

ORDER AND CATASTROPHE:

SCIENCE AND RELIGION IN AUSTRALIA, 1828

by

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There is at the present time a tremendous international interest in the relationship of science and religion. This is seen in the creation of new centres of research¹ and academic chairs and lectureships.² There are also many associations of scientists and theologians who are interested in each other's discipline³ and individuals and groups who have engaged specifically in education⁴ or apologetics⁵ or which have provided financial or technological support to other science-religion programs.⁶ There are also an increasing number of web-sites, academic courses, monographs, series, journals and popular level articles on the topic. Australian organisations which have an interest in this area include The Institute for the Study of Christianity in an Age of Science and Technology; the university Science-Faith network; the Symposium on Science and Theology of the Australian Theological Forum and Answers in Genesis.

Most of these organisations are *inter alia* contributing to a general awareness that modern science and serious theological thinking are not only compatible but also complementary and mutually enriching. This is a reversal of previous popular perceptions that tended to see science and faith as independent or, worse still, as antagonistic and in irrevocable conflict. It is usual to point out that modern interpretations of science and faith as being in conflict were influenced by J. W. Draper's, *History of the Conflict between Religion and Science* (1875) and A. D. White's *A History of the Warfare of Science with Theology in Christendom* (1895). These influential works were assisted by popular but frequently erroneous historical data concerning highly symbolic events⁷ and accentuated in the process by some well-known and often vitriolic (but probably unnecessary) debates concerning the relationship of divine creation and evolution and the nature of the Noahic flood. The impression has frequently been given that science and faith are either irrelevant to each other or have been in conflict since the development of modern science began some three hundred years ago.

¹ Some of the major centers involved are: The Carl Howie Center for Science Art and Theology (Union Theological Seminary and Presbyterian School of Christian Education, Richmond, Virginia); The Center for Theology and the Natural Sciences (Berkeley, California); The Center for Research in Science (Azusa Pacific University, Los Angeles); The Center for the Renewal of Science and Culture (Seattle); The Center for Faith and Science Exchange (Boston Theological Institute); The Chicago Center for Religion and Science; The Institute for Theological Encounter with Science and Technology (St. Louis); The Pascal Center for Advanced Studies in Faith and Science (Redeemer College, Ontario, Canada); The Ian Ramsey Centre; (Oxford); Wycliffe Hall (Oxford).

² Including, for example, the universities at Cambridge, Oxford, Princeton and Pittsburgh.

³ Such as The Science and Religion Forum (UK); The Society of Ordained Scientists (UK); The European Society for the Study of Science and Theology; The Creation Research Society; The American Science Affiliation Program of Dialogue between Science and Religion; and The Institute on Religion in an Age of Science.

⁴ Such as Science and Spirit Resources.

⁵ Including Reasons to Believe.

⁶ Especially the very influential John Templeton Foundation and Adrian Wyard's Counterbalance.

⁷ Such as the motives involved in the trial of Galileo and the supposed theological objections to the introduction of chloroform anaesthesia.

However, it is interesting to examine what has, in reality, been gained and what has been lost in terms of the contemporary understanding of the relationship of science and faith. It would be a mistake however, to suppose that it is only in the most recent times that science and theology have been publicly united in any sort of harmony or that there has not been any formal, thoughtful, theological reflection on the matter previously. It would also be a mistake to think that in the Australian scene the recent formation of various organisations or the productions of books, conferences and journals dedicated to the topic represent an entirely new stage of development. There is evidence of an awareness of science-faith issues, and a desire to integrate science and faith and to educate the general public at a very early stage of British development in Australia. The first scholarly Australian journal devoted specifically to an understanding of the relationship of science and theology was produced not in the late twentieth century but more than one hundred and seventy years ago in 1828!

1. Wilton and the Australian Quarterly Journal

The first census taken in New South Wales was in 1828 and it revealed that there were 36,598 white persons in all. Of these 20,930 were free and 15,668 were convict (including emancipists and children) and, in the eyes of the clergy at this time, it was a society in which order and virtue were being sorely tested. In that same year the Reverend Charles P.N. Wilton, M.A., described as “Fellow of the Cambridge Philosophical Society, Late Scholar of St John’s College, Cambridge, Master of the King’s Female Orphan Institution, Parramatta, and one of His Majesty’s Assistant Chaplains in the Colony of New South Wales” produced four volumes of *The Australian Quarterly Journal of Theology, Literature and Science*.

The title of the journal indicates a very broad set of interests but an examination of the major articles and the overall spread of types of article indicates that the relationship between religion and science was the critical issue which Wilton wished to address in the journal.⁸ Pride of place, the very first article, is accorded to Wilton’s *On the Connection between Religion and Science*. It was his intention to show that it was through science that religion was defended, and that through religion that society was ordered and preserved.

Charles Pleydell Neale Wilton (1795-1859) was born in Stow, Gloucestershire, educated at St John's College, Cambridge, and ordained in 1820. Wilton was a fellow of both the Cambridge Philosophical Society and the Ashmolean Society of Oxford. He was appointed Chaplain for New South Wales in 1826. He arrived in Sydney in April 1827 with his wife Elizabeth and was appointed to the parish of Field of Mars and Castle Hill and also made Master of the Female Orphan School, Parramatta. Herbert Marshall describes him as "prompt and energetic in his parochial duties."⁹ He did however resign in December 1828 after a dispute with his superior, Archdeacon Scott. Accusations had been made concerning some apparently dubious financial transactions but Wilton was cleared of any wrongdoing and he subsequently took up a chaplaincy position in Newcastle. Here he visited school and gaol, pastored at Christ Church, helped form a Mechanics' Institute, farmed and became a senior cleric until his death in 1859. Marshall says he was "to the end, a conscientious churchmen and active encouraging science."

⁸ The specific interest of the journal is blurred by its reference in Manning Clark’s *History of Australia* as The Australian Quarterly Journal of Theology, Literature and Finance. C. M. H. Clark, *A History of Australia, Vol II: A History of Australia and New South Wales and Van Dieman’s Land, 1822- 1830*, (Melbourne: Melbourne University Press, 1968) page 170.

⁹ H. Marshall, “Charles P. N. Wilton” in Douglas Pike (General Editor), *The Australian Dictionary of Biography*, Volume 2: 1788-1850, I -Z, (Melbourne: Melbourne University Press, 1967)

The general object of The Australian Quarterly Journal of Theology, Literature and Science (AQJ), as set out by Wilton in the first edition was twofold. "First to afford a faithful picture of the colony, her Commerce, Agriculture, state of Society, and prospects, to the public in England. Second to call the attention of the Australians themselves to the advantages of their own situation, and to endeavour to point out the way, in which they can be rendered most available, to the interests and prosperity of the colony." Wilton's Australian audience is seen in the list of subscribers which is provided in volume one and which includes the Governor of New South Wales, the Lieutenant Governor of Van Dieman's Land, Wilton's superior - Archdeacon Scott, the Honourable Chief Justice Forbes and eighty one other individuals and businesses in the colony. As far as the public in England are concerned the fact that Wilton was a Fellow of both the Cambridge Philosophical Society and the Ashmolean Society of Oxford would mean that he had an interested audience there at least. His reliance upon, and modification of the theological interpretations of geological data of the Oxford scholar, William Buckland, would, apart from anything else, have guaranteed this. Wilton, like Buckland sought to use recent geological discoveries to demonstrate the congruence of science and religion (at least religion as understood by the Church of England). A copy of the AQJ may still be found in the library of the Ashmolean Natural History Museum, Oxford and some of the attitudes which sought to distance theology from science and which prompted Wilton to found this journal can also still be found there. This is evidenced by the somewhat lighthearted and yet revealing comment of the helpful librarian at the Ashmolean who produced the AQJ for me that if she had known it was about theology she would have thrown it out! Clearly in her mind a science museum has no room for theology.

Wilton's determination to demonstrate that science and theological reflection are not opposed is seen clearly in the articles included in the four volumes of the journal, all of which were produced in 1828. The very first article is a general article on the topic written by Wilton, "On the Connection between Religion and Science". The second article is a record of a sermon that he preached on 6 September, 1827 in the parish church of St. James entitled, "The Beauty of Order in the Church of England." Despite its title this sermon is really a continuation of the subject of the first article. How this is so will be discussed below. Other articles in the first volume included reviews of two recent publications: "A Survey of the Intertropical and Western Coasts of Australia, Performed Between the Years 1818 and 1822" by Captain Philip King and "Specimens of a Dialect of the Aborigines of New South Wales, Being the First Attempt to Form the Speech into a Written Language" by L. E. Threlkald. The journal also included other articles of a scientific nature including "Suggestions for the establishment Australian Museum" (a very appropriate proposal for a Fellow of the Ashmolean Society), and articles on mineralogy; sheep farming; and the Australian sperm whale fishery. There was also a funeral hymn; an account of the recent tour of A. E. Cunningham and a discussion on the state of the colony. Subsequent editions covered a wide range of topics but science and theology are clearly the main point of interest for Wilton.

The aim of this essay is to introduce the AQJ to a wider audience and to show how the early nineteenth century Charles Wilton viewed the relationship of religion and science positively. Wilton used the results of science to develop a natural theology, which would support the life and work of the Church of England and through the church the whole of society. Order, stability, virtue and morality were the natural outcomes of his natural theology. The article also shows that his fundamental theology of a God of order had to interpret the nature of catastrophe in the natural world.

2. The search for order in science and religion

Wilton begins his discussion of science and religion with the claim that it is a divinely given responsibility for humanity to utilise reason and scientific investigation.

That man is destined for a future state of exalted being, both reason and revelation most unequivocally assure us. The fact that he has been endowed by God with the powers of thought and investigation, is an evident proof, that it was the intention of the Almighty, that he should call forth the various faculties of his mind into action.¹⁰

Thus he extols the virtue of study which illuminates religious knowledge. Humanity is called “to look through Nature up to Nature’s God” and reject the biblicist notion -

made use of by hypocrisy and cant in the present day - that the Bible is the only book man ought to peruse - that human learning - that literary and scientific acquirements are to be disclaimed as useful and hurtful; from whence the inference is clear, that true religion cannot exist in the heart of one, who does not confine his attention exclusively to the things, which had an immediate reference to a state hereafter.¹¹

On the contrary the botanist, the astronomer, the mineralogist and the geologist all work together to demonstrate the glory of God. The geologist for example "is enabled, by adducing the strongest evidences of an universal deluge, to put to silence the infidel and the sceptic. Surely then religion and science may well go hand in hand together."¹² The article then concludes with the hope that the exploration of Australia will contribute not only to the welfare of the colony but also to “the advancement of Science.”¹³

Wilton follows this scientific apologetic for faith with the second article in the journal, which is “The Beauty of Order in the Church Of England” and here there is really no change of intent or deviation of purpose. The two articles merge together seamlessly and this indicates the level of integration of science and religion which Wilton seeks to present to his readers. He begins the sermon (or, in another sense, continues his journal argument) in this way:

That the Almighty is not a God of confusion an insight into the book of nature will immediately demonstrate. If we but turn our eyes to the Heavens above us, and consider the revolutions of the celestial bodies, each performing its destined part in creation, we cannot fail to be convinced that the Great Ruler of the Universe has thereby set before us the full beauty of order. And if we look from the Heavens above to the earth beneath, we shall observe the same regard to regularity - the same powerful principal inculcated upon us. We see the kindly fruits of the earth so blessed and preserved to our use, that in their due and appointed seasons we enjoy them.¹⁴

Above all things, God is a God of order who controls all things. Order in science and order in religion are the hallmarks of the presence of the Almighty. The order which scientific investigation reveals confirms religious belief and where there is order then God is to be found. Hence the text for his sermon is 1 Corinthians 14:40, “Let all things be done decently and in order.” Beauty and order are seen, of course, in the life of the Church of England. Wilton has moved from the order of science to the order of the church and he then continues the search for God and order as he considers moral and social issues. He says (continuing immediately on from the previous quotation) to his flock at St. James,

¹⁰ “On the Connexion between Religion and Science” in *The Australian Quarterly Journal of Theology, Literature and Science* Vol.1 (1828), 1.

¹¹ “On the Connexion between Religion and Science”, 3.

¹² “On the Connexion between Religion and Science”, 4.

¹³ “On the Connexion between Religion and Science”, 6.

¹⁴ “The Beauty of Order in the Church Of England” in *The Australian Quarterly Journal of Theology, Literature and Science* Vol.1 (1828), 6.

So, with respect to ourselves - in the different sorts and conditions of men or in their several stations, high and low, rich and poor, learned and un-learned, we form together one great system of things, under the unerring Providence of God, who both sets the mighty machine in order, and directs and regulates its many and complicated parts. If then we perceive such to be the method adopted by the Almighty in the government of the universe, and if we moreover observe a similar plan, unfolded in the operations of his grace, it is surely our duty to endeavour, though but imperfectly, to imitate this great example.¹⁵

Social order is thus buttressed by religious conviction, which is, in turn, supported by natural theology derived from scientific investigation. Morality, social order, religious forms, natural theology and the results of scientific examinations cohere together in one orderly structure. In this context Wilton goes on to argue for piety, virtue and a continuance of a protestant king in England.

Wilton's natural theology of order is an illustration of the early nineteenth century move to appropriate the findings of science for the preservation of moral, social and religious order. Wilton's semi-deistic natural theology (God "both sets the mighty machine in order, and directs and regulates its many and complicated parts") along with Buckland's interpretations of geology and William Paley's *Natural Theology* (published in 1802) helped counter the danger that the results of scientific investigation would be used in a subversive manner, as the secularised cosmology of Laplace and biology of Lamarck threatened to do in France. John Hedley Brook notes that, despite the Wesleyan revival, England was not immune from this tendency,

During the last decade of the 18th century, there was such a conservative backlash against the horrors of the French revolution that any revolutionary scientific conjecture was liable to start the warning lights flashing. It was during the 1790's that Joseph Priestly had his house and chemical laboratory destroyed by a Birmingham mob because of his known sympathies with events in France.¹⁶

Both ecclesiastical and civil authorities in the prison colony of New South Wales were very concerned to maintain proper order. Anything which contributed to the possibility of a disturbance was to be suppressed. Wilton's natural theology presented a view of both God and science which was ordered rather than chaotic and stable rather than revolutionary. His views justified the preservation of the status quo. Natural theology is a useful resource when the moral order is under threat.

3. The search for 'a new Newton'

Wilton followed up his argument in these two pieces with several articles on geology in which he used specific examples to illustrate the general principles he had outlined. The rise of geological knowledge in the late eighteenth and early nineteenth century presented fresh problems for scriptural interpretation and Wilton was very aware of them, probably most recently through the work of William Buckland. While Wilton was still at St. John's College in Cambridge, Buckland (1784-1856) was appointed Reader in Geology at Oxford. Wilton had connections there and was a fellow of the Oxford based Ashmolean Society. Buckland's inaugural address at Oxford University on 15 May, 1819 was dedicated to the Chancellor of the University, William Wyndham,

¹⁵ "The Beauty of Order in the Church Of England". 6-7.

¹⁶ John Hedley Brooke, *Science and Religion: Some Historical Perspectives*, (Cambridge: Cambridge University Press, 1991) 212.

[in the] inseparable interests of science and religion; and from feelings of gratitude and high personal respect (to the Chancellor of the University); this attempt to show that the study of geology has a tendency to confirm the evidences of natural religion; and that the facts developed by it are consistent with accounts of the creation and deluge recorded in the Mosaic writings.¹⁷

Buckland's 'connection of geology with religion' is influential on Wilton's overall 'connection of science with religion' and his geological interests. In his inaugural lecture Buckland responds to the religious scepticism of certain geologists and "the apparent nonconformity of certain Geological phenomena with the literal and popular account of creation, as it is presented to us in the first book of Genesis."¹⁸ Buckland agreed with John Sumner, Archbishop of Canterbury that geology was in need of "its Newton" in order to "break through the various obstacles peculiar to that study which have hitherto precluded any general solution of its numerous and opposite phenomena".¹⁹ Wilton followed Buckland in echoing Sumner, although Wilton's estimate of the work remaining to be done by post-Newtonian astronomers was more than a little optimistic,

Since the days of the immortal Newton, the science of astronomy has been comparatively simple and clear, and the road to it made plain and easy, while the heavenly bodies roll on in their respective orbits in the same even and uninterrupted calls. Little probably of importance to mankind, in this branch of natural philosophy, remains to be discovered.²⁰

His estimate of the contemporary importance and popularity of geology was more accurate. Geology was certainly critical in the science-religion dialogue and it was, indeed, moving towards maturity.

The study of Geology in England has, at the present day, assumed an important feature in the national character. This we allow, may, and it does in some measure, arise from a mere spirit of curiosity, - from the abstract pleasure of making collections - or from a vain desire of being accounted learned, without possessing aught beside a smattering knowledge. Since the laborious investigations of a *Buckland*, the whole country may be said to have run mad after caves of hyaenas, and the bones of the gigantic mammoth. Every lady has her "*Outlines of Geology*" - her bag and her hammer: no drawing-room is considered complete in its furniture, which has not its little cabinet and museum. Nay - to such an extent has the mania diffused itself, that ... the veriest link - boy in the metropolis, that ever talked about "reform" - "equality" and "the march of intellect," and who looks forward with an aspiring eyes to a new honorary degree in the new university, discusses most profoundly the qualities of, and the properties of *Micaceous Schistose* and the properties of *Primitive Trap*.²¹

In the late seventeenth century the notion that all created species still existed was shaken by the discovery of the remains of giant mammoths by George Louis Buffon (1707-1788) and of the quadrupeds of the Paris basin by Georges Cuvier (1768-1832). Speculation centred on some form of progressive creation but it was clear to Wilton as well as others that the clockwork world of William Paley was one which could not be entirely sustained as it appeared to geology that the world had undergone significant change since the divine creation and that these changes possibly

¹⁷ William Buckland, *Vindiciae Geologicae: or The Connexion of Geology with Religion Explained*, (Oxford: Oxford University Press, 1820).

¹⁸ *Vindiciae Geologicae*, 22.

¹⁹ *Vindiciae Geologicae*, 25-26.

²⁰ "Geology - No.1", 191.

²¹ "Geology - No.1", 192.

involved divine intervention of a most significant and supernatural kind. In his *Epochs of Nature* (1778) Buffon speculated that the world was 75,000 years old. Cuvier argued that not all species had survived since creation and that they had not all been contemporaneous, since there were clear strata indicating progression and change. An extended history of the world and a conviction that there was significant change meant that, ultimately, a Darwinian synthesis was possible. The way was being made clear for Sumner's 'new Newton' but before he came the place of catastrophe had to be resolved.

4. Buckland and fossil strata

Buckland addressed the difficulty of relating the formation of various geological strata with scripture. The organic remains in the strata indicated great changes and the development of new species coming into existence and then becoming extinct over a significant period of time. Buckland considered four possible solutions. (1) Could these fossil strata have been caused by the Noahic flood? Buckland did not believe that the one year of flooding allowed by scripture was sufficient. He argued that although the strata bore, on the surface, unequivocal marks of the deluge they were evidently not produced by, but were, in fact, partially destroyed by the deluge. An answer must be sought elsewhere. (2) He noted that others supposed that the strata were formed at the bottom of an antediluvian ocean during the interval between creation and the Mosaic flood. Buckland saw this as having no scriptural support and as not fitting the known distribution of fossil marine and land animals.

(3) Buckland considered the hypothesis that there was a significant and undefined period of time antecedent to the creation of the present form of the world during which a long series of 'operations and revolutions' may have been going on in between the 'in the beginning' and the 'then God said let there be light'. This part of the history of the world had no connection with the history of the human race and for this reason was passed over in silence in the space of one verse of scripture. This became known as the 'gap' theory. (4) Finally, he considered the view that the days of the Mosaic creation are not to be strictly construed as implying 'the same length of time which is at present occupied by a single revolution of our globe'.

Buckland rejected the first two options but believed that with the assistance of either of the other two "we may be enabled to remove the leading difficulties which the infant state of geology as yet cannot but present to us".²² Whatever solution is achieved has to be consistent with *both* sacred Scripture and geology. But this is only possible if both disciplines recognise their limitations. On the one hand it is necessary that theology does not interpret scripture in a woodenly literal manner²³ and therefore a liberal interpretation of the 'days' of creation is acceptable. On the other hand, geology must not try "to explain everything by the sole agency of second causes, without any reference whatsoever to the first." This means repudiating the idea that "nature was set up as an original source of being, distinct and independent of the Almighty"²⁴ In saying this Buckland repudiated biblicist interpretations on the one hand and deistic notions of an independent world on the other. He also makes first and second causes alternate rather than complementary explanations.

5. Wilton and catastrophe

²² *Vindiciae Geologicae*, 32-33.

²³ *Vindiciae Geologicae*, 25.

²⁴ *Vindiciae Geologicae*, 27.

In two articles in different volumes of AQJ Wilton discussed the current state of geology and analysed the options which had been laid out by Buckland. Wilton recognised the dangers involved in making geology conform to philosophical or biblical ideals. He is critical of the process whereby other writers describe fossil bones as skeletons of fallen angels or the remains of marine animals or of colossal baboons, rather than as being the remains of extinct species. "Mankind has begun to feel that facts are of much greater value than chimerical ideas, and that to believe in these matters at least, they must receive nothing contrary either to the deductions of reason - to clear demonstration - or to well authenticated report."²⁵

In considering the third and fourth hypotheses, which Buckland admits as possible explanations of the geological strata, Wilton began by casting doubt on the appropriateness of the gap theory. What might have taken place during in the intermediate state of the planet between the creation 'in the beginning' and that which is described in the six days "must be a matter of mere conjecture... the possibility of that we pretend not to deny, but we doubt its probability for it would seem to limit the wisdom, as well as the power of the Creator, were we to suppose him to make the world, out of the ruins of a former one".²⁶

On the other hand, Wilton was not happy to account for this geological evidence by reference to the six days of creation as indefinite lengths of time. The six days of creation are normal twenty-four hour days. This is not simple biblicism as Wilton recognises that "it is true, that the Bible was designed not to teach Geology, but religion - and not the structure of the earth, but the way to heaven."²⁷ but he cannot accept that it is hermeneutically valid to have multiple meanings for the one word 'day'. "It cannot but involve an absurdity, to interpret, for the purpose of accounting for certain Geological phenomenon; the Hebrew word *Iom* day, as it refers to the creation, in any other sense, than in that, in which it is commonly understood, viz; as a period of twenty four hours."²⁸

Consequently, if, as it is "commonly admitted" that creation took place in 4004 BC²⁹ then there have been, says Wilton, 5,832 years of history in which all events have occurred. How can this be related to slow, successive deposits, which appear to require considerable amounts of time? It is at this point that Wilton shifts from his view of God as supremely a God of order to take refuge in divine chaos.

If the first great epoch of scripture is creation then "the second great epoch of scripture" is the Noahic deluge and just as the work of creation must be attributed "to the Divine Arm" so too the flood, "a catastrophe as universal as it was fatal", must be seen as the result of a divine action for "such a circumstance could not have happened according to any known laws of nature, for the whole catastrophe of the deluge was from the beginning to the end (as we have remarked on a former occasion), a suspension of the order of nature".

Now Buckland, in his inaugural address at Oxford University, had argued that geology must not try to explain everything by the sole agency of second causes, without any reference whatsoever to the first cause – God; and this was the clue for Wilton to argue that it is "the high tide of folly and a climax of presumption" to attempt to "explain the exercise of miraculous power by second or natural causes". Rather than indulging in wild theories it is appropriate for a finite being simply to give credit where it is due – to scripture as the source of explanation, "and to bow down with awful

²⁵ "Geology – No.1", 192.

²⁶ "Geology – No.1", 194.

²⁷ "Geology – No.1", 194.

²⁸ "Geology – No.1", 198.

²⁹ "Geology – No.1", 196. Wilton actually says that 4004BC is "commonly accepted" as the year "that our Lord was born" when he presumably meant the year that the world was created. A date popularised by Archbishop Ussher.

submission before that plenitude of power, revealed in its pages".³⁰ And so, for Wilton, the difficult-to-explain geological strata come about as the result of a catastrophic and unique flood. In that sense they are result of a natural action but the flood itself is the result of nothing other than divine intervention. Scripture is aligned with geological research by virtue of a miracle.

6. The search for God and social order

Wilton showed a willingness to work towards a firm and positive relationship of science and religious thought and developed a natural theology with broad implications. The following points summarise his intentions and achievements. First, he was genuinely open to a natural theology that paid due respect to both theology and science. He was opposed to obscurantism. Second, Wilton's final resort to a miraculously caused flood (which is, by definition, beyond human examination) as an explanation of global geological strata pointed to an interpretative scheme which allowed the operation of natural mechanism and the divine arm as alternating explanations. However, this inconsistently worked out theory must be seen in the context of the times. This was no more unusual than the ambiguity found in Buckland and even in the work of Isaac Newton. He, who had done so much to resolve astronomical irregularities, also contained within his thought certain ambiguities (for example concerning the cause of gravity and the rotation of the planets) with respect to the relationship of divine intervention and natural mechanism. Wilton's devotion to the biblical narrative, illustrated in his attitude to the interpretation of the days of creation, made it difficult for him to take what he would have considered liberties with the text but while this was difficult in practice his own theory sought to avoid woodenly literal interpretations.

Third, Wilton used the results of science to develop a theology, which would support the life and work of the Church of England, and through the church the whole of society. Order, stability, virtue and morality were the natural outcomes of his natural theology. There is something of an inconsistency here however, for wherever he found order then he found the God who loves to create order and who calls on humanity to follow his example. But the only viable explanation for the geological strata he could find was based in the chaotic, catastrophic event of a global flood. This necessitated an interpretation of divine action as being found in chaos. In the normal processes of the world God is a God of order but at the point of divine intervention God uses catastrophe for his purposes. It is unlikely that Wilton would ever have used this kind of divine action as a model for human action in the same way he used the ordered process of the natural world as an example and encouragement to ordered morality. After all, it might have sounded too much like the style of the French revolution!

7. Later developments

The four editions of the AQJ were published in 1828. Wilton was not far from the time of Paley's *Natural Theology* (1802) when it optimistically seemed that the order and design of the universe perfectly reflected the nature of an ordered God. But for Wilton the problems of geology: change, new species, extinction, geological strata and catastrophe were real issues that could not be avoided. His grappling with them, however, brought no real solution as he was, in practice, unwilling or unable to commit himself to his own theoretical position. It is no surprise that Wilton's work of 1828 was soon followed by that of Charles Lyell (1797-1875) who published his *Principles of*

³⁰ "Geology – No.1", 374-376. Wilton specifically says that "It were needless therefore to seek for an explanation of the mystery of this continuous rain as we have seen suggested in a periodical work of the present day) by the falling of the nucleus of a comet to the earth." It is therefore clear that a divine explanation is an entirely sufficient cause without any secondary cause at all. Incidentally, while the comet may have appeared in a contemporary journal it was a hypothesis first suggested by Newton's successor, William Whiston in his *New Theory of the Earth* in 1696..

Geology in 1830 in which he examined the causes of the successive states of the world and from which he specifically excluded a catastrophic flood in favour of a tranquil flooding. This was followed soon after by Adam Sedgwick's public recantation in 1831 when retiring as President of the Geological Society.

Having been myself a believer, and, to the best of my power, a propagator of what I now regard as a philosophical heresy... I think it right, as one of my last acts before I quit this chair, thus publicly to read my recantation. We ought, indeed, to have paused before we first adopted the diluvian theory, and referred all our old superficial gravel to the action of the Mosaic flood. For of man, and the works of his hands, we have not yet found a single trace among the remnants of a former world entombed in these deposits.³¹

From this time on the kind of catastrophic solution which Wilton propagated was very difficult to sustain and it was placed on the sidelines and only championed by a few. Wilton's fundamental problem was his confusion of the role of first and second causes and consequently his recourse to miraculous catastrophe was futile. Even today the scientific use of first causes is dangerous and there are lessons for the interpretation of evolution, the big bang and quantum mechanics. Just as much as in Wilton's time it seems today to remain a temptation to identify the inexplicably catastrophic or chaotic directly to divine action while the regular and the predictable is interpreted naturalistically. God is at work in all things but those, for example, who want to see the unpredictability of quantum mechanics as a special place in which God works are probably, like Wilton, to be disappointed.

The details of Wilton's natural theology were only applicable for that short period between the development of the geological findings of the late seventeenth century, which threatened a divorce between science and faith, and the beginning of the resolution marked by Sedgwick's recantation in 1831. Nonetheless, Wilton stands as part of a long line of theologians who have worked reconcile theology with the natural sciences and also with social, political and moral issues in a regulated and ordered universe. He was convinced that whether we look at the heavens or the earth beneath our feet or at the life of the church "we cannot fail to be convinced that the Great Ruler of the Universe has thereby set before us the full beauty of Order".³²

END

³¹ *Idem, Proc. Geol. Soc.*, 1831, 1, 313 cited in C. A. Russell, *Cross-Currents: Interactions between Science and Faith* (Leicester: IVP, 1985), 139.

³² "The Beauty of Order in the Church Of England", 7.