

WHY THE WORLD WAS CREATED IN 4004 B.C.: ARCHBISHOP USSHER AND BIBLICAL CHRONOLOGY¹

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The one thing generally known about James Ussher, Archbishop of Armagh, is that he reckoned the creation of the world to have taken place in the year 4004 B.C. Few, however, have troubled to enquire *how* he reached this computation or *why*. The published biographies of the man are concerned mainly with his ecclesiastical and political career, and they spend little space on his chronological calculations. Modern works on biblical chronology may mention him but they make no attempt to understand him. Indeed, Ussher is sometimes something of a figure of fun in the popular consciousness: what incredible folly, people think, that one should suppose that the exact time and date of creation could be reckoned! Folly, however, was the last characteristic that should be ascribed to Ussher, a highly careful and rational person "of an erudition seldom matched by that of his critics".² People suppose, no doubt, that he simply added up the figures in the Bible: in fact, however, the matter was a good deal more complex than this, as we shall see.

Doubtless seventeenth-century chronology of the ancient world is not to everyone's taste; and to some the reading of 2,000 pages (the exact figure cannot fail to be significant to those sensitive to these matters) of Ussher's Latin in the standard Elrington edition may seem a little forbidding.³ The pages of the Bodleian Library's

¹ A lecture delivered in the John Rylands University Library of Manchester on Wednesday, 2 May 1984.

² J.D. North, "Chronology and the Age of the World", in *Cosmology, History, and Theology*, edd. W. Yourgrau and A.D. Breck (New York and London, 1977), pp. 307-333; quotation from p. 307. My thanks are due to Professor North for much helpful information and guidance; he is not responsible for errors or misunderstandings which may appear in this article.

³ The "Whole Works" of Ussher were published in Dublin, edited by C.R. Elrington and J.H. Todd, in 17 volumes (1847-64). The chronological material is

set were still uncut when used by the writer in 1981. Yet the thinking of this intelligent, cultivated and large-hearted man, who must have devoted an enormous amount of time to his chronological work, ought to be of interest.

Ussher was, of course, an Irishman;⁴ the dates of his life are 1581-1656. He was educated at Trinity College, Dublin, later was Professor of Divinity there, became Archbishop of Armagh in 1625, and wrote on a wide variety of learned topics, including the Septuagint, the early history and laws of Ireland, and — most interesting for our purpose — the letters of St. Ignatius, in which he distinguished the seven genuine from the later and spurious ones, the existence of which had previously discredited the whole lot. This is significant because it shows critical ability and creative originality. In theology he was a strong Calvinist. He was said to have compiled the Irish Articles of 1615, which are of that doctrinal persuasion, including absolute predestination. He was also one of the bishops invited to be present at the Westminster Assembly, though it seems that he did not attend. He had a high reputation for scholarship, tolerance and sincerity; he was not unfriendly with Laud; and he worked hard to achieve reconciliation between churchmen and dissenters. Cromwell gave him a state funeral in Westminster Abbey.

I will give one specimen of his exegetical style. Among his works is a published "judgement" written "in answer to the request of a learned friend", and this judgement sets out to explain the mention in Rev. 17.8 of "the beast that was, and is not, and yet is".⁵ To Ussher it was manifest that this beast was the Papacy. In

to be found in vols. 8-12. The *Annales* begin at the beginning of the 8th volume and this goes from creation down to the time of Alexander the Great; vol. 9 takes us from there to 68 B.C.; vol. 10 comes down into New Testament times, and on p. 473 begins the "Seventh Age of the World" with the birth of Christ. The text of the *Annales* finishes on p. 113 of vol. 11. If we include the short preface of vol. 8 and the tables of vol. 11, the *Annales* amount to precisely 2000 pages (605, 622, 598, 175). A further work, the *Chronologia Sacra*, which discusses controversial points in biblical chronology and was published after Ussher's death, begins on p. 475 of vol. 11 and continues to p. 144 of vol. 12. All citations of Ussher in this article are given by volume and page of this edition.

⁴ On Ussher in general see the articles in the *D.N.B.* and the *Oxford Dictionary of the Christian Church*; recently R. Buick Knox, *James Ussher, Archbishop of Armagh* (Cardiff, 1967). None of these says much of value about the principles of his chronological work.

⁵ *Works*, xii. 545-50.

ancient Rome, as Dionysius of Halicarnassus had demonstrated, the *pontifices* were subject to the *pontifex maximus*. This office was so important that the emperors took it over and annexed it to themselves. And yet the pontificate still existed. Thus the office was something that had been in the past, and was no more, and yet in a way still existed. This fitted the Bishop of Rome precisely. Ussher illustrated this from the Dukes of Lancaster: there used to be such a Duchy, it is no more, since the monarchy absorbed it into itself, and yet it still goes on. In this example we see the combination of extremely detailed attention to scripture on the one hand, and on the other correlation of it with rather exotic knowledge of the ancient and quite unbiblical world, all going to produce a result which, in the then climate of opinion, was not so very surprising.

One or two more biographical points. These were, of course, stirring times, with civil war in England and strife in Ireland. In 1645 Ussher, leaving Oxford, went to Cardiff, and thence, while on his way to St Donat's, Glamorganshire, he "fell into the hands of Welsh insurgents, who stripped him of his books and papers, most of which were afterwards recovered".⁶ Further, going back to Ussher's youth, though I have said that he must have spent very much time on his chronological work, it seems that his interests in this direction had developed from a very early age. When, at the age of thirteen, he went up to Trinity in 1593-4, "he had already shown a precocious taste for divinity and chronology"⁷, and it is said that before he graduated B.A., probably in July 1597, i.e. at about the age of sixteen, "he had already drawn up in Latin a biblical chronology (to the end of the Hebrew monarchy), which formed the basis of his *Annales*." And there is indeed something juvenile in his approach to chronology in spite of his great learning. One person who almost certainly influenced Ussher in his chronological work was Thomas Lydiat (1572-1646), a man thus nine years older than Ussher, and said to have married his sister (although this now appears doubtful). Lydiat was a fellow of New College, Oxford, but "his defective memory and utterance led him to relinquish both the study of divinity and his fellowship in 1603, in order to devote himself to mathematics and chronology"⁸. They kept in touch, for Ussher later invited Lydiat to Ireland,

⁶ *D.N.B.*, lviii. 69.

⁷ *Ibid.*, lviii. 64.

⁸ *D.N.B.*, article on Lydiat, xxxiv. 316.

assisted him with housing, and still later had to make strenuous efforts to get him out of prison, where he had unfortunately landed. This association also may affect our judgment of Ussher's originality in chronological matters.

But let us turn without delay to the first and most basic chronological question, and give our first, over-simple, answer to it: why 4004 B.C. and not some other year? Firstly, there was a long tradition, going back into the Middle Ages, and thus long before Ussher, that there were four thousand years between creation and the coming of the Christ. This tradition, at least in approximate terms, was inherited by Ussher; his chronology not only took over this tradition but made it work in very accurate terms. Ussher did not necessarily *presuppose* the correctness of the 4000-year interval: most of his predecessors had suggested rather different periods — but he succeeded in making it work out, and as a precise figure; and that without any tampering — at least as he thought — with the biblical text itself.

If this gives us a first explanation of the four thousand, what about the four years remaining? This comes from a quite secular piece of chronology. Traditional Christian reckoning, going back to Dionysius Exiguus in the sixth century, had supposed that Jesus was born 753 years after the founding of Rome, i.e. that his birth fell at the point where B.C. merges into A.D., as we now call them. But by Ussher's time, and especially since the work of the great scholar Scaliger (1583), it was clearly known and accepted that Herod the Great had died in 4 B.C. Since it was clear from St. Matthew that he was alive when Jesus was born, and that he thereafter perpetrated the massacre of the innocents, the birth of Jesus must go back to 5-4 B.C. Hence, the date of 4004 B.C. for creation gave a more or less exact period of four thousand years from creation to Christ.

And this is not all, for Ussher obtained yet another scoop by his calculations, which is much less well known. I refer to the date of the start of work upon Solomon's temple, and the date of completion. The Bible gives a key place to the date of the commencement of the temple, which is very carefully noted in the key text I Kings vi.1: in the 480th year after the exodus of Israel from Egypt, in the fourth year of Solomon's reign, in the month Ziv which is the second month, he began to build the house of the Lord. Now by Ussher's calculations the temple was commenced in A.M. 2993 (A.M. = *anno mundi*, i.e. in the year 2993 from the

creation of the world), and therefore it was completed in A.M. 3000, giving an exact three thousand years after creation and one thousand before the coming of Christ. This is a special bonus that the reader gains from Ussher. As he points out in his preface (viii.7): the temple was completed in the 3000th year of the world, and Christ, of whom the temple was the type, was manifested to man in the 4000th. The idea of a total scheme of time expressed in a major round figure, already powerfully manifested if there were really 4000 years from creation to Christ, was enormously strengthened if yet another such key interval could be demonstrated. For Ussher this was a major triumph.

But we must now go back and consider how Ussher actually worked. First of all, he did not work, as many people suppose he worked, by taking the number of generations and multiplying them by what was supposed to be a probable average: a little thought quickly shows that this cannot fit the biblical material. Ussher worked entirely, or almost entirely, from express and exact dates, as far as concerns the biblical material. But this leads us to a fundamental point which explains why Ussher, like other biblical chronologists, could not work by simply adding the figures of the Bible together. First of all, though most biblical dates are probably unambiguous, a certain number could conceivably be taken in more than one way, and this, as we shall see, is an essential factor in a number of Ussher's decisions. But, more important, the Bible in itself cannot furnish us with a chronology. Putting it crudely, this is because the Bible does not specify the chronological distance between the Old Testament and the New. No event in the New Testament is given a precise date stating distance from any Old Testament event. Putting it in another way, unlike our A.D./B.C. system, which dates events back from the first century, the Bible dates events from the creation forward. It is impossible from the Old Testament, taken alone, to know how far back its events had lain in history. At the end of the Old Testament, e.g. the time of Ezra and Nehemiah, no firm dating is given. The construction of any biblical chronology required a synchronism with profane history, with extra-biblical data, at some point or other. Ussher himself tells us (viii.6-7) what the essential synchronism for him was. It was the death of Nebuchadnezzar, and his succession by his son Amel-marduk, known in English as Evil-Merodach. According to the "Chaldaean" historical tradition, which means through Berossus

(Josephus, *C. Ap.*, i.146-50), this took place in the year which *from Greek and Roman history* can be reckoned back to and fixed as 563.⁹ This year was, according to II Kings xxv.27ff., the 37th year of the exile of Jehoiachin. This synchronism thus provides an entry from without into the latter part of the chronological figures of the Books of Kings, and from these it was possible, it was thought, to reckon back to the time of Solomon, and from there, step by step, to creation itself. Now Ussher was highly successful at this point, for this date was historically almost correct: Nebuchadnezzar did die in the year 562.

That simply adding up the figures of the Bible does not produce a chronology can be easily seen if one considers the standard Jewish calendrical reckoning. The year 1983-4 is counted by Jews as 5744, and this means a fixation of creation in 3761 B.C. by the Christian dating. But the Jewish dating is too short, and does not leave room for the known history. If Solomon's temple began to be built in 3146 A.M., which seems the likeliest way of taking the Hebrew text, it leaves very little space for the remainder of history before the Christian era: for the period of the temple can hardly be squashed into less than 360 years, and that would mean that its destruction by Nebuchadnezzar took place about 250 B.C., over 330 years too late, indeed at a time after Alexander the Great had already destroyed the Persian Empire. In other words, the traditional Jewish reckoning left nothing like enough room for the Persian Empire. This was because the Bible itself, though it mentioned various Persian emperors, gave no information about the intervals between them or the periods they had ruled, and indeed it did not make it quite clear how far they were all different people at all. Thus medieval Jewish chronographers assigned periods like 52 or even 32 years to the entire Persian empire, which had in fact lasted just over two centuries.¹⁰

⁹ I find something of a discrepancy here, for Ussher in his preface (viii. 6-7) gives this year as 562 B.C., but in the *Annales* itself (ibid., p. 208) gives it as A.M. 3442, which by his own tables (xl. 160) is 563 B.C. However, for the present we are concerned simply to indicate the importance of external synchronisms for any complete biblical chronology. But see further below pp. 607 sqq.

¹⁰ See, for example, Abraham ibn Daud, *The Book of Tradition (Sefer ha-Qabbalah)* ed. Gerson D. Cohen, (London, 1967), p. 15: Darius the Mede one year; Cyrus three years; Ahasuerus sixteen years; Darius "who is the same as Artaxerxes" 32 years: a total of 52. On the paucity of information about the Persian emperors, already visible in the Book of Daniel, see briefly J. Barr,

For a scholar with a fine classical background such as Ussher had, such an approach was impossible. From the classical side he could follow a chain of historical sequence right back into the Persian period and up to before 500 B.C. Any biblical chronology had to dovetail into that network of classical information. To give space for this, the date of creation had to be well before the traditional Jewish date of 3761 B.C. The classical side is important also for our estimate of Ussher as a scholar. He was no 'man of one book', no scholar who never looked beyond the pages of his Bible. On the contrary, far more space in the *Annales* is taken up by Greek and Roman history than by biblical and Jewish; the campaigns of Alexander the Great and of Julius Caesar, for instance, occupy long stretches of pages in great detail. It is a great mistake, therefore, to suppose that Ussher was simply concerned with working out the date of *creation*: this can be supposed only by those who have never looked into its pages. Creation is only one point, though a very essential one, in Ussher's total scheme. The *Annales* are an attempt at a comprehensive chronological synthesis of all known historical knowledge, biblical and classical, down to just after the fall of Jerusalem in A.D. 70. Of its volume only perhaps one sixth or less is biblical material.

Let us go back, then, to our 4000 years. In placing creation around 4000 years before Christ, Ussher had plenty of predecessors. The Talmud itself had spoken to the same effect: B. Abodah Zarah 9a (Soncino ed., p. 43) had reported the Tanna of the House of Elijah as saying "The world is to exist 6000 years. The first 2000 years are to be void [Hebrew *tohu*]; the next 2000 years are the period of the Torah; and the following 2000 years are the period of the Messiah". This utterance suited Christianity admirably, and it was being repeated in the time of Renaissance and Reformation: Melanchthon wrote: *sex milia annorum mundus, et deinde conflagratio: duo milia inane; duo milia lex; duo milia dies Messiae*.¹¹ This very rough computation, however, was far from giving any exact fit with the biblical figures; but it shows the attraction of a general scheme expressed in round numbers. Figures a little below 4000 were common, and are found both in church tradition and in the works of scholarly chronologists. Thus

"Daniel", in *Peake's Commentary on the Bible*, 2nd edn., edd. M. Black and H.H. Rowley (Edinburgh, 1962), p. 592.

¹¹ On this see K. Scholder, *Ursprünge und Probleme der Bibelkritik im 17. Jahrhundert* (Munich, 1966), p. 84.

the eleventh-century Anglo-Norman historian Orderic Vitalis stated that, following Bede, creation could be placed at 3952 B.C. *secundum hebraicam veritatem*, i.e. according to the Hebrew text of the Old Testament.¹² Great chronologists of the sixteenth and seventeenth centuries were working in the same general time frame: Scaliger placed creation in 3950 B.C. and Petavius in 3983. So the figure of 4004 was not in itself a revolutionary shift; rather, it was a fairly small adjustment in terms of the mere figures themselves.

There is, however, another side. There was an alternative tradition about chronology, which made creation more remote. It went back to the Septuagint, the Greek translation of the Old Testament. In it the ages of the early patriarchs at the time when their first son was born — and it is upon these ages that the chronology from creation down to the Exodus mainly rests — were different, and in most cases 100 years higher at each birth. Thus in the Hebrew text Adam was 130 years old when Seth was born, but in the Septuagint he was 230. The result was that the total Septuagint chronology was considerably longer, or had higher figures. The flood, for instance, was at 1656 A.M. in the standard Hebrew text, but 2242 A.M. in the Greek. Thus by the time of the Babylonian Exile the Greek Bible was already counting something close to 5000 years from creation (4890 is probably the correct figure), so that a mere 4000 years from creation to Christ was far too low. Incidentally, it is sometimes thought that these figures were thus expanded in the Greek tradition of the Bible because Jews in the Greek world wanted to show that their records and history reached further back into antiquity than those of competitors such as the Phoenicians and Egyptians. This is precisely the point of Josephus's tract against Apion: to prove the antiquity of the Jews and their history (5000 years is the figure he himself gives, in the first century A.D.), as against those who say that the Jews have entered late into the stream of world history. In any case, whatever the motives for the difference, the Greek Bible had a longer chronology.

This had important social effects because the Greek figures were in general followed by Eastern Christianity; and most Eastern computations ended up by placing at least 5500 years between creation and Christ. A common figure is 5509 or 5508. This might

¹² See Marjorie Chibnall (ed.), *The Ecclesiastical History of Orderic Vitalis*, vi (Oxford, 1980), 134f.

be linked, and was, in fact, linked, with the idea of a total world duration of 7000 years. This might make the time about 1492 A.D. a critical time; and this appears in fact to have had some influence on Russian apocalypticism precisely then.¹³ Whether it had a connection with the discovery of America in the same year, or with the completion of the reconquest of Spain and the expulsion of the Jews, remains obscure.

These matters were known not only to obscure scholars. The seventeenth century was a learned and polymathic age, and men of letters would know about such things and write about them. Sir Thomas Browne tells us that he had seen a letter by the Tsar of Muscovy written in our 1645 A.D. but dated 7154, which is exactly 5509 + 1645.¹⁴ This sort of information could, of course, raise the further question: might the figures of the Greek text be right, or might it be that the true dates lay somewhere between the figures of the Greek and those of the Hebrew? Moreover, the higher figures were known not only in the East. The great theologians of the Western church had, until St. Jerome and his Vulgate, themselves worked with a Latin Bible (the so-called Old Latin) which was translated from the Greek and preserved the chronological figures of the Greek; and through the authority of great names such as St. Augustine this tradition had been widely dispersed in the western church also. In the seventeenth century, and indeed in Ussher's own time, a further new discovery had still more emphasized the question of textual variation. The Samaritan Bible contained only the Pentateuch, and in Hebrew, though in a script different from that of the Jewish text. Made known to the west through a discovery in Damascus in 1616, it immediately achieved considerable renown. Many scholars thought it superior to the accepted Jewish text.¹⁵ It was printed in the Paris Polyglot Bible of 1632 and, still more important, in Walton's London

¹³ Cf. James H. Billington, *The Icon and the Axe: an Interpretive History of Russian Culture* (London, 1966), pp. 58f., 87.

¹⁴ Sir Thomas Browne's *Pseudodoxia Epidemica*, edited by Robin Robbins (Oxford, 1981), i. 446. Browne similarly knew well the variety of computations of the time from creation to Christ, and the 6,000-year scheme of "Elias the Rabbin", mentioned above; see his entire section on these matters (*ibid.*, pp. 440-52).

¹⁵ This was Sir Thomas Browne's judgement: "Now the Samaritans were no incompetent judges of times and the Chronologie thereof; for they embraced the five bookes of Moses, and, as it seemeth, preserved the Text with far more integrity then [*sic*] the Jews" (Browne, *ibid.*, p. 444).

Polyglot of 1653-7, which was widely used in Great Britain. In the beginning of Genesis, the Samaritan had lower figures, placing the flood in A.M. 1307. All these things were familiar to men of letters of the time.

Chronology had been made a more central question through another event of the time. The church year, governed by the Julian calendar, put into effect by Julius Caesar himself, was well known to be getting out of phase; and in 1582 Gregory XIII initiated the new or Gregorian calendar, omitting ten days (the day after 4 October was taken as 15 October in that year) and correcting the future calendar (century years were in future to be leap years only when divisible by 400, thus 1600 and 2000 but not 1900, etc.). In the very next year, 1583, Joseph Justus Scaliger (1540-1609) published his *de emendatione temporum*, the foundation of scientific chronology. He was a Calvinist, and professor at Geneva, later at Leiden, and an enormous scholar in classical and historical learning, in textual criticism and in the critique of sources. Incidentally, he was against the reform of the calendar, as was also Ussher himself; and it is believed that this opposition was a major reason why the Gregorian calendar was not adopted in Great Britain until much later, in fact in 1752. Another very famous scholar was the Jesuit Dionysius Petavius (1583-1652), long professor of dogmatic theology at Paris, who published in 1627 his *de doctrina temporum*, another major contribution to chronological studies, revising and expanding Scaliger.

Now Ussher, though he knew very well the evidence of the Greek and the Samaritan, worked in principle from the standard Hebrew text, but with one qualification, which we shall indicate next, as we pass on to consider the two or three key places at which Ussher's interpretation of the Old Testament evidence is questionable or even definitely wrong.

Before that, however, we must pause for a moment to consider one of the tiny but knotty questions that make a difference to biblical chronology; the words "two years after the flood" in the notice of the birth of Arphaxad (Arpachshad in more modern spelling) at Gen. xi. 11.

Noah was 500 years old when he "begat Shem, Ham and Japhet"; I quote from the A.V., Gen. 5.32. He was 600 years old when the flood began, Gen. 7.11. As is well known, his three sons and their wives entered into the ark along with Noah and his wife. The difficulty arises at Gen. xi. 10:

These are the generations of Shem: Shem was an hundred years old, and begat Arphaxad two years after the flood ...

But for almost any reader the natural sense will be that Shem was a hundred years old when the flood *began*: compare the two verses just quoted. How, then, could he be a hundred years old when he begat Arphaxad, two years after the flood? All chronologists battered their wits against this problem. Ussher devoted a chapter in his *Chronologia Sacra* to it (*Works*, xi. 514-29). To us it may seem that the two-year interval at Gen. xi. 10 is out of character and forms an unintended foreign body in the chronology. Ussher dealt with the problem in another way. According to him, when it says that Shem, Ham and Japheth were born in Noah's 500th year, it was actually Japheth who was born in that year; Shem was born two years later. This means that Shem was 98 when the flood commenced, and he was a hundred two years later when he became father of Arphaxad. What this means is that there is a two-year discrepancy between a chronology like Ussher's and any chronology which in some way by-passes the two years of Arphaxad. This information is given here simply to explain why there is a two-year difference in some of the comparisons set out below.

It also introduces us to some of the ways in which Ussher coped with biblical problems, and we shall soon see another case of the same kind.

We come, then, to the key places at which Ussher's handling of the Old Testament evidence is questionable:

1. The date of Abraham's birth, and his migration from Haran into Canaan (in biblical chronology it is the migration from Haran into Canaan, and not the earlier migration from Ur to Haran, that receives the main attention). Gen. xi. 26 says that when Terah was seventy years old, which would be in A.M. 1946 (ignoring the two years of Arphaxad), he became the father of Abram, Nahor and Haran. Now the natural meaning of this, I submit, is that these three were born in that year; no reasonable person would take it otherwise. Then xi. 32 tells us that Terah died at Haran at the age of 205 years: this would be A.M. 2081. But the next chapter immediately goes on to tell of Abram's emigration from Haran, and to say that this took place when he was 75 years old. Now I submit that the natural meaning of all this is straightforward: Abram was born when Terah was seventy (A.M. 1946), and when

he was 75 he migrated to Canaan (A.M. 2021). Terah was still alive, and died later on, still in Haran, sixty years after Abraham had departed. The date of Terah's death stood outside the sequence and progress of the chronology and made no difference to following events — as was true of all the patriarchs in the time down to the flood and indeed down to Abraham himself.

Ussher, however, went in another direction. He took it that, just as the death of Terah was immediately followed in the text by the migration of Abraham, therefore the event of that death had preceded the migration. But, since it was clear that Abram was 75 at the time of the migration (expressly stated in Gen. xii. 4), he could not have been born when Nahor and Haran were born (1946 A.M.). Therefore when Gen. xi. 26 says "when Terah had lived seventy years, he became the father of Abram, Nahor and Haran", this must mean that when Terah had lived seventy years he became the father of Nahor and Haran, while *sixty years later* he became the father of Abram. We may make the difference clear with a diagram :

A. Natural sense of Hebrew (ignoring two years of Arphaxad)	B. Ussher's chronology (including two years of Arphaxad)
A.M. 1876 Terah born 1946 Abram, Nahor and Haran born 2021 Abram migrates to Canaan 2081 Terah dies	1878 Terah born 1948 Nahor and Haran born 2008 Abraham born 2083 Terah dies and Abram migrates to Canaan

Since the migration into Canaan is the datum point for the following stages of the chronology, it means that from here onwards Ussher's system runs sixty years (or 62 if adjusted for the two years of Arphaxad) behind the one that the Hebrew naturally suggests: to put it simply, Abram is born about sixty years too late.

The reader will observe the extreme literary violence done to the text by Ussher's interpretation. It is, as will have been noticed, the same device as was used with Shem, Ham and Japheth (above, p. 585) : where a text says that in such and such a year Shem, Ham and Japheth were born, this is explained to mean that Japheth was born then but Shem two years later. Here, similarly, where a text says that when Terah was seventy he begat Abram, Nahor and

Haran, it is explained that Nahor and Haran were then born while Abram, the first to be mentioned, was born about sixty years later. Such an explanation must seem highly artificial to the reader.

Now there may have been Jewish precedents for the reading of the text in this way: but I submit that Ussher would never have read it so but for another fact, namely that Acts vii. 4 definitely read it so: "*after his father died, God removed him*". Now Acts either simply read Genesis carelessly or straightforwardly, following the sequence of events and not reckoning up the chronology, and thus thinking that, since Genesis tells of Terah's death and then immediately goes on to Abram's migration, therefore Terah's death preceded the migration; or else it followed a Jewish interpretation which had taken the same line. Unless one was carefully following the figures and calculating the chronology, one would not unnaturally take it in this way. But Acts definitely contradicts the natural sense of Genesis. Ussher, however, could never have conceived that Acts had simply got this wrong. He took the line he did because he followed Acts. For Ussher everything in the Bible was correct and accurate. This principle, however, was modified in those cases where two biblical passages seemed to conflict. There was room for much freedom in interpretation, and need for much ingenuity. So it was at this point.

2. If this first case had stretched out the chronology, adding 60 years to it, the second compressed it. This is the all-important matter of the 430 years of Exod. xii. 40. The Hebrew text is quite clear: "The time that the people of Israel dwelt in Egypt was 430 years". This gives us the all-important link between A.M. 2236, when the seventy persons entered Egypt, and the exodus (A.M. 2666). The Israelites had been 430 years in Egypt, as they had been half of that period, 215 years, in Canaan from the migration of Abram into Canaan until the entry into Egypt. Ussher, however, took the 430 years to extend back to the arrival of Abram in Canaan. Here, again, his reason lay in the New Testament. Gal. iii. 17 is quite explicit that the promise to Abraham preceded the Mosaic law by 430 years. The 430 was the period, then, not from Jacob's old age to Moses but from Abraham to Moses. Now why did St. Paul say so explicitly that 430 was the figure for this historically longer period? Because this is the text of the Septuagint, in which Exodus xii. 40 reads quite clearly: "the dwelling of the children of Israel, for which (time) they dwelt in the land of Egypt *and in the land of Canaan*, was 430 years"; the

Samaritan is similar. That is, the total 430 years, taken in this way, will absorb within itself the 215 years of life of the patriarchs in Canaan between their entry under Abraham and their departure for Egypt with Jacob. Here, once again, the basis for the Septuagint reading may lie in a Jewish interpretative comment. On this matter Ussher expended a good deal of ink, and we shall not enter into his diverse arguments here.¹⁶ But surely it is perfectly obvious that Ussher formed his chronology at this point in this way because the Pauline statement seemed to require it so. But St. Paul gave this figure precisely because it was the figure of the Septuagint. Would this, then, not have suggested that the true chronology of biblical times should be built upon the Septuagint's figures all the way through? Not according to Ussher. He adhered to the Jewish Hebrew text (not the Samaritan) throughout, and where the New Testament contradicted the obvious meaning of it he used his interpretative wiles to explain it in agreement with the New Testament. Finally, the chronological effect of this matter was to compress the total world history by the loss of 215 years. As we have seen, his treatment of Abraham's birth expanded it by 60 years, and the two taken together create a net difference of 155 years. This is exactly the difference at the crucial point of the beginning of the construction of the temple (3146 A.M. by the more natural reading of the Hebrew; 2993 A.M. according to Ussher, i.e. 153 years less, or 155 if we apply the two years of Arphaxad to both sides).

3. The third area in which the biblical figures can be taken in several ways is the period of the Hebrew kingdoms. In this area the chronological material of the Bible was decidedly vague. Biblical chronology is rather like H.G. Wells' *The Outline of History*, of which someone said that it was all right until you got down to the emergence of human life: Old Testament chronology was at its best in the time down to the flood, that was the great period for it, and after the flood it became rather more uncertain. In fact the Bible does not give any proper chronology for the period of the kingdoms, although it would have been easy to do so. Nowhere does the Old Testament give a figure for the period from Solomon to Zedekiah, the last of the kings of Judah. There are figures for the individual reigns of the kings, both in Judah

¹⁶ Ussher's discussion of this matter is in the *Chronologia Sacra*, ch. viii (*Works*, xi. 580-98).

and in Israel, but no overriding figure for the whole. Most have supposed that there is some overlapping through shared reigns, co-regencies and the like; there are also doubtful quantities, as when a new reign begins in the middle of a year, or when a king reigns only for a short time before being assassinated but perhaps gets credit for one year.

Now if we simply add up the figures for all the kings of Judah from the fourth year of Solomon, when the building of the temple began, until the destruction of city, temple and kingship, the sum of these figures is 430: a very significant fact, for it is no coincidence that this is the figure for the stay of Israel in Egypt and half of it the figure for the stay of the patriarchs in Canaan before entering Egypt. It is a reasonable supposition that the figure 430 for the sum of the reigns of the kings actually generated the use of the same figure at these other key points. But, if we may leave theoretical chronology and turn for a moment to historical fact, there is no doubt that the duration of the kingdom was far less than 430 years: the actual historical duration, as modern scholars see it, is about 372 years (Solomon's accession 962 B.C.; start of temple 958; destruction of temple 586). If this is correct, out of the 430 years found by simple addition from the books of Kings, 58 years have to be disposed of as cases of overlapping, results of textual mistakes, theoretical schematism or pure historical errors of the sources. Ussher himself got rid of seven years in this way, and ended up allowing 423 in all, i.e. his A.M. 2993-3416. Measured against history as we know it, this was far too long a time, and it placed Solomon and the temple much too early: for the commencement of the temple was placed by Ussher about 1012 B.C., about fifty years too early, at a time when Solomon can hardly have been born.

Now this opened up the spectre of a serious problem for Ussher, and one which he does not really face so far as I know. Once it is granted that there was some overlapping in the figures of reigns of the kings, how was one to know that there was not more of it? In fact, as we today historically know, there was much more of it. As we have said, for the period of the kings the Bible provided no total chronology but only figures for individual reigns. If these figures overlap, there is no means of knowing *from the Bible alone* exactly how many years were involved. But if Ussher had known of this, or had even faced the possibility, it would have destroyed his absolute chronology. His dating for Solomon depended ab-

solutely on reckoning back from the end of the kingdom. Once he had got to Solomon, biblical figures gave him means for a clear and precise reckoning back to creation, assuming a correct decision about the two special cases I have just discussed, i.e. the birth of Abraham and the scope of the 430 years of Ex. xii. 40. But if Ussher had supposed that from the 430 years of the kings not seven but twenty or even as much as fifty might have to be discounted as the result of overlapping, his chronological results would have been thrown into complete confusion. Why did he not reckon with this possibility? For this was the Achilles' heel of his entire system of thought.

I would account for it thus: to him it was clear that the Bible was intended, as far as it went, as a completely accurate chronological guide. This was clear from Genesis and from the great figures like the 480 years from the Exodus to the start of the temple (I Kings vi. 1). The figures for the reigns of the kings formed the essential link between Solomon and Nebuchadnezzar, at which time a synchronism with extra-biblical history was obtained. These figures must therefore be an infallible guide to the true chronology. There was indeed some overlapping, but no more overlapping than had been provided with clear indications in the Hebrew text. Such clear overlappings brought the period from the start of the temple until its destruction down to 423 years. Ussher saw no reason to suppose that there were any more such overlappings. This is the point at which it would be easiest to accuse Ussher of wishful thinking or of reckoning in order to produce his desired result. It would require much detailed analysis to be sure about this. My own present opinion is that Ussher did *not* force the evidence to fit his needs.

An error in the figures for the reigns of the kings, as I have said, would have thrown Ussher's total scheme into confusion. This is because he did not aim merely to discover the correct year of creation. He also emphasized the correspondences of thousands of years between key events, which would have been spoiled by an alteration of even one year. But Ussher wanted to know not only the year of creation but also the month and the day. Creation was not only in 4004 B.C. but on Sunday, 23 October. This involves us in a further interesting complex of problems involving biblical exegesis, astronomy, and ideas about the calendar. Precision about such a matter was nothing new: Petavius, for instance, had said that creation was on Monday, 26 October 3983 B.C.,

although Monday was certainly a bad day from an exegetical point of view. It had long been debated whether Spring or Autumn was the more likely time. Advocates of midsummer were few, although they included the great Mercator, famous for his map projection. Spring was supported by ecclesiastical authorities such as Eusebius, Ambrose, Theodoret and Bede, and it could be argued that it was the best time, being good for growth. Most chronologists, however, opted for Autumn, which was the beginning of the Jewish year. Sir Thomas Browne thought that there was no answer to the question, since daylight in Mesopotamia would be night to the Americans (American Indians, as we would call them) and Summer would be Winter in the Antipodes.¹⁷ Anyway, Ussher was sure that it was in the Autumn. He knew from Genesis that it was a Sunday, for he took it, I think rightly, that the 'first day' of creation was intended to be the first day, just as Sunday is the first day of any week afterwards. From his chronological calculations he knew that it was 4004 B.C. In his preface he tells us how he worked.¹⁸ Knowing that it was 4004 B.C., he looked in the astronomical tables for the Sunday which came first after the Autumnal equinox in that year. He left out of consideration the stopping of the sun in the days of Joshua, and its going back on its tracks in the time of Hezekiah, which incidents might have suggested that the tables were not an adequate guide: in other words, whatever happened in these miraculous events, he thought that the uniformity of temporal calculations would have remained intact.¹⁹ He found that Sunday to be 23 October 4004 B.C. It was in the middle of that day that light was created.

¹⁷ Sir Thomas Browne, *ibid.*, pp. 453-4.

¹⁸ Ussher, *Works*, viii. 7.

¹⁹ Ussher discusses the effect of these events on astronomical calculation under their respective years, see *Works*, viii. 77 and 152.

Incidentally, the biblical scholar attempting to read Ussher may well be made uncertain or even bewildered by finding that many chronological statements are made by reference to the 'Julian Period'. The Julian Period was a sort of theoretical calculation-scheme designed to combine a number of important cycles. The Julian Period went back to before the actual creation of the world as dated by Ussher. Ussher's primary way of expressing the year of creation was to say that it was the year 710 of the Julian Period, which was 4004 B.C. His tables or *Collatio Annorum* (*Works*, xi. 119-75) give in parallel columns all years from creation onward in terms of dates A.M., of years of the Julian Period, of B.C. or A.D., of the Olympiads (from 776 B.C.), and (from 748 B.C.) of years from the foundation of the city of Rome. On the choice of 748 B.C., see below, p. 599.

One may be surprised to find, if it was based on the Autumnal equinox, that the date came so late in the year as 23 October: for that equinox now falls around 21-23 September. The explanation lies in the failure of the Julian calendar to keep accurately in step with the real year. In 1582 this made a difference of ten days as against the time of initiation of this calendar some 1600 years earlier. Over a period of five to six thousand years, i.e. from Ussher back to 4004 B.C., the Julian calendar would have been about 32 days out of step. In terms of his own calendar, Ussher was highly accurate and knew the equinoctial dates correctly. The same calendar difference explains why Ussher sets the biblical months, as related to the Jewish feasts, so late in the year: for example, by his scheme, Rosh ha-Shanah, day one of month VII (the Jewish New Year, confusingly, is at the beginning of the seventh month) was 23 October, much too late a date for our modern conception, since that festival generally falls in September.

There is another complication in the date of creation. In Ussher's scheme, as in many others, there is a sort of double creation. The first verse of the Bible, "In the beginning God created heaven and earth", is read not as a summary of the entire chapter but as reference to a single act of creation preceding the creation of light which is the first element in the seven-day creation. This was an ancient understanding, found for example in St. Augustine: first God created the chaotic matter, then out of it he made the created world. For Ussher this means that this pre-creation took place the night before, the Saturday evening, *noctis illius initium*, which preceded the 23 October. This was the *temporis principium*, the beginning of time. This is why some people say that according to Ussher the world began at 6 p.m. on a Saturday evening. It was, of course, a thoroughly bad exegesis, for by placing the primal act of creation outside the seven-day scheme it ruined the effect of the whole carefully calculated stylistic pattern of the chapter. But that need not detain us now.

It is often said in this connection that in Jewish reckoning the night precedes the day. This is sometimes true in some ways but in the first chapter of Genesis it is manifestly not the case. The mistake comes from supposing that "evening" and "morning" are the same as "night" and "day". "Evening" means the passage from day to night, and "morning" the passage from night to day. When it says, after the first day of creation, "and it was evening

and it was morning", this clearly means that for this passage day came first, then evening, then night, then morning, and the totality of that was Day One.

The matter of dates within the month must be pursued further, however, for it forms a characteristic aspect of Ussher's work in the Old Testament period. The reader is often surprised to find with what precision Ussher translated Jewish dates into dates of the Julian calendar. For instance, that all-important day when the building of the temple began, the second day of the month Ziv, the second month (as it was then named), is, Ussher tells us, Monday, 21 May. Anyone accustomed to the difficulty of translating Jewish dates (built upon a luni-solar calendar) into those of the Julian or Gregorian calendar will be surprised at this.

Ussher believed that the year of early mankind, including the Egyptians and Hebrews, was of the same quantity as the Julian calendar but was organized in a different way.²⁰ It could not be proved, he maintained, that the Jews used lunar months before the Babylonian captivity. In this original calendar the months were uniformly of thirty days. At the end of the twelfth month five additional days were added, and every fourth year six were added, giving a leap year system identical with the Julian, though the months themselves, of course, did not vary like the January, February, March, etc. of the Roman, and of our present, calendar. Since, then, the beginning of days is known to be the 23 October, 4004 B.C., any biblical statement down to the Exile can, if it gives month and day (e.g. "in the fifth month, on the seventh day of the month", II Kings xxv. 8), be translated into the month and day of the Julian calendar, and these relations would be constant every year.

For anyone who was so strongly convinced of the authority of the Bible as Ussher was, this was an extremely drastic assumption to make. I doubt if there is any evidence in the Bible of these intercalary days; no recorded event seems ever to have fallen upon them. Nor does any event appear to fall on the thirtieth day of any month. Nevertheless there was biblical evidence upon which Ussher probably relied. As so often in these matters, the evidence lies in the story of the flood. The waters of the flood prevailed upon the earth for 150 days (Gen. vii. 24). But the flood had begun on the 17th day of the second month and, when at the end

²⁰ *Works*, viii. 6.

of 150 days it came to rest, it was the 17th day of the seventh month (Gen. viii. 3-4). 150 days thus made exactly five months. Theoretically it was possible that there would be one of 31, one of 29 and three of 30, as in our calendar, but Ussher, like others, took it as more natural to understand it as five months of 30 days each. Thus he was able to say of the flood that it began on Sunday, 7 December, and the ark rested 150 days later, on Wednesday, 6 May.²¹ The knowledge of months, days and even hours was important to Ussher. From the evening which preceded the full creation, until the end of the year, at midnight, where B.C. ended and the Christian era began, there were 4003 years, 70 days, and six 'temporary' hours (a 'temporary' hour was a fraction of the day not regularly measured: he meant the time from the 'pre-creation' to the midnight preceding the day on which light was created).²² The temple was destroyed 424 years, 3 months, and eight days after the start of its construction.²³ Ussher could be interested in this sort of thing even when it was not biblical: he tells how the burning of Rome in Nero's time was said to be 448 years, or 5376 months, or more exactly 167,632 days after its previous burning by the Senones or Gauls (this was in 391 B.C.).²⁴

The importance of this precision in dating extended to cases where actual dates were not given by the Bible itself. Given that the year was known (by Ussher's calculations), if a week related to the Passover was known dates in the Julian calendar could be given, by simple extrapolation from the tables used to determine Easter in the church. This was important for the events of the gospels. The first day of Unleavened Bread (Mk. xiv. 12) was 2 April (x. 555); the crucifixion was on the 3rd, although curiously this seems not to be explicitly stated; the following day, the Saturday, when the grave was sealed by a stone, was the 4th; and it was 5 April in the morning when the women came to the tomb (x. 566; incidentally, these pages, which present the detailed chronology of the gospels, were prepared by an assistant, and not

²¹ *Works*, viii. 18.

²² *Works*, viii. 7. Since Ussher worked with the Julian year as his scheme, the year in which creation took place, 4004 B.C., was not a complete year: that is, the 70 days and six 'temporary' hours were all that remained from creation to the end of that year.

²³ *Works*, viii. 200.

²⁴ *Works*, xi. 86. For an exception to Ussher's success in exact dating, and one of the highest theological importance, see below, pp. 600-601.

by Ussher himself, from a 'harmony' of the gospels). The day of the Ascension, forty days later (Acts i), was 14 May (x. 572f.); Pentecost was 24 May (x. 573). All this depended, of course, on the events being in the right year, which Ussher had fixed as A.M. 4036, i.e. A.D. 32-33. A miscalculation by a single year would have thrown the whole series of results out.

We spoke earlier of the beauty of those great overarching numbers which linked great events: Ussher had this with his series 4000-3000-1000. Another possibility was to take the jubilees into account. The Book of Jubilees itself in ancient times had done just this: it ended at the entry into Canaan, which it placed in the year A.M. 2450, exactly 50 jubilees from creation. B. Sanhedrin 97b had told that R. Judah said that "the world has no fewer than 85 jubilees, and in the last the Son of David will come". People noticed this sort of thing. Eusebius remarks that he was writing in the second year of the emperor Probus, which year was also the beginning of the 86th jubilee from the 45th year of Abraham's life. Ussher was interested in this also. He carefully fixed the datum point for jubilees, not at the creation of the world or at a time in Abraham's life, but strictly according to the letter of the Mosaic law, after the entry to the land and with counting to begin after the first sabbatical year: this was A.M. 2560.²⁵ Now John the Baptist, he found, began his preaching in the year 26-27 A.D. or A.M. 4030: this was "the beginning of the gospel", exactly 30 jubilees from the datum point²⁶ This highly significant agreement was another major triumph for Ussher's reckoning.

Of Ussher's treatment of the New Testament I will mention only a few features. One well-known chronological puzzle is the reference in Luke ii. 2 to the census of Quirinius, governor of Syria at the time of the birth of Jesus. Ussher knew, as modern scholars know, that Quirinius was governor from A.D. 6 (A.M. 4010; cf. x. 503). He just enters this into the chronology at this point as if

²⁵ According to Ussher, the entry into Canaan was in A.M. 2553, and from the Autumn of the next year, 2554, in which the receipt of manna had ceased and agricultural sowing had commenced, sabbatical years were to be counted. The first was 2560, and from it the cycle of Jubilees was to be deduced. See *Works*, viii. 78 and 80.

²⁶ *Works*, x. 527. Ussher thought it "most probable" (ibid., p. 528) that this ministry began on the tenth day of the seventh month, which was both the Day of Atonement and the day on which the trumpet was sounded to announce the jubilee; this would be around our 19 October.

there was no difficulty about it, although, if this was the census referred to by Luke, it would shatter the entire fabric, since it would mean that Jesus was not born in the days of Herod the Great but some ten years later. Under the year A.M. 4000, however (x. 470f.), he enters an earlier census taken under Quirinius. In other words, there were two such censuses and Quirinius was twice governor of Syria; this is, of course, the traditional device for harmonizing chronological contradictions by making the event happen twice. Actually, however, Ussher tacitly changes his tone here: he knew very well that he had no evidence at all from Roman sources that Quirinius was in Syria at this earlier time, and he knew the explanation, as old as Tertullian, that it was actually another man, Sentius Saturninus; what he wrote was that Quirinius *could have been there: potuit, nihil obstat*. He does the same with the cleansing of the temple: it happened once, as reported by John, in the first Passover, A.M. 4033 (x. 533), and again as reported by the other gospels at the third, A.M. 4035 (x. 551). However, though he worked from a harmony of the gospels, he could not get them to agree on the detailed chronology. He finds it surprising (*singulare*, x. 532) that Matthew was the only one who had neglected the order of events; everyone else had followed it precisely, except perhaps for Luke iii. 19-20, the piece about John the Baptist being shut up in prison, which was a parenthesis and undoubtedly out of order in Luke. In the history after the Ascension until A.D. 70 he mainly follows Acts, as is to be expected, and he puts in the dates of the various epistles where he can find a place for them. A surprising feature is the lack of attention to the Johannine literature: perhaps Ussher thought that the lack of mention in Acts, and the absence of historical information in the Johannine writings, left him without guidance. I have not seen any statement that he dated the Johannine literature late, but that is how it appears in English Bibles with dates, which are largely based on Ussher:²⁷ in them the Johannine

²⁷ Dates based on Ussher are said to have been inserted in printed Bibles from about 1701. In any case the reader should be aware that the mere provision of dates in the margin of a Bible gives no proper idea of Ussher's thinking and can often greatly mislead. A date at the top of a Bible page can leave it very vague which of the events on that page is in fact being dated: sometimes a page can cover events that take up many hundreds of years. The more modern printed Bibles which insert dates have often altered Ussher's dates in any case. One edition recently studied by the writer, an Authorized Version 'with chain references', Oxford, no date, has a note which states:

letters are dated "probably A.D. 90", and Revelation in A.D. 96, both surprisingly late. The *Annales* stop abruptly just after the fall of Jerusalem and do not go on so far.

On the whole, Ussher relies little on non-biblical traditions except where he is working from classical sources. There are, however, some exceptions. The death of St. Mark at Alexandria in A.M. 4065 = A.D. 61-62 rests entirely on tradition, as does the martyrdom of St. Peter and St. Paul five years later. To the Apocrypha Ussher not surprisingly devotes little attention, although he uses the Books of Maccabees and follows them as a historical source throughout the period that they cover. It is interesting, however, that he gives a place (viii. 211) to the origins of IV Ezra: in A.M. 3446, thirty years after the destruction of the first temple, the apocryphal author of IV Ezra "pretended" (*finxit*) that he had conversed with the angel Uriel, when Salathiel was national leader, Jechoniah the ex-king being already dead. IV Ezra was thus a fiction, a clear reflection of the Protestant depreciation of the apocryphal books; but at least it got a place in the listing. Ussher, of course, knew the book well, it being part of the Latin Bible, even if, since the Council of Trent, only in an appendix and thus an apocryphon even from the Roman point of view.

Ussher's *Annales* for the most part do not enter into discussion of the problems or into controversy: they tell you the right answer, the system as it has been worked out, but they do not lay out the evidence and work from it towards a solution. The more controversial questions were dealt with by Ussher in his later work, *Chronologia Sacra*, which was left incomplete and published after his death by Thomas Barlow (1607-91). In this he goes over the various options and interpretations of the evidence: the date of creation, the differences between the Greek, Hebrew and Samaritan texts, the problem of Cainan, son of Arphaxad, who appears in the LXX but not in the Hebrew, the birth of Arphaxad

"In the matter of chronology it is generally agreed, among conservative as well as liberal scholars, that dates prior to about 2000 B.C. are unreliable and rather speculative. In this edition no dates are given before the twenty-first century B.C., but from that period onwards a system based largely on Ussher's chronology has been followed".

This is a ludicrous reversal of Ussher's own point of view. For the older biblical chronology the figures of the early part of Genesis were the firmest and most assured ground. If these figures are not correct and exact then, there is no point in Ussher's endeavour whatever.

"two years after the flood" and other such recondite subjects, mostly quite unfamiliar to the modern reader of the Bible. The matter of the text was important. Ussher stuck steadfastly to the *Hebraica veritas*, the truth as expressed in the traditional Hebrew text. There was, as we have seen, a certain contradictoriness in this, for at two major points he forced a very unlikely interpretation upon the Hebrew through the authority of New Testament passages, one of which itself depended entirely on the Septuagint against the Hebrew. The cultural acceptance and success of Ussher's scheme depended on his adherence to the Hebrew: for the standard translation, the King James Version, of course followed the Hebrew in the Old Testament, and this meant that Ussher's chronology could be directly attached to the English Bible that everyone used and read in conjunction with it. No system which appealed at times to the Septuagint or the Samaritan could have had that sort of acceptance.

A little about its relation to the Jews. Ussher had a good knowledge of various sorts of Jewish scholarship and he quotes it from time to time. But his results could not be very acceptable to Jews — not that they would have worried much about them one way or the other in any case. His very drastic assumption of the Julian year could hardly commend itself to them. He largely ignored their own accepted chronological scheme — although, indeed, he could hardly have accepted it, because of its inability to cope with the Persian empire; but he might have paid more positive attention to it. Here and there in his notes he points out that such and such an event was a type of Christ, but no effort is made to do this frequently; once (viii. 76) we have even the presence of the incarnate Christ: Jesus himself our lord appeared with drawn sword at Jericho. After the destruction of Jerusalem he ends the *Annales* abruptly with *atque iste rerum Judaicarum fuit exitus*, by which I suppose he meant that this was the end of Jewish history.²⁸

It remains, in conclusion, to offer some estimate of the general intellectual character and value of Ussher's work on chronology. The *Companion to English Literature* edited by Sir Paul Harvey

²⁸ Incidentally, this represents a shift of emphasis as against the older chronological tradition. In that tradition, chronology began with creation and worked through the Bible, in order then to continue into the Christian era and the more modern world. Ussher's stopping just after the destruction of Jerusalem represents the more biblicistic emphasis of Protestantism.

says that his *Annales* were "of extraordinary critical quality". It is difficult to be sure of either "extraordinary" or "critical". Ussher, after all, was not so original: the really epoch-making work in ancient chronology had already been done by Scaliger, Petavius and others, and these two at least were intellectual giants compared with Ussher. In what sense was Ussher "critical"? His work is critical in the sense that it is meticulous in the estimation of how one thing may fit with another within a vastly complicated network of evidence. On the other hand, Ussher is rather uncritical, in the sense that he seldom shows any doubt about the correctness of the information his sources give him. This is true not only of the Bible, which by definition was infallible, but also of Greek and Roman sources. What is written down is true history. He thought that Rome was founded not in 753 B.C., as was generally supposed, but five years later, in 748: but this was because Fabius Pictor, the earliest relevant author, took it in this way. An apocryphal book of the biblical tradition like IV Ezra fared worse, as we have seen, and its data were branded as mere fictions. The Bible itself was something quite different. It never occurred to Ussher that a biblical text might be chronologically inexact, or that it might be the product of legend or of some intentionality other than correspondence with plain fact, with events as they had really been. He did sometimes contradict the plain sense of a biblical text, but this was because there was another biblical text that seemed to require him to do it. The principle of "comparing scripture with scripture", far from producing a clear and manifest agreement, actually served as the mode by which very artificial and implausible interpretations could be introduced. It was actually the assumption that all scripture hung together that forced Ussher at certain points to nullify the extremely probable sense of the text.

Ussher's chronology is expressed in years A.M. but translates into the reality of Julian years, beginning on January 1st. The first year, our 4004 B.C., thus had only seventy full days in it. It seems as if Ussher thought that the Julian year corresponded to the actual realities of time. Since the Bible was correctly expressing these realities, it was obvious that the Bible must be expressing itself in what were basically Julian years, even if the arrangement of months within them was different.

In Ussher's time biblical chronology was hovering on the brink between the older and the modern world. To him, as to many

earlier scholars, the Bible presented a perfect replica of history: it did not tell everything, but everything that it told was absolutely correct. Moreover, since biblical history reached back to the beginnings of the world, there could not be any true history before it began. This was a little like fundamentalism. But on the other hand Ussher never had the idea that all that needed to be known was in the Bible. On the contrary, it was legitimate and necessary to dovetail biblical knowledge into that which could be known from other sources. The Bible in fact left many gaps. It did not tell explicitly such things as: as a man of what age was Adam created?²⁹ how did he manage to feed himself? by what sort of death did Methuselah die? It was not necessarily illegitimate to fill up these gaps. An obvious case in Ussher is his elaborate speculation about the date in the year on which creation took place, a subject concerning which the Bible actually offers no hint. Another is the outrageous insistence that the early Hebrews worked by the Julian year. In the choice whether to fill up such gaps or to leave them empty, Ussher was moved sometimes by the intellectual fashions of the time, or by the logic of his own working methods, or by more general religious convictions. A telling instance of this lies in the date of the birth of Christ. Considering that the exact date, day and month, is given to quite minor events in the Old Testament and carefully recorded, it is something of a let-down to find that, although the birth of Christ is carefully recorded as in the year A.M. 4000, nothing at all is said about the month or day, and, in fact, Ussher offers little in this all-important section more than a Latin transcription of the relevant sections of the gospels (x. 473, cf. ib. 467 f.). He gives no expression of regret or embarrassment: but it is easy to see what the trouble was. The Bible gave not the slightest hint of the time at which Jesus was born, not even a suggestion whether it was in Winter or in Summer. Ussher thus had no reliable data. This spoiled the perfection of his scheme quite a lot. He was pleased to be able to offer very exact figures of the time that had passed from creation to Christ, down to the exact number of hours: but this was not the interval from creation to the actual birth of Jesus, it

²⁹ Sir Thomas Browne (*ibid.*, p. 543) reports the opinion that Adam was created as a man of fifty or sixty, "the perfect age of Man". This meant that he was virtually longer-lived than Methuselah, since the latter lived only 969 years in all, while Adam, who lived 930 years after his creation, had in a sense attained 980 or 990 years by the time he died.

was the interval from creation to midnight on the last night of the year 1 B.C. with which the traditional Christian era began, or (xi. 490) the interval from creation to the date, 25 December, in which "we suppose" (*supponimus*) that he was born. "We suppose" was symptomatic. Protestants thought that there was something fishy about Christmas: the Bible gave no dating for it. Thus at one of the most important points in his entire system Ussher had to hold back from the precision in dating that he so loved.

Ussher stood within an ancient tradition, more ancient and solid than he himself understood. It is probable that in the last stages of the development of the Old Testament chronological interests became more lively, and that some of the data we now have in our Bibles are products of late editing and comparable with the adjustments we see in the Samaritan and Greek texts. The Book of Jubilees, as has been said, tried to rewrite Genesis and make it chronologically more explicit. Hellenistic Jewish historians like Demetrius had tried to say, not just in what year, but on what day, Abraham or Jacob had made such and such a journey. In all this Ussher stood on the ancient side. He calculated the ages of the world from a fixed beginning. He was right in thinking that the Bible implied a particular year for creation, although the Bible did not make it very explicit and left it rather as an implication which the curious in these matters might work out if they wanted. He was also right in thinking that, at least by the Masoretic text, some time a bit before 4000 B.C. was intended, although something more like 4100 would be better. But to us, of course, the idea that creation should be so close in time leads in a direction which to Ussher was quite unknown, that is, towards the recognition that the Bible's ideas about early chronology were legendary rather than being accurate recording.

On the other side one must say that Ussher's work represented, on the whole, a very 'rational' approach to the questions. He worked almost entirely from precise data, biblical or extra-biblical. Little or nothing of his scheme depends on estimates, such as averages of how long a generation or a series of kings would be. He built nothing upon speculations about whether the earth was created in this or that sign of the Zodiac, and he seems not to have flirted with speculations about the Great Year. Astrology was remote from his mind. Conjunctions of planets were largely ignored, and eclipses played a minor role.

Basically, it seemed obvious to Ussher that the Bible was deeply interested in chronology, or more correctly, that God had dispensed through the Bible some absolutely accurate chronological information. In thinking this he was partly right and partly wrong. Parts of the Bible were indeed acutely interested in chronology: especially so the early parts of Genesis and the group of major intervals such as the 430 years in Egypt and the 480 from the Exodus to the temple. Calendars, similarly, deeply interested the people of Qumran and the books of Enoch and Jubilees. But Ussher was misled by the supposition, common to his time, that anything that was in the Bible applied to everything in the Bible. It was not really true that the whole Bible was so chronologically minded. Genesis had simply no idea of the time of year at which the creation occurred. Samuel and Kings made no attempt to provide an overall chronology. The chronology of the life of Jesus was at best rather vague. Ussher seems to imply the assumption that, since precise chronology is so important, the Bible's chronological remarks must always be absolutely accurate markers of the truth. He seems never to have conceived that a biblical writer, saying that such and such an event happened on the fourth day of the seventh month, had not the slightest idea that this should be set against a regular 365-day Julian year and therefore be translatable without possible error into 26 October. Equally, the idea that the great scheme of the ages of the patriarchs, cumulating in the flood, must have had some special meaning integral to that ancient culture, and that one might ask what that meaning was, was completely absent from his mind. The Bible, at least in matters chronological, informed us not of the intentionality of the writers, or of that of the texts as they stand, but of the precise facts of things that happened.

It is sometimes thought that the older exegesis preserved a perception of the literary form of the text as it stands, an awareness of the links between form and intention which more recent 'critical' study has lost. There is no sign of this in Ussher: literary form, canonical form, whatever we may call it, had little effect upon his mind. Though he was a cultured and well-lettered man, this did not affect his reading of the Bible, not at least in its chronological aspects. The only linkage that mattered was that between biblical statements and the external events to which they referred. In order to make sure these links, he would where necessary accept exegeses which glaringly contradicted literary

and canonical form — as did most exegetes of his time. The correlation of the Bible with ancient history was much more important for him than any question of literary form. The absolute position of the Bible went hand in hand with the fact that information derived from the Bible stood ultimately on the same level as information derived from the classics and ancient history. The dovetailing of the two was essential to his operation. There was no real clash between biblical and extra-biblical knowledge. There was no secret biblical world with its own rules of logic and meaning. The Bible differed in that it was absolutely true, not in that it concealed a different logic or a different kind of truth. This very openness of Ussher (and others) to extra-biblical truth was, in the next half-century, to alter the balance: by then the pressure of extra-biblical truth was to begin to cause men to think differently of the nature of biblical truth. But hardly a trace of this change is to be seen in Ussher.

APPENDIX

A. THE OLD TESTAMENT CHRONOLOGICAL MATERIAL

This article is devoted to Ussher's ideas and methods rather than to the elucidation of the chronological material in the Old Testament for itself. Since this material, however, is unfamiliar to most readers of the Bible, it may be helpful if we offer here a simple description of its character and compass. This will deal only with the Old Testament material, which, for reasons discussed above, is really much more important in determining the total chronological picture.

The Old Testament contains a large number of apparently chronological references, the number of years lived by this or that person, the length of the reign of this or that king; but much of this detailed data is bridged over or overridden by certain major architectonic statements, and if we direct our attention to these we find that many of the complicated details can be left aside.

It is convenient to consider Old Testament chronology — that is, the chronology as presented by the Old Testament text, not necessarily the actual historical chronology of real events — as existing in three great segments. These are:

1. From creation to the migration of Abram from Haran into Canaan.

2. From Abram's migration to the start of construction of the temple of Solomon, which was in the fourth year of that monarch.

3. The period of the Judaeen kingdom, from the fourth year of Solomon to the end of the kingdom and destruction of the temple.

We shall look at each of these separately, and then bring them together.

1. *Creation to Abram's migration.* This is relatively simple, and the chronology can be obtained by simple addition of the ages at which the first son was born, in the genealogies of Gen. v and xi. By the standard Hebrew ('Masoretic') text, the flood began in the year 1656 A.M. (the Samaritan Hebrew text has 1307 and the Greek (Septuagint) has 2242).

After the flood the only complication is that of the "two years after the flood" of Arphaxad, which affects the chronology by two years (see above, p. 585). By any natural interpretation of the Hebrew, it produces a contradiction, and for the present it will be ignored, and we shall proceed on the basis that Shem was born in the year A.M. 1556 and Arphaxad in 1656, when Shem was a hundred years old. If we work on this basis, Abram's migration from Haran was in A.M. 2021.

2. *Abram's migration to Solomon's temple.* This major segment falls into three smaller sections: (a) from Abram's migration into Canaan until the entry of Israel into Egypt; (b) the period spent in Egypt; (c) the time from the exodus from Egypt to the start of the temple building.

The first of these is easily calculated from ages of the patriarchs: Abraham was a hundred years old at the time of Isaac's birth, Gen. xxi. 5, i.e. 25 years older than he had been at the time of his migration into Canaan; Isaac was sixty at the time of Jacob's birth, Gen. xxv. 26; Jacob was 130 years old at the time of the descent into Egypt, Gen. xlvii. 9. By a simple sum, the total for this period was 215 years — a period, be it noted, exactly half of the figure 430 which appears twice in the chronological data shortly to be considered.

The second, the period spent in Egypt, has already been discussed above. The Hebrew text clearly states, at the key point of Ex. xii. 40, that 430 years was the figure for the dwelling of the children of Israel in Egypt. The Septuagint, and similarly the Samaritan, used the same figure, 430 years, but added words which made it apply to their dwelling in both Egypt and Canaan. As explained above, the effect of this is to absorb the 215 years of

the patriarchs' time in Canaan within the total of 430. Thus we either have a total of 645 (215 in Canaan plus 430 in Egypt), which is the natural sense of the Hebrew text, or a total of 430 (215 in Canaan and 215 in Egypt). Ussher followed the latter basically because St Paul earlier had followed it; but for a different reason — for Paul followed it because it was in the Septuagint text which he used, while Ussher sought to justify it from the Hebrew text.

The third period, from the Exodus to the start of the temple building, is unequivocally settled by I Kings vi. 1: this period was 480 years. This overrides a great deal of fragmentary chronological material about the Judges, Samuel, Saul and David: furnished with this major bracket, the chronologist did not have to trouble too much about the details that lay within it.

3. *Period of the Judaeen kingdom from the fourth year of Solomon to the end.* This is in many ways the most puzzling period. The texts provide careful information in the form of synchronisms: in the third year of Asa king of Judah, Baasha son of Ahijah began to reign over all Israel at Tirzah, and he reigned 24 years (I Kings xv. 33). It seems that the writers were chronologically very conscious. Nevertheless it is very difficult to obtain a clear chronology from the period of the kings. There is no precise account of how long all this was taking. The dating is entirely relative rather than absolute: it tells you the date of a king in one kingdom by the years of a king in the other, but nowhere is there an absolute chronological statement. Nowhere does it say: this took place 210 years after Solomon's completion of the temple, or 3300 years after the creation of the world. (The actual dating of events directly from creation, as when we say that this is the year 5744 by the Jewish calendar, was not used by Jews until long after biblical times).

There is, we might say, a maximum figure for the period of the kingdom. That is, if one simply reads from Kings all the numbers of years recorded for the kings of Judah, from the fourth year of Solomon to the destruction of kingdom and temple, and adds them up, the number is: 430. The actual chronology could have been shorter than this, and historically it certainly was. The figures of the kingdom must be accounted for through textual errors, or through overlaps and coregencies, or on the grounds that they were adjusted to fit a theoretical chronological schematism.

But 430 remains a very important number. It is the key number in the period from Abraham to the Exodus, and 215, which by the Hebrew text is the other number there involved, is half of 430.

We conclude, then, by bringing together the essential data of the Hebrew text of the Old Testament in the following table:

Segment	Period	Years added	Cumulative total (= A.M. figure for end of period)
I	1. Creation to flood	1656	1656
	2. Flood to Abram's migration	365	2021
II	3. Abram's migration to entry of Israel into Egypt	215	2236
	4. Period in Egypt	430	2666
	5. From Exodus to start of temple building	480	3146
III	6. Period of kingdom from 4th year of Solomon to its end	430	maximum but no absolute chronology provided

As already noted, if the two years of Arphaxad are added in, the cumulative totals are two years higher from immediately after the flood. In other words, the period from the flood to Abram's migration would be 367 years. However, the 365-year period as in the table above is likely to be significant, and probably confirms us in omitting these two years. For the importance of a 365-year period is manifest, and is confirmed by that other all-important place in the chronological data at which such a period is found: Enoch, the only man not to die but to be 'taken' by God, the seventh of the early patriarchs, lived 365 years on earth, a figure markedly discrepant in type from the life-spans of the other persons of Gen. v (see Gen. v. 20-24). Similarly, as pointed out above, the figure 430 is likely to be schematic in character, and even more is this true of 480. The figure 2666 from creation to Exodus is two thirds of 4000, and this may also be schematic and significant. From the latter part of the kingdom the Old Testament provides no steady chronological framework in its own text and all determination of the temporal relations depends on recourse to extra-biblical information, as Ussher already knew very well.

B. GENERAL SCHEME OF USSHER'S CHRONOLOGY

The following is an extract of the more central features of Ussher's chronology, expressed in years both A.M. and B.C./A.D.

	A.M.	B.C./A.D.
creation	1	4004 B.C.
flood begins	1656	2349
Abraham born	2008	1997

migration from Haran	2083	1922
entry of Jacob into Egypt	2298	1707
Exodus from Egypt	2513	1492
entry into Canaan	2553	1452
start of agriculture	2554	1451
first sabbatical year	2560	1445
first Jubilee	2609	1396
birth of David	2919	1086
start of temple building	2993	1012
completion of temple	3000	1005
destruction of temple	3416	589
death of Nebuchadnezzar	3442	563-2
birth of John Baptist and conception of Christ	3999	6-5 B.C.
birth of Christ	4000	5-4 B.C.
death of Herod	4001	4-3 B.C.
beginning of Gospel with preaching of John Baptist	4030	26-7 A.D.
beginning of Christ's ministry	4033	29-30
Passion and Resurrection	4036	32-3
Conversion of St. Paul	4038	34-5
Mark dies at Alexandria	4065	61-2
Martyrdom of SS. Peter and Paul	4070	66-7
Titus destroys temple	4073	69-70
conclusion of annals	4076	72-3

A note should be added about Ussher's mode of indicating the years, for this can be confusing to the beginner. Throughout the *Annales* Ussher registers events in years A.M., beginning from 1. Thus the chronology develops from the datum point of the beginning, in the style of Genesis. Only occasionally are B.C./A.D. dates mentioned. But A.M. figures are readily translatable into B.C./A.D. figures, and Ussher provides a full table, year by year, for the 4076 years covered by his work. But an A.M. year did not coincide with a B.C./A.D. year. Though it was of the same length and was believed to have the same character as a Julian year, it started from a different point, from 22 October which was the beginning of time. Thus the year A.M. 1 began in 4004 B.C. but it ran on until October 4003, and so throughout the series. Therefore, even if it was known in which year A.M. an event happened, it could fall within either of two B.C./A.D. years unless the date within the year was known. This makes little difference in the earlier part of the chronology but a considerable amount in the later part, as we approach New Testament times, for there we have many events that are known to have taken place at a certain time of the year. Thus, to take a central example, the Passion and

Ressurrection of Jesus Christ are registered by Ussher under the year A.M. 4036, and by his tables this is correlated with A.D. 32. But the event did not take place in A.D. 32. The year A.M. 4036 runs from October 32 to October 33, and since these events are known to have taken place in the Spring the date intended by Ussher is A.D. 33. For this reason I have given the B.C./A.D. dates in the latter part of the right-hand column in a form like 32-33 A.D., although this is not the way in which Ussher himself expresses them. Dates in English Bibles, even if based on Ussher, are given in B.C./A.D. dates reconstructed from Ussher, and thus fail to display his own mode of thinking about the matter. On this see the important prefatory note to the *Collatio Annorum*, *Works*, volume xi, p. 117.

In the first portion of the chronology, from creation down to the building of Solomon's temple, Ussher's solution is typologically quite close to the position of the Old Testament texts themselves. There are, indeed, some differences, and these have been discussed above, pp. 584-87: the two years of Arphaxad, the position of Abram's birth in relation to those of Nahor and Haran, the scope assigned to the 430 years of Ex. xii. 40. These are questions which can no doubt be discussed. But the general character of Ussher's chronology in its early period, so long as we look only at the years and ignore months and days, is quite similar to that of the Hebrew text itself. In its latter part, from Nebuchadnezzar's death onwards, it was, as Ussher himself knew, dependent for its basic structure not on biblical data but on an extra-biblical chronology into which the fragments of biblical information could be fitted. In the central Old Testament section, the history of the kingdom, the position was paradoxical: this was the period for which the Old Testament furnished the best historical evidence, and in which also detailed information about length of reigns and the like was provided, but it was also the period in which Ussher's solutions were most out of line with the known historical facts. Ussher's date for the commencement of Solomon's temple was about fifty years too early.

Ussher also divided his chronology into seven "ages of the world": these began with (1) creation, (2) the flood, (3) Abram's migration from Haran, (4) the Exodus from Egypt, (5) the start of the building of the temple, (6) the destruction of kingdom and temple, (7) the birth of Jesus Christ. But these seem to have functioned only as a sort of chapter heading, and he seems not to have provided any detailed arguments for this division.