here its chief weakness, for the intimate association of mediaeval "science" with religious creed meant that to attack one was to attack the other. Thus the Church found herself obliged to defend scientific views no longer tenable; or else to modify her pronouncements upon the basic unity of all knowledge in some manner consistent with saving of face.

The Protestant Reformation served further to attack the fundamental unity of the post-medieval structure. Formerly orthodoxy was to be equated with Romanism; but after the Diet of Worms, a 'normative' Protestantism began to express itself — frequently at variance with the decrees of Rome. If we could at this moment, for the first time, be reading the account of the Reformation, with the subject of this paper in the background of our thoughts, we would probably ask ourselves: "Will the new movement avoid the blunders of Rome here? Will it be content to suspend judgment concerning the conclusions of the New Science, and proceed with (at least) reserve, and without gearing its doctrinal content to any particular world view?"

Unhappily such was not to be the case. "It is said," writes De Wulf, "that Melancthon and Cremonini refused to look at the heavens through a telescope."<sup>13</sup> Bertrand Russell points out that "At first the Protestants were

almost more bitter against him [Copernicus] than were the Catholics. Luther said that 'people give ear to an upstart astrologer who strove to show that the earth revolves, not the heavens or the firmament, the sun and the moon . . . .' Melancthon was equally emphatic; so was Calvin . . . ."<sup>14</sup>

It is here that the essentially conservative nature of religion becomes apparent. Unfortunately this conservatism frequently got the Church into difficulties. In an excess of caution, Protestantism threatened to stand as a barrier to scientific progress.

After Luther the question, What was orthodoxy? became increasingly difficult to answer. The supremacy of Rome was challenged by great strength of numbers; likewise the fragmentation of Protestantism made it for a time exceedingly unclear what was really normative. In time, however, there was formulated a platform of basic doctrine upon which the major branches of reformed Christianity were in agreement. By the advent of the modern scientific revolution there existed what may with correctness be called Orthodox Protestantism.

The unhappy fact remains that extreme positions with respect to the new science were common to Romanism and early Protestantism. At this point the Reformation represented a far less distinct break with Rome than many historians have thought. Consciously or unconsciously, the Reformed branches of the Church relinquished with difficulty and reluctance the position that orthodoxy was yet geared to medieval views of the universe. Happily the young Protestant movement lacked a strongly centralized hierarchical organization by which its intolerance in these matters could be implemented.

<sup>13</sup> De Wulf, M.: *Op. Cit.*, p. 150.

<sup>14</sup> Russell, *op. cit.* pp. 20f.

## II.

In studying the changes which the Scientific Revolution made in the temperament of the time, it is necessary to confine the discussion to a few of the many points of tension between it and orthodox Christianity. In this paper, attention shall be given to four of these, which may prove to be representative, and which may allow the tentative adoption of some conclusions.

Before proceeding to the specific grounds of conflict it is necessary to observe that the Scientific Revolution was marked by a resuscitation of the Scientific Method, the "universally adopted method of observation, experiment and calculation."<sup>15</sup> This had been discouraged by the Church, in favor of a dogmatic 'science' in which questions were settled by an application of a proof text, or by the preponderance of Patristic opinion.

The scientific spirit attempted a revival under Roger Bacon<sup>16</sup> whose discoveries anticipated the invention of the telescope; but he came in conflict with authority, and was summarily treated as a handler of Black Art. Two mental attitudes had collided head-on.

Probably the proponents of the new method were over-sanguine concerning its validity and applicability. Boutroux points out that

Avec Descartes et surtout avec Kant, l'esprit scientifique paraissent déterminé, d'une manière immuable, par les conditions logiques de la science et par la nature de l'esprit humain . . . chez Kant, c'était l'affirmation *a priori* d'une liaison nécessaire des phénomènes entre eux, dans l'espace et dans le temps . . . et les succès qu'il a obtenus ont pu lui faire croire qu'il était désormais en possession de la forme éternelle, et absolue de la vérité. Mais cette opinion a dû se modifier, lorsque l'on a examiné de plus près la manière dont se fait la science les conditions de son développement et de sa certitude.<sup>17</sup>

The pioneers of the scientific method (i. e. the men who began to re-employ the method long before used by Archimedes),<sup>18</sup> needed philosophical weapons which were not available until the opening of the arsenal of the critical philosophy. During the period between Roger Bacon and Descartes, science labored under great handicaps. The period was one of ferment; and in this interval neither Protestantism nor Catholicism were able to neglect the rising tide of scientific progress; and the conflict raged largely about the revolutionary achievements in the field of physical science.

The controversy raised by the publication of the Copernican theory can be better understood by those of us who live removed from it by several centuries than it could have been seen by the contemporaries of the unhappy astronomer. Again it appears unfortunate that the Ptolemaic system was attributed with theological significance. For what in theology really demanded that the earth be considered the center of the universe, or that the human race be the only race of created intelligences, (apart from the angels)?

But the unfortunate fact remained; and to maintain the supposed integrity of her dogma, Rome tended to make life miserable for Copernicus, Galileo and Kepler. Protestantism, while less drastic in her treatment of these men, was greatly to be blamed for her intolerant and reactionary attitude toward the new learning. Even Luther, who should have had sufficient personal experience with the intolerant methods of Rome, himself called Copernicus an "upstart astrologer who sets his own authority above that of the Sacred Scriptures."<sup>19</sup>

The inconsistency of the Protestant policy of intolerance is emphasized by

<sup>15</sup> Pupin, M.: *Op. cit.*, p. 5.

<sup>16</sup> Taylor, H. O.: *Op. cit.*, Vol. II 484ff.

<sup>17</sup> Boutroux, Émile: *Science et Religion*, Paris: E. Flammarion, 1908, p. 349.

<sup>18</sup> Snyder, Carl: *New Conceptions in Science*, New York: Harper, 1903 pp. 14f.

<sup>19</sup> Pupin, M.: *Op. cit.*, p. 27.

John Wm. Draper in his *History of the Conflict Between Religion and Science*. For the Lutheran principle of private interpretation of Scripture demanded at least a toleration of private opinion in reading the Book of Nature. But,

The generation that immediately followed the Reformation may perhaps be excused for not comprehending the full significance of their cardinal principle . . . . When Calvin caused Servetus to be burnt, he was animated, not by the principles of the Reformation, but by those of Catholicism, from which he had not been able to emancipate himself completely. And when the clergy of influential Protestant Confessions have stigmatized the investigators of Nature as infidels and atheists, the same may be said.<sup>20</sup>

In fairness, it must be said that with Newton, the European temper was modified.<sup>21</sup> Or should we say with S. R. Calthrop,

But there came a time when it was no longer possible for the word of God in astronomy to be thus bound. Resolute hands fenced off astronomy from the fields of the Church. The Pope's bulls could no longer eat the Tree of Knowledge down; and lo! the infinite Heavens were laid bare to the wondering gaze of man!<sup>22</sup> —

The critical philosophy of Descartes and his successors attempted to deal with the dualism between science and religion, which appeared in the light of conflict to be opposites. This attempt at solution was continued by his successors, and in spite of repeated restatements, this problem arises in our own day. Descartes' contribution here seems, however, to be a landmark in the history of thought. Says Boutroux:

Descartes pose en principe l'indépendance mutuelle de la religion et de la science. La science a son domaine: la nature; son objet; l'appropriation

<sup>20</sup> Draper, John W.: *History of Conflict Between Religion and Science*. New York: Appleton, 1895, pp. 363f.

<sup>21</sup> Barnes, E. W.: *Scientific Theory and Religion*, Cambridge University Press, 1925, p. 312.

<sup>22</sup> Calthrop, S. R.: *Religion and Science* (Pamphlet from *Religion and Science* in Harvard Library), p. 2.

tion des forces naturelles; ses instruments: les mathématiques et l'expérience. La religion concerne les destinées supra-terrestres de l'âme, et repose sur un certain nombre de croyance, d'ailleurs très simple et sans rapport avec les subtilités de la théologie scolastique. Science et religion ne peuvent se gêner ni se dominer l'une l'autre, parce que, dans leur développement normal et légitime, elles ne se rencontrent pas. Le temps ne doit plus revenir où, comme au Moyen Age, la théologie imposait à la philosophie les conclusions que celle-ci devait démontrer et les principes d'où elle devait partir. Science et religion sont, l'une et l'autre autonomes.<sup>23</sup>

But the application of the new philosophy to Scholasticism came to full flower in the work of Kant. His First Critique shook the strongholds of Scholastic reasoning, and declared new limits to the function of speculative reason.

Although then reason in its purely speculative application is utterly insufficient for this great undertaking, namely, to prove the existence of a Supreme Being it has nevertheless this great advantage of being able to *correct* our knowledge of it, if it can be acquired from elsewhere, to make it consistent with itself and every intelligible view, and to purify it from everything incompatible with the concept of an original Being, and from all admixture of empirical limitation.<sup>24</sup>

Thus, the function of reason is reduced to a negatively critical one; it is useful only as a corrective and as a means of clarification of theological truth, if such *can* be acquired by some other avenue. If Kant be correct in this, the faculty by which the Schoolmen thought to discover many of the essential truths of the Christian system, independent of Revelation, is reduced to a non-definitive rôle. And whether Kant's conclusion was correct, it is evident that the influence of the Kantian tradition has prevailed in subsequent theological circles, so that Protestantism has followed some course other than that of the Schoolmen.

The Renaissance brought also a revolution in the field of Ethics.

<sup>23</sup> Boutroux, Émile: *Op. cit.*, p. 14.

<sup>24</sup> Kant, I.: *Op. cit.*, p. 489.

Whereas the ethical systems of Christendom had previously been objectivistic and authoritarian, there came now a trend which sought to locate the criteria elsewhere. Space forbids a detailed analysis of the changes wrought in this field; it may fairly be said, however, that the trend was toward a subjectivistic and relativistic ethic, with the ultimate datum grounded elsewhere than in an inerrant Revelation.<sup>25</sup> This was obviously a challenge to the Church, a challenge which could not but result in a clash. This was not long in coming; and the systems of Spinoza and Hobbes were shortly the targets of attack by all who professed the name of orthodoxy.<sup>26</sup>

Conventional orthodoxy set the stage for a yet more serious clash, in its identification of itself with a view of creation which allowed insufficient place for the notion of progress. With the epoch-making endeavors of Sir Isaac Newton, the father of the science of dynamics,<sup>27</sup> there was not only a revolution in the field of physics, but a reaction against a static Biology in favor of a biology oriented in a dynamic setting.

The early scientists, being usually in the current of orthodoxy, faced the problem of maintaining their religious views, and at the same time pursuing their theories and investigation. One means by which this was accomplished was by the method of 'insulating' the mind from the religious faculties. New scientific hypotheses were held which were, it is true, at variance with their religious views; but by varied means these men attempted to retain both views, by a compartmentalization of knowledge. But this was a temporary expedient; and with the rise of toleration, due to a division of authority in the post-Reformation Church which made impossible a unified persecution

of erring thinkers, scientists made more bold to profess heretical views. This tendency was restrained until the time of Kant<sup>28</sup> after whom the dynamic conceptions of the universe found more overt expression.

The newer conceptions found a ready expression in the science of Geology. From the pages of the rocks, it was clearly read that the Ussherian date of creation was out of the question, if by creation we mean absolute creation, i. e., *ex nihilo*. Moreover, phenomena were discovered which could in no sense be accounted for by an event of the proportions of the Noachian deluge.

The conflict took the form of a denial by theologians of the correctness of the conclusions reached by the geologists. Some undertook to do this systematically; others, too sluggish to reason, resorted to a denunciation of geologists as infidels. Cowper sums up the eighteenth century theological estimate of geology, thus:

Some drill and bore  
The solid earth, and, from the strata there,  
Extract a register by which they prove  
That He who made it, and revealed its date  
To Moses was mistaken in its age.<sup>29</sup>

In a certain sense the controversy over the findings of the geologists prefaced the larger controversy which was precipitated by the publication of the *Origin of Species* in 1859. In this volume the emphasis upon process assumed a most concrete form. Darwin's theory was pursued, with variations, by Lamarck and later by DeVries. Since 1859, scholars have differed greatly upon the mechanism of the development of species; but there has been a large measure of unanimity upon the central premise--that all life has developed from a few simple and primaeval forms. Thus the idea of progress is the permanent

<sup>25</sup> Hardwick, John C.: *Op. cit.*, p. 23.

<sup>26</sup> *Ibid.*, p. 33.

<sup>27</sup> Pupin, M.: *Op. cit.*, pp. 44ff.

<sup>28</sup> Russell, Bertrand: *Op. cit.*, p. 54.

<sup>29</sup> Rice, Wm. N.: *Christian Faith in an Age of Science*. New York: Armstrong, 1903. p. 54.

heritage of the scientific world from the evolutionary hypothesis. Although Darwinism, Lamarckianism, DeVriesianism and Buffonianism be found inadequate, the scientists are (with very few exceptions) one in feeling that in process is to be found the answer to the riddle of the species.<sup>30</sup>

The clash between religion and science was far from being a local event; it was a characteristic of several centuries. And the antecedents of the controversy over evolution are to be found well back of the nineteenth century. But with the Darwinian phase, the collision ceased to be in the nature of a side-swipe, and assumed the character of a 'head-on'.

In the case of the evolutionary conflict, the parties thereto represented basic misunderstandings. On the one hand, the forces of orthodox Christianity identified their cause with a pattern of interpretation which was so rigid and standardized as to permit of no entrance of the ideas of process and progress. On the other hand, science was trying her wings, and frequently entered fields outside of her strict domain.<sup>31</sup>

Upon both sides the predictions were dire. Orthodoxy saw in the new science only impiety and impudence. Science began likewise to toll the death-knell of Christianity, making much of the antithesis between evolution and the record in Genesis, and asserting dogmatically that the Christian system must stand or fall with the integrity of a certain interpretation of the early chapters of Genesis.

A brief history of the conflict may be in place here. In the earliest years following 1859, the attack was chiefly upon Darwin himself, and specifically upon his teaching. Theologians pic-

tured the theory in as revolting a manner as possible, in the hope of provoking an emotional reaction against it. In the '70s, the emphasis was upon the impious and atheistic influence of evolution, while in the '80s, the emphasis was chiefly upon the subject of the evolution of man, and upon the religious and ethical implications thereof.<sup>32</sup>

Beginning with 1890, there followed the irenic period, in which there was a serious attempt upon the part of some, notably Henry Ward Beecher and Henry Drummond, to reconcile orthodox Christianity with evolution, these men following in general the method of demonstrating that evolution was the method by which the Almighty built His world. These men elaborated the work of a much earlier scholar, Andrew P. Peabody of Harvard, who in his *Ely Lectures* (1874) attempted a compromise.<sup>33</sup>

A more level head was to be found in Borden P. Bowne, who in his *Philosophy of Theism* declared that much of the vituperous conflict was between the "magazine scientist" and the "panicky Christian".<sup>34</sup>

Beecher and Drummond were made the subjects of a volley of invectives, the import of which was that they represented a traitorous movement from within Christianity. Whatever their final motive, they did anticipate a current within Christianity which has persisted; and which has no doubt made contribution to the present interpretations of evolution which stress its creative aspect, rather than the details of its mechanism.<sup>35</sup>

But there were blunders on both sides; whereas the theologians were driven to extreme and dire predictions, the evolutionists also turned to ex-

<sup>32</sup> Roberts, W. H.: *Reaction of American Protestantism to Darwinian Philosophy*, p. 39.

<sup>33</sup> *Ibid.*, p. 11.

<sup>34</sup> Bowne, B. P.: *Philosophy of Theism*, p. 1f.

<sup>35</sup> Hardwick, J. C.: *Op. cit.*, p. 121.

<sup>30</sup> Lane, H. H.: *Evolution and the Christian Faith*. Princeton University Press, 1923. p. 25f.

<sup>31</sup> *Ibid.*, p. 173.

treme positions. T. H. Huxley took pains to minimize the difference between man and the brutes, with special disparagement of the superiority of the former in intellectual powers.<sup>36</sup> With this a more recent evolutionist, Henri Bergson, agrees in his estimate of animal instinct as superior to reasoned intelligence.

Dadson likewise states: "Between man and dog, though the latter cannot use vocal speech, there is real converse. Among the moral faculties in man, what is there that the dog does not show in some degree?"<sup>37</sup> Haeckel has, in the opinion of some, stretched the truth in his table of embryological similarities between man and several of the animals. His admission that "six or eight per cent" of his drawings were purposely changed, which appeared in the *Berliner Volkszeitung*, Dec. 29, 1908<sup>38</sup> does not increase confidence in his conclusions. Others laid undue stress upon the physical details involved in the question, as for example upon the presence of anatomical similarities between man and the brutes, the presence of vestigial organs in the human body, etc.<sup>39</sup>

Theological extremists foresaw that the acceptance of the evolutionary hypothesis spelled the death of Christianity. Some of the scientists made rejoinder that they felt it might be even so. Under the pressure of controversy, both friend and foe grasped at straws, each to prove his favorite position, and to manifest the supposed-thinness of that of his opponent. Evolution was caricatured; Christian theology was parodied. In this clash, the true spirit of both parties concerned was in danger of being lost: in Christianity, the spirit of tolerance

and charity; in science, the spirit of caution and objectivity.<sup>40</sup>

Typical of the blunders of the conflict was that which occurred when eminent physicists and biologists made public announcements that scientific findings of more recent date have tended to disprove materialism, and to re-establish the truths of religion.<sup>41</sup> Bertrand Russell criticizes this tendency thus:

The statements of the scientists have as a rule been somewhat tentative and indefinite, but the theologians have seized upon them and the newspapers in turn have reported the more sensational accounts of the theologians, so that the general public has derived the impression that physics confirms practically the whole of the Book of Genesis.<sup>42</sup>

Russell has a point here. Although there has, in general, been a tendency away from materialism, yet tentative remarks of scientists are easily capable of misinterpretation by those whose zeal is doubled and whose scholarship is halved. Such material is, as a rule, not well handled by newspapers, whose reporters may fail to reproduce information already badly handled by dilettantes at either religion or science.

Yet more objectionable were the sensational offers made by would-be theologians, suggesting a pecuniary reward to the person finding an error in the Bible, etc. etc. In a few cases these reached the courts, where the fiasco was rendered the more conspicuous.

But it must not be thought that none saw the real issue and the significance thereof. It is a characteristic of human nature, that in the heat of controversy, one party or both may 'lean over backward'. It is difficult to

<sup>36</sup> Lane, H. H.: *Op. cit.* p. 66.

<sup>37</sup> Dadson, A. J.: *Evolution and Its Bearing on Religion*, p. 99.

<sup>38</sup> Bole, S. J.: *The Modern Triangle*, Los Angeles: Biola, 1926. p. 103.

<sup>39</sup> Lane, H. H.: *Op. cit.*, p. 59ff.

<sup>40</sup> See *Congregationalist*, XXIV (July 26, 1882) 250; *Advance*, XVII, 480; *Standard*, XXXI, 1; *Interior*, Nov. 27, 1884, p. 4.

<sup>41</sup> Hardwick, J. C.: *Op. cit.*, p. 111f.

<sup>42</sup> Russell, Bertrand: *The Scientific Outlook*. New York: Norton, 1931. p. 101.



say which group in this controversy was the worse offender. Nevertheless, it became apparent that *some* of the conclusions of the scientific revolution could be harmonized with an interpretation of Christianity based upon the essential integrity of her Revelation; and that a large number of them were absolutely incapable of harmony therewith. But the number of clear heads was far too small.

### III.

In spite of the grim forebodings on both sides Christianity has survived the scientific revolution. It must not be thought, however, that the controversy between Christianity and Science is over, nor that the last word has been said on either side. And to undertake any synthesis in an article of this size is next to impossible, save by examining the present *modus vivendi*, and attempting some possible suggestions.

Among the hopeful signs is that of a decrease in the tendency upon the part of both theologians and scientists to hand down judgments *ex cathedra* upon matters outside their respective provinces. Again, some are willing to suspend judgment upon those matters for which the evidence is not yet all in. There is reason, however, to feel that the tendency to compartmentalize the problem is still in existence. Statements are frequently released by scientists, disclaiming any interest in the question. Some apparently wish to be scientific most of the time, and to shut off the remaining section of their existence under the label of 'religion'.<sup>48</sup>

But before possible solutions are suggested, it should be pointed out that the solutions which were put forward in the past were not necessarily final. Some felt that by 1920 the final chapter in the controversy over organ-

ic evolution had been written; but the recrudescence of the conflict in the Scopes Case indicated that some such controversies have remarkable vitality. So long as the findings of science are tentative, it is to be expected that the historic points of tension will occasionally be touched, and controversies which have been slumbering will again be heard.

It would be unwarranted optimism which would declare that in the field of controversy all of the issues are yet properly stated. It is true that the Copernican view of the universe is entrenched throughout Christendom, save perhaps in a small island about Zion, Illinois. The critical philosophy which once seemed a threat to orthodoxy has now been taken for granted (whether for good or for ill) by a large part of Christian thought. The general trend appears today to be that toward a reconciliation of differences. Whether this is a significant tendency toward a possible goal, or whether it be merely an expression of a desire for a resolution of dissonance, it is not at this moment possible to decide.

Before suggesting possible bases for harmony, it may be helpful to consider an attempted solution, which is considered by some to be a Protestant backwash. We refer to the Dialectical Theology, chief among whose leaders is the eminent Karl Barth, whose method is that of cutting the Gordian Knot rather than untying it. Barth's desire appears to be to salvage out of the admitted chaos which science and criticism have left of the older theological structure a type of evangelicalism which short-circuits around controverted questions (especially those touching the historical accuracy of the Bible), and finds refuge in the theory that whatever may be said of the scientific accuracy of the Scriptures, they are 'the Word of God'.

In an age such as this present one in Europe, such an attempt may for

<sup>48</sup> Lane, H. H.: *Op. cit.*, p. 185.

a period be successful. But it is a question whether, when times become more nearly normal again, and when thoughtful men on the Continent may hope again, there may not be a demand for some solution to the question which will do better justice to the requirements of the rational processes. In any event, not all of Christendom is in Europe; and reports indicate that even there men will seek some more stable solution to the problem.

Before seeking a more constructive basis for harmony, we must determine what type of religion a Christianity which is satisfactory for the twentieth century must be. Among possible types there are two general groupings under which most forms of the interpretation of the Christian system can be placed. One is the doctrinal or dogmatic type, in which an objective authority is held to constitute the *sine qua non* of the system. This involves a large measure of belief in the historical accuracy of the Christian Scriptures. The other is the 'value' type. In general this approach seeks to reduce dogmatic content to a minimum, and reveres the Bible chiefly as it tends toward the production and conservation of value. It is this latter form which accords with the dynamic and functional trends in modern scientific thinking.

It is at once obvious that the former type will require more of apologetic effort, and much more attention to questions of textual criticism and exegesis. Moreover the standard of orthodoxy must be sufficiently flexible to permit, within its doctrinal canons, an interpretation in harmony with the *tested* findings of a true science. Possibly the greatest single need at this point is a disciplining of science itself, until theories incapable of proof are treated *as such* and not made the subject of confessional treatment.

From the viewpoint of Christianity, there must be an intelligent apparatus for the interpretation of Scriptures.

There will likewise be need for patience and for willingness to reserve judgment, pending further knowledge. That tendency toward panic which has so frequently been the *bête noire* of theologians must be eliminated. There will of necessity be a willingness to suspend judgment on *both* sides, and a realization that the conclusions of science are frequently tentative. Theology, instead of riding to the conflict upon the *chevaux du bataille* of intolerance and dogmatism, must be willing to speak with at least some measure of reserve.

If such an attempt be made by some branches of Protestantism (as doubtless will from time to time be the case), there will be a need for a type of thorough scholarship which has been too largely lacking in orthodox circles. It must be said that the Catholics have frequently been ahead of us at this point. Again, their scholars are in some respects at an advantage over Protestants, in that the Catholic view of authority makes it feasible to make some concessions which Protestants with their emphasis upon the final authority of Scripture might not see fit to make. Some Catholics have sought to effect a synthesis by making limited concessions. Illustrative of the case in point is that of Leslie J. Walker, S. J., who is examining the question of evolution as it relates to the theology of the Roman Church.

It would not affect any vital dogma of the Church were it proved that Adam and Eve had ape-like parents, provided the whole human race, which fell and was redeemed, be descended from Adam and Eve; and this is always possible even if we adopt an evolutionary hypothesis. What matters is the origin and nature of the soul, its indivisibility, its immortality, its power of transcending the phenomenal world. . . . On that point Christianity cannot yield. . . . Apply evolution to the origin of the human soul and morality goes, and with it goes all hope for the future alike in this world and in the world to come.\*

\* *Science and Revelation*. London: Burns Oates Washburn Ltd., 1932, p. 74.

This quotation indicates that its author is willing to make concessions in the matter of changes which have occurred in the physical structure in the world of nature. He draws the line at which the Catholic view of evolution must stop in the light of the his view of the Church as the locus of authority. It is doubtful whether Protestantism can or should attack the problem in exactly this manner. Dr. Walker has, however, made a brave attempt to harmonize a rather literal interpretation of the Bible with that which the generality of modern scientific men accept as given.

There are yet Protestants who are profoundly of the conviction that such a harmonization can be effected in many, perhaps all, of the fields of conflict, so that a working basis with science may be reached in a manner consistent with an orthodoxy which recognizes the full inspiration and final authority of the Scriptures. Most of these are increasingly of the conviction that such an agreement is impossible save upon the basis of some radical revision of many of the positions now held to be fundamental to the 'modern' view. In other words, there must be a repudiation of many aspects of contemporary naturalism before science can be harmonized with any sort of religious world-view, to say nothing of the Christian world-view.

The problem would, of course, be greatly simplified if we should determine to define Christianity in terms of a 'religion of value' rather than in terms of an authoritative Revelation. In his *New Reformation*, Michael Pupin points out that the outstanding achievement of the past two decades has been the newer interpretation of the universe in terms of value—by a shift of interest "from physical to spiritual realities."<sup>45</sup> A value religion

will escape, for example, the folly of such a controversy as raged over the findings of Copernicus or Galileo. Values in human experience are in no sense affected by the question of whether the earth alone among the 'heavenly bodies' be inhabited, or whether its place in the universe be conspicuous or humble. Our relation to the realm of values may not be conditioned by our relations to space-time, and the realization of value has but one *sine qua non*, human freedom.<sup>46</sup>

To this view science as science can shed no light upon standards of values. Therefore the scientist should confine himself to a pursuit of the pure field of science. If he choose to speak as a religious man, let it be apart from a scientific *ex cathedra*. In turn the religious man would be urged to keep within his province. As a religious man, let his quest be for the essential purpose of the world, and for a knowledge of what self-determining spirits ought to be and do. Further, since evolution cannot account for values, the truth or falsity of the doctrine of evolution cannot affect the chief concern of religion, namely the pursuit of value. If one conscious and free being is worth more than the entire physical system, how can any scientific discovery within the realm of the physical permanently or essentially affect a system whose core and center is the achievement and conservation of value?

This is, on the surface at least, a tempting view; and it is not surprising that some have sought to thus redefine Christianity. Certainly such a view is much easier of defense than has been the historic Christian system. Is it necessarily true, however, that simplicity and ease of defense are proper criteria for the truth of a system? After all, Christianity has

<sup>45</sup> p. 257.

<sup>46</sup> Brightman, Edgar S.: *A Philosophy of Ideals*, New York: Holt, 1928, p. 85.

been historically understood to embody, not only a 'science of value' but also a distinctive and characteristic *Weltanschauung*. If this be correct, then it is no simple value-system, but a system with sweeping presuppositions and vast consequences for the Christian's understanding of the entire field of thought.

James Orr has observed that it is precisely at the point of its basing religion upon definite, positive teaching that Christianity distinguishes itself from other religions. Just as a religion based upon the feelings is vague and unreliable, so also religion based merely upon value-judgments implies an untenable epistemological dualism. Such a sundering of religious and theoretic knowledge strikes at the view held by historic Christianity that the Christian religion affirms the objective truth of the ideas which it entertains. As W. R. Sorley points out, "The Christian who thinks cannot keep God in his soul and leave him out of his world."<sup>45</sup> In other words, Christianity is not indifferent to the character of its ideas; and the latitudinarian view of the followers of the 'value' type of Christianity toward the Scriptures is likely to share the general instability of those views which cleave the world into two realms, the realm of nature and the realm of value, and which leave each to cultivate its own field.

The alternative to this view is an apologetic which frankly accepts the Christian Scriptures as in a qualitatively unique sense divinely inspired, and hence as regulative for human life and human thought. To hold this view is to stake out an immense task of defense. We chance to live in a period in human history in which the spirit of the time is uncongenial to

the basic insights of the Scriptures at the points of God, creation, man, history, and human destiny. In the midst of this condition it is heartening to know that Christianity is still, in the historic sense, very much alive.' In spite of the conclusion reached by Andrew Dickson White in his monumental work, *A History of the Warfare of Science With Theology*, that orthodox Christianity was (as early as 1896) vanquished by the might of the so-called modern movement, it is by no means certain that the realities of modern scientific discovery demand an abandonment of the view of the historical accuracy of the Christian Scriptures, properly interpreted.

Several facts should be borne in mind by the individual who, heartened by the survival of historic Christianity, purposes both to believe and to propagate it. First, the task will be, not easy but difficult. The nature of the realities with which the Bible deals is such that its interpretation may prove a task much more difficult than would appear at first sight. Second, there will be need for a much greater amount of diligent and painstaking work than has frequently been thought necessary. There is need for an army of men of the stature and patience of Randolph S. Foster and J. Gresham Machen in this field of endeavor. Third, there will be need for a wholesome degree of suspension of judgment in those cases in which full information is not yet obtainable, combined with a recognition that in some instances absolute evidence will not be obtainable.

Wholesome will be the effect of remembering that while the scientific revolution profoundly affected Christendom, it has not definitively altered the character of Christianity. Scientific theories have their day and then die. Moreover, scientific men show some evidence of becoming more disciplined in the matter of the announce-

<sup>45</sup> *The Christian View of God and the World*, Edinburgh: A. Elliott, 1893, p. 23.

<sup>46</sup> *Moral Values and the Idea of God*, Cambridge University Press, 1903, p. 479.

ments of their hypotheses. Therefore this is no moment for panic among the adherents of the historic Christian system. Doubtless aggressive and affirmative declaration of the Christian Gospel is the first line of offense. Behind this line is needed an army of sober thinkers who dare to challenge the theories of our so-called scientific mentality with a reverent and carefully wrought assertion of the "thus saith the Lord" at the points of the crucial issues in the understanding of the world.

In conclusion let it be said that conflicts between religion and science have sometimes been the outcome of

tension in peripheral and incidental matters. There is need for a recognition of the identity and character of the real issues. There may be a conflict between the facts of science and the theories of religion; there may be a conflict between the theories of science and the facts of religion; there may be conflict between the theories of science and the theories of religion; but there can be no conflict between the facts of science and the facts of religion. Never has the need been greater than now for discrimination between facts and theories, or for a recognition that God is God of the *one world* of science and religion.

#### THE PRESIDENT'S LETTER (Concluded from page 1)

Dean William D. Turkington reports that the advance registrations for the fall quarter, opening in September, are in excess of any previous year at this time. We are deeply indebted to those who pray for the seminary daily for the increasing growth of the institution. We have no greater assets than the prayers of our friends.

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#### ALUMNI LETTER (Concluded from page 20)

be knit together in spiritual fellowship, praying constantly for the welfare of two organizations brought together in inseparable bonds. We can be on the alert to seek out and guide young men and women with the divine call upon their lives, to the place where we know they will develop into the warm-hearted zealous servants of God, intellectually equipped to face a world that desperately needs the message of Asbury Seminary. Our influence and recommendations can carry great weight in making and holding new friends for an ever increasing flow of scholarship gifts which will enable these young persons to pursue their training.

Inseparably connected, let us pray that the bonds of union will be cemented even closer. Join us in the second meeting of the Alumni Association on May 31st.

REX M. DIXON, *First Vice-President*  
*Asbury Theological Seminary Alumni Association,*  
 Detroit, Michigan