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Where science and history meet: some fresh challenges to the Christian faith?*

Introduction

Once upon a time, in 17th century England, a certain cleric wrote of his adventures in crossing the high mountains of Europe. He was not impressed by their beauty or their grandeur, as we might have expected, but rather by their wildness, – “confusion” as he called it. He wrote:

There is nothing doth more awaken our thoughts or excite our minds to enquire into the causes of such things, than the actual view of them; as I have had experience myself when it was my fortune to cross the Alps and Apennine mountains; for the sight of those wild, vast and indigested heaps of stones and earth did so deeply strike my fancy, that I was not easy till I could give myself some tolerable account how that confusion came in Nature.¹

The author, Thomas Burnet, was reading into nature what he saw in the revolutionary society around him. He, like us, was living through stirring times. He too was looking for a millennium, though his had nothing to do with the calendar. For, as Norman Cohn has written, “the pursuit of the millennium” has often occurred in history.² Burnet was writing in 1684, 35 years after the execution of King Charles I. Within five years the “Glorious Revolution” would have come. For Burnet, at that apocalyptic time, nature and history were as one. So questions about “how that confusion came in nature” were equally applicable to the stormy history through which he was living.

For us, the “pursuit of the millennium” may take many forms: a millennium Dome whose failure speaks as eloquently as that of Israel’s golden calf; self-congratulatory TV reviews of a channel’s programmes before 2000; apocalyptic predictions of imminent doom through cosmic events, global warming or nuclear weapons in the “wrong” hands; and so on. Yet it cannot be coincidental that science and history are again converging. They weren’t always like that: school children before World War II were told “history is about kings and science is about things”. Thirty years ago it would have been unthinkable that

*This paper is based on a Public Lecture at the Victoria Institute after its AGM on 15 May, 2000. It is also being published in their journal *Faith and Thought*.

1 T. Burnet, *The Theory of the Earth*, London, 1684, p.140.

2 N. Cohn, *The Pursuit of the Millennium: Revolutionary Millenarians and Mystical Anarchists of the Middle Ages*, Oxford University Press, Oxford, 1990.

journals like *Nature*, *New Scientist* or *Science* should have articles on the applications of scientific research to matters of history. Even less probable would have been the dedication of prime TV time to a “history zone”, let alone to programmes where scientific methods were applied to solving historical conundrums. These range from innumerable searches for the lost Ark to DNA analyses of tissues from the Pharaohs in order to test for extensive inbreeding. Today the evidence is all around us that science and history cannot legitimately be separated. And, as for Burnet, their meeting raises critical questions of theological belief.

There seem to be two obvious ways in which interaction is occurring all the time: first, when science is applied to historical data, and, second, when historical methods are applied to scientific progress. We shall look briefly at these in turn. In each case, however, the field is so vast that the merest summaries can be given and it is recommended that the original papers be consulted wherever possible.

1. When science is applied to historical data

Geology

That geology is one of the chief historical sciences is obvious. Much has been written on this aspect of it and little need be added here, partly because it is so well-known, and partly because earth sciences relate more to pre-history than to history.

On the question of the age of the earth events really began to move towards the end of the 18th century, culminating in Hutton’s famous declaration that there is “no vestige of a beginning, no prospect of an end”. Taking further this concept of an extremely long earth history Charles Lyell, in the next century, advanced in a uniquely extreme form the theory of uniformitarianism where all changes to the surface of the globe took place at the very slow rates we currently observe. Catastrophes like earthquakes were not denied but assigned a relatively minor place in shaping the scenery of today. This, of course, gave to Darwin all the time he needed for his species to evolve, and caused much pain to those earnest souls who believed in a “young earth”, ostensibly on the basis of Scripture.

Efforts were made to escape the dilemma caused by a literal interpretation of the Genesis creation accounts, none more ingenious than the gap theory advanced by the famous Scottish evangelical leader, Thomas Chalmers. This supposed a vast time gap between the first two verses of Genesis. For all its ingenuity it has long been shown to be untenable on linguistic and exegetical grounds, as well as on the absence of geological evidence. Had it not been sanctified by Scofield, and incorporated into “his” Bible, it would probably have long since been forgotten.

Closely related to the age of the earth was its form as we see it today. Put crudely, was it due to volcanoes or floods, to fire or water? Proponents of the latter view in the early 19th century were appropriately called “diluvialists”, though it was only later that the Flood of Noah was invoked as the major example of diluvialist shaping of the earth. This was quickly repudiated by Buckland, Sedgwick and other founders of geological science, but it rumbled on for a century and more, and was revived in spectacular form in the context of late-20th century American fundamentalism. A great deal has been written about it and more heat than light has been generated. However serious geological science seems to be in little doubt that the form of the earth derives from far more than an inundation in the Near East almost within historic time.

The study of the origins of man is the work of that branch of geological science known as palaeontology (as well as evolutionary biology). Here science has almost the only contribution to make to this part of our history (or pre-history). The current consensus view seems to be that a tool-making *homo erectus* may be located in Africa at least 1.5 m years ago, and in China 800,000 years ago. But there are still huge gaps in the fossil record (*e.g.* of the ancestor of the chimp-human-gorilla) and science has much to learn as well as teach.³ Scientific questions about the “real Adam” remain to be solved, but they would appear to pose little threat to a mature theological belief.⁴

Volcanology

Scientific interest in volcanoes continues to increase, and several studies of past volcanic activity have thrown new light on wider aspects of ancient history. Only one illustration can be given, the dates when Joseph flourished in Egypt. The phenomenon of a seven-year famine is not likely to be attributable to a failure of the Nile to irrigate the flood-plain for that length of time, and instead the famine in Egypt could be attributed to climatic disturbances in the 17th century BC. Occurrence of large acidity spikes in ice-cores from Greenland may be taken in conjunction with evidence from dendrochronology (tree-ring measurements), where exceptionally narrow tree ring growth can be located to within almost a year: 1628 BC. These seem to correspond to a massive eruption of the volcano Santorini (Thera) in the Aegean at almost exactly this time. It was an immense eruption with 30 km³ of rock ejected, and ash found in an area of over 2m. km². The outfall of dust, the lowering of air temperatures, and the huge volume of acid rain could well account for a 7-year famine in Egypt and the surrounding area. If so, it occurred in the reign of one of the Hyksos dynasty, and the Biblical account of Joseph gains credibility as a true narrative.⁵

3 *Science*, 24 May, 2000, p.2132; 3 March, 2000, p.1566.

4 Allan Day, *Science and Christian Belief*, 1998, 10, 115-143.

5 C. J. Humphreys and R. S. White, *Science and Christian Belief*, 1995, 7, 151-162.

Archaeology

In so far as it has developed its own internal methodology this subject must surely rank as a science. Sophisticated methods of dating from pottery fragments have been supplemented by radiocarbon dating, a technique first used in 1949 which has been much refined, and its limitations have been more accurately understood. It measures the ratio $^{14}\text{C}/^{12}\text{C}$ in organic material obtained from historical sources. One of its most spectacular – if trivial – results has been the debunking of the 1st century origin of the Turin Shroud; in a similar way it has been applied to fragments of the “True Cross”. One illustration of its use in archaeology must suffice. At Tel Rehov, S. of the Sea of Galilee, some extensive remains have been conventionally dated to an Egyptian raid just after Solomon’s death (c.931 BC). Recently some have argued that the great fortresses and palaces were actually 100 or more years later, in which case these alleged relics of Solomon’s military might may be spurious. Indeed the very existence of that monarch has been disputed. However an Israeli archaeologist, Amihai Mazar, has applied radiocarbon dating to burnt seeds and to a wooden beam, and concluded that the older view is correct.⁶

In view of the extensive coverage by expert writers elsewhere in this journal I confine myself to a recent observation that like other sciences, archaeology has had its fads and whims, and has emerged through four important phases:

In the 1930s and 1940s archaeological findings seemed generally favourable to Biblical accounts. The names of Sir Frederic Kenyon and Sir Charles Marston spring to mind, and excavations seemed not to deny but even to affirm the historicity of the flood, Abraham and other figures. The “biblical archaeology” developed by William Albright before and after the War was usually conducted by Christian scholars, and often had an apologetic function until about the mid-20th century.

In the 1950s and 1960s archaeology often acquired a nationalistic function. The state of Israel had been established in 1948, and Jewish archaeologists were keen to show Israel’s origins in Palestine. Whether or not their conclusions were valid their enterprise was wholly proper, for no science can be conducted without presuppositions (even prejudice, some would say) and scientific research has often had an extra “non-scientific” function as in religious or political apologetics.

In the 1970s and 1980s there was much less overt concern for religious or political ends. This was a time for “rational thought”, uncluttered by metaphysical assumptions and dedicated to using the best and most modern techniques. Its advocates were sometimes styled “Biblical minimalists”, the movement coming to a head in 1992 with Philip Davies’ book *In search of “Ancient Israel”*.⁷ It queries the existence of David and Solomon, and asserts the Bible

6 M. Balter, *Science*, 2000, 287, 7 Jan., p.32.

7 Philip Davies, *In Search of “Ancient Israel”*, Sheffield University Press, Sheffield, 1992.

has introduced an unacceptable bias into archaeological theory.

By the mid-1990s an onlooker could be forgiven for being totally confused and concluding that here is a classical example of a science subject to a multitude of external pressures that actually affect its conclusions. At the heart of the matter is a question as to whether Biblical texts have any value in the witness box. The fact is that, for many areas of research, they are almost all we've got. But not all would take them seriously. Until these storms have abated it might seem unlikely that the Christian church has much to hope for – or much to fear – from archaeological work in the Near East. But things are beginning to change. In a provocative but far-reaching review one recent commentator asserts that “many archaeologists say the minimalists have already gone too far”, adding that “now, despite years of trying to keep the Bible at arm's length, archaeologists find themselves on the other side of the argument, accused by a new school of biblical scholars of having become biased by the holy book”.⁸

Astronomy

There is space to mention only briefly some remarkable work on Biblical events by Colin Humphreys, Chairman of Christians in Science. On the date of the crucifixion he has provided a recalculation of the Jewish calendar using modern techniques in order to determine the date when the new crescent moon was first visible. If the “moon turning to blood” represents a lunar eclipse it then becomes possible to date the first Good Friday to 3 April, 33 AD.⁹ A further piece of research relates to the date of Jesus' birth. An early suggestion (Origen) that the “star of Bethlehem” was a comet of 5 BC had been rejected because comets were usually supposed to herald bad news. This was shown to be not always the case. Chinese records report comets in 4, 5 and 12 BC. The first and last [Halley's] were ruled out by contemporary events (the dates of Herod's death and Tiberius' reign respectively). Hence the Bethlehem “star” could be the comet of 5 BC. The Magi's expedition could then have been triggered by the triple conjunction of Saturn and Jupiter known to have occurred in 7 BC, followed by their close massing with Mars in 6 BC. These and much other data have led to the proposal that Jesus was born in the spring of 5 BC. The author adds: “It seems best to consider as a working hypothesis that the [Biblical] report is correct, and to investigate whether any astronomical phenomenon exists which fits the report”.¹⁰ This admittedly Christian comment is a far cry from the “Biblical minimalism” of some archaeologists!

Seismology

Earthquakes along the Jericho fault on the Jordan plain have been recorded

8 M. Balter, *Science*, 2000, 287, 7 Jan., pp.28-30.

9 C. J. Humphreys and W. G. Waddington, *Nature*, 1983, 308, 743-746.

10 C. J. Humphreys, *Science and Christian Belief*, 1993, 5, 83-101.

since 117 BC. They have probably been responsible for many incidents recorded in the Old Testament before that. Examples include blocking of the mountain cleft in Jerusalem in c.760 BC (Zech. 14: 4-5.), the collapse of Jericho c.1000 BC (Josh. 6), the crossing of Jordan (Josh. 3: 15-16), and the doom of Sodom and Gomorrah c.2000 BC (Gen. 19 and 20), possibly now engulfed under the Dead Sea. Once again we have another reversal of “Biblical minimalism”, so that now the OT is used to locate seismic events.¹¹ It is beginning to look as though not only may science serve history, but that history (in the form of Biblical records) may come to be of service to science. A similar sentiment was expressed in the unlikely context of a paper on marine engineering.

Engineering

In 1955 a paper was given by Sir William Currie to the Institute of Naval Architects, dealing with past and future trends in liner design. Of crucial importance to a ship are its “form coefficients”, i.e. the ratios length/breadth and breadth/depth. Considering two ocean-going liners the *Marmora* (1903) and the *Arcadia* (1954), the author showed that the later liner has ratios approaching those of Noah’s Ark. He concluded, “It is interesting to note that as we learn more about ships and the sea, we find an inevitable return to the knowledge imparted to us by that master shipbuilder, Noah, who received his specifications from the heavens”.¹² This opinion, which has not been widely reported, is yet a further example of [Biblical] history being at the very least of some relevance to the practice and application of science.

Such a conclusion leads naturally to an inspection of what happens when historical methods are applied not so much to specific sciences as to scientific progress in general.

2. When historical methods are applied to scientific progress

To practising scientists the idea that science “progresses” is almost self-evident. Yet a historian must be free to question the inexorability of that or any other trend and, even when it is shown to have happened, will want to know the possible reasons. Much research has been done on the subject which is, indeed, a central interest of the history of science. Not only may such enquiries lead us to some useful lessons for the present, but they will also help to disclose the true historical nature of the phenomenon of “science progress”. Several compelling theses have been proposed and three of them will be briefly considered now.¹³

11 A. Nur, *New Scientist*, 1991, 6 July, 45-48.

12 W. Currie, *Qu. Trans Inst. Naval Architects*, 1955, 97, 309-330 (313).

13 An extended treatment of these theses may be found in the author’s *Cross-currents: Interactions between Science and Faith*, IVP, Leicester, 1983, and its reprint (Christian Impact, London, 1995); also in J. H. Brooke, *Science and Religion: some Historical Perspectives*, Cambridge University Press, Cambridge, 1991.

The Puritanism thesis

A theory advanced in 1938 by the American sociologist Robert Merton connected the emergence of science in the 17th century with the rise of Protestantism in general. In particular that specific form of Protestant religion known as Puritanism was identified as being specially favourable to the science then emerging. Thus a high proportion of Puritans (not merely Protestants) in the membership of the early Royal Society in England has enabled Merton to argue that Puritan attitudes “did much to encourage” its growth.¹⁴

Criticism has mainly come on two grounds. First the almost exclusive claims for Protestantism have had to be modified in the light of significant scientific work by Roman Catholics, as Copernicus, Galileo, and many later figures, especially in France. They cannot be ignored. Nevertheless, despite the preponderance of Catholics in France, the ratio of Catholics to Protestants in the Académie des Sciences between 1666 and 1885 was 18:80. There does seem to be a correlation between prominence in science and religious allegiance.

The other main objection to Merton’s thesis resides in the difficulty of defining a “Puritan”. On one hand a person with that title is sometimes regarded as a kind of ascetic fundamentalist, while on the other he may be considered rather as a dangerous political radical. Many difficulties disappear if Puritanism is considered theologically rather than politically. From this point of view a Puritan will hold strongly to the teaching of the Bible as opposed to that of church or tradition, but may not necessarily support the Parliamentary cause in the English revolution. He might even be a “moderate Anglican”.

If modern day sceptics are right, and there is no unequivocal proof that science was actively encouraged by Puritan theology, it may still be true that both may have been the outcome of a common cause or causes, including new movements of social and economic change and of a libertarian philosophy. However this may be, a general correlation seems inescapable in the 1600s between the promotion of science and a strongly Biblical theology.

Some, however, would go much further than this, positing an explicit causal relationship between science and Puritanism, and arguing that the latter “caused” the former. One of the strongest advocates of this “hard” form of the Merton thesis has been the Dutch historian of science Reijer Hooykaas, notably in his momentous work *Religion and the rise of modern science*.¹⁵ Whereas it was once customary to see science as a product of our Greek inheritance, liberated from its bondage to religion at the Renaissance, Hooykaas now proposes a view that is its polar opposite. Science may be understood far better as an off-

14 Some of the best recent critiques may be found in D. N. Livingstone, D. G. Hart and M. A. Noll, (eds.) *Evangelicals and Science in Historical Perspective*, Oxford University Press, New York, 1999, especially J. Morgan, “The Puritan thesis revisited” (pp.43-74), and E. B. Davis, “Christianity and early modern science: the Foster thesis reconsidered” (pp.75-95).

15 R. Hooykaas, *Religion and the Rise of Modern Science*, Scottish Academic Press, Edinburgh, 1972.

spring of that Biblical theology which was rediscovered at the Reformation. On this view Greek philosophy may be seen as an inhibiting force for 1500 years, and its displacement by a Biblical theology of both nature and work at last permitted the rise of experimental science.

Despite much recent criticism, serious evidence exists in support of this thesis. Many well-known scientific figures as Francis Bacon, Robert Boyle and Isaac Newton declared that their science was theologically inspired and lived their lives accordingly. More indirect, though still impressive, evidence exists in several points of remarkable congruity between Biblical theology and the emerging credo of science.

At the root of the so-called “scientific revolution” lay what Hooykaas called the “demythologisation of nature”, and others have called its “mechanisation”. The traditional idea, endemic in cultures as far removed as mediaeval Europe and the ancient world of the Near East, was that nature, or “the world” was alive in some sense, an animate or even divine being. This “vulgarly received notion of nature” was exposed with devastating candour and logic by Boyle whose science was soaked in theology derived from the Bible. He saw, as did many of his contemporaries, that if “nature” is evacuated of all divinity, that it is not to be identified with God but seen as a creation by him, then it can become quite properly an object of study, manipulation and experiment. Such views were entirely consonant with the teaching of both Old and New Testaments.

Another idea that is consistent with the broad stream of Reformation thinking is that nature works in a lawlike manner and is not erratic or (in principle) unpredictable. So students of nature like Descartes, Boyle and Newton began to speak of laws impressed by God on nature. As A. N. Whitehead later quipped, men looked for laws when they recognised the existence of a law-giver. None of our modern concerns with indeterminacy, randomness and chaos theory is relevant to the historical point that a law-like universe *at the time that it emerged* had a strong theological underpinning.

Science, of course, can only discover its own laws as people do experiments. However it had been the view of many Greeks in the ancient world that to descend to manual activity, and so to get dirty hands, was socially unacceptable (unless you happened to be a slave). It could even be said to be impious if your universe was part of God. So when Francis Bacon urged “men to sell their books, and to build furnaces” he was becoming the spokesman for a radically new experimental method. Not inhibited by Greek shibboleths he and others could cite widespread approval of manual techniques for mining, refining and testing in parts of the Old Testament.

Two other aspects of the religious impetus to science may be briefly mentioned. One was the Biblical exhortation to see the heavens and earth as manifesting the glory of their Creator. If Kepler felt that in his astronomy he was thinking God’s thoughts after him, he proclaimed that “in the works of Thy

hands have I exulted”, a theme taken up strongly in Calvinistic theology at about this time. Finally, there was perceived to be a Biblical mandate to exert “dominion” over nature. This broadened the motivation for scientific work still further, “for the glory of God and the relief of man’s estate”, in the famous declaration of Francis Bacon. As Hooykaas wrote, “The Biblical conception of nature liberated man from the naturalistic bonds of Greek religiosity and philosophy and gave a religious sanction to the development of technology.”

Declarations in the 17th and 18th centuries connecting science and Biblical beliefs are far too numerous for them to be dismissed as mere rhetoric. It has been said that Hooykaas, like Merton, underestimates the numbers of Roman Catholic contributions to the new science. Copernicus is perhaps the most widely quoted example of a Catholic man of science, yet we must not forget the astronomer’s other cultural roots, not least the influence of his Lutheran assistant Rheticus, and the liberal legacies of Erasmus within his own church. At that time Roman Catholic attitudes towards nature varied considerably. Exceptions to the Hooykaas thesis unquestionably exist, but they should not conceal the large number of cases where it appears to be substantially correct. The debt of science to Protestantism generally is immense.¹⁶

The dominion thesis

There is little doubt that Christian theology has been a major formative influence on modern science. In recent years some have expressed the opinion that this has not always been in the best interests of the world, amongst them the American historian Lynn White in 1966/7. He has provided us with a further thesis, that much of the damage to our environment springs from a misuse of science and technology for which “Christianity bears a huge burden of guilt”.¹⁷ The problem lies, he says, in the “realisation of the Christian dogma of man’s transcendence of, and rightful mastery over, nature”. He sees the remedy as a return, not to the primitive Christianity of the New Testament, but to an animistic world like that of St Francis of Assisi, who saw sun, moon, earth and its inhabitants as brothers. We must love nature rather than exploit it (which is how he saw the Biblical call to “dominion”).

However we may view its theology or ontology of nature we cannot escape the fact that the White thesis is a quite specific historical hypothesis and therefore assessable only by use of the best historical techniques to examine the evidence. The result of such enquiries is not encouraging. It seems that few, if any, of the pioneers of modern science actually held this particular view of exploiting nature, nor did their colleagues in Reformation theology. John Calvin explicitly repudiated it, as did William Derham, a widely-read writer of natu-

16 A classic exposition is J. Dillenberger, *Protestant Thought and Natural Science: A Historical Interpretation*, Collins, London, 1961; for a much more recent analysis see P. Harrison, *The Bible, Protestantism and the Rise of Natural Science*, Cambridge University Press, Cambridge, 1998.

17 L. White, *Science*, 1967, 155, 1203-1207.

ral theology in the 18th century. They, and many others, argued that the Biblical “dominion” should be interpreted as “responsible stewardship”, not irresponsible plunder.

A further blow to the White thesis comes from the simple fact that, historically, immense environmental damage has occurred in places where Christianity could not possibly be held responsible. Examples range from the wholesale deforestation in Mediterranean lands BC, through the extinction of species in Asian forests, to the fetid pollution of the Ganges and the polluted air in modern inner-city Tokyo. Recent work on the dire effects of urbanisation, agropastoralism and animal extinction, has shown the conspicuous absence of a theological agenda to drive them.¹⁸ In fact recent calls for a human conquest of nature have come from Marxist rather than the Christian voices.¹⁹

As a historical generalisation, the Lynn White thesis stands largely discredited.

The conflict thesis

This thesis is much older than the other two.²⁰ It is also much better known. Essentially it states that science and religion have been for centuries in a state of perpetual conflict and that, eventually, science will vanquish religion. Although one of its most vocal advocates was the Victorian naturalist T. H. Huxley, he had many allies in the late 19th century and no one individual should claim the credit (or the blame). Its promotion was greatly assisted by two books, by Draper²¹ and White²². Though they date from the late 19th century they achieved enormous circulation and are still in print.

In essence it is argued that where scientific conclusions have been challenged by the church the challenge is usually unsuccessful and the ecclesiastical authorities have been forced into an eventual retreat. This is what allegedly happened to Galileo in the 17th century and to Darwin nearly 250 years later. Many more examples were unearthed by Victorian writers, with greatly varying degrees of credibility.

Despite a brave showing by its defenders the thesis has faced considerable difficulties. For example, it is hard to reconcile with the massive evidence for a powerful alliance between science and Christianity since at least the 17th century. How could they at the same time be in mortal conflict? Moreover a detailed examination of the relatively minor cases urged in the conflict litera-

18 C. L. Redman, *The human role in environmental disaster*, Univ. Arizona Press, Tucson, 1999.

19 C. A. Russell, *The Earth, Humanity and God*, UCL Press, London, 1994.

20 C. A. Russell, “The conflict of science and religion”, in G. B. Ferngren (ed.), *The history of science and religion in the Western tradition: an Encyclopedia*, Garland Publishing, New York, 2000, pp.12-16.

21 J. W. Draper, *History of the conflict between religion and science*, London, 1875.

22 A. D. White, *A history of the warfare of science with theology in Christendom*, London, 1896.

ture reveals that many were badly documented with respect to original sources. In the event some have been shown to be greatly exaggerated, while others are quite simply apocryphal.

The cases of Galileo and Darwin have received much better investigation. These “martyrs to science” (as the conflict-mongers would sometimes call them) were indeed assailed by organised religion and, in different ways, they suffered from that experience. However they seem to have been relatively isolated cases of genuine “conflict” and are a standing warning to historians not to generalise on the basis of a few, if notable, examples. In the case of Galileo his persecution owed much to power struggles within the church that had nothing whatever to do with astronomy. Darwin’s dilemma must be seen in the light of a range of other social forces, from the rise of religious scepticism in German theology to a different set of power struggles, those in the deeply divided society of industrial Britain.

Today the Draper and White manifestos of “conflict” are universally discredited as serious works of historical scholarship. They are rather to be seen as highly partisan tracts reflecting the tensions existing in the experience of the authors. Draper had become deeply disenchanted with the Roman Catholic church, partly on account of some family experiences and partly for its recent declaration of papal infallibility. White was President of one of the first non-sectarian colleges in the USA (Cornell) and had been strongly opposed by certain members of the religious establishment. Each had reason to oppose the organised church, and their attempts to discredit it by allegations of conflict with upright and incorruptible “science” must be seen as that, not history but myth.

Despite strenuous efforts by historians of science in the last thirty years the now discredited conflict thesis has shown remarkable resilience. It is the staple fare of much popular writing and broadcasting and is probably the standard view of the average man-in-the-street. If one asks how such a tendentious myth could have become so entrenched in Western culture we need to recall the plight of English science in the last 40 years of Victoria’s reign. By comparison with Germany it was under-funded by government and inadequately supported by secondary education. With the general public it was fairly unpopular for a variety of reasons and was crying out for recognition and support. It had no chance of occupying a leading place in English culture so Thomas Henry Huxley and some close allies determined on a course of action. They would undermine the privileged position of the Anglican church as leader of English culture and put science in its place. A detailed strategy was worked out, of which one element was propagation of what we would call a “conflict thesis”. If the church was always portrayed as the loser in its eternal battle with science, its cultural leadership or hegemony would be seriously undermined. Using the books of Draper and White, the undoubted discomfort of many Christians over evolution, and a network of like-minded men of science, the proponents of “conflict” would do all in their power to ensure that the conflict thesis was accepted

as a self-evident truth. They succeeded in creating a legend that has remained largely unquestioned, at least by the general public and the less responsible parts of the media until our own day.²³ Good historical scholarship has never been more important.

Conclusion

From the few examples given I hope it is clear that where science and history do come into contact the implications for Christian belief can sometimes be momentous. Where science purports to speak about history, – even remote history – it is important to listen, even though at first sight the findings may not seem agreeable to the Christian faith. This is why there may be a challenge to the faith, compelling it to face up to findings of science, but with a critical eye. Science is never final, even when it speaks of the age of earth, the origins of mankind and so on. But it is a God-given tool for humanity to use wisely, and never more so than when issues of faith may be involved. Equally, however, one may gain encouragement from many findings, though again with circumspection. It is always incumbent upon Christians to use Scripture wisely, and scientific light thrown upon history may well help us to do that.

When history looks at science, moreover, there may be similar benefit. To appreciate the strengths and weaknesses of the three historical theses mentioned above can considerably clarify our theological thinking. To know something of individual scientists may deliver one from falling into many of the traps awaiting the unwary. It is not wise, for example, to portray Galileo as physically ill-treated by the Roman Catholic Church,²⁴ or Isaac Newton as a paragon of Christian orthodoxy,²⁵ or Darwin as a late convert to the faith,²⁶ or his views as being unacceptable to all evangelicals,²⁷ or even to portray the “scriptural geologists” as a bunch of early 19th century cranks and half-wits.²⁸ Because none of these assertions is true they can have no place in an apologetic presented with honesty and integrity.

One contemporary challenge to the Christian faith is thus to use the findings of history of science in a clear-sighted and responsible way, though that often entails a good deal of time and trouble. Another challenge is to do everything possible to expose the dangers inherent in a “Biblical minimalism”, and to encourage scientific investigation into historical data supplied by Scripture, contemporary records or archaeology. When our “creationist” friends declare

23 C. A. Russell, *Science and Christian Belief*, 1989, 1, 3-26.

24 M. A. Finocchiaro, *The Galileo Affair: a Documentary History*, University of California Press, Berkeley, 1989.

25 F. E. Manuel, *The Religion of Isaac Newton*, Clarendon Press Oxford, 1974.

26 J. R. Moore, *The Darwin Legend*, Baker Books, Grand Rapids, 1994.

27 D. N. Livingstone, *Darwin's Forgotten Defenders*, Eerdmans, Grand Rapids, 1987.

28 T. Mortenson, “British Scriptural Geologists in the first half of the Nineteenth Century”, PhD thesis, Coventry, 1996.

that this is exactly what they are doing we need gently to remind them how the wider issues of literary genre and cultural context need also to be taken into account. This is never more true than when considering the Old Testament stories of creation, but of course it applies to all scientific studies of records of past events.²⁹

The latest convergence of science and history on TV or in the newspapers may also have another effect. It may well remind us that, as Burnet felt, nature and history are not truly separable. If all truth is one that is hardly surprising. As we glimpse something of their interactions we may see something greater than either can provide on its own: a vision of the sovereign Creator by whose will they, and we, continue to exist.

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²⁹ On scientific issues relating to Biblical interpretation see, e.g., E. Lucas, *Thelemios*, 1987, 12, 46-51.

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science and faith
by Professor Colin A Russell

This scholarly survey of the interactions between science and Christianity is a valued volume in the personal libraries of many readers of this journal. It was originally published in 1985 by Inter-Varsity Press. In response to renewed demand, partly as a text-book for courses in science and religion, it was re-issued (with minor changes) ten years later by Christian Impact, in conjunction with Christians in Science.

The publications secretary of CiS still has some copies available at a specially reduced price of £5 plus postage and packing (£1.25 second class post to an address in the UK).

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