father's pedagogy through her moral bookkeeping with their children.

Éowyn as healer is never shown in action; we do not see her studying with the Warden, or observe her at work amid the materia medica of Ithilien. In terms of the wider story there is no need. Tolkien, like Niggle in his short story, was burdened with professional and domestic duties, and "there were some corners where he [did] not have time … to do more than hint at what he wanted". But it is useful to have for comparison Tolstoy's acute perception of Marya, which provides more than a hint. By what inner alchemy — hormonal, ethical, vernal — does 'a lady high and valiant' become the biblical *eishet chayil*, the 'woman of valour' of the last chapter of Proverbs, who employs her inexhaustible energies for life and for peace?

Catherine Madsen's previous essays on Tolkien are 'Light from an Invisible Lamp' (*Mythlore* **53,** 43–47) and 'Eru Erased' (in *The Ring and the Cross* ed. Paul Kerry, Fairleigh Dickinson University Press; 2011).

1. Saccio, P. 'Shrewd and Kindly Farce' in *Shakespeare Survey: An Annual Survey of Shakespearian Study and Production* vol. 37. (ed. Wells, S.) (Cambridge University Press, 1984). Saccio makes the same point more strikingly in the lecture 'The Taming of the Shrew: Farce and Romance' in the audio series *William Shakespeare: Comedies, Histories, and Tragedies* (The Teaching Company, 1999).
2. Tolstoy, L. *War and Peace* (trans. Pevear, R. & Volokhonsky, L.) (Knopf, 2007).

We hatesses those tricksy numbers: Tolkien, Lewis and maths anxiety

KRISTINE LARSEN

In an often cited (especially by this author) passage in the famous essay *On Fairy Stories*, Tolkien explained that in his early years not only did he like fairy stories, but "many other things as well, or better: such as history, astronomy, botany, grammar, and etymology". Flieger and Anderson have allowed us to peek into Tolkien's thought process as he crafted this essay, by publishing excerpts from his drafts. Manuscript A contains similar language for this specific passage, as Tolkien wrote[1]: "In that distant day I preferred such astronomy, geology, history or philology as I could get, especially the last two." However, Manuscript B contains two versions of this passage (the first crossed off, the second not so) that contain a puzzling counterpoint to the list of "preferred" subjects. The first states:

> In that happy time I liked a good many other things as well (or better): such [as] astronomy, or natural history (especially botany) as I could get. If I preferred fairy-stories to arithmetic, it was merely because (alas!) I did not like arithmetic at all. (ref. 1)

The second reads:

> I liked many other things as well, or better: such as history, astronomy, natural history (especially botany), and more than all philology…. I was quite insensitive to poetry (I skipped it if it came in tales); and stupid at arithmetic. (ref. 1)

His admitted insensitivity to poetry is interesting, given his later proclivity for inserting it into his own tales, but what fascinates (and confounds) this author is his apparent childhood aversion to mathematics.

Although it is true that maths anxiety (or mathphobia) is and has been a problem in education circles for far too long, we should not be so quick to use that easy explanation to brush off Tolkien's comments. Like poetry, mathematics plays a fundamental role in the crafting of Middle-earth and, in my mind, Tolkien displays an equal ease with both disciplines. In fact, poetry depends on mathematics, in terms of its meter, and we know that Tolkien was undaunted by difficult meters. As he explained in a 1962 letter to his aunt Jane Neave:

> The Pearl is much more difficult to translate, largely for metrical reasons; but being attracted by apparently insoluble metrical problems, I started to render it years ago…. I never agreed to the view of scholars that the metrical form was almost impossibly difficult to write in, and quite impossible to render in modern English. (*Letters* 238).

Likewise Tolkien correctly and deftly used arithmetic to coordinate the timelines of events in his legendarium; determine distances and travel times for the journeys of Bilbo, Frodo and others; establish the various calendar systems of Middle-earth (one of which was actually suggested for possible real-world adoption by a 1978 editorial in *Chemical and Engineering News*[2]); and work out inconsistencies in the lunar-phase chronology in the drafts of *The Lord of the Rings*[3]. In addition, Tolkien seems to have demonstrated a working understanding of the 19-year Metonic cycle of lunar phases in his descriptions of how Durin's Day was related to the moon-letters in *The Hobbit*. Tolkien also wrote in a 1972 letter that he had devised numeric signs analogous to the Fëanorian alphabet "accommodated to both a decimal nomenclature and a duodecimal, but I have never used them and no longer hold an accurate memory of them" (*Letters* 344).

Tolkien also played with mathematics in crafting a calendar for Valinor, leading both Tolkien and (in his commentary)

his son Christopher to take the reader through a detailed mathematical analysis of the Valian Year versus the Years of the Sun[4]. Surely the time and effort Tolkien took in developing multiple calendars is evidence that he was not 'stupid at arithmetic'. Indeed, he actually used mathematics to try to quantify the stupidity of war in a 1944 letter to Christopher:

> How stupid everything is!, and war multiplies the stupidity by 3 and its power by itself: so one's precious days are ruled by $(3x)^2$ when x = normal human crassitude (and that's bad enough)" (*Letters* 61).

On the jacket-flap to *The Hobbit* appeared a statement that its author was 'a professor of an abstruse subject' and compared the birth of *The Hobbit* to that of *Alice in Wonderland*. In a 1937 letter to Allen and Unwin Tolkien noted that "'Philology' — my real professional bag of tricks — may be abstruse, and perhaps more comparable to Dodgson's maths" than to Anglo-Saxon, his professional 'subject'. He added of his legendarium that "I am afraid this stuff of mine is really more comparable to Dodgson's amateur photography, and his Song of Hiawatha's failure, than to Alice" (*Letters* 15). The reference here is to Charles Dodgson, the real name of Lewis Carroll, and both his 'day job' (as lecturer and tutor of mathematics) and his hobbies. Dodgson wrote his own mathematical pamphlets and books to better prepare his students for the requisite standardized tests of his day (and in response to what he considered the serious problems with the standard geometry texts). Biographer Morton Cohen describes[5] his mathematics publications as "professional and, if not altogether elegant, genuine attempts to change mathematical practices and help students". Tolkien's willingness to be compared to Dodgson in this way also seems to contradict his claims to being bad at maths.

The comparison to Dodgson also leads us naturally to a brief discussion of the state of maths education during Tolkien's childhood. In the late twentieth century maths education scholars affirmed that arithmetic has historically been the cause of more student anxiety and failure than any other subject, and that childhood attitudes towards mathematics persist into adulthood. Tolkien's era was interestingly similar to our own time, as Tolkien's childhood coincided with a massive debate within mathematics education circles in England as to the proper order and method of teaching various topics within mathematics. The following report of the 1901 meeting of the British Association of Education section on the Teaching of Mathematics would give any current maths teacher a serious case of déjà vu:

> During the first half of the discussion the question as to where the responsibility rests for the present unsatisfactory state of affairs was scarcely touched, but the President of the Association set that all rolling by remarking that the present examination system was one imposed on the teachers from the outside, as a test of their efficiency, and that the teachers were not really to blame for it. (ref. 6)

Whereas Tolkien might have claimed that maths was not his strong suit, in the case of fellow Inkling C. S. Lewis the claim was apparently very real. In a 1959 letter[7], Lewis called mathematics "a science of which I have to this day not succeeded in mastering the elements". In a 1962 letter he offered[7]: "I shudder at the subjects you have to take in High School, and some of them I could not even begin to attempt — Algebra and Calculus for example." Apparently Lewis did not inherit his mother's affinity for the subject; Flora Lewis received first class honours in geometry, algebra and logic while in college. In 1917, Mr Kirkpatrick, the headmaster of Lurgan College, and Lewis's tutor, noted[8] that when it came to mathematics, Lewis "has not only no taste, but on the contrary a distinct aversion".

Lewis's disdain for maths may have hindered him in at

least two specific instances. With the First World War raging, Lewis's father suggested to his son that he try to join the ranks of the artillery specialists (assumed to be a safer position within the military than in the infantry). Despite his father's apparent persistence, Lewis explained in three separate letters that "only those cadets who can be shown to have some special knowledge of mathematics" would be recommended for such a position[8]. Lewis's aborted story *The Dark Tower* relied on engineer J. W. Dunne's theory of 'serial time', and included a mind-numbing paraphrasing of Dunne's ideas in the last completed section of the tale. Walter Hooper suggests that because Lewis was "weak in mathematics, he may have been unable to imagine a convincing method" of tying up the strands in the story and bringing it to a reasonable conclusion[9]. Interestingly, as Verlyn Flieger explains in *A Question of Time* (1997), Tolkien himself used Dunne's model of time in writing *The Lost Road* and *The Notion Club Papers*, and although neither tale was completed, a lack of understanding of mathematics does not seem to be the reason. In fact, in part 2 of *The Notion Club Papers*[16] the character Lowdham calls the two distinct Númenórean languages A and B, to which fellow character Stainer complains "I find this rather hard to follow, or even to swallow. Couldn't you give us something a bit clearer, something better to bite on than this algebra of A and B?" Although Tolkien himself thought that the character of Franks was more closely aligned with Lewis[10], perhaps Stainer's complaint owes its genesis in Tolkien's knowledge of Lewis's attitudes towards mathematics.

Although it is tempting to simply blame a late Victorian version of the infamous American educational policy called 'No Child Left Behind' for Tolkien's and Lewis's self-described childhood difficulties with maths, it seems that at least Tolkien vastly underestimated his eventual mathematical abilities. For as he noted somewhat smugly in a 1955 letter to Naomi Mitchison, "I am sorry about my childish amusement with arithmetic; but there it is: the Númenórean calendar was just a bit better than the Gregorian: the latter being on average 26 seconds fast [per annum], and the N[úmenórean] 17.2 sec[onds] slow" (*Letters* 176). Not bad for a 'fairy story' written by a mathphobic English professor!

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2. Reese, K. M. Hobbit Calendar Proposed for Serious Consideration. *Chemical and Engineering News* 52 (27 March 1978).
3. Tolkien's meticulous crafting of a lunar phase-based timeline for *The Lord of the Rings* can be seen in letters found in *Letters* 69, 84 and the draft calendars discussed in *The Treason of Isengard* (367–369).
4. Tolkien, J. R. R. *Morgoth's Ring* 50–51, 58–60 (Houghton Mifflin,1993).
5. Cohen, M. N. *Lewis Carroll: A Biography* 75 (Alfred A. Knopf, 1996).
6. Muirhead, R. F. The Teaching of Mathematics. *The Mathematical Gazette* **2**(29), 82 (1901).
7. Hooper, W. (ed.) *The Collected Letters of C. S. Lewis, Volume 3* 1029, 1399 (Harper, 2007).
8. Hooper, W. (ed.) *The Collected Letters of C. S. Lewis, Volume 1* 1008, 264; 305, 316, 322 (Harper, 2004).
9. Hooper, W. (ed.) *C. S. Lewis: The Dark Tower and Other Stories* 96–97 (Harvest Books, 1977).
10. Tolkien, J. R. R. *Sauron Defeated* 240–241, 150 (Houghton Mifflin, 2002).

Inscriptions and insertions in a first edition of *The Lord of the Rings*

JAMES BLAKE

To the bibliographer, provenance means the ownership history of individual copies of books. The study of provenance is generally extended to include examination of physical evidence, such as inscriptions or annotations, which show how readers interacted with books. Such studies play a part in illuminating the role particular books played in the social, cultural or intellectual lives of their owners. Here I look at a first edition of *The Lord of the Rings*, which, being rich in inscriptions and insertions and of known provenance, provides a case study showing how the work was received by two early readers.

The three volumes, the first of which is a second impression, were originally owned by the English painter George Dannatt (1915–2009) and his wife Anne. The books remained with the Dannatts until sold to the booksellers Paul and Barbara Heatley in 2002. The inscriptions and insertions, which according to the Heatleys all date from the time of the Dannatts' ownership, can be summarized as follows: pencilled ownership inscriptions in the front of all three volumes, with dates of acquisition appended to two of these; dates of reading pencilled in the back of all three volumes; various cuttings, principally from *The Times* and *The Listener*, inserted in all three volumes, with some annotation. As described below, one cutting is pasted in.

Comparison with correspondence sent to the Heatleys allows most of the handwritten annotations to be ascribed to George, and many of the rest to Anne; there is uncertainty over a few examples as, to a non-expert eye, the Dannatts' handwriting is rather similar.

The inscriptions and insertions allow us to reconstruct much of the history of the Dannatts' interaction with *The Lord of the Rings* over a period of more than 40 years. The pencilled inscription in *The Fellowship of the Ring* shows that they bought it in December 1954, some five months