



Mythopoeic Society

mythLORE

A Journal of J.R.R. Tolkien, C.S. Lewis,
Charles Williams, and Mythopoeic Literature

Volume 14
Number 4

Article 8

Summer 7-15-1988

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Recommended Citation

Martin, Darrell A. (1988) "J.R.R. Tolkien's Calendars, or The Saga of Hador The Incompetent," *Mythlore: A Journal of J.R.R. Tolkien, C.S. Lewis, Charles Williams, and Mythopoeic Literature*: Vol. 14: No. 4, Article 8. Available at: <https://dc.swosu.edu/mythlore/vol14/iss4/8>

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Abstract

Finds inconsistencies in *The Lord of the Rings* appendix relating Middle-earth's calendars to the Gregorian.

Additional Keywords

Tolkien, J.R.R.—Settings—Middle-earth—Calendar systems; Tolkien, J.R.R. *The Lord of the Rings*. "Appendices"—Calendars

J.R.R. Tolkien's Calendars

or The Saga of Hador The Incompetent

Darrell A. Martin

J.R.R. Tolkien's Middle-earth was constructed with a concern for detail, to say the least. One area that has not been examined in depth is the calendars, in their interrelationships and their connection to Terra.

I use the word "Terra" to refer to our world of primary reality. It is dangerous to distinguish it from Middle-earth too much, though, for as Tolkien says:

Middle-earth is not an imaginary world.... The theatre of my tale is this earth, the one in which we now live, but the historical period is imaginary. (*Letters*, #183, pg. 239)

But why study the calendars at all? I enjoy playing Tolkien's "vast game", although I, too,

find that kind of thing only too fatally attractive. It is, I suppose, a tribute to the curious effect that story has, when based on very elaborate and detailed workings of geography, chronology, and language, that so many should clamour for sheer 'information', or 'lore'. (*Letters*, #160, pg. 210)

Although just plain fun is not to be denigrated, the Englishness of Tolkien's mythology and other literary implications are also to be found. The study actually originated in an analysis of sources for Tolkien's histories and annals in Classical Antiquity and earlier.

The following astronomical and historical information is taken from various sources; where it has been commonly accepted for some time it will not be referenced. Days may be expressed to six decimal places (not hours, minutes, and seconds) for ease of calculation; "0.000,001 days per year" is equal to 14 minutes 24 seconds in 10,000 years.

By 1956 international definition, 1900 AD was 365 days, 5 hours, 48 minutes, 45.9747 seconds (365.242,199 days) long (Sandov). The year's length is very slowly decreasing, at a rate of about 5.3 seconds per millennium.

The year's beginning is arbitrary. The Egyptian civil year began at the Summer Solstice at one time, and had "seasons" named from the Nile flood; but since it was exactly 365 days long, its start "wandered" through the tropical year. The Babylonian lunar year began between March 25 and April 21. The Romans' Ianuarius 1 was supposed to be about a week after the Winter Solstice. The English civil calendar generally abandoned January 1 for December 25 in the 7th Century, switched to March 25 in 1338, and returned to January 1 with the

1752 adoption of the Gregorian reform. (Students of the Anglo-Saxon Chronicle are well aware of problems arising from regional differences in New-Year's.)

The month of lunar phases averages 29.530,588 days, giving 12,368,264 months in a tropical year. The ratio is thoroughly inconvenient. Most primitive calendars were lunar, and eventually gave way to combined luni-solar years like the Babylonian. The Egyptians kept such a calendar for some purposes, tied to the heliacal rising of Sirius about the time of the Summer Solstice (in the second millennium BC).

As an aside, note that this heliacal rising of Sirius is the same annual event, mentioned in Lucan's *Pharsalia*, which occasioned Dorothy Sayers' attempt to defend this Roman poet against the attacks of Graves and Housman. Her efforts (Marsden) are illustrative of the difficulties encountered by literary persons attempting to deal with astronomical matters.

The Egyptian civil calendar was unusual in being detached from the moon; it had three "seasons" of four 30-day months, plus five epagomenal days at the end of the year. The Roman months (except *Februarius*) were 29 or 31 days because they thought even numbers unlucky. Every other year, when the *pontifex maximus* didn't have enemies in office whose terms he wanted to shorten, a month was added before *Martius*. This didn't have to be announced until *Februarius* 5, but provincial bureaucrats still had to date their documents. You can imagine their attitude when they learned they had guessed wrong. The Julian reform established the pattern we now use; the shifting of days when *Sextilis* was renamed *Augustus* is a legend.

The Egyptians chose dawn twilight to start their day (they found both twilights important, and gave them separate hours). The Babylonians used sunset. Hellenistic astronomers found noon more convenient. The Babylonian Kidinnu used a day of 6 "watches", each of 60 *ges* and 3,600 *gars*. Hipparchos took the Egyptian 24-hour day and the Babylonian divisions of 60, began the day at midnight, and eventually bequeathed to the Romans their *horas*, *pars minuta*, and *pars secunda*.

The source for Tolkien's calendars is Appendix D to *LotR*. I assume familiarity with the second edition. There are major changes between editions and a few relevant texts outside Appendix D. Tolkien used modern month-names in his narrative to

avoid confusion; I have used untranslated month-names, even in quotations.

The first revision involves intercalations made in the 3rd Age by the Stewards. In the first edition, Mardil added two days to 2060; in the revision, to 2059. Hador added one day to 2360 in both editions. The first edition had no detailed accounting for the additions.

More interesting as "lore" are revisions in relating the Shire calendar to the Gregorian (see Table 1).

Table 1.

Appendix D paragraph relating Shire and Gregorian dates

FIRST EDITION	COMMON TO BOTH	SECOND EDITION	was
and Year's End			were originally
	intended to correspond		
	as much as possible		
	to the summer		
and winter	solstices		
, and still did so.			
	In that case		
	the Shire dates were		
	actually in advance		
	of ours by some		
nine			ten
	days, and		
	our New Year's Day		
	corresponded more or less		
	to Afterlithé		
8.			9.

Appendix D also says "the Numenoreans... adhered to the custom of beginning the year in mid-winter..."

Accounts of the marriage of Aragorn and Arwen use the term "Midsummer", which is not found in Appendix D (III, pgs. 251, 343). Appendix B says "Mid-year's Day" (III, pg. 376). "Midsummer" is a definite day in English, see *OED* Eve def.2. quote, "...on mydsomer eue kynng Edward bygan to sayll toward fraunce." *Midsummer* def.1. "the summer solstice, about June 21st", "that ys on lyden solstition & on englisce midsumor"; or defs. 2. and 3. "Midsummer day, June 24th...one of the recognized 'quarter-days' in England". cf. *Mid-year* def.1. "Midsummer. Obs." and *Solstice* def.1. "about 21st June (the summer solstice)". Other pertinent *OED* definitions include *Midwinter* "The middle of winter; spec. the winter solstice, Dec. 21st, or the period about that time. Also formerly applied to Christmas". *Solstice* def.1. "about...22nd December (the winter solstice)".

The actual occurrences of the equinoxes and solstices are readily available (e.g. Meeus, pgs. 3-1

to 3-42). The first complete Gregorian cycle, 1601-2000 AD, covers all but eighteen years since the Gregorian reform in 1582. I have selected 1953-1968 as four leap-year cycles close to the time when Tolkien was writing and revising Appendix D.

Table 2.

Dates of the Solstices and Equinoxes, Gregorian Ephemeris Time (GMT is little different)

Day of month: 19th 20th 21st 22nd 23rd 24th

SUMMER (JUNE) SOLSTICE

<i>OED</i>				****		
1601-2000	0	26	301	73	0	0
20th Century	0	0	64	36	0	0
1953-1968	0	0	12	4	0	0

CONSENSUS ****

AUTUMNAL (SEPTEMBER) EQUINOX

<i>OED</i>				****	****	
1601-2000	0	0	0	135	255	10
20th Century	0	0	0	10	82	8
1953-1968	0	0	0	1	15	0

CONSENSUS * ***

WINTER (DECEMBER) SOLSTICE

<i>OED</i>				****	****	
1601-2000	0	10	227	162	1	0
20th Century	0	0	22	77	1	0
1953-1968	0	0	4	12	0	0

CONSENSUS *** *

VERNAL (MARCH) EQUINOX

<i>OED</i>				****		
1601-2000	22	270	108	0	0	0
20th Century	0	43	57	0	0	0
1953-1968	0	8	8	0	0	0

CONSENSUS *** *

It is clear that the *OED* dates are trustworthy over a long period. For the Summer Solstice, June 21st is the clear choice; the other consensus dates are September 23, December 21st (with a fair claim for the 22nd), and March 20 (with some claim for the 21st).

Unfortunately, even with options for some of the "equations", Tolkien's statements relating the Shire calendar to the Gregorian turn out to be irreconcilable, and his explanation of the intercalations is in error. Still, exegesis of the texts and computer analysis of the deficits allow us to recover the seasonal implications of the Numenorean

calendar both in intent and at the time of the War of the Ring.

The key paragraph and its history indicate Tolkien's lack of certainty. "Intended", "as nearly as possible", "by some days", and "corresponded more or less" are a lot of qualifiers for a short passage. In the material at Marquette University there is evidence of confusion, or developing concepts. In the fair holograph copy of the letter from King Elessar to Mayor Samwise, part of the unpublished Epilogue to *LotR*, several dates have been corrected, and Elessar uses a New Reckoning "thirty-first of Stirring"; all months in that calendar have 30 days.

Tolkien produced the appendices under pressure; he had still not delivered them when he wrote to Rayner Unwin 6 March 1955 (*Letters*, #160, pg. 209). It is possible he used a 1955 calendar when he first wrote Appendix D. If he did, he found the Vernal Equinox about 10 a.m. March 21, the Summer Solstice 5 a.m. June 22, and the Winter Solstice at 3 p.m. December 22 (GMT; Meese). Other June 22nd solstices occurred in 1955, 1959, 1963, and 1967. Taking this possibility into account does not, in any case, solve the "Afteryule 9 problem".

Whatever Tolkien's original notions, the days of difference and the Shire equivalent of our New Year's were both revised by one. But "Mid-year's equals Summer Solstice", "ten days difference" (apparently between New Year's Days), and "January 1 equals Afteryule 9" still seem to give three different results.

The "days of difference" as between 2 Yule and January 1 can be rejected. In both editions it is inconsistent with the June 21 solstice; in neither does it fit the correspondence of Shire date and the Gregorian New Year. "Ten days" can be reconciled to the solstitial Mid-year by using the average difference between corresponding months. The average difference is ten days (one month at eight, two at nine, five at ten, and four at eleven) when Mid-year's corresponds to June 21. (This also works for "nine days" if a June 22 solstice is assumed for the first edition.) Allan hints at this method in his 1981 calendar notes, "Our months lag about 10 days..."

Concerning the Numenoreans' supposed intent, the phrase "In that case..." makes the solstitial Mid-year's logically precedent, and of the three statements it is the one that was unmodified between editions. The ten days difference can easily be made consistent with it. But January 1 equalling Afteryule 9, as it is reasoned, is a discrepancy insufficiently corrected between editions.

Table 3 offers six calendars, based on five items to account for. Items (1)-(3) and calendars "B"- "D" are the most important:

PRIMARY

- (1) Mid-year's Day equals Summer Solstice, June 21.
- (2) A 10-day difference between calendars, mean difference between months
- (3) Afteryule 9 equals January 1.

SECONDARY

- (4) 2 Yule equals midwinter:
December 21
or December 22
or December 25
- (5) Mid-year's Day equals Midsummer:
June 21
or June 24

Table 3.
Six selected calendar comparisons
for non-leap years

CALENDAR: A		B	C	D	E	F
SHIRE	(PREVIOUS)	GREGORIAN	MONTH	DATE		
2 Yule	December	20	21	22	23	24 25
1 Afteryule	December	21	22	23	24	25 26
1 Solmath	January	20	21	22	23	24 25
1 Reth	February	19	20	21	22	23 24
1 Astron	March	21	22	23	24	25 26
1 Thrimidge	April	20	21	22	23	24 25
1 Forelithe	May	20	21	22	23	24 25
Mid-year's Day	June	20	21	22	23	24 25
1 Afterlithe	June	22	23	24	25	26 27
1 Wedmath	July	22	23	24	25	26 27
1 Halimath	August	21	22	23	24	25 26
1 Winterfilth	September	20	21	22	23	24 25
1 Blotmath	October	20	21	22	23	24 25
1 Foreyule	November	19	20	21	22	23 24
1 Yule	December	19	20	21	22	23 24

GREGORIAN	(CORRESPONDING)	SHIRE	MONTH	DATE
1 January	Afteryule	12	11	10 9 8 7
1 February	Solmath	13	12	11 10 9 8
1 March	Reth	11	10	9 8 7 6
1 April	Astron	12	11	10 9 8 7
1 May	Thrimidge	12	11	10 9 8 7
1 June	Forelithe	13	12	11 10 9 8
1 July	Afterlithe	10	9	8 7 6 5
1 August	Wedmath	11	10	9 8 7 6
1 September	Halimath	12	11	10 9 8 7
1 October	Winterfilth	12	11	10 9 8 7
1 November	Blotmath	13	12	11 10 9 8
1 December	Foreyule	13	12	11 10 9 8

Summer Solstice	Shire	2	MYD	1	30	29	28
should be	Mid-year's	-----	Lithe	Forelithe	-----		

Avg diff corresp months	11	10	9	8	7	6
should be	ten					

New Year's	Afteryule	12	11	10	9	8	7
should be	"Shire Jan. 9"						

Shire New Yr	December	20	21	22	23	24	25
should be	Midwinter						

Shire Mid-year's	June	20	21	22	23	24	25
should be	Midsummer						

Calendar "A" is given only for use in the later deficit discussion.

Calendar "B" meets items (1); (2) with the more likely option; (4) with the most likely option; and (5) by virtue of (1). This calendar, with 2 Yule equalling December 21, is the obvious choice for the Numenoreans' original intent.

Calendar "C" meets point (4) by the second option. It also corresponds to the 1955 calendar's solstice for Mid-year's Day.

Calendar "D", with 2 Yule equalling December 23, meets (3). It is the one used for the Shire dates in the Ballantine calendars from 1977 on. Its anchor is the explicit date equation; but that is not enough, even though James Allan (Calendar) argues for this choice. He accepts a June 22nd Solstice, requiring January 1 to be Afteryule 10. He also accepts Tolkien's erroneously reasoned, but correct, accumulated deficit, and attributes the difference between his calculated Afteryule 10 and the stated Afteryule 9 to the failure "to add an extra day in the year 3000" [emphasis mine --there were two days not added]. But deficits move seasonal events (and corresponding Gregorian dates) later in the calendar with the deficit. (This point will be amplified.) Tolkien's one-day deficit at the War of the Ring leads to an Afteryule 11 for January 1.

Calendar "E" meets (5) by Mid-year's Day equals June 24. For fans of English "quarter-days" only.

Calendar "F" meets (4). For Grinches who want to steal Christmas by combining it with New Year's.

Having established the Numenoreans' original intent, i.e. a year beginning December 21 and a June 21 Mid-year: how well had they done? The answer can be either based on the calendar's applicability to Terra, or on how well they administered their own system.

The Numenoreans did not use the Gregorian method of making years divisible by 400 leap-years, but instead added two days to years divisible by 1,000. The figure 2 is not in the second edition, but it is necessary for a "millennial deficit of 4 hours 46 minutes 40 seconds". Tolkien was proud of his calendar:

I am sorry about my childish amusement with arithmetic; but there it is: the Numenorean calendar was just a bit better than the Gregorian: the latter being on average 26 secs fast p.a., and the N 17.2 secs slow. (Letters #176, pg. 229)

It is obvious that he paid no attention to the changing length of the year:

The year no doubt was of the same length... long ago as those times are now reckoned in years and lives of men...

His Middle-earth year is a static 1900 AD. Still, his calendar compares very well with Terran efforts, see Table 4.

Table 4.

Average length of various years over long periods.

Roman Republican (theory)	366.25	days
Julian	365.25	days
RECKONING OF RIVENDELL	365.243,056	days
Gregorian	365.242,5	days
Tropical year 1900 AD	365.242,199	days
Tropical year 2000 AD	365.242,193	days
NUMENOREAN/VARIANTS	365.242	days
Egyptian civil	365	days

Not only is the Numenorean calendar closer to the tropical year than the Gregorian (as given in most references, leaving 4000 AD a leap-year), it is getting even closer.

Tolkien had trouble with the Stewards' administration of the calendar. He used the system of "deficits", amounts by which the calendar year is shorter than the seasonal year. Deficits cause the beginning of the calendar year to arrive too soon, and therefore cause seasonal events to occur later in the calendar. (I suspect that Tolkien may have gotten this backwards, putting Allan in good company.) From his second edition reasoning for the intercalations, a deficit at 3Age 2001 of about 2 days 8 hours can be deduced. He was accounting for the age change and two millennial deficits only, as 3Age 2001-2059 were part of the next millenium. The correct deficit is given in Table 5.

Table 5.

Total deficit in 3Age 2001.

3 millennial deficits:	0 day 14 hr 20 min 0 sec
4 centennial deficits:	0 day 21 hr 6 min 40 sec
10 quadrennial SURPLUSES: +0	7 hr 29 min 20 sec
1 annual deficit:	0 day 5 hr 48 min 46 sec
Total deficit, 3Age 1	1 day 9 hr 46 min 6 sec
2 millennial deficits:	0 day 9 hr 33 min 20 sec
Total deficit, 3Age 2001	1 day 19 hr 19 min 26 sec

Computer analysis confirms this figure's accuracy.

The reasoning that led to Tolkien's error of about 13 hours is not clear. Treating the events historically, it appears that Hador was incompetent, or pandering to the holiday crowd; had he not added a day, and had Denethor II added the

expected two days to 3Age 3000, the accumulated deficit to begin the fourth millenium would have been a mere 6 minutes and 6 seconds! As it actually occurred, the deficit was 1 day 6 minutes and 6 seconds to begin 3Age 3001. Tolkien says that, "By the end of the Third Age, after 660 more years, the Deficit had not yet amounted to 1 day." Given the facts, and assuming for comparison's sake that the Summer Solstice occurred at noon Mid-year's Day in 2Age 1 when the Numenorean era began, computer analysis gives the results in Table 6 for the leap-year cycle that included the War of the Ring. I can only regard the results' similarity to Tolkien's "not yet amounted to 1 day" as serendipitous.

Table 6.

The Summer Solstice at the time of the War of the Ring assuming one occurred
2Age 1 Mid-year's at noon.

3Age 3017	9:06 a.m. 2 Lithe
3Age 3018	2:55 p.m. 2 Lithe
3Age 3019	8:44 p.m. 2 Lithe
3Age 3020	2:33 a.m. Overlithe

With a sunrise day-start, 2:33 a.m. is just a few hours before the end of Overlithe in the morning.

The average difference of the above from a normal Shire Summer Solstice at Noon on Mid-year's is a deficit of about 23 hours 49 minutes.

Given a June 21 solstice, these would require the use of Calendar "A", which has Afteryule 12 equal to January 1, for the end of the Third Age. Even using the incorrect June 22 solstice results in a Shire calendar only one day later, equating our New Year's Day with Afteryule 11, or Calendar "B".

This discussion has dealt with the Numenorean calendar, and not with its source, the Eldarin *loa*. The questions of interest in the Reckoning of Rivendell are: whether it is possible to determine the start of the year count; and what bearing this may have on equating dates.

The Calendar of Imladris added three days to every twelfth year, omitting the addition in the last year of every third *yen* (every 432nd year). The beginning of the *loa* moved 2,906,388 days in the seasons in any twelve-year cycle, so the accumulating surplus probably didn't bother the Elves.

The Red Book of Westmarch noted that the omission of the doubled *enderi* "has not happened in our time". With a 2Age 1 beginning, the closest end of the 432-year period to the War of the Ring

would be SR 1439 (4Age 19); beginning 2Age 1697 at the founding of Imladris gives SR 1408 (3Age 3008); and beginning 3Age 1 results in SR 1424 (4Age 4). None of these would be outside "our time" to the Red Book chronicler(s).

The remaining likely possibility is that the era used by the Elves of Middle-earth began when the seasons began, when "the evening and the morning were the first day" (Genesis 1:5, KJV). *LotR* and *Silmarillion* do not give the length of the First Age of the Sun. But Foster's analysis of *Silmarillion* dates (pgs. 561-564), and "The Later Annals of Beleriand" as emended (*Lost Road*, pgs. 125-144), agree remarkably well on a First Age lasting about 600 years. (Foster's error in considering time before the Sun as part of the First Age is trivial.) Christopher Tolkien remarked on these annals that:

From the end of annal 257 (457) the manuscript was very little changed, either before *The Lord of the Rings* or after... (*Lost Road*, pg. 145)

We may reasonably, if tentatively, accept the "Later Annals" figure of 597 years for the First Age. An Eldarin era based on that age's beginning would have had 432-year periods end in SR 1274 (3Age 2874) and SR 1706 (4Age 286). There thus would have been no omission of the doubled *enderi* closer than 145 years to the War of the Ring.

The reasoning is recursive -- look for an era-start that works, then point out that it does --but if one equates noon (the day being 3/4 over to the Elves) of the first day after the first sunset with the first Vernal Equinox, and assumes that this was the first day in the era used in Rivendell, then the Vernal Equinox would have occurred as given in Table 7 for the "Great Years" at the end of the Third Age.

Table 7.

Vernal Equinoxes in the Calendar of Imladris given a 1Age 1 beginning with the first Vernal Equinox at noon on the first day.

The Vernal Equinox is assumed to be Rethe 30, March 20 in Calendar "A", at the end of the Third Age.

The Yen-Loa year is one prior to the corresponding Middle-earth year, due to the Equinox moving earlier in the calendar; and the apparent discrepancy in the Rivendell-Shire dates is caused by the Eldarin sunset day-start and the Shire sunrise day-start.

Yen	Loa	Middle-earth	Rivendell	Shire
XLIX	144	3Age 3019	<i>coire</i> 49 morning	Rethe 30
L	1	3Age 3020	<i>coire</i> 49 afternoon	Rethe 30
L	2	4Age 1	<i>coire</i> 50 evening	Rethe 30

The equation of Rethe 30 with coire 49 gives a *yestare* of Astron 6, the date Celeborn met Thranduil in 3Age 3019 (III, pg. 376) and the Shire's mallorn flowered in 3Age 3020 (III, pg. 377). *Yestare* "in the Calendar of Imladris... corresponded more or less with Astron 6" (III, pg. 390). Even reasoned in reverse, the results are compelling, unless Christopher Tolkien finds relevant and contradictory material in his father's papers.

In summary, the material published to date indicates that Tolkien intended the original Numenorean calendar to begin on December 21, and to have a June 21 Mid-year's; and that, although his reasoning was faulty, his conclusion that the deficit at the War of the Ring was just less than one day was correct, requiring the use of Calendar "A" of Table 3 for The Great Years.

It is further likely that the era of the Elves in Middle-earth began on the first Vernal Equinox, which occurred on the first day following the first sunset, and that Tolkien used a 597-year First Age for his calculations. His equation of Astron 6 and the Elves' New Year is therefore correct as of 3Age 3019-4Age 1.

It also seems clear that Tolkien had difficulty with the calendric material, and under the pressure of deadlines erred in at least three ways: the explanation of the Stewards' intercalations, the calculation of the age-change deficits, and the equation of Afteryule 9 with our New Year's Day. I am unable to suggest a coherent line of reasoning that would have led to these mistakes.

The implications of all this are indeed manifold. The "vast game" is fun to play. And once again we are reminded of how firmly Tolkien rooted his mythology in our own familiar world, even if the advent of the "long arc-lit suburbs" that Tolkien hated (*Letters* #83, pg. 96) has obscured all but the brightest stars, and made the sky a place of transportation rather than of wonder.

They do not have the same seasonal implications in the Shire calendar as in ours, but Tolkien's use of several dates has a ring of familiarity (to the educated). March 25, the date of the Ring's destruction and the New Reckoning's New Year, is the date of the Annunciation in the church calendar, was the English New Year's Day in the 13th-18th Centuries, and was the traditional Roman Vernal Equinox. May 1, which had religious significance for the Celts, served Tolkien for Aragorn's coronation and Sam's wedding. September 22, Bilbo's birthday, the day Frodo and Sam met the Last Riding of the Keepers of the Rings, and the day of Sam's last departure from Bag End, has been the usual Autumnal Equinox in the 20th Century, and was used for the start of the short-lived French Revolutionary Calendar, which greatly resembled the Shire's (Allen, *Intro. to Elvish*). December 25, on which the Fellowship departed Rivendell, is Christmas, one variant of "midwinter", the English New Year's Day in the 7th-13th Centuries, and the traditional Roman Winter Solstice.

As is true with almost any facet of Tolkien studies, there are linguistic implications. Most have been dealt with elsewhere; James Allen, whom I have taken to task on chronometry, is my master in these matters, and I need not elaborate. One fact I will mention, only because it is Greek, is that "Thargelion" was the eleventh month in the Athenian calendar. Tolkien used it as the name for a region in East Beleriand. This probably means nothing more than that he had encountered the word, and it sounded appropriate to him for the use he made of it.

Tolkien's only reference to a luni-solar date is in *The Hobbit* (pgs. 63-64); the Dwarves' New Year's Day was "the first day of the last moon of Autumn". Based on the description of the event,

Soon he saw the orange ball of the sun sinking towards the level of his eyes. He went to the opening and there pale and faint was a thin new moon above the rim of Earth. (*Hobbit*, pg. 222)

The last moon of Autumn in the calendar of Durin's folk is likely to have been the first visible crescent of the month which ended before the Winter Solstice. There are problems with the chronology of *The Hobbit*, as Christopher Tolkien discussed at the 1987 Mythopoeic Conference. Still, it can be safely said that there is not enough time in one lunar month for the finding of the back door on Durin's Day, the death of Smaug and the Battle of Five Armies, all the attendant waiting and marching, and then for Bilbo to arrive at Beorn's house on the way back "by midwinter" (pg. 306). The Dwarvish New Year's Day must therefore have fallen in the range October 22 to November 24 to allow the beginning of another lunar month before the Winter Solstice.

The Dwarves have been compared in many ways to the Jews. Since the Babylonian exile, at the latest, the Jews have used a luni-solar calendar that in concept begins with the first new moon after the Autumnal Equinox. In the 20th Century, Rosh Hashanah has occurred from about mid-September to early October. This is close enough to the Dwarvish method to comment, but not identify.

The Appendix D calendars, all in the family of the Eldarin *loa*, share three characteristics: a solar year of 365 days, epagomenal days (outside the months) in all years, and epagomenal intercalations. There is a great deal of agreement on other details as well. The *loa* has six "seasons" and King's Reckoning has two 31-day months; otherwise all the months are 30 days long. King's Reckoning has three epagomenal days; all the rest have five. The *loa* intercalates three days every twelfth year; the norm is one day every fourth year. All New Year's Days are near the Winter Solstice or the Vernal Equinox.

The Egyptian civil calendar would have fit this family well. It had three seasons, each with four 30-day months; it ended the year with five epago-

menal days, and was the only major calendar of the ancient world to have them. From the names of the seasons it was originally tied to the tropical year, but there were no leap-years; yet the Egyptians seemed unconcerned with the 1,460-year shift of the civil year through the seasons, because in 238 BC when Ptolemy III Euergetes I tried to decree a sixth epagomenal day every fourth year, he was ignored.

The Egyptians also used a luni-solar calendar, in which the beginning of the year was tied to the heliacal rising of Sirius (Sothis, the Greek name, is usually used; the Egyptian name was *Sepdet*). A star rises heliacally when, after a time of invisibility when close to the sun, the star is visible for the first time just before sunrise.

The Elves were like the Egyptians in paying special attention to the twilights; cf. Tolkien's comments on *tindome*, *undome*, *uial*, *minuial*, and *adual* in Appendix D.

The implications of the relationship between the Egyptian and Eldarin calendars go beyond the similarities in form.

Believing that the Egyptian civil calendar must have been instituted when the first day of *Thoth* and a Sothic heliacal rising coincided, Meyer in 1904... went back from the coincidence [20 July 139 AD] reported by Censorinus to supposed earlier coincidences at 1,460-year intervals...[and] boldly declared that 17 July (Julian), 4241 BC was the first certain date in history. (O'Neill, pg. 69)

Although Meyer's premises have been questioned in recent scholarship, his conclusion was accepted for many years, and is still found in general histories. In "Of the Coming of the Elves", it says:

when first Menelmacar [Orion] strode up the sky and the blue fire of Heliuin [Sirius] flickered in the mists above the borders of the world, in that hour the Children of the Earth awoke, the Firstborn. (*Silmarillion*, pg. 48; defa., pgs. 335, 340)

If this were at sunrise, it would be a perfect description of a heliacally rising Sirius. Although in the published *Silmarillion* the Sun did not exist when the Elves awoke, Dr. Clyde Kilby's notes on Tolkien's manuscript "Awakening of the Quendi" say, "The first thing they saw was the stars, as they woke in pre-dawn twilight..."

The "first certain date in history" was tied to the heliacal rising of Sirius. So was the first date in the history of the Children of Iluvatar. Tolkien's description also includes Orion, which with Sirius and Ursa Major are the only identified asterisms in the Egyptian sky (Neugebauer, pg. 48).

When Julius Caesar decided, as *pontifex maximus*, on calendar reform, he turned to Sosigenes, an Alexandrian Greek. In 46 BC, the "year of ulti-

mate confusion", they wrenched things back in line. It appears the seasonal point of contact Julius was aiming at was connecting the Summer Solstice with *Fors Fortuna* on *Junius* 24.

The Roman pontifices, possibly using inclusive counting when Sosigenes meant differential counting, certainly as the result of astronomical incompetence, fouled up Julius' reform by intercalating every third year. This parallels the actions of Mardil and Hador, where the original correction was accurate but a subsequent Steward dislocated things again. (One may note that neither Rome nor Gondor were ruled by kings at the time--perhaps kings are "divinely right" and don't err?) Augustus, the first Emperor, declared a moratorium on leap-years for about 13 years to put things in order. King Elessar began the use of a new year-start date.

Tolkien's use of solstitial, equinoctial, and New Year's dates in the English calendar (March 25, June 21, September 22, and December 25) for important Shire dates, though without exactly the same seasonal meaning, is another in a long list of examples of his providing Middle-earth with a distinctly Northern flavor. But in Terra Northern calendar practice was usually dependent upon the civilizations of the Mediterranean and Near East. Tolkien's own calendars can also be tied directly to the Classical world in Rome and the Ancient world in Egypt.

Recent Tolkien scholarship has begun to take notice of Tolkien's roots outside of Northern Europe. More needs to be done in this area. Perhaps, during Tolkien's time at Oxford, Classical learning was valued too highly relative to the North; but our American and English cultures now seem headed toward indiscriminate ignorance of both. If *The Hobbit* and *The Lord of the Rings* can be seen as "recovering" Beowulf and his time, perhaps *The Silmarillion* "recovers" Homer and the ancient world. But that is another story.

ACKNOWLEDGEMENT AND BIBLIOGRAPHY:

I would like to acknowledge the invaluable help of Ms Phyllis Pitluga, Senior Astronomer at Chicago's Adler Planetarium. Her interest in my subject and willingness to offer suggestions for further research made this project more enjoyable than it otherwise would have been.

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gave the author copies of these notes for analysis.

Christopher Tolkien has confirmed the authenticity of the ms. in a letter to the author, referring to it as "an Elvish fairy tale"(!), but Mr. Taum Santoski reports to me in mid-1988 that Christopher Tolkien has not yet located the ms. in his father's papers.

It is important to note that the citation by Dr. Kilby in his notes of the passage quoted indicates that he is summarizing, and not quoting verbatim. There is no doubt whatsoever, though, that the substance of his report is correct.

Continued from page 18

The book, for those who, nearly half a century after it was written, have never read it, contains 31 purported letters from the senior devil Screwtape to the junior tempter Wormwood, on the proper way to tempt his "patient," and ordinary young Englishman in the darkest hours of World War II. Screwtape's infernal advice is always the exact reversal of Christian teaching; he sees everything upside down and inside-out. This, far from being a mere device, becomes more and more penetrating as the book progresses, to the point where (dare I give away the plot?) the patient is saved. (Read it for yourself to find out how!)

Poor Screwtape: he concludes his arguments in *The Screwtape Letters* by lamenting, "All that sustains me is the conviction that our Realism, our rejection (in the face of all temptations) of all silly nonsense and claptrap, must win in the end." Not while new editions of Lewis' trenchant masterpiece come readily to hand!

-- Nancy-Lou Patterson

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