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A table of contents for the *Proceedings of the Wesley Historical Society* can be found here:

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JOHN WESLEY AND ISAAC NEWTON'S 'SYSTEM OF THE WORLD'

The Wesley Historical Society Lecture 1991

ACCORDING to the distinguished Methodist scholar, Sir Herbert Butterfield, the Scientific Revolution of the seventeenth century 'outshines everything since the rise of Christianity and reduces the Renaissance and Reformation to the rank of mere episodes . . . within the system of medieval Christendom'¹. Some may ask if the metaphor of 'revolution' obscures more than it reveals. Perhaps it disguises how much of the old is retained in the new. Specialists argue about the number of scientific revolutions. Have there been several of them or just one?²

The following abbreviations will be used in these footnotes:

- COM Wesley, John. *A survey of the Wisdom of God in the Creation: Or, A Compendium of Natural Philosophy*. 3rd ed. 5 vols.; London: Printed by J. Fry and Company, 1777.
- HW *The Philosophical and Theological Works of John Hutchinson*. 3rd ed. 12 vols.; London: Printed for J. Hodges, 1748.
- PRI *Sir Isaac Newton's Mathematical Principles of Natural Philosophy and His System of the World*. Translated into English by Andrew Motte in 1729. The translation revised, and supplied with an historical and explanatory appendix. Edited by Florian Cajori. Berkeley: University of California Press, 1934.
- SER Baker, Frank, gen. ed. *The Works of John Wesley*. Nashville: Abingdon Press, 1987. Volumes I – IV: *Sermons*. Edited by Albert C. Outler.

¹Herbert Butterfield, *The Origins of Modern Science 1300 – 1800*, new ed. (1957), p. vii; see also pp. 189–90.

²Thomas S. Kuhn, *The Structure of Scientific Revolutions*, (Chicago and London: 1962) is a key text in this debate. Kuhn refers repeatedly to four 'turning points in scientific development' . . . 'which display what all scientific revolutions are about.' These revolutionary moments are 'associated with the names of Copernicus, Newton, Lavoisier, and Einstein' (p. 6).

However that may be, the seventeenth century was an age of crisis, to which the new science contributed. The educated classes of Europe and America were accustomed to think in terms of an integrated picture of reality, in which nature, man and God were assigned their appropriate places. Scripture and revealed theology, on the one side, and moral and natural philosophy, on the other, all helped to shape this image. However, the new science had called into question not only the Aristotelian-scholastic picture of the world, which descended from the Middle Ages, but also the Platonic-alchemical view, which had been worked out during the Renaissance. Without intending to do so, the new science, and the 'modern' philosophy associated with it, had also threatened the very foundations of Christianity itself.³

Educated men and women were in a quandary. Rival interpretations of nature were competing for their allegiance - to name several, Paracelsian, Baconian, Cartesian and Newtonian. How could they choose among them? Some persons came to doubt that human beings can know the truth about nature. Others reviewed the field but hesitated before committing themselves. Since every system was laid under attack, perhaps they were prudent to do so. Still others oscillated between one interpretation of nature and another. Each of these responses can be found in John Wesley.

Both by reason of his background and his personality, Wesley was almost forced to take an interest in scientific matters. His father had attended a dissenting academy which included the new science in its curriculum.⁴ Later Samuel was admitted to the Spalding Gentlemen's Society, an organisation which numbered among its members both Alexander Pope and Sir Isaac Newton. As these names suggest, the Society took into consideration not only literary and historical questions, but also scientific ones.⁵ In due course, Samuel Wesley arranged for his eldest son, Samuel, Junior, to join the Society as well. Apparently the young man developed a keen interest in science. He was one of the subscribers to Henry Pemberton's *View of Sir Isaac Newton's Philosophy*, published in 1728. As for

³In this paper, I will be referring to the 'science' of Newton and his age. Strictly speaking, 'science' is an anachronism. Andrew Cunningham suggests that 'until at least 1750, and possibly as late as 1800, no-one at all described their activity' in this manner ('Getting the Game Right: Some Plain Words on the Identity and Invention of Science,' *Studies in History and Philosophy of Science* 19 [1988] : 380). The more accurate term is 'natural philosophy.' Note the title of Newton's principal work, *Mathematical Principles of Natural Philosophy* and the sub-title of Wesley's *Survey of the Wisdom of God in the Creation: Or, A Compendium of Natural Philosophy*. As Wesley's book illustrates, 'Natural Philosophy was an enterprise which was about God' (to quote Cunningham again) 'Natural philosophy had Nature as its subject-matter, but not as its goal. For Nature was the book of God's works. Thus Natural Philosophy could be an exploration of God's creation and an admiration of His wisdom and foresight, or it could be an attempt to discover God's laws, or an attempt to penetrate the mind of God ... Nature was explored, but not for itself' (p. 384).

⁴[Samuel Wesley], *A Letter From A Country Divine To His Friend in London Concerning the Education of The Dissenters, In Their Private Academies* (1703), p. 7. This school in Newington Green was maintained by Charles Morton.

⁵George W. Bailey, *Spalding Gentlemen's Society* (Lincoln: 1937), p. 7.

John Wesley, he might have received some instruction in natural philosophy while he was a pupil at Charterhouse. The Usher or second master of the School, Andrew Tooke (1673-1732), had something of a reputation as a mathematician.⁶

At the time Wesley entered Christ Church, Oxford (1720), Cartesianism held the ground. The College faculty required students to read Caspar Thomeson Bartholin, *Specimen philosophiae naturalis Praecipia Physicae capita exponens* (first edition, 1697).⁷ Bartholin (1655-1738) was a professor in the University of Copenhagen. Although his book was deliberately eclectic, its outlook was basically Cartesian.⁸ But a rival system, Newtonianism, had entered the lists. Newtonian science had been taught at Oxford for about a quarter of a century before Wesley entered Christ Church. However, as the assignment of Bartholin's text illustrates, it was slow to make its way in the University. This situation was changing during the 1720s.⁹ Even while Wesley was studying Bartholin, he heard about Newton's ideas, perhaps from John Whiteside, a chaplain at Christ Church. In his notes on Bartholin, Wesley contrasted the views of Descartes and Newton regarding the possibility of a vacuum.¹⁰

During the months following his commencement as a B. A., and during his years in residence as a Fellow of Lincoln, Wesley made a special effort to become better acquainted with Newtonianism.¹¹ Between 1725 and 1735, he read Newton's *Opticks* (his treatise on light) and several popularizations of Newton's natural philosophy. These included W. J.'s Gravesande's *Mathematical Elements of Natural Philosophy confirm'd by Experiments* and

⁶ Fellow of the Royal Society, 1704; Professor of Geometry in Gresham College, London, 1704-29; see Edgar W. Thompson, *Wesley at Charterhouse* (1938), p. 6. The Master of Charterhouse at the time Wesley enrolled was Thomas Burnett, author of *The Sacred Theory of the Earth*, 2 vols. (London: Printed by R. Norton, 1684).

I take it that the Master had no teaching responsibilities; Thomas Walker was in charge of the school in Wesley's day. However, the little 'physico-theology' which Burnett included in his *Theory* (vol. I. pp. 289 - 309) is interesting. Conceivably it represents the kind of natural philosophy which Wesley might have learned at Charterhouse. Burnett's physico-theology includes Cartesian elements (pp. 290 - 92, 301 - 2, 305); his anti-Aristotelianism (p. 316) may also be noted.

⁷ John C. English, 'John Wesley's Studies as an Undergraduate,' *Proceedings*, xlvii, pp. 35 - 37.

⁸ For further information regarding Bartholin, see Olaf Pedersen, 'Newton versus Ørsted: The Delayed Introduction of Newtonian Physics into Denmark,' in *Newton and the New Direction in Science*, ed. G. V. Coyne, M. Heller and J. Zycinski (Città de Vaticano: Specola Vaticana, 1988), pp. 135 - 36.

⁹ Referring to Oxford in 1721, Nicholas Amhurst wrote "'that Locke, Clarke, and Sir Isaac Newton begin to find countenance in the schools'" (quoted by W. R. Ward, *Georgian Oxford: University Politics in the Eighteenth Century* [1958], p. 79). A reading list prepared by Joseph Smith of Queen's College (T.H. Acton, ed., *History of the University of Oxford* (Oxford: 1986), vol. v: *The Eighteenth Century*, ed. L. S. Sutherland and L.G. Mitchell, pp. 581 - 82) is further evidence of this transition.

¹⁰ John C. English, 'Wesley's Scientific Education,' *Methodist History* (forthcoming).

¹¹ He had set aside one day a week for the study of metaphysics and natural philosophy (V.H.H. Green, *The Young Mr. Wesley* (1961), p. 116).

Henry Pemberton's *View of Sir Isaac Newton's Philosophy*, to which I have referred previously.¹² This programme was reflected in Wesley's preaching. He referred, for instance, to Newton's concept of gravity in a sermon dated 1730.¹³

* * * * *

Newton's *Mathematica Principia* was the high point of the Scientific Revolution. Adopting certain concepts formulated by his predecessors, transforming others in light of his own insights and inventing a mathematics suitable for his purposes, Newton was able to create a 'system of the world' (Book III of the *Principia*) which eventually earned almost universal acceptance. Now the question arises, What did Wesley make of his

¹² Richard P. Heitzenrater, 'John Wesley and the Oxford Methodists, 1725-35' (Unpublished Ph. D. dissertation, Duke University, 1972), pp. 506, 513, 515. Wesley also read George P. Domcke, *Philosophiae mathematicae Newtonianae illustratae* (London, 1730) and John Keill's 'Principia,' which is probably 'In qua Leges Attractiones aliaque Physicae Principia traduntur,' *Philosophical Transactions of the Royal Society*, no. 315 (May-June 1708): 97-110 (Heitzenrater, pp. 502, 509; *Dictionary of Scientific Biography*, vii, p. 276).

These references to Wesley's reading raise some interesting questions. Did Wesley read Newton's *Principia Mathematica*? Albert C. Outler believed that he did (SER, II, p. 380). Wesley included the *Principia* in his list of books which the well-prepared clergyman should have mastered ('An Address to the Clergy' [1756], in *Works*, (1872), x, p. 492). It was also a part of the second year of study in the advanced course at Kingswood School, designed to prepare men for the Christian ministry (A.G. Ives, *Kingswood School in Wesley's Day and Since*, (1970), pp. 246-47).

If Wesley did take the *Principia* in hand, could he understand what he was seeing? The *Opticks*, to which I have referred in the text, contains very little mathematics, and Wesley probably would have found it easy going. The *Principia* is a different story. Even skilled mathematicians had trouble with Books I and II. Judging from his reading lists, Wesley made an effort to equip himself with the maths needed to comprehend the *Principia*, but he abandoned the attempt. In 1727, he read William Whiston's version of Tacquet's Euclid and Archimedes (Heitzenrater, p. 525; first Latin edition, 1703; third edition of the English translation, 1714). Apparently Wesley found Whiston hard going. In 1731, he started over with John Keill's version of Euclid (Heitzenrater, p. 509; first Latin edition, 1715; first English translation, 1723).

Perhaps Wesley followed Newton's advice to his readers with little mathematics, as stated in his preface to Book III of the *Principia*, 'System of the World: 'It is enough if one carefully reads the Definitions, the Laws of Motion, and the first three sections of the first Book. (These deal with "the method of first and last ratios of quantities;" "the determination of centripetal forces" and "the motion of bodies in eccentric conic sections" –JCE). He may then pass on to this Book, and consult such of the remaining propositions of the first two Books, as the references in this, and his occasions, shall require' (PRI, p. 397).

In my judgment, Wesley learned most of his Newton from second and even third-hand sources. This raises the further question, Who was the 'Newton' whom Wesley knew? The secondary sources often interpreted Newton in light of other authors and traditions. Wesley read Henry Pemberton and W. J. 's Gravesande, for instance (see above). Both of these books show the influence of John Locke (G.A. J. Rogers, 'The System of Locke and Newton' in *Contemporary Newtonian Research*, ed. Zev Bechler [Dordrecht, 1982], pp. 220-22). Wesley also knew the books of Arthur Michael ('Chevalier') Ramsey (Heitzenrater, p. 516; *Standard Journal*, iv, p. 82; *Standard Letters*, iii, pp. 104-10). Ramsey's *Philosophical Principles of Natural and Revealed Religion and Travels of Cyrus* present a Platonized version of Newton (Daniel P. Walker, *The Ancient Theology: Studies in Christian Platonism from the Fifteenth to the Eighteenth Century*, (1972), pp. 254 - 58).

¹³ SER, iv p. 283.

acquaintance with Newton and Newtonianism? The short answer is, Wesley's response was ambivalent and subject to change. On some occasions he spoke of the great physicist in highly critical terms. This is the aspect of Wesley's response which scholars have tended to emphasise. He was strongly attracted to the theories of the anti-Newtonian philosopher and exegete, John Hutchinson, itself a sign of his dissatisfaction. On the other hand, there is another side of Wesley's response, a more friendly and affirmative side, which students of the subject have tended to overlook. Wesley uttered words of high praise for Newton's achievements. He endorsed several of his explanations of physical phenomena, even if he looked with scepticism upon the others. The balance of this paper will be devoted to exploring some of these intricacies.

A. J. Kuhn and Robert E. Schofield have emphasised the negative aspects of Wesley's response to Newton; Kuhn goes so far as to say that Wesley was 'anti-Newtonian'¹⁴. To be sure, there are passages in Wesley which support this characterisation. Sometimes he referred to Newton's work in a slighting fashion, calling his explanations mere 'conjectures'. In his *Compendium of Natural Philosophy*, he repeated certain arguments against Newton's theory of gravitation, which had been put forward by John Rogers. Elsewhere he asserted that Newton had discovered little which was new;¹⁵ rather, his conclusions had been anticipated by the Greeks.¹⁶

But then Wesley also spoke in a more positive vein. In the *Compendium*, he praised Newton's account of the tides (from *Principia Mathematica*, Book III, Proposition XXIV, Theorem XIX *et seq.*) and of the motions of the comets (Book III, Proposition XXIX, Problem XX, Lemma IV *et seq.*). Elsewhere he named Galileo and Newton as 'the greatest of all modern philosophers.'¹⁷ I particularly call attention to the following passage from his *Concise Ecclesiastical History*, a passage which students of Wesley have tended to overlook. The third volume of the *History* rises to the following climax:

The immortal man, to whose immense genius and indefatigable industry philosophy owed its greatest improvements, and who carried the lamp of knowledge into paths of knowledge that had been unexplored before, was Sir Isaac Newton, whose name was revered, and his genius admired, even by his warmest adversaries. This great man spent, with uninterrupted assiduity, a long life in correcting, digesting, and enlarging the new philosophy, and in throwing upon it the light of demonstration, both by observing the laws of

¹⁴ A. J. Kuhn, 'Nature Spiritualized: Aspects of Anti-Newtonianism,' *ELH* 41 (Fall 1974): 410; Robert C. Schofield, 'John Wesley and Science in Eighteenth-Century England,' *Isis* 44 (December 1953) p. 339.

¹⁵ On Rogers, *COM*, iv, pp. 40-46; Rogers' Dissertation on the knowledge of the Antients in Astronomy was published in 1755. On Newton's discoveries, v, p. 169.

¹⁶ *COM*, v, pp. 93-100. Newton himself said that he was simply repeating in another language what the ancients had said before him (Frank E. Manuel, *The Religion of Isaac Newton* [Oxford: 1974], p. 23). Notice Newton's appeal to the authority of the Greeks in support of his conclusions (*Opticks Or A Treatise of the Reflections, Refractions, Inflections and Colours of Light* [New York:, 1979], p. 369.

¹⁷ *COM*, v, pp. 73, 100, 117.

nature, and by subjecting them to the rules of calculation; and thus he introduced a great change into natural science, and brought it to a high degree of perfection.¹⁸

The evidence, I submit, is persuasive; to describe Wesley simply as an 'anti-Newtonian,' is to tell only part of the story.

One may ask, why was Wesley attracted to Newton, on the one hand, and repelled by him, on the other? Let me consider here the first of these questions. Some Christian apologists saw in Newton's physics a useful weapon in their struggle against atheism and infidelity. So Richard Bentley, in the first series of the Boyle Lectures, used Newtonian arguments in order to demonstrate the existence of God.¹⁹ This sort of thing did not appeal to Wesley. He did not reject 'natural theology,' to be sure. The reason of fallen humanity has been renewed in part; thanks to preventive grace, even the 'natural man' can learn that God exists. However, knowing that God exists is not to be confused with knowing who or what He is. The latter kind of knowledge, knowing God as holy Love, comes by faith, or as Wesley put it, by acquaintance, not logical inference.²⁰ He appreciated Newton's work, then, not for any apologetic uses to which it might be put, but as an outstanding contribution to scientific knowledge. As noted above, Wesley commended Newton's account of the tides and of the motions of the comets. Never before had these phenomena been explained so satisfactorily. Elsewhere he praised Newton's account of colour and light, as contained in the *Opticks*, a text to which I will return later in this paper. Here the point is, all of these discoveries have added to the sum total of human knowledge.

Now let me list a few of the reasons why Wesley was dissatisfied with Newton. I begin with the doctrine of Providence, a pivotal concept in Wesley's theology. Literally hundreds of references to Divine Providence lie scattered across his sermons, Notes on the Old and New Testaments and other publications. Newton also defended the concept of Providence. He said, for instance, in the General Scholium to the *Principia*, 'A God without dominion, providence, and final causes, is nothing else but fate and Nature'.²¹ Yet Newton's idea of Providence, as stated in the scientific writings which he published,²² might well have given Wesley pause. Newton

¹⁸ John Wesley, *A Concise Ecclesiastical History, From the Birth of Christ to the Beginning of the Present Century* (London: Paramore, 1781), iii, p. 332.

¹⁹ Richard Bentley, 'A Confutation of Atheism from the Origin and Frame of the World,' in I. Bernard Cohen, ed., *Isaac Newton's Papers and Letters on Natural Philosophy and Related Documents*, 2nd ed. (Cambridge: Harvard University Press, 1978), pp. 320, 324, 337 and elsewhere.

²⁰ SER, ii, p. 177; iii, p. 207; see John Deschner, *Wesley's Christology* (Dallas: 1960), pp. 91-92.

²¹ PRI, p. 546.

²² The distinction between published and unpublished writings is significant. In his unpublished manuscripts on Biblical prophecy and chronology, Newton had a great deal to say about God's providential work in history. Modern scholars have been sifting through this material and presenting their findings to the public (see, for instance, Manuel, chapter IV and Robert S. Westfall, *Never at Rest: A Biography of Isaac Newton* [Cambridge, 1980], pp. 319-30), but of course Wesley wouldn't have known about it.

insisted that God is present and active in the universe, as over against the Deists who asserted that He has withdrawn from the world which He called into being and set in motion.²³ However, God's activity, as Newton conceived it, is activity of a limited sort. First, God works in an unspecified way to preserve his creation.²⁴ Then He acts to maintain the particular order which He has chosen for the universe. Having set the fixed stars at great distances from one another, for example, He maintains them in their places; otherwise, being attracted by the force of gravity, they would collapse upon one another. God has also set the planets and their moons in concentric orbits; he regulates them so that they continue in their paths.²⁵ All of this belongs to God's 'ordinary concurrence,' to use Thomas Burnet's phrase.²⁶ From time to time, however, God acts in a more direct manner. Newton had stated that the universe decays over the course of time or, to put it another way, the amount of motion and activity in the universe tends to decrease. God intervenes, Newton said, to renew the universe or to replenish the supply of motion which has been lost.²⁷

Wesley would regard this conception of Providence as woefully incomplete. While it might be reconciled with God's work in history, superintending the rise and fall of nations and empires,²⁸ it says nothing about the 'particular providence' which Wesley was especially anxious to defend.²⁹ In the spirit of Matthew 6:25-33,³⁰ Wesley emphasised the personal support and guidance which God extends to every individual, even the lowliest. As Wesley put it, 'Nothing is so small or insignificant in the sight of man, as not to be an object of the care and providence of God.'³¹

Let us consider next the truth claims which Newton made. While there is a great deal about the natural world which human beings do not know,

²³ Martin Tamny, 'Newton, Creation, and Perception,' *Isis* 70 (1979): 53-54. Passages which support the Deist conclusion can also be found in Newton (Edwin A. Burtt, *The Metaphysical Foundations of Modern Physical Science* [Garden City: 1954], p. 293).

²⁴ John E. McGuire, 'Force, Active Principles, and Newton's Invisible Realm,' *Ambix* 15 (1968): 201-2.

²⁵ PRI, pp. 543-44; Cohen, *Papers*, pp. 284-87, 306.

²⁶ Burnet, I, p. 106.

²⁷ David Kubrin, 'Newton and the Cyclical Cosmos: Providence and the Mechanical Philosophy,' *Journal of the History of Ideas* 28 (July-September 1967) pp. 332, 334; Wesley alludes to these arguments in his *Compendium* (COM, iv, pp. 49-50). See also M. A. Hoskin, 'Newton, Providence and the Universe of the Stars,' *Journal for the History of Astronomy* 8 (July 1977) pp. 77-101.

²⁸ Notice Jacob's remarks on the analogy between natural and social worlds (Margaret C. Jacob, *The Newtonians and the English Revolution 1689-1720* [Ithaca: 1976], pp. 61-62).

²⁹ Westfall has put his finger on the essential point: Describing Newton's theology, he writes: 'Autocrat over all that is,' God 'dictated the form of the natural world and the course of human history. Newton did not meet him in the intimacies of watchful providence, a point related to his Arianism. (See below -JCE) Rather he found Him in the awful majesty of universal immutable laws - an austere God, one perhaps whom only a philosopher could worship' (*Never At Rest*, p. 828).

³⁰ 'Therefore take no thought, saying, What shall we eat? or, What shall we drink? or, Wherewith shall we be clothed? ... for your heavenly Father knoweth that ye have need of all these things' (verses 31, 32b).

³¹ SER, ii, p. 537.

and indeed, lack the capacity to learn, they can be certain about parts of it. In Newton's eyes his work on the refraction of light and his law of universal gravitation were examples of indubitable knowledge.³² Why did he feel entitled to make such claims? As we shall see, the Cartesians believed that their basic presuppositions were undoubtedly true. They conceded, however, that the explanations based upon them were, at best, plausible or probable. Newton was more assertive. The key to his self-confidence was mathematics. He developed a method which appealed to experience, on the one hand, and used mathematical reasoning, on the other. In order to explain the motions of bodies, Newton focused on their primary qualities - those which can be numbered and measured and postulated the existence of various 'forces.' He then developed, in Books I and II of the *Principia*, a mathematics of quantities and forces which, when applied to observable phenomena, fitted them closely.³³ Now comes the important point, insofar as Newton's critics were concerned. If matter in motion is described mathematically, one might infer that the patterns of nature are in some sense necessary, that is, immutable and unchanging.³⁴ This conclusion would be based upon the premise that the subject of

³² Burt, pp. 226, 235. Over the years, the claims which Newton made for his conclusions contracted slightly. One may note the difference between Newton's youthful paper on the refraction of light, presented to the Royal Society in 1672, and the restraint shown in the last edition of his *Opticks*, published in 1717. The claims to certainty made in 1672 gave a good deal of offence (see Zev Bechler, 'Newton's 1672 Optical Controversies: A Study in the Grammar of Scientific Dissent' in *The Interaction Between Science and Philosophy*, ed. Yehuda Elkana [Atlantic Highlands, New Jersey: 1974], especially pp. 118-21). Query 31 of the *Opticks* includes this language: 'And although the arguing from Experiments and Observations by Induction be no Demonstration of general Conclusions; yet it is the best way of arguing which the Nature of Things admits of' (p. 404). This was not much of a retreat, as the following passage from Henry Pemberton suggests: 'The proofs in natural science cannot be so absolutely conclusive, as in the mathematics. For the subjects of that science are purely the ideas of our own minds ... But in natural knowledge the subject of our contemplation is without us, and not so completely to be known: therefore our method of arguing must fall a little short of absolute perfection. It is only here required to steer a just course between the conjectural method of proceeding ... and demanding so rigorous a proof, as will reduce all philosophy to meer scepticism, and exclude all prospect of making any progress in the knowledge of nature' (*A View of Sir Isaac Newton's Philosophy* [Dublin: Re-printed by John Hyde, 1728], pp.19-20).

³³ Newton explained the process as follows: 'In mathematics we are to investigate the quantities of forces with their proportions consequent upon any conditions supposed; then, when we enter upon physics, we compare those proportions with the phenomena of Nature, that we may know what conditions of those forces answer to the several kinds of attractive bodies. And this preparation being made, we argue more safely concerning the physical species, causes, and proportions of the forces' (PRI, p. 192).

³⁴ This was not the only possible inference. Describing the situation in the mid-seventeenth century, Barbara J. Shapiro says, 'While mathematical calculations which described the behaviour of natural things became increasingly common, the extent to which these calculations partook of demonstration or were simply mathematically formulated descriptions was not often discussed' (*Probability and Certainty in Seventeenth-Century England* [Princeton: 1983], p. 32).

mathematics is a part of eternal and necessary truth.³⁵ But what becomes then of God's freedom and Providential care?

It comes as no surprise that mathematics had an unsavoury reputation in certain quarters. Distinguished persons of the order of Jonathan Swift, George Berkeley and Edmund Burke were deeply hostile towards mathematics.³⁶ Their hostility, which Wesley shared, cannot be explained simply on the basis of 'mathsfright' or that antagonism between the 'two cultures' to which Lord Snow called attention.³⁷ They tended to think of mathematics as dehumanizing and mechanical and as a threat to the Christian faith. Wesley's comment is instructive: 'I am convinced, from many experiments,' he wrote in 1760, 'I could not study to any degree of perfection either mathematics, arithmetic, or algebra, without being a deist, if not an atheist.'³⁸

I turn now to personal reasons why Wesley might have been suspicious of Newton. By 'personal' I mean attitudes which owed little or nothing to Newton's strictly scientific work. That such influences came to bear is not implausible, although they must be a matter of conjecture.

During the first quarter of the eighteenth century, English churchmen found a great deal to disagree about; among the subjects in serious contention was the doctrine of the Trinity. Wesley defended the orthodox doctrine, although he did not insist upon every technical term which had been used to express it.³⁹ Newtonianism, on the other hand, was tainted with heresy. This may have affected Wesley's attitude toward Newtonian science. The study of Newton's manuscripts has shown that he rejected orthodox Trinitarianism although he was careful not to broadcast his opinions.⁴⁰ He did discuss his Arian views with intimates whom he could trust,⁴¹ however, and rumours regarding his heterodox conclusions circulated among those who did not know him well. Two of Newton's

³⁵ For an illustration of this premise, see John Norris, *Reflections upon the Conduct of Human Life; With reference to the Study of Learning and Knowledge*, 2nd ed. (London: Printed for S. Manship, 1691), pp. 26-27.

³⁶ Donald J. Greene, 'Smart, Berkeley, the Scientists and the Poets: A Note on Eighteenth-Century Anti-Newtonianism,' *Journal of the History of Ideas* 14 (June 1953): 340, 347, 350-51; Kathleen Williams, 'Animal Rationis Capax' in *Jonathan Swift's Gulliver's Travels: Modern Critical Interpretations*, ed. Harold Bloom (New York: 1986), pp. 48-52; Maurice Crosland, 'The Image of Science as a Threat: Burke versus Priestley and the 'Philosophic Revolution,' *British Journal for the History of Science* 20 (July 1987): 295-96. Swift's friend, John Arbuthnot, tried to rebut his objections (see quotation from Arbuthnot's *Essay on the Usefulness of Mathematical Learning in Memoirs of the Extraordinary Life, Works, and Discoveries of Martinus Scriblerus*, ed. Charles Kerby-Miller [New York: 1966], p. 327).

³⁷ Charles P. Snow, *The Two Cultures and the Scientific Revolution* (Cambridge: 1959).

³⁸ SER, ii, p. 270; see COM, i, p. iii.

³⁹ SER, ii, pp. 377-78.

⁴⁰ Westfall, *Never at Rest*, pp. 594, 828.

⁴¹ Westfall concludes, 'Well before 1675, Newton had become an Arian in the original sense of that term' (p. 315); on the character of Newton's Trinitarianism, see pp. 309-18, 822-25. This conclusion has not gone undisputed: Frank E. Manuel asserts, 'It is an error to seize upon his antitrinitarianism in order to pigeonhole him in one of the recognized categories of heresy - Arian, Socinian, Unitarian, or Deist' (p. 58).

associates were not as circumspect. In 1708, William Whiston, Newton's successor at Cambridge, published an Arian essay on the *Apostolic Constitutions*. As a result, Whiston lost his professorship. In 1712, Samuel Clarke, who was to defend Newton's ideas in a famous correspondence with Gottfried Wilhelm Leibniz, published his *Scripture Doctrine of the Trinity*. He too was accused of Arianism and lost any chances he may have had of receiving further promotion in the Church.

Party politics also may have influenced Wesley's attitude toward Newton and his physics. Newton was a Whig; he was elected in 1689 and again in 1701 to represent the Whig interest in Parliament. Newton owed his appointment as Master of the Mint to the Whig grandee, Charles Montague, Lord Halifax, once a Fellow of Newton's college and later First Lord of the Treasury. Wesley, on the other hand, was a Tory, 'an High Churchman, the son of an High Churchman,' as he put it in a letter to Lord Dartmouth.⁴² The Toryism which he learned at Epworth and Oxford may have inclined him against Newton. As I have stated above, he was attracted to the natural philosophy of John Hutchinson. It has been argued, by Christopher B. Wilde, that Tory High Churchmen were especially drawn to Hutchinson, because his ideas could serve as a foil to Newton's.⁴³ Margaret Jacob's hypothesis may also be cited. Professor Jacob has identified a group of latitudinarians or low churchmen who, in an effort to defend the Church's interests, constructed what she calls a 'Newtonian ideology.'⁴⁴ This programme combined a social ethic emphasising benevolence and self-interest, millennial expectations based upon Biblical prophecy and elements of Newtonian physics. While not all of the proponents of this ideology were Whigs,⁴⁵ the greater number of them appear to be. Wesley may have associated Whiggery, latitude and Newtonianism, to the disadvantage of the latter.

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I have been outlining some of the reasons why Wesley was dissatisfied with Newtonian science. As previously suggested, Wesley saw in Newton a potential threat to the Christianity passed down from generation to generation. Could a science which was less threatening be found? An alternative lay at hand, namely, Cartesianism. Wesley had been introduced to Descartes' ideas while he was an undergraduate at Oxford. He must have remembered what he had learned, because echoes of Cartesianism are to be heard in his *Compendium of Natural Philosophy*, published almost four decades later.

Why, from Wesley's point of view, might Descartes be a promising alternative to Newton? I am thinking now not about Descartes'

⁴² Wesley, *Letters*, vi, p. 156.

⁴³ C.B. Wilde, 'Hutchinsonianism, Natural Philosophy and Religious Controversy in Eighteenth Century Britain,' *History of Science* 18 (1980):2, 6-11.

⁴⁴ Jacob, *Newtonians*, pp. 21, 160.

⁴⁵ Anita Guerrini, 'The Tory Newtonians: Gregory, Pitcairne, and Their Circle,' *Journal of British Studies* 25 (July 1986) : 288-311.

explanations of particular phenomena, but about the rationale which lies behind them. A distinction needs to be drawn between the Cartesian ideal and Descartes' actual practice. The Cartesian ideal is a deductive science. Having established certain metaphysical principles, based upon the soul's clear and distinct ideas, one can deduce from them various laws of nature.⁴⁶ These laws are undoubtedly true, Descartes said, assuming of course that one had attended closely to the ideas and followed the rules of logic without fail. The laws, in turn, can be used to explain specific phenomena, such as the tides and the comets. Ideally, there should be a single explanation for each phenomenon. Now comes the rub. In actual practice, two or more explanations may be devised, each of which is consistent with the metaphysical principles and the laws. How is the scientist to decide among these alternatives? At this point, Cartesianism takes an empirical turn. The better explanations are those which agree closely with sense experience. Once this appeal to experience has been made, the claim to certainty has been compromised. Cartesian scientists might continue to claim certitude for their explanations. They came to recognise, however, that they are, at best, statements of probability. In the language of the day, such explanations are 'hypotheses.'

This body of ideas allowed Wesley to minimize or to disregard unwelcome conclusions. Not only had he been introduced to Descartes and Newton; he was also an Aristotelian of sorts. From Aristotle's point of view, statements of probability are not to be considered 'knowledge'; they are simply 'opinions'. This gave Wesley an opening. If a scientific explanation seemed to threaten the Christian faith, he could push it aside as a matter of opinion only. The word 'hypothesis' appears occasionally in Wesley's sermons and more frequently in the *Compendium*.⁴⁷ Thus we are told that Newton's law of universal gravitation is a 'cobweb hypothesis'.⁴⁸ Sometimes Wesley went further than this. All scientific explanations, he asserted at one point, 'terminate in mere conjectures: one whereof is often more probable than another, but none admits of any solid proof.'⁴⁹

But Wesley was unwilling to rest there. He had made an important but expensive trade-off. He emphasised the 'hypothetical' character of science, in the hope of defending the Christian faith against the challenge posed by the new science. In so doing, however, he had to relinquish the goal of certitude. This break with the Aristotelian tradition must have made Wesley uncomfortable. But there is more to it than that. Wesley had a craving for certainty which will only be explained, I suspect, in psychological terms. This brings me to the man who claimed to provide such certitude, John Hutchinson. Wesley hoped that Hutchinson would provide the certainty he was seeking, only to be frustrated and disappointed in the end.

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⁴⁶ The following expositions of Cartesian science are extremely useful: Desmond M. Clarke, *Descartes' Philosophy of Science* (Manchester: 1982); Clarke, *Occult Powers and Hypotheses: Cartesian natural Philosophy under Louis XIV* (Oxford: 1989).

⁴⁷ SER, ii, pp. 380, 382; COM, iii, pp. 4, 277, 318; iv, p. 39.

⁴⁸ SER, ii, pp. 382. 'Cobweb' is an echo of John Hutchinson, who used the same adjective to describe Newton's concept of gravity.

⁴⁹ COM, i, p. 21.

John Hutchinson (1674-1737) is not to be confused with Francis Hutcheson, Professor of Moral Philosophy at Glasgow. Hutchinson the 'naturalist' began his career as an agent for the Duke of Somerset. He became acquainted with the Duke's personal physician, Dr. Josiah Woodward, and helped him form his 'cabinet' or collection of geological specimens. Thanks to Somerset's patronage, Hutchinson was able to retire from active life in order to pursue his researches. Hutchinson devised a complete 'system of the world,' the first part of which he published in 1724, under the title, *Moses's Principia*. As his title suggests, Hutchinson was a severe, not to say unbalanced, critic of Newton's philosophy. However, both Hutchinson and Newton had one thing in common. They both claimed certitude for their conclusions, although the bases of their claims were as different as night and day.

Moses's Principia belongs to a genre of literature called 'Mosaic physics.' Hutchinson attributed the book of Genesis to Moses who, in the estimate of many, was the first philosopher.⁵⁰ If one read with discernment the first seventeen verses of Genesis, he would find there a complete system of natural philosophy. Hutchinson presupposed a certain theory of language.⁵¹ Hebrew, the language in which Moses wrote, is the original tongue, created by God Himself. There is an exact correspondence between the words of Hebrew and the realities they signify.⁵² These realities exist on two levels, the physical and the spiritual. A given word may have both a literal meaning, referring to the first of these, and an esoteric meaning, referring to the second. In order to discover these deeper meanings, Hutchinson compared the different passages in which a particular word appeared and brought into association the various ways in which it was used. He also attached a special importance to the patterns

⁵⁰The figure of Moses and the book of Genesis could be treated in different ways. (a) Genesis might be used as a source of factual data, which could be combined with facts drawn from other sources, in order to explain some aspect of the natural world. Thomas Burnet sometimes used the book of Genesis in this manner. In addition to examples from his *Sacred Theory of the Earth*, p. 276, for instance, see Burnet's letter to Newton, January 13, 1680 (*Correspondence of Isaac Newton*, vol. 2: 1676-1687, ed. H. W. Turnbull [New York: 1960] p. 322). (b) St. Anselm had spoken of 'faith seeking understanding.' 'Modern' science could be used to explicate the system of the world which Moses had described in general terms. Both Burnet and Hutchinson did this; however, Burnet felt free to depart from Moses when 'philosophy' demanded it. Moses had expressed himself in a way which the common people could understand, so his account is not always as precise as the natural philosopher would wish (Burnet to Newton, *Ibid.*, pp. 323, 326). (c) In an effort to deflect criticism, the authority of Moses might be claimed for a concept which developed outside the Biblical tradition. Thus Ralph Cudworth, at a time when atomic theory was associated with Epicurean atheism, made the claim that Moses, the first philosopher, was the original atomist (*The True Intellectual System of the Universe* [London: Printed for Richard Royston, 1678], p. 12).

⁵¹The best discussion of this subject is to be found in G. N. Cantor, 'Revelation and the Cyclical Cosmos of John Hutchinson,' in *Images of the Earth: Essays in the History of the Environment Sciences*, ed. L. J. Jordanova and R. S. Porter (Chalfont St. Giles: British Society for the History of Science, 1979), pp. 12-17.

⁵²HW, ii (Moses's Principia, Part II''), p. xxix.

into which consonants fall. (Hutchinson insisted on using the unpointed or 'uncorrupted' text only.) If two or more words include similar arrangements of consonants, then the things which they signify must be related. Thus Hutchinson could claim that each letter of each word is a clue regarding the nature of reality.⁵³

Such an approach seems bizarre to us. It was rapidly losing ground in the eighteenth century,⁵⁴ although Hutchinsonianism attracted some noteworthy adherents, as we shall see in a moment. 'Mosaic physics' or something similar had appealed to the seventeenth century, however. To take some British examples only, both the Independent divine, Theophilus Gale (1628-78) and Henry More (1614-87), the Cambridge Platonist, developed natural philosophies based upon Moses.⁵⁵ As for Hutchinson, men of repute took him seriously. Among his eighteenth-century disciples may be counted Duncan Forbes (1685-1747), Lord President of the Court of Session, sitting in Edinburgh; the respected 'geologist,' Alexander Catcott of Bristol (1725-79),⁵⁶ George Horne (1730-92), President of Magdalen College, Oxford and later Bishop of Norwich;⁵⁷ and William Romaine (1714-95), the Calvinistic chaplain to Lady Huntingdon and Professor of Astronomy in Gresham College, London. Even in the nineteenth century the influence of Hutchinsonianism was still being felt.⁵⁸

In developing his ideas, Hutchinson drew upon many sources. For instance, he made extensive use of Christian Hebraist scholarship.⁵⁹ He was

⁵³ *Ibid.*, pp. xxix, 356.

⁵⁴ See Burnet's comment i, p. 282).

⁵⁵ Theophilus Gale, *The Court of the Gentiles; or, A discourse touching the original of human literature, both philologie and philosophie, from the Scriptures, and Jewish Church*, 4 vols. (Oxford; Printed by H. Hall, 1669-77); Henry More, *Conjectura Cabbalistica. Or, A Conjectural Essay of Interpreting the mind of Moses, in the Three first chapters of Genesis, according to a Threefold Cabbala* (London: Printed by James Flesher, 1662). Edward Stillingfleet insisted that Moses provides the only correct account of the universe's origin and rejected the systems of Aristotle, the Stoics, Epicurus and Descartes. However, Stillingfleet did not try to 'explain' Moses's account (*Origines Sacrae*, 3rd ed. [London: Printed by R. W. for Henry Mortlock, 1666], pp. 411-70).

⁵⁶ Michael Neve and Roy Porter, 'Alexander Catcott: Glory and Geology,' *British Journal for the History of Science* 10 (March 1977): 37-60. Wesley commended Catcott as one who 'truly fears God' (Wesley, *Journal*, vi, p. 305).

⁵⁷ Wesley described Horne as a man of strong and deep understanding (Wesley, *Journal*, v, p. 383; for his other comments concerning Horne, see *Journal*, iv, p. 490; vi, p. 402). Horne raised no objection to Wesley's preaching within his diocese (Wesley, *Journal*, viii, p. 108).

⁵⁸ A. J. Kuhn, 'Glory or Gravity: Hutchinson vs. Newton,' *Journal of the History of Ideas* 22 (July-September 1961): 304; Robert E. Schofield, *Mechanism and Materialism: British Natural Philosophy In An Age of Reason* (Princeton: 1970), p. 133.

⁵⁹ Hutchinson cites repeatedly the work of late sixteenth and seventeenth-century Hebrew scholars, such as Johann Haberman (1516-90), Johannes Buxtorius (1564-1629), Edmund Castell (1606-85), Johannes Coccejus (1603-69), Marius de Calasio (d. 1620), William Robertson (d. 1686?), Valentin Schindler (d. 1604) and Louis Thomassin (1619-85). Note the table on the first unnumbered page preceding the introduction to HW, ii ('Moses's Principia, Part II').

influenced by the Platonic tradition, as his references to Plato himself, Plotinus and Clement of Alexandria make clear.⁶⁰ But he was also indebted to many other persons, in ways which are imperfectly understood. The influence of Jakob Boehme (1575-1624), the German Lutheran mystic, and Hermann Boerhaave (1688-1738), Professor of Medicine in the University of Leiden, has also been suggested.⁶¹ However that may be, Hutchinson was clearly indebted to Descartes. At point after point, he stood alongside Descartes, as over against Newton. A few comparisons will illustrate this generalisation.

Descartes intended to explain the natural world in terms of two created substances only, 'spirit' and 'matter.' There is no void or vacuum, Descartes said. Space is filled with particles of matter which assume various shapes and sizes. Changes in motion are to be explained in terms of collisions between particles or the pressure which one brings to bear upon another. Newton found this account to be unacceptable, for two reasons. It encouraged materialism and atheism, Newton believed. Once the universe has been created and set in motion, Descartes seemed to imply, God is no longer needed. (A similar criticism had been made by Pascal.)⁶² Furthermore, Newton argued, Descartes' account does not explain observed phenomena.⁶³

As part of his effort to provide more adequate explanations, Newton introduced a third entity, 'force,' to stand alongside 'spirit' and 'matter.' If his readers were bewildered by this concept, they can be excused for their bafflement. 'Force' was hard to pin down, since Newton's description of what he had in mind changed over the years.⁶⁴ Then there was the metaphysical question. According to Descartes the essence of spirit is thought and the essence of matter is extension. What is the essence of force? Newton never answered this question. Hutchinson, following the lead of Leibniz, accused Newton of taking a step backwards. The new science had rejected the substantial forms and real qualities which the Aristotelians and scholastics had used in their explanations. Newton, with his talk of 'force,' was trying to bring back these 'occult qualities,' as Leibniz and Hutchinson called them.⁶⁵ Newton vigorously rebutted the charge.

Hutchinson had even more trouble with Newton's statements regarding causality. In particular, Newton had declared that the 'cause' of gravity

⁶⁰ HW, ii ('Moses's Principia, Part II'). pp. 161-63, 200, 203, 206.

⁶¹ Wilde, p. 15; P.M. Heimann, "Nature Is A Perpetual Worker: 'Newtons Aether and Eighteenth-Century Natural Philosophy,'" *Ambix* 20 (March 1973): 15.

⁶² Blaise Pascal, *Pensées*, trans. A. J. Krailsheimer (Penguin ed. 1966), p. 355.

⁶³ PRI, p. 543.

⁶⁴ The authorities on this subject are Richard S. Westfall, *Force in Newton's Physics* (New York: 1971) and Ernan McMullin, *Newton on Matter and Activity* (Notre Dame: 1978).

⁶⁵ HW, ii ('Moses's Principia, Part II'), p. 27; v ('A Treatise of Power Essential and Mechanical'), p. 133; *The Leibniz-Clarke Correspondence*, ed. H. G. Alexander (Manchester: 1976), pp. 94, 95, 184, 188. On forms and qualities, see Marie Boas. 'The Establishment of the Mechanical Philosophy,' *Osiris* 10 (1952): 415-17.

remains to be discovered.⁶⁶ This statement was doubly irritating to Hutchinson.⁶⁷ While Newton said that the cause of gravity is unknown, this did not prevent him from speculating about it. Writing to Richard Bentley in 1693, he remarked that the cause might be either material or immaterial.⁶⁸ From time to time, Newton suggested that an 'aether,' an 'active principle' or an 'elastic and electric spirit' might be the cause.⁶⁹ None of these was acceptable to Hutchinson. He interpreted each of these entities in terms of Newton's 'force' which, as we have seen, he rejected.

But Hutchinson had another and more fundamental problem with Newton's statements regarding causality. Following the lead of Descartes, Hutchinson declared that there is one and only one cause, namely, God Himself. While God may employ material entities in order to effect his purposes, these entities have no 'power' in themselves.⁷⁰ Although the words 'agent' and 'cause' are used sometimes to describe them, this language is not strictly accurate. Properly speaking, God is the sole Cause.⁷¹ If Newton's statements were read from this perspective, they fail to give God the glory which is due his Name.

This point can be carried still further. Hutchinson was an orthodox Trinitarian, as Newton was not. He connected Newton's Arian theology and his reticence regarding the cause of gravity. For Hutchinson, God the Son is the Person of the Trinity who creates and moves the universe.⁷² Newton, in refusing to commit himself on gravity, was indirectly expressing his theological preferences, or so Hutchinson charged. His reticence was an implicit denial of the full divinity of God the Son.

Newton's account of space also provoked Hutchinson. Once again, the ideas of Descartes helped to shape his response. Newton had made statements such as this:

Does it not appear from *Phaenomena* that there is a Being incorporeal, living, intelligent, omnipresent, who in infinite Space, as it were in his Sensory, sees the things themselves intimately, and thoroughly perceives them, and comprehends them wholly by their immediate presence to himself⁷³

⁶⁶ PRI, pp. 546-47.

⁶⁷ Notice the warmth with which he writes about Newton (HW, v ['Treatise of Power Essential and Mechanical'], pp. 131f., 214-18).

⁶⁸ Cohen, Papers, p. 303.

⁶⁹ P.M. Heimann summarizes the relationships between aethers, active principles and spirits (pp. 5-8).

⁷⁰ HW, v ('Treatise of Power Essential and Mechanical'), p. 187. See Peter K. Machamer, 'Causality and Explanation in Descartes' Natural Philosophy' in *Motion and Time Space and Matter*, ed. Peter K. Machamer and Robert G. Turnbull (Columbus: 1976), pp. 178-79. Nicolas Malebranche, whose influence upon Wesley awaits thorough examination, made similar statements regarding the Divine causality (*The Search After Truth*, trans. Thomas M. Lennon and Paul J. Olscamp [Columbus: 1980], pp. 448, 615, 791).

⁷¹ HW, i (separate pagination for 'Moses's Principia, Part II'), p. 20; v ('Treatise of Power Essential and Mechanical'), pp. 22-23, 151, 171-72. There was a point in Newton's career when he said that the will of God is the cause of gravity (McGuire, pp. 161-64).

⁷² HW, xi ('Glory or Gravity, Part II'), pp. 2-3; see also V ('Treatise of Power Essential and Mechanical'), pp. 199-200.

⁷³ Newton, *Opticks*, p. 370.

This and similar statements gave Hutchinson another occasion to accuse Newton of subverting orthodox Christianity. Such language tends toward 'pantheism,' the identification of the material world and the Divine. Indeed, he asserted that Newton was working hand in glove with John Toland (1670-1722), the man who invented the term 'pantheism.'⁷⁴ Hutchinson was probably reading Newton in light of Descartes' teachings. For Descartes, the essence or primary quality of matter is extension. Matter occupies infinite space and, in fact, there is no real distinction between the two.⁷⁵ If God's sensory is space, and space is matter, then God must be material as well, Hutchinson may have reasoned.

Over two dozen references to the works of Hutchinson and his disciples are to be found in Wesley's letters, journals and other publications. The first one I have noticed comes from the year 1747; the last, from 1787. Hutchinson appealed to Wesley for several reasons. (a) Hutchinson had sought a secure foundation for his system in the truth of explaining God's Word. (b) In explaining the Scriptures, he had used a wide variety of exegetical tools, both ancient and modern. (c) He offered a fully-developed alternative to Newton, whose philosophy was open to question. (d) Hutchinson incorporated into his system Cartesian concepts with which Wesley was familiar. It would be hard to say, however, that he ever committed himself to Hutchinsonianism for an extended period of time.

Apparently Wesley was fascinated by Hutchinson's system and had a difficult time letting go of it. This point can be illustrated by referring to one of Hutchinson's admirers, Samuel Pike (1717-73). Wesley records in his journal for January, 1756 that he was reading Pike's *Philosophia Sacra; or the Principles of Natural Philosophy Extracted from Divine Revelation*. Wesley concluded that Pike 'says all that can be said for Mr. Hutchinson's hypothesis,' 'but it is only a hypothesis still; much supposition and little proof.' One might assume this would settle the matter, but in November of the same year, Wesley and his preachers were going over Pike's book once again.⁷⁶ Then they began to study an abridgement (really an abstract) of Hutchinson's works.⁷⁷ Wesley concluded, 'The abridgers have expressed, with surprising exactness, not only his [Hutchinson's] sense, but his very spirit. But, in truth, I cannot admire either, nay, I admire his hypothesis less and less, as I see the whole is unsupported by Scripture.' Despite this

⁷⁴HW, v ('Treatise of Power Essential and Mechanical'), pp. 273-75. Margartet C. Jacob mentions Toland's efforts to adapt Newtonian science for his own purposes (*The Radical Enlightenment: Pantheists, Freemasons and Republicans* [1981], p. 83.)

⁷⁵Frederick Copleston, *History of Philosophy*, vol. IV: *Descartes to Leibniz* (Westminster, Maryland: 1958), iv, p. 129.

⁷⁶Wesley, *Journal*, iv, pp. 146-47, 190.

⁷⁷Wesley refers to the 'Glasgow' abridgement of Hutchinson's works. No such book is listed in the catalogues of the British Museum and the Library of Congress. Wesley is probably referring to an anonymous text, *An abstract from the works of John Hutchinson, esquire. Being a summary of his discoveries in philosophy and divinity* (Edinburgh: Printed by R. Flemming, 1753).

negative verdict, Wesley returned to the 'abridgement' in July, 1758; however, his second reading of the text led him to a similar conclusion: 'The more I consider it, the less can I subscribe to his [Hutchinson's] system either of divinity or philosophy, as I am more and more convinced that they have no foundation in Scripture or sound reason'.⁷⁸

This judgment notwithstanding, Wesley continued to take up and read Hutchinsonian books, only to be disappointed again and again. He perused William Jones, Robert Spearman, Walter Hodges and Henry Lee. His conclusion regarding each of these works was negative. So Wesley says of Lee, 'Many of his remarks, like those of his master, Mr. Hutchinson, are utterly strained and unnatural, such as give pain to those who believe the Bible, and diversion to those who do not.'⁷⁹ It comes as something of a surprise, then, to find Wesley stating in 1777 that Hutchinson's system of the world is probably true and recommending an abridgement of Hutchinson a few years later. He returns to the attack in 1785, but then he writes in 1787 that he approves of many of Hutchinson's remarks.⁸⁰

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What then are we to conclude? Wesley was acquainted with the ideas of Newton, Descartes and Hutchinson. He was attracted to each of these authors, but he also had serious doubts about them as well. In particular, how are we to evaluate Wesley's attitude toward Newton? Wesley's inconsistencies cannot be resolved, but perhaps the difficulties they pose can be narrowed. Let me explain briefly what I mean.

I. B. Cohen and Thomas S. Kuhn have made an important point. During the eighteenth century, there was more than one way to be a Newtonian.⁸¹ Each way was founded upon a Newtonian text, the first upon the *Principia Mathematica*, the second upon his *Opticks*. We should not forget the praise which Wesley heaped upon Newton, to which I referred at the beginning of this paper. Here is what Wesley said about the *Opticks*:

That wonderful theory, whereby is investigated and distinguished from one another, all that variety of colours which enters into the composition of that uniform appearance, Light, might of itself suffice to establish for ever the

⁷⁸ Wesley *Journal*, iv, pp. 191, 280.

⁷⁹ *Ibid.*, vi, p. 6. On Jones, Spearman, Hodges and Lee, see v, pp. 149, 353, 432; vi, pp. 5-6. Wesley was also familiar with another Hutchinsonian work, Andrew Wilson (pseudonym 'Impartial Inquirer'), *Short Observations on the Principles and moving Powers Assumed by the Present System of Philosophy* (London: Printed for W. Nicoll, 1764). Wesley summarized this book in the second edition of his *Compendium* (Bristol: Printed by William Pine, 1770), II, pp. 227-42. This summary does not appear in the third edition.

⁸⁰ Wesley, *Letters*, vii, pp. 251-52, 367.

⁸¹ I, Bernard Cohen, *Franklin and Newton: An Inquiry into Speculative Newtonian Experimental Science and Franklin's Work in Electricity as an Example Thereof* (Philadelphia: American Philosophical Society, 1956), p. 179; Thomas S. Kuhn, 'Mathematical versus Experimental Traditions in the Development of Physical Science,' in *The Essential Tension: Selected Studies in Scientific Tradition and Change* (Chicago: 1977), pp. 31-65; Kuhn, 'The Function of Measurement in Modern Physical Science,' *Isis* (June 1961): 185-90.

glory of Sir Isaac Newton, and be an eternal monument of the extraordinary sagacity of that great man.⁸²

Wesley would have found the *Opticks* less threatening than the *Principia*. The book emphasises, not mathematics, but experiment and the collection of data. It is open-ended; the *Opticks* close, not with a series of proven conclusions, but with a set of questions or 'queries.' The approach for which the book stands emphasises the practical application of scientific research,⁸³ which surely must have appealed to Wesley. If and when he thought of Newton in terms of the *Opticks*, he might have considered himself a good Newtonian. But that is speculation on my part, which remains to be established by additional research.

JOHN C. ENGLISH

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⁸² COM, v, p.82.

⁸³ Cohen, *Franklin*, p. 108.

We offer our President Emeritus, the Rev. Dr. John C. Bowmer our congratulations and good wishes on the occasion of his recent eightieth birthday. The latest bulletin of our North-East Branch takes the form of a *festschrift* in his honour and a few spare copies may still be available from its editor, Mr. G. E. Milburn, 8 Ashbrooke Mount, Sunderland, SR2 7SD. We are pleased to note that the current issue of *Worship and Preaching* includes a timely reprint of Dr. Bowmer's study of the Local Preacher in Early Methodism, which first appeared in the *Local Preachers' Handbook* for 1963.

The Wesleyan Theological Society has issued a call for papers on the theme: 'Wesleyanism and Modernity' in preparation for its 1991 Annual Meeting at Ashland Theological Seminary, Ohio, USA, November 6-7, 1992. Proposals, to be accompanied by a 250-300 word summary, should be submitted to Susie Stanley, Western Evangelical Seminary, 4200 SE Jennings Avenue, Portland, OR 97267, USA, by February 1, 1992.

The Eucharistic Hymns of John and Charles Wesley by J.E. Rattenbury (1948) is a classic work which has been long out of print. It is now available again in an American edition edited by Timothy J. Crouch and published by OSL Publications, Cleveland, Ohio, (ISBN: 1-878009-05-2). The entire text has been rewritten in inclusive language and Rattenbury's longer sentences have been broken up. Fortunately, the same treatment has not been given to *Hymns on the Lord's Supper*, which remain as an Appendix.

A Correction

In Notes and Queries No 1436, Methodist Malfeasants, (vol xlvii, p. 140) the date of the Adelaide Bartlett murder case was given as 1868. This should read 1886.

BIBLIOGRAPHY OF THE PUBLISHED WRITINGS OF FRANK BAKER : A SUPPLEMENT

[In preparing the initial Frank Baker Bibliography [*Proceedings*, xviii (5, May 1990): pp. 232-240] I was acutely conscious that in attempting to do this as a 'surprise' in Dr. Baker's honour, we would miss many items.

We did. Dr. Baker kindly provided a list of the omissions which are listed below. As in the first bibliography, they are arranged in chronological order of publication under the same headings. The numbering continues that of the first bibliography. E.H.]

BOOKS: AUTHOR

- 190 *An Order of Worship for Aldersgate Sunday*. London: Epworth Press for the International Methodist Historical Society, 1951. 4pp.
- 191 "Methodism in Kingston upon Hull", *Handbook and Directory for the Aggregate Meeting of the Methodist Local Preachers' Mutual Aid Association*, June, 1958, 8pp.

BOOKS: CONTRIBUTIONS TO LARGER WORKS

1950 -

- 192 "Methodist History and Doctrines, Methodism's Witness and Present Opportunities", *Programme Suggestions for Senior Groups. Methodist Youth Dept. Year Book*, 1950-51, pp. 3-36.
- 193 "Statistics of World Methodism", *The Methodist of the World, Compiled for the Eighth Ecumenical Conference*. International Methodist Historical Society, Leeds, 1951, pp. 21-28.
- 194 "Wesley, Charles; Wesley, John; Methodism", *Chambers's Encyclopedia*, new rev. ed., 1968. Vol XIV, pp. 505-06; 506-07, Vol IX, pp. 334-37.
- 195 "Charles Wesley; John Wesley", *Encyclopedia Britannica*. Chicago: Univ. of Chicago Pr., 1971.: vol 23, pp. 412-14; 414-16.
- 196 "Love Feast", *Dictionary of Liturgy and Worship*, ed. J.G. Davies. London: SCM Press, 1972, pp. 247-50.
- 197 "John Wesley and the Bible", *Historical Highlights*, Commission on Archives and History, South Georgia Conference, June 1976.
- 198 "Methodism", *Encyclopedia Americana*, New York: Grolier, 1980. Vol 18, pp. 793-96.
- 199 *The Works of John Wesley, volume 7, A Collection of Hymns...*: ed. Franz Hildebrandt and Oliver A. Beckerlegge. Oxford: Clarendon Press, 1983. "Appendix A: [text see No. 30] 723-26; Appendix B: The Source of the Collection, 727-29; Appendix F: The Gamut or Scale of Music, 1761, 739-64; Appendix H: Directions for Singing, 1761, 765; Appendix I: Thoughts on the Power of Music, 1779, 766-79; Appendix J: Wesley's Tunes, 1786, 780-87" [all, except Appendices A and I are with Oliver A. Beckerlegge].
- 200 *The Works of John Wesley, vol I-4, Sermons*, ed. Albert Outler. Nashville: Abingdon Press, 1984-87. "The Sermons in Alphabetical Order; Appendix A [text see No. 30]", v.1: 714-22; v.2: 616-24; v.3: 646-54; v.4: 555-73; 421-513 [text].

- 201 "Love Feast", *A New Dictionary of Liturgy and Worship*, ed. J.G. Davies. London: SCM Press, 1986. pp. 341-45.
- 202 *Works of John Wesley, volume 9; The Methodist Societies.* : ed. Rupert E. Davies. Nashville: Abingdon Press, 1989 "Gair I'r mt (A word to a Methodist), 238-46; Appendix B: A partial reconstruction of Bailey's letter to Wesley (1750), 565-66; Appendix C: 'Ought we to separate from the Church of England?', 567-80; Appendix D: A partial reconstruction of G.L. Fleury's two sermons answered by Wesley (1771), 581-82."

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- 203 "The Education of Wesley's Preachers", *Preachers' Magazine* (Epworth Press) March/April 1938, pp. 101-04, 141-43.
- 204 "Greeny Grass-Blade and the Rest", *Kiddies' Magazine*, (Epworth Press) 1938, pp. 44-47.
- 205 "William Cole: Aspects of an Eighteenth Century Clergyman", *Meth. Magazine*, Vol. 152, September 1939, pp. 522-25.

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- 206 "Methodist Items in the Keighley Museum", *Proc WHS*, Vol. XXIII 1941, pp. 56-59.
- 207 "Wesley's Kempis", *Proc WHS*, Vol. XXIII, 1941, p.46.
- 208 "Charlotte Bronte and Wesley's Kempis", *Proc. WHS*, Vol. XXIII, December 1942, pp. 158-59.
- 209 "Original of a Class Ticket Design", *Proc. WHS*, Vol. XXIII, June 1942, pp. 142-43.
- 210 "Portraits of Wesley Preaching", *Proc WHS*, Vol. XXV, March 1945, pp. 15-16.
- 211 "John Bacon - the First Methodist R.A.", *Proc WHS*, Vol. XXV, June 1946, pp. 94-95.
- 212 "In Methodist Byways: 'Lowe's' Balsam", *Meth. Magazine*, Vol. 160, March 1947, pp. 123-25.
- 213 "In Methodist Byways: the Ballad-Monger", *Meth. Magazine*, Vol. 160, February 1947, pp. 70-72.
- 214 "In Methodist Byways: the First Tract Society", *Meth. Magazine*, Vol. 160, January 1947, pp. 31-33.
- 215 "John Hickling, the Last of Wesley's Preachers", *Proc. WHS*, Vol. XXVI, March 1947, pp. 15-16.
- 216 "Ordination of John Ogilvie", *Proc. WHS*, Vol. XXVI, June 1947, p. 31.
- 217 "Two Letters by John Wesley", *Proc. WHS*, Vol. XXVI, December 1947, pp. 62-64.
- 218 "Wesley and the Roman Catholics", *Proc. WHS*, Vol. XXVI, December 1947, p. 68.
- 219 "World Parish", *Venture: Magazine of Batford Methodist Church, Harpenden, [London]* Vol. 4, December 1948, pp. 5-6.
- 220 "John Hickling's Bible", *Proc. WHS*, Vol. XXVII June 1949, p. 47.
- 221 "The Lovefeast in the Methodist Church", *Friends of Reunion Bulletin*, Vol. 35, December 1949, pp. 4-6.

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- 222 "In Methodist Byways: Wesley Acrostics", *Meth. Magazine*, Vol. 164, November 1951, pp. 502-04.
- 223 "Thomas Maxfield and the Countess of Huntingdon", *Proc. WHS*, Vol. XXVIII, September 1951, p. 63.
- 224 "Headingley Papers: III. John Cennick and Kingswood School", *Proc. WHS*, Vol. XXVIII, December 1952, pp. 149-50.
- 225 "In Methodist Byways: The Scarecrow Chapel", *Meth. Magazine*, Vol. 165, February 1952, pp. 76-79.
- 226 "John Wesley's Death Bed", *Proc. WHS*, Vol. XXVIII, December 1952, p. 168.
- 227 "Behind the Scenes in 1841", *Proc. WHS*, Vol. XXIX, September 1954, pp. 145-48.
- 228 "In Methodist Byways: John Ogilvie, Presbyterian Poet", *Meth. Magazine*, Vol. 167, February 1954, pp. 78-80.
- 229 "The Wesley Coat of Arms", *Journal of the Meth. Hist. Soc. of South Africa*, Vol. 11, August 1954, pp. 19-20.
- 230 "James Evans Among the Crees: a Missionary Goes Home", *The Times* (London), May 6 1955, p. 12.
- 231 "James Evans Returns to the Land of the Crees", *Meth. Rec.*, May 12 1955.
- 232 "The Return of James Evans", *United Church Observer (Toronto)*, illus., June 15 1955, pp. 5-6.
- 233 "The Return of James Evans", *Joyful News.*, July 1955.
- 234 "Francis Fletcher Bretherton", *Proc. WHS*, Vol. XXX, March 1956, pp. 101-02.
- 235 "Methodism's Oldest Church", *New Christian Advocate*, Vol. 3, May 1959, pp. 29-30.
- 236 "The Wesley Historical Society Annual Lectures", *Proc. WHS*, Vol. XXXII, Dec. 1959, pp. 91-92.

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- 237 "Missing Trevecka Letters", *Journal of the Historical Society, Presbyterian Church of Wales*, Vol. 45, 1960, pp. 14-16.
- 238 "Christ the Mediator", *The Upper Room Discipline*, 1964, pp. 67-73.
- 239 "John Wesley by Francis McConnell: Leader's Suggestions. Five sessions", *Adult Teacher*, Vol. (Nashville), May 1964, pp. 11-13.

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- 240 "Come over and Help Us - America to Wesley", *Christian Advocate*, March 18 1971, pp. 13-14.
- 241 "The Origins of the World Methodist Historical Society", *World Meth. Hist. Soc.* Vol. 1, December 1971, pp. 1-2, 7-8.
- 242 "Was John Wesley Real?", *Cross/Talk*, Vol. 2 (3), 1973.

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- 243 "The Lay Pioneers of American Methodism", *Forever Beginning, 1766-1966*, Vol. [Historical Papers presented at American Methodism's Bicentennial Celebrations, Baltimore, Md., April 21-24, 1966]. Association of Methodist Historical Societies, Lake Junalaska, 1967, pp. 169-77.

- 244 "John Wesley and the German Pietists in Georgia", *The Harold Jantz Collection: Proceedings of a Conference to introduce the Collection to specialists in German-American Literary Relations*. Ed. Lel and R. Phelps. Duke University, Center for International Studies, 1981. pp. 30-39.
- 245 "The Apostle of Methodism in the South Seas [Richard Johnson]", *Wesley's South Seas Heritage: a Report of the South Pacific Regional Conference of the World Methodist Historical Society*, Auckland, New Zealand, May 1987. pp. 28-35
- 246 "Methodist Pioneers in the South Pacific", *Wesley's South Seas Heritage: a Report of the South Pacific Regional Conference of the World Methodist Historical Society*, Auckland, New Zealand, May 1987, pp. 36-45.
- 247 *John Wesley at Leisure*, Joint Meeting Canadian Methodist Historical Society and the North American Sector, World Methodist Historical Society, Victoria University, Toronto, June 1989. *Canadian Methodist Historical Society, Papers, 1989*. ed. Neil Semple, Toronto, vol 7, 1990: pp. 23-25.

CORRECTIONS

The following corrections should be made to the original bibliography :-

No 24 replace with:

[Editorial Committee and Eighty Entries] *Encyclopedia of World Methodism*, ed. Nolan B. Harmon. Nashville: United Methodist Publishing House, 1974. 2 vols. Note: A complete list of Baker contributions to this work is available from Methodist Archives, John Rylands Library, Manchester or United Methodist Archives, Drew University, New Jersey, USA. Multi-page articles are as follows: "Anti-Methodist Publications (British)", 119-22; "Life and Literature of Devotion," 672-76; "General Rules," 986-88; "Histories of Methodism," 1129-34; "Wesley Family," 2511-12; "Wesleyana," 2529-32; "World Methodist History : Chronology," 2634-38; "Bibliography" (joint author), 2721-66. pp.

No 30 replace with:

[General Editor/ Textual Editor] *Works of John Wesley, 1975 -*: Oxford Edition of the Works of John Wesley 1975 [1976] - 1983; [continued as] The Bicentennial Edition of the Works of John Wesley Oxford: Oxford University Press; Nashville: Abingdon Press, 1984- Each volume Appendix A: "Wesley's Text: Editions, Transmission, Versions, Presentation and Variant Readings" [or similar title] For individual works see below under section "Books: Contribution to Larger Works". pp

No 169 replace with:

"Unfolding John Wesley: a Survey of Twenty Years' Studies in Wesley's Thought", *Quarterly Review: A Scholarly Journal for Reflection on Ministry*, Vol I, Fall 1980, pp. 45-58. Also translated into German in *Mitteilungen der Studiengemeinschaft für Geschichte der Evangelisch-methodistischen Kirche*, Reutlingen, 1983, pp. 1-18.

ELIZABETH HART

(Elizabeth Hart is Librarian of the Vancouver School of Theology)

THE BIBLE CHRISTIANS IN SCOTLAND

THE Bible Christians were the smallest of the major Methodist denominations and were regionally based with their chapels concentrated in south west England. Their members held their church in such affection that small Bible Christian circuits were formed in the Midlands and North of England to serve west country families who migrated in search of work. There were two short periods when the Bible Christians even crossed the border into Scotland.

The story begins with Mary Ann Werrey, a female itinerant.¹ Whilst serving in the Jersey Mission station and due to go on to Guernsey, she experienced a powerful dream, calling her to Scotland. So she took the opportunity in November 1823 of a free passage on a boat sailing for Blyth, near Newcastle upon Tyne. At Blyth she was kindly received by the Wesleyans and began to preach in the area and northwards. Very soon though, she fell ill with an unidentified illness which recurred on several occasions.² In the 1824 Bible Christian *Minutes* she was stationed in the Northumberland Mission, an official acquiescence to her initiative, with William Mason as superintendent. He found that Mary Ann was far too ill to work and apparently near her end; it was reported that Mason 'arrived too late to effect her rescue' and that 'God took her .. no one living so far as is known being able to tell how or when or where, for not a trace has been left behind.'³ She did not appear in the 1825 stations.

Yet the story was not ended!⁴ Nursed by friends Mary Ann recovered and travelled with those friends to Edinburgh where the story is taken up in newspaper accounts:

It having been publicly announced that a young lady from Guernsey would preach in the Caledonian Theatre yesterday evening, at half-past six o'clock, as might be expected the novel and ridiculous exhibition drew together an immense concourse of people. So early as five o'clock crowds began to besiege the doors, and before they were opened there were as many collected as would have filled the house ten times. When the doors opened the rush was tremendous and in a few minutes the house was completely filled.

Just as public worship was about to commence some of the seats in the gallery gave way from the pressure, the crash of which making the people apprehensive that the gallery would fall down, the whole multitude was seized with panic and pressed towards the doors, when a scene of the greatest danger and confusion ensued that can be conceived. Some were so

¹F.W. Bourne, the *Bible Christians: their Origin and History (1815-1900)* (1905) pp. 139-145. See also n. 2 below.

²A.W.G. Court, 'Mary Ann Werrey in the North', WHS North East Branch *Bulletin*, 1964, pp. 60-62. This quotes letters from Werrey to William O'Bryan.

³Bourne, op. cit. p. 145

⁴Court, loc. cit.

impressed with fear for their safety that, forgetting the danger they ran from broken limbs, two men and a woman leapt to the street from the window of the first storey. Many had their clothes torn, and several lost shoes and shawls, but we have not heard of any person being hurt.

After the fear of danger had subsided the theatre was again filled, but as it was then too late for public worship, a strong party of police, under the orders of Captain Robison, cleared the house and the people soon dispersed. The lady herself took her departure among the cheers of the mob, in a hackney coach. We trust the public authorities will take care that no such disgraceful proceedings are again permitted to disturb the peace and sanctity of the Sabbath.⁵

Ten days later the same newspaper picked up the story again:

The young lady from Guernsey having returned to this city begstointimate that she intends preaching in the Free Masons' Niddry Street, on Monday 16th, Wednesday 18th, Thursday 19th and Friday 20th. Service on the first two mentioned days at one o'clock and on the two latter at six o'clock in the evening. In order to prevent a recurrence of the painful disturbance which took place on the evening of Sunday 1st inst., none will be admitted without a ticket.⁶

There is no known account of these meetings nor of the later career and death of Mary Ann Werrey. Whether her attempt should be described as Bible Christian work is open to question as the Edinburgh meetings appeared to be without the knowledge and sanction of the Conference.

Almost fifty years later the possibility of work in Scotland was officially recognised. The 1874 Bible Christian Conference sent its fraternal greetings to the Canadian Conference, noting that 'calls are continually reaching us from various towns and centres of large populations in the North of England as well as from some places in Scotland.'⁷ At this date there were circuits in Cumberland, Barrow-in Furness and Durham, the northern work having recommenced in Cumberland in 1871.⁸ But west countrymen had been working over the border in the Ayrshire coalfield for several years. One example was the father of T.H. Carthew, who moved from Cornwall to Ayrshire around 1866 before finally settling in County Durham.⁹

In June 1875 Enoch Rogers, the first preacher to be stationed in the Durham circuit visited Scotland. This visit is revealed in the circuit baptism register. From 27th June to 1st July Rogers baptised 21 children of miners: seven at the preaching room at Kirkland, in Dreghorn parish (five miles west of Kilmarnock); nine at the preaching room at Crosshouse in Kilmaurs parish (two miles west of Kilmarnock); three in houses at Kilmaurs and one each in houses in Kirkland and Dreghorn.

⁵*Edinburgh Evening Courant*, May 2nd, 1825 quoted in Court loc. cit.

⁶*Ibid.* May 12th 1825.

⁷*B.C. Minutes* 1874 p. 29.

⁸O.A. Beckerlegge, 'The Northern Bible Christians', *Proceedings*, xxxi, pp. 39-43.

⁹J. Kirsop, *Life of Thomas H. Carthew*, (1897) p 9.

The surnames suggest west country origins - Cole, Silas, Jane, Easterbrook, Creber, Williams, Dawn, Henwood and Olver. By 8th July Rogers was back in County Durham.¹⁰

The next year J. Finch, minister at Dalton reported to the *Bible Christian Magazine* on 'A Visit to Scotland'¹¹ Travelling on Friday February 11th to Kilmarnock, Finch was met by Bro. W.D. Bunney, a local preacher. On Sunday he met the class, addressed the school and preached morning and evening. On Monday evening Finch preached again, always to 'large and attentive congregations'. A full house heard Finch lecture on the Tuesday, while Wednesday and Thursday saw him visiting. Then he '... preached at each place to as many as could gain access to the cottages'. Unfortunately the names of the places are not given. Finch concluded:

Our good friends in Scotland, many of whom are Bible Christians of some years standing, are holding on with the hope that at the ensuing Conference a minister will be sent among them to reside at Kilmarnock.¹²

This hope was acknowledged by the 1876 Bible Christian Conference which again sent news to Canada.

We have at length crossed the border and entered on Scotland's famous and historic ground. A society has been formed at Galston in Ayrshire consisting of 25 members and we hope soon that a minister will be appointed to labour there.¹³

The practical arrangements were less favourable. The 1876 *Minutes* noted under the Cramlington [Northumberland] station that 'The Preacher at Cramlington to take the oversight of Galston and visit it once in six weeks; the Preachers at Barrow and Durham to render what assistance they can.' The statistics for Galston were five local preachers, three preaching places and 25 members. Galston is five miles east of Kilmarnock. Some details are known of two of the families having children baptised in Scotland, for they appear in the 1881 census at Murton in County Durham, where the Durham Bible Christian Mission had its major chapel. Henry Dawn was born in Thrushleton, Devon in 1846 and his wife at Bere Ferrers, Devon in 1850. Two children were born at Stoke Climsland, in Cornwall in 1870 and 1872. A daughter was born in Scotland in 1874 who was baptised by Enoch Rogers in her parents' house on 1st July 1875. Two more daughters were born in Murton in 1878 and 1881. Thomas Henwood appears in Murton aged 63 in 1881, having been born in an unspecified part of Cornwall. One eleven year old daughter, born at Kilmarnock, was also baptised by Rogers on 1st July 1875, again at her parents' house. Mrs Ann Henwood appears to have died by 1881. These west country families moved north

¹⁰Durham Bible Christian Mission Baptism Register, 20 Sept 1874-21 March 1887. Tyne & Wear Record Office 1097/113.

¹¹*B.C. Magazine* 1876 p. 185.

¹²Ibid.

¹³*B.C. Minutes* 1876 p. 29.

for work through either the agricultural or mining depression, and were prepared to keep on moving, yet they sought to retain their Bible Christian connections.

In the 1877 *Minutes* Galston disappeared from the stations but the statistics indicate three local preachers, one preaching place and only nine members. This is the last reference to work in Scotland and it is most likely that the tiny nucleus of members moved on to find work elsewhere. The existence of a tiny cause north of the border was no more than an anomaly, so far from the south west heartland but it was a symptom of the mutual desire of expatriate members and their Church to maintain a relationship, which for Bible Christians was particularly intense.

COLIN C. SHORT.

(Colin Short is a minister in the Bishop Auckland circuit.)

Since the last 'Hill's Arrangement' appeared in 1968, it has become progressively more difficult to locate the obituaries of ministers in the *Minutes of Conference*. The Methodist Publishing House has now issued *Ministers who have died 1968-1989*, by William Leary (37pp, £3.50 Ref PD254) which every individual with a set of *Minutes* needs. This gives the date of birth and death of all ministers who have 'died in the work' since 1968. There are minor errors, such as 'Randall' for 'Randell' and 'Raymond' for 'Raymont' among surnames but these do not detract from the general value of this work for anyone trying to find out about ministers who died in this period.

J. H. L.

NOTES AND QUERIES

1447. SILAS K. HOCKING: INFORMATION WANTED

Mrs. Joan T. Parry-Jones is searching for material for a critical biography of the Rev Silas Hocking, author and sometime Free Methodist minister. In particular, she is seeking to contact direct descendants of his sons Ernest Lloyd and Arthur Vivian (d.1919) or daughters Bertha Mary Conder and (?Mary) Eunice Tiedman. Mrs Parry-Jones is also trying to trace a copy of a posthumous publication, *Looking Back*, apparently published by Cassell in 1935, a collection of Hocking's monthly articles, written almost up to the time of his death in that year. Any information should be sent to Mrs Parry-Jones, Department of English, Monash University, Clayton, Melbourne, Victoria, Australia.

EDITOR

WESLEY HISTORICAL SOCIETY — FINANCIAL STATEMENTS, 1990

Income and Expenditure Account for the Year ended 31st December 1990

INCOME.	£
Subscriptions (Note 1)	3,948
Donations	103
Irish Branch	230
Sales of <i>Proceedings</i> (back numbers)	446
" other Publications, etc. ...	63
Library—Tickets, Donations, Sales	195
Annual Lecture Collection ($\frac{1}{2}$ -share)	27
Advertisements	75
Bank Interest	342
War Stock Dividend	8
<i>Proceedings</i> Appeal (enlarged issue)	1,015
	6,452
EXPENDITURE.	£
<i>Proceedings</i> and distribution	4,003
Other Printing	26
Library	1,359
Annual Lecture	40
World Methodist Historical Soc.	64
Administration Expenses	501
Insurances	18
Advertising	40
Subscriptions	15
	6,066
Excess of Income over Expenditure	£ 386

Balance Sheet as at 31st December 1990

ASSETS EMPLOYED (Note 2)	£
3½% War Stock (at cost) (Note 3)	225
Current Assets—	£
Sundry Debtors	860
Income Tax recoverable	480
National Savings Bank...	1,551
Trustee Savings Bank	901
Midland Bank (Deposit A/c)	702
" (Current A/c)	1,232
Cash in hand	156
	5,882
Current Liabilities—	£
Sundry Creditors	1,332
Subscript'ns paid in advance	2,188
Conference Deposits	427
	3,947
Net Current Assets	1,935
	£2,160
REPRESENTED BY	£
Balance at 1st January 1990 ...	1,558
Add Excess Income over Expenditure	386
	1,944
Conference Fund Surplus	216
(Signed) RALPH WILKINSON, <i>Honorary Treasurer.</i>	£2,160

Notes to the Accounts

1—SUBSCRIPTIONS	£	£
Unexpired Subscriptions at 1st January 1990—		
Ordinary Members	3,830	
Life Members (estimated)	350	
	4,180	
Received during year*		1,856
Income Tax recoverable		100
		6,136
<i>Less</i> Unexpired Subscriptions at 31st December—		
Ordinary Members	1,888	
Life Members (estimated)	300	
	2,188	
		£3,948

*No account has been taken of subscriptions in arrears at 31st December 1989, whether or not recovered since, but any previous arrears received during the year are included in the above figures.

2—ASSETS EMPLOYED
The Library and stocks of Publications have not been valued, and are not included in these financial statements.

3—WAR STOCK
Market value at Balance Sheet date ... £73

AUDITOR'S REPORT—I have audited the financial statements in accordance with approved auditing standards. The amount of subscriptions paid in advance by members includes estimates based upon a reasonable interpretation of the available data. No account has been taken of possible arrears of subscriptions. Other assets and liabilities have been independently verified.

Subject to the matters mentioned above, in my opinion the financial statements give a true and fair view on an historical cost basis of the state of affairs of the Society as at 31st December 1990, and of its surplus for the year then ended.

Barron & Barron,
Bathurst House, 86, Micklegate, York, 10th May 1991.

(Signed) W. B. TAYLOR,
Chartered Accountant.

THE ANNUAL MEETING AND LECTURE

THE annual meeting of the Society took place on Monday, June 24th at St Helen's Road Methodist Church, Bolton. This year's lecturer was Dr. John C. English, Professor of History at Baker University, Baldwin, Kansas - the first American lecturer in the Society's history. Present in the audience was another outstanding American scholar, Dr Richard Heitzenrater, a further reminder that Wesley studies are now very much a trans-Atlantic dialogue.

Dr. English has made a special study of John Wesley's intellectual background, underlining the extent to which he was a man of *many* books, influenced by the philosophical and scientific thought of his age. Towards one eminent figure in the recent scientific revolution, Sir Isaac Newton, Wesley showed an ambivalent attitude which the lecturer examined in detail. The lecture is printed in full in this issue of *Proceedings*.

Prior to the lecture, which was chaired by Dr. John A. Vickers, an excellent members' tea was provided by members of the church and donated by the Lancashire & Cheshire branch of our Society. The President, the Rev. A. Raymond George, expressed the Society's thanks to all concerned.

The Annual Meeting, chaired by the President, received the accounts (see p. 95) and reports of the officers. The successful Conference held at Oxford in April will be followed by one in July 1993, when the WHS will be host to a general WMHS Conference, probably in Cambridge. The Rev. T. S. Macquiban was thanked for all his work in this regard. Dr. Vickers reported that his General Index to vols 31-45 of *Proceedings* was almost ready for the printer. A new occasional publication, by Dr. A. Skevington Wood, is also in preparation. To mark the centenary of the society in 1993, it is hoped to compile an anthology of articles from early issues of *Proceedings*.

Much time was given to discussion of the Society's library and it was agreed to continue negotiations with Westminster College, Oxford, about a possible transfer of our books there. The library sub-committee was re-appointed along with the other officers.

E.A.R. and J.A.V.

NEWS FROM OUR BRANCHES 1991

A well-known car manufacturer supplies its customers with a little book giving the locations of its local dealers, with regional maps to make things clearer. There are 17 local branches and groups associated with this Society which may not sound many but the information they have supplied about themselves and their activities has been enough to make a booklet - but without the maps. For good measure it includes notes on the parent Society and other organisations. Copies of this booklet *Methodist history - joining or finding out* has six A4 pages and may be obtained from the Local Branches Secretary for £1 including postage.

The booklet lists the regions and main towns covered by the various groups - some are doubly blessed, like East Cornwall which is cherished by two adjacent Societies. On the other hand there are lacunae and this booklet will enable these to be identified and perhaps remedied. Off-shore Methodism is not forgotten, for the Scilly Islands are a concern of CMHA and the Isle of Man has its own Society. Numbers are not related to population, as Cornwall has some 250 members while the London and Home Counties Branch has 90. However all groups face the problems of organising activities and lectures with far-flung memberships and spiralling travel costs. Despite this their continued existence proves that it can be done and that the study of our denominational history is enriching and an occasion for fellowship as well.

From time to time I hear suggestions, made rather too lightly that the local Wesley Historical Society should undertake this piece of research or preserve that chapel (turning it into a well-stocked museum with a library open every day of the year!) or record the gravestones at yet another Bethel. Our local Societies comprise like-minded people with enthusiasm but the key people are usually the small band of officers who are already busy with full-time jobs and many have long standing projects of their own choosing. Great things can be done by a small or even tiny band with persistence, vision and enthusiasm - Billy Bray's Chapel and Englesea Brook Chapel prove this - but even these illustrate how vital it is to enlist the sympathy of a wide constituency. Our local groups are much better able to serve the cause of our history by being encouragers and advisers to local Methodism. For example, new procedures are likely to be devised for approving alterations to our chapels which have architectural merit. The voice of the local WHS Branch should be heard in these procedures - cajoling, informing, admonishing.

The local magazines continue to entertain and inform. The 1851 Ecclesiastical Census is a topic receiving well-merited attention and is dealt with in a 15 page article in the Spring 1990 issue of the *Cumbria Branch Journal*. It lists the returns for the 200 Methodist chapels in modern Cumbria and is a brave attempt. It is almost fatally marred by the lack of any order in the entries - a list which begins with Windermere and ends with Flimby and does not give reference numbers, parishes or historic counties makes life unnecessarily difficult for the would-be user.

Another popular subject, Methodist pottery, occupied 13 pages of the November issue of *Heritage* from the East Midlands Branch. In fact the purported authorship is misleading for it is the report of a lecture by Herbert McGonigle and not an article by him. It shows that a local journal can produce an article of much wider interest, enlivened as it is by the line illustrations. One aside was that there is no Wesley on horseback in pottery. This article makes us impatient for the day when Mr McGonigle will share his magisterial knowledge with us in a more substantial printed form.

ROGER THORNE (Local Branches Secretary)

BOOK REVIEWS

The Limits of 'Love Divine' by W. Stephen Gunter (Nashville, T N. Kingswood Books, 1989, pp. 368. \$15.95 ISBN: 0 687 21856 X)

Within a month of John Wesley preaching in the open-air for the first time in April 1739, controversy broke out about his doctrines. The protest at Bristol concerned his anti-Calvinist stand and for the next fifty years, Wesley was involved in controversies occasioned by his doctrines and his practices. Gunter has carefully traced the progress of Wesley's conflict with antinomianism and enthusiasm. The charge of enthusiasm was made by Anglican opponents who had heard (and mis-heard) about the Methodists preaching instantaneous conversion, justification by 'faith alone,' the witness of the Spirit, also the accounts of the physical convulsions experienced by many of the converts. It was also reported that the Methodists were openly anti-clerical in their criticisms of the established clergy. Antinomianism was also, unhappily, a feature of the revival when some converts believed that faith in Christ absolved them from keeping the moral law.

Gunter examines Wesley's reactions to these problems. He demonstrates that by and large none of these errors could be fairly said to be the consequence of Wesley's teaching but neither was he wholly guiltless. He agrees with Albert Outler that Wesley never seemed to acknowledge that his own aggressive spirit in answering opponents sometimes helped to fuel the fires of controversy (p.75). Some of the language used in his 1739 sermon, 'Free Grace', was hardly conciliatory or likely to mollify his opponents. In chapters 6, 7 and 8 there is very good work done in tracing Wesley's developing understanding of the nature of faith. This has been an area of research recently for Wesley scholars and Gunter shows Wesley progressing from his early Moravian-inspired doctrine of justification by faith to something like a dialectic of faith and works. It is implied that Wesley's June 1738 Oxford sermon 'Salvation by Faith' did not clarify sufficiently the place of good works in the justified life. Certainly Wesley did not give large space to that emphasis but perhaps his hearers did not listen attentively enough when Wesley spoke of 'a faith which is ... necessarily productive of all good works and all holiness' (*Works*, Bicentennial ed. 1984, 1, p. 125). A surprising omission from these chapters is any reference to Wesley's discovery at Herrnhuth that the German Moravians taught saving faith, the immediate fruits of justification and the witness of the Spirit in ways significantly different from the English Moravians, an important point evinced by Martin Schmidt in his *John Wesley* (1962) and more recently and fully by R.P. Heitzenrater in *Mirror and Memory* (1989). The overall evaluation, however, is both comprehensive and critically acute, concluding, 'Wesley never forsook the emphasis that man can only be saved by faith alone in the atoning work of Christ, but he included that the reality of an active righteousness is inseparably coupled to this' (p. 116).

While much of the ground covered in this book has been dealt with before, the value here is the close attention given to the writings of Wesley's critics. Gunter rightly avoids the approach of 'Wesley right or wrong', and his assessment of the arguments of Wesley's critics helps to give a balanced evaluation of Wesley's replies. In chapter 14 on 'Conditional Election,' it is pointed out that the Calvinistic controversy of the 1770s might not even have occurred if Wesley had been more careful in wording the *Minutes* of the 1770 Conference and

been less hasty in sending to the printer John Fletcher's personal letter to him, the letter that was published as the *First Check to Antinomianism*. There is a very good critique of Fletcher's understanding of the place of good works in the Christian life and how it is much more than Wesley's view restated.

The ten-page Conclusion at the end of the book is a well-written summary of the whole work but one sentence needs some explanation: 'It does not seem to have occurred to Wesley that his rejection of quietism as antinomian was similar to the Anglican rejection of his *faith alone* preaching as antinomianism' (p. 270). But these two verdicts can hardly be compared fairly. The Moravian doctrine of quietism did inevitably lead to antinomian practices; part of the reason for the Anglican rejection of Wesley's doctrine of faith alone was that many of his critics did not trouble to find out precisely what he taught and thus missed his emphasis on faith producing good works. Of particular value in Gunter's work are the very full, informative notes referencing the chapters and printed at the end of the book, likewise the very useful Selected Bibliography, indicating both the width and depth of the research. Although the chapters deal very fully with the promise of the subtitle, 'John Wesley's Response to Antinomianism and Enthusiasm', the title remains vague and does not recommend the work. On a minor point, Wesley was ordained deacon on Sunday 19th September 1725, not Thursday 16th September as stated on page 48.

HERBERT MCGONIGLE

Never Call Retreat. A Biography of Bill Gowland by David Gowland and Stuart Roebuck (Chester House Publications, 1990, pp xvii, 268. £4.95. ISBN: 0 7150 0084 5)

Anyone who, like the reviewer, came to Christ in the late 1940s in response to a Christian Commando campaign is bound to warm to the subject of this book and to hope that his life story will be both a reminder of a remarkable career and a stimulus to future generations of Methodist activists. On any reckoning this is an outstanding book. Quite apart from its excellent illustrations, it has at least six strengths. It explores fully Bill's reading, the literary basis of his spirituality: William Temple, T.R. Glover, Toynbee, Butterfield and Charles Coulson emerge as his mentors. It also goes deeply into his many friendships: the inevitable Dr Sangster, Colin Roberts, Leslie Davison, Hubert Luke, Derek Burrell, Charles Coulson, Percy Scott, Lord Rank, Colin Morris, Harry Morton and a host of ministerial colleagues, industrialists, trade unionists, lay workers and down-and-outs. Fortunately the critics and obstructionists (the 'greysuits', to use the expression which has crept into the language following Mrs. Thatcher's overthrow) remain anonymous, though their machinations are carefully recounted. Third, neither filial piety nor ministerial collegiality have prevented the authors from giving us a portrait 'warts and all'. We meet here that most disturbing of men, the rebel who is by nature an authoritarian (no wonder Bill lived so closely to John Wesley), a man whose external brashness and entrepreneurship concealed an inner shyness, a humble disciple prone to bursts of elation and activity - and to many, happily shortlived, dark nights of the soul, 'a tough yet curiously vulnerable personality' (p. 109).

Fourth, we are given comprehensive accounts of every phase of Bill's career: childhood and student days in Manchester, the Isle of Man and marriage, Tilehurst, the Albert Hall Manchester, Luton and the Industrial College, the Presidency, foreign travel and 'retirement'. Fifth, (and here a particular debt of

gratitude is owing) the authors analyse very thoroughly the evolution and substance of Bill's Christian politics, always more difficult to work out, sustain and communicate to a wider audience than mere party politics, the easier option. Finally this book is written in most attractive English. The tragi-comic description of the Chapel Street premises in Luton to which Bill came in 1954 (pp. 118-121) must surely be included in some future Documents of twentieth century Church History.

The reviewer put down this enthralling book (which, unhappily, is not indexed) with more questions in his mind than when he began it - another tribute to its original and stimulating quality. One query is particularly insistent. Was Methodism in the 1930s really so moribund and were the Methodist hierarchies in Manchester and London in the 1950s really so awful or do they merely appear to be so when viewed as the dull-grey backcloth to the ebullient performance which is taking place on stage? In addition, granted that Bill had particular theological concerns (the nature of evangelism, Christ and the cosmos etc) and granted that ecumenism was low on his list of priorities (p. 210), had he nothing to say about the Anglican-Methodist Conversations, the sillier sorts of '60s and '70s radicalism, the charismatic movement or the ordination of women? Lastly do we not detect a certain sense of discomfort on Bill's part at the speed of change in British society and attitudes in the '80s, a discomfort mirrored here in the account of his awkward interview with a Tory Prime Minister? (pp. 198-200). Where stands Bill's 'extreme' moral puritanism today? (p 34). Where the Industrial College in post-industrial society? What happens to his trade union concerns in an age when the working class disappears and mutally hostile 'Essex Man' and the new underclass move in to take its place? Where stands even moderate Labourism at a time when Socialism is widely seen as a noxious irrelevance? And whither goes Bill's type of evangelism in the new world of Rob Frost, Graham Kendrick and Spring Harvest? Fortunately Butterfield's clarion call rings as true for us now as for Bill in his heyday: cling firmly to Christ 'and for the rest be totally uncommitted', while to inspire us further we have now to hand a fine biography of the most outstanding English Methodist of the post-Sangster generation.

IAN SELLERS

Church and Chapel in the North Midlands: Religious Observance in the Nineteenth Century by Keith D. M. Snell (University of Leicester, Department of English Local History, Occasional Papers, Fourth Series, No. 3. Leicester University Press, 1991, pp. v, 77. £8.95 ISBN: 0 7185 2038 6)

This booklet is essentially divided into two unequal parts, each of them of great significance to Methodist historians. The core of the work is a sophisticated analytical quantification of accommodation and attendance data from the published returns of the 1851 ecclesiastical census for Leicestershire, Rutland, Lincolnshire, Nottinghamshire and Derbyshire. Especially interesting is the use of correlation coefficients to examine the effects of urbanization and ruralization on religious observance and the statistical relationships between the principal denominations. Despite a wide variation in conditions between and within counties, Snell is able to venture certain generalizations: both Methodism and the Church of England displayed a pronounced rural bias whilst Old Dissent had a relatively higher urban presence; Methodism tended to flourish in areas where Old Dissent was weakest; with the exception of

Lincolnshire, the Currie thesis linking Wesleyan expansion with Anglican failure was largely unsubstantiated, and in Nottinghamshire it was completely disproved; the Primitive Methodists, by contrast, were more likely to fill vacuums left by the Established Church; the smaller Methodist bodies made the greatest headway in districts where both Wesleyan and Primitive Methodists were least effective. The subsidiary element in the study is an investigation of the occupational structure of Methodism on the basis of 7,273 baptismal entries for the period 1800-94 (mostly for 1810-50) from Leicestershire, Lincolnshire and Derbyshire. Not unexpectedly, it is shown that the Wesleys attracted three times as many non-manual recruits as the Primitive Methodists (28 and 9 per cent respectively) but under half as many unskilled workers (24 against 55 per cent). Although highly technical in its approach and far from being a light read, this is an excellent piece of scholarship which creates a sound and innovative methodological framework on which other researchers can build.

CLIVE D. FIELD

Ministers and Circuits in the Primitive Methodist Church, a Directory compiled by William Leary. (Teamprint, Loughborough, 1990. pp. 266. £28 hardback, £17.50 paperback, ISBN: 1 871431 00X (hb) 01 (pb))

This beautifully presented volume has been a life's work for William Leary and will be of great use to all seeking to find out about Primitive Methodist ministers or Primitive Methodism itself. It stands to be compared with Oliver Beckerlegge's slimmer volume on United Methodist ministers, published in 1968. Like that book it fills an important gap. It lists all known Primitive Methodist ministers and gives, in order, their circuits, the dates they travelled, together with brief personal details where known, and references in the *Minutes* and *Magazines*. Many have references to portraits in the *Magazines* and the PM newspapers and connexional histories are also used.

In several respects Leary is better than Beckerlegge because it has more references, more on ministers overseas, with separate sections for Australia, Canada and New Zealand and, best of all, it continues the itineraries after 1932. However it is not always consistent and it is less accurate. Some mistakes are humorous. Yorkshire Methodists will enjoy 'Leeds Rehoboam' for 'Leeds Rehoboth'. Some are unimportant spelling mistakes such as 'Joseph Ramsey' for Joseph Ramsay. Others do matter, e.g. 'Colne' not 'Calne' (Albert Altree 1920) or when men are re-named e.g. John Bradbury is called 'David Bradbury' while the real David Bradbury is omitted. Again, Herbert R. Rowe is called 'Herbert R. Rose' and is said to have left the ministry in 1928 when in fact he continued to travel (Shipley, Selby, Wakefield, Aireborough and Sandbach), retired to Bispham in 1961 and died in 1971 (*Minutes* 1971, p. 181).

Nevertheless this remains an important work. All Methodist libraries and scholars need it and most of them will find that it will save them a great deal of work. Like Beckerlegge's work it gives details of those who left the ministry. When will we have something to cover this area for Wesleyan Methodism or for Methodism post Union?

JOHN H. LENTON

NOTES AND QUERIES

1448. JOHN WESLEY HARDIN

William Parkes (Note 1439) asks for more information about the notorious Western gunfighter, John Wesley Hardin. May I suggest he tries to trace a copy of *The Fastest Gun in Texas* by J.H. Plenn and C.J. LaRoche, Signet (New American Library), 1956. I also seem to recall that Hardin produced an autobiography. No doubt he would get further details from the Librarian at Southern Methodist University, Dallas, Texas..

BARRY BIGGS

1449. 'THE WESLEYAN CHURCHES OF ENGLAND'

I have seen occasional copies of a booklet entitled *The Wesleyan Churches of England, Bradford [Yorks] Circuits*, published in 1904 by Jarrolds of Norwich. It has a limp cover and measures 9½ by 7in. It is, in effect, a photograph album with an exterior view of each Wesleyan chapel in the ten circuits and one interior - that of the Eastbrook Hall. The cover title implies that this publication was intended to be one of a series. Were other towns treated in a similar way or does this Bradford example stand alone?

D.P. RAINE

1450. A RECIPE FOR A METHODIST

The fourth volume of *The History of the Methodist Church in Great Britain* has (p.153) a fascinating and bitter 'Receipt to make a true Methodist' taken from an undated manuscript in Wesley Theological Seminary in Washington DC. Kirkham lists an undated pamphlet by that name and dates it 1785. A similar attack is found as a postscript to another anti-Methodist work, *Methodism Unmasked*, which, although undated, seems to be a response to Wesley's sermon 'God's Approbation of His Works' as published in the *Arminian Magazine* in July and August 1782. I include it here for comparison. (original spelling and punctuation retained).

A RECIPE TO MAKE A METHODIST

Take of the herbs of *Hypocrisy*, and the radix of *Spiritual Pride*, each two handfuls; two ounces of *Ambition*, *Vain Glory*, and *Impudence*, boil them over the fire of *Sedition*, till the ingredients swim on the top; then add six ounces of sugar of *Deceit*, one quart of *Dissembling Tears*, and put the whole into the bottle of *Envy*, stopping it fast with the cork of *Malice*. When these ingredients are settled, make them into pills. Take one night and morning, with the *Tongue of Slander*. Then go into the SOCIETY HOUSE to hear nonsense and stupidity, by way of gentle exercise: Fall into pretended fits; go home; cant; sing hymns; and pray, till you are heard all round the neighbourhood; *backbite* your *Best Friends*; *cheat* all you are acquainted with; and, in short, under the mask of *Holiness*, commit every other act that an *Honest Man* would be ashamed of.

M. ROBERT FRASER