

Swords and sky stones

Meteoric iron in *The Silmarillion*

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Meteorites, or “sky stones”, have a long tradition of inspiring worship and fear alike. One of the most curious weapons in Tolkien’s Middle-earth is the black sword Anglachel, forged from meteoritic iron by Eöl, the Dark Elf. Melian wisely warned that it contained “malice” and “the dark heart of the smith still dwells in it.” Given to Thingol by Eöl as payment for the privilege of dwelling in Nan Elmoth, the sword eventually made its way to the doomed hand of Túrin, and in its time drew much innocent blood. This paper explores the supernatural properties of Anglachel in comparison to similar legends of meteoritic iron, and suggest several real-world events which may have triggered Tolkien’s addition of the meteoritic origin of the sword to his legendarium circa 1930.

Among the many tales that form J.R.R. Tolkien’s legendarium, perhaps none is more tragic than that of Túrin Turambar. Filled with incest, murder, and suicide, the life of this largely flawed hero, Tolkien himself noted, draws from similar elements in the lives of the legendary “Sigurd the Volsung, Oedipus, and the Finnish Kullervo” (Carpenter, 2000: 150). One of the main characters in this tale is neither human nor elf, but instead an inanimate object, namely a curious talking sword named Anglachel, made from meteoritic iron. Interestingly, a survey of the *History of Middle-earth* volumes shows that the astronomical origin of Anglachel was not introduced into Tolkien’s legendarium until c.1930. This paper will trace the evolution of Anglachel in the *HoME* volumes, compare its properties to those of similar swords in legend and history, and posit that Tolkien’s decision to include such an origin for the sword was strongly influenced by real-world events in the late 1920s and early 1930s.

In the published form of *The Silmarillion*, Anglachel was forged by Eöl, the mysterious Dark Elf, husband of Aredhel, Turgon’s sister, and father of Maeglin. It was made of “iron that fell from heaven as a blazing star; it would cleave all earth-delved iron. One other sword only in Middle-earth was like to it. That sword does not enter into this tale, though it was made of the same ore by the same smith...” (Tolkien, 2001: 241). Eöl reluctantly gave Anglachel to Thingol, King of Doriath, for permission to live in Nan Elmoth, keeping Anguirel, the other meteoritic sword, for his own use until it was stolen by Maeglin. The subsequent fate of Anglachel is carefully laid out by Tolkien. Beleg, faithful friend of Túrin, chose the sword as payment for acting as a liason between the then outlaw and Thingol. But Melian, with the insight of one of the Maiar, warned that the sword had “malice” and that the “dark heart of the smith still dwells in it. It will not love the hand it serves; neither will it abide with you long” (Ibid.).

True to Melian’s ominous word, the sword betrayed Beleg by pricking an unconscious Túrin’s foot while its well-intentioned owner tried to cut Túrin’s bindings. Túrin was “aroused into a sudden wakefulness of rage and fear” and in his confusion killed Beleg with his own sword (Tolkien 2001: 248). After the death of its owner, Anglachel was said to be “black and dull and its edges blunt” and it was claimed that it “mourns for Beleg” (Tolkien 2001: 250). In Nargothrond it was reforged for Túrin, and “though ever black its edges shone with pale fire; and he named it Gurthang, Iron of Death” (Tolkien 2001: 251). Túrin became known as Mormegil (Black Sword), and after many adventures killed

Glaurung the dragon with the blade. Meanwhile, his pregnant wife learned that she was actually his sister and committed suicide, and when Túrin discovered the truth, killed Brandir, the innocent bearer of that most unpleasant news. Unable to live with all that he had done, Túrin finally asked the sword to take his life, to which it answered in a “cold voice... ‘I will drink thy blood gladly, that so I may forget the blood of Beleg my master, and the blood of Brandir slain unjustly. I will slay thee swiftly’” (Tolkien 2001: 271). Túrin then threw himself upon his sword, which broke beneath him, and both steel and soldier were buried together in a mound grave.

Although the concept of a sentient, talking sword might seem out of place in Tolkien’s mythology, its presence directly follows from the professor’s love for the *Kalevala*. By his own admission, he was “immensely attracted by something in the air” of it, to such an extent that the beginning of his tales of Middle-earth was “an attempt to reorganize some of the *Kalevala*, especially the tale of Kullervo the hapless into a form of my own” (Carpenter 2000: 214). In the classic story of Kullervo we also see accidental incest between the hero and his sister, and a sword is asked if he “was disposed to slay him.” In response, the sword answers

*Wherefore at thy heart’s desire
Should I not thy flesh devour;
And drink up thy blood so evil?
I who guiltless flesh have eaten,
Drunk the blood of those who sinned not?*

(Kjrby 1985: 481)

The origin of the other major property of Túrin’s sword, namely its material, is not so obvious. In fact, the first mention of this is an addition to “The Quenta”, where Tolkien explains that Beleg’s “renowned sword” with which he cut free Túrin was “made of iron that fell from heaven as a blazing star, and it would cut all earth-dolven iron” (Tolkien 1995: 150). In his commentary, Christopher Tolkien notes that this addition is “the first indication that [the sword] was of a strange nature” and that in the published *Silmarillion* the information is positioned in a different part of the story (Tolkien 1995: 221-2). Christopher Tolkien explains in the same volume that “the Quenta, or at any rate the greater part of it, was written in 1930” (Tolkien 1995: 92). It is therefore natural to ask what motivated Tolkien to make the addition, and why was the addition made at this particular time?

Part of the problem is that “the development of the legend of Túrin Turambar is in some respects the most tangled and

complex of all the narrative elements in the story of the First Age” (Tolkien 1988: 6). In “Turambar and the Foalókë” (c.1919) Túrin received the sword from Orodreth in Nargothrond, where it was “made by magic to be utterly black save at its edges, and those were shining bright and sharp as but Gnome-steel may be” (Tolkien 1992: 84). The basic concept of a magical sword of mysterious origin (and cursed fate) is a common archetype in North European mythology (Gansum 2004; Malone 1925). However, here there is no mention of the sword being made of meteoritic iron, nor is Beleg’s sword (a separate weapon) given any special properties. It should also be noted that in this original tale there is no suggestion that the sword broke upon Túrin’s death. It is certain, however, that Túrin’s sword is to be considered to have mystical properties, as it already possesses the power of speech in this early version. We find additional evidence of the sword’s supernatural powers in the “Earliest Silmarillion” (c.1926-30), where the so-called Second Prophecy of Mandos states:

*When the world is much older, and the Gods weary,
Morgoth will come back through the Door [of Night], and the
last battle of all will be fought. Fionwë will fight Morgoth on
the plain of Valinor, and the spirit of Túrin shall be beside
him; it shall be Túrin who with his black sword will slay
Morgoth, and thus the children of Húrin shall be avenged.*
(Tolkien 1995: 46)

Christopher Tolkien (1993: 203-4) notes that this problematic plotline (namely of a mortal returning from death at the End of Days) is phased out by the time of the writing of the “Later Quenta Silmarillion” (c. late 1950s).

In “The Earliest Silmarillion” we also have the suggestion that Túrin’s sword is Beleg’s weapon, which has been reforged. Such an act is highly symbolic (as in the case of the shards of Narsil); since the otherworldly nature of Túrin’s sword had already been established in the legendarium, it now fell to Tolkien to explain how Beleg’s blade was special on its own side. As described earlier, the first mention of the meteoritic nature of Beleg’s sword appeared c.1930 in “The Quenta.” Unlike many of the fine nuances of Middle-earth, this change appears to have been an important and permanent one, as it remains largely unaltered through Tolkien’s wholesale rewriting of the tale of Túrin, the “Narn i Hîn Húrin” (c.1951) (Tolkien 1988: 155; Tolkien 1994: 321). Therefore it is instructional to explore any other references to meteorites and related phenomenon in Tolkien’s writings.

Meaning of the terms

Although often used interchangeably, the terms “meteor” and “meteorite” refer to related but technically distinct phenomena. A natural piece of debris in space is termed a meteoroid. This may be shed from a comet (composed of ices and dust) or an asteroid (made of metal and rock), or may simply be a chunk of material smaller than approximately 100 m across left over from the early days of the solar system. When a meteoroid enters the earth’s atmosphere, it burns up due to friction, generating a streak of light called a meteor (more colloquially called a “shooting star” or “falling star”). If a piece survives to hit the ground, it becomes known as a meteorite. The origin (parent bodies) of individual meteorites have been extensively studied and debated: the only certainty is that small objects in the solar system form a continuum of com-

positions, of which comets and asteroids are loosely defined examples (McSween, Jr 1999: 85). Astronomers divide meteorites into “falls” and “finds,” depending on whether the object was seen to fall to earth, or accidentally recovered at a much later date. In terms of composition, meteorites are divisible into three main categories: irons (siderites) which are composed mainly of iron alloys, with 8-10% nickel content; stones (aerolites), comprised of rocky materials; and stony-irons (siderolites), which feature rocky minerals embedded in an iron-nickel matrix. During their fiery descent through the atmosphere, they may acquire a blackish outer coating, called a fusion crust, although the meteorite as a whole is usually either grayish or metallic in appearance. Tolkien may have erroneously thought the fusion crust to be a bulk property of meteorites, and used it to tie in the already-established black colour of the sword to its newly-suggested meteoritic origin. In fact, the shining edges of the sword are also reminiscent of a meteor streaking through the air.

Meteors in the canon

Meteors make limited appearances in Tolkien’s legendarium, possibly because the professor was not exactly sure how to account for them (in contrast to solar eclipses and lunar phases, for which he formulated a poetic explanation in “Of the Sun and Moon” which nicely matched observed phenomena). The first mention of meteors appears to be in the poem “Habbanan beneath the stars” (1915-16):

*A globe of dark glass faceted with light
Wherein the splendid winds have dusky flight;
Untrodden spaces of an odorous plain
That watches for the moon that long has lain
And caught the meteors’ fiery rain –
Such there is night.”* (Tolkien 1984: 92)

As for the main legendarium, the first mention is in “The Hiding of Valinor” (early 1920s), where it is said that stars that have fallen (i.e. meteors) return to the sky by passing through the Door of Night following the sun, and are able to “leap back and rush up into the sky again, or flee across its spaces; and this is a very beautiful thing to see – the Fountains of the Stars” (Tolkien 1984: 216). As vivid as this description may be, it is curiously nonscientific, as meteors are not seen to move upward into the sky from the ground. In “The History of Eriol” (c.1925-6), Tolkien explains that “Melko stalks high above the air seeking ever to do hurt to the Sun and Moon and stars (eclipses, meteors).” He then adds that “Varda immediately replaces any stars that Melko loosens and casts down” (Tolkien 1992: 286). In this circumstance, Tolkien appears to once again take the concept of “falling stars” quite literally. His explanation of meteors changed in the late 1930s with “The Quenta Silmarillion”, where they became stars hidden in the “roots of the earth” that fled before Tilion, the driver of the moon, “into the upper air” (Tolkien 1996: 265). This concept was eventually dropped from the canon, and by the “Annals of Aman” (1958) was no longer part of the tale (Tolkien 1993: 136).

Although there is no one consistent (or successful) explanation for meteors in Tolkien’s main writings, the phenomenon is generally seen in them in an unfavourable light (in all but “The Hiding of Valinor” they are connected with fear or outright violence). Likewise, in many ancient and modern cultures, meteors have been considered an evil omen. Shakespeare

utilised them in this very way in several of his plays. For example, in *The Tragedy of King Richard the Second* (Act II Scene IV), it is written that “meteors fright the fixed stars of heaven... [and] forerun the death or fall of kings.”

Meteorites have had a more complex interpretation among various cultures. Some worshipped specific meteorites, such as the Needle of Cybele in Rome, and the Pallas meteorite revered by the Tartars (Farrington 1900). Other peoples considered meteorites to be evil omens. For example, among the Swiss a fall of meteorites was thought to be an omen of impending war (Burke 1986: 218). Meteorite showers also appear in the Old and New Testament. In the Book of Joshua (10:2), “the Lord cast down great stones from Heaven” upon the Amorites, killing many of them. Although sometimes translated as “hailstones,” at least one astronomical author of Tolkien’s time, William Pickering of Harvard, openly interpreted this event as caused by a meteorite storm (1919: 206). Similarly, in Revelation 6:13 “the stars of heaven fell unto earth, even as a fig tree casteth her untimely figs, when she is shaken of a mighty wind.” In a later verse (8:10), “there fell a great star from heaven, burning as it were a lamp and it fell upon the third part of the rivers, and upon the fountains of rivers.” It is reasonable to assume that Tolkien was aware of most if not all of these references to meteors and meteorites as ill-omens. But is it natural to assume that he would have made the connection between meteorites and their use in sword blades?

In a 1923 article in *Scientific Monthly*, Arthur M. Miller asserted that there “is little doubt but that the human race first learned the use of iron from sideritic masses of celestial origin” – in other words, iron meteorites (438). Meteoritic iron has been found in numerous ancient archaeological sites, ranging from Sumerian artifacts dating back more than 4500 years, to the tomb of Tutankhamen (Bevan and De Laeter 2002: 12). It was alleged that Attila the Hun “and other devastating conquerors had swords from heaven.” According to “Averrhoes, an Arab philosopher of the twelfth century... excellent swords were made from a meteor weighing 100 lb that fell near Cordoba, in Spain” (Rickard 1941: 55). The Prambanian meteorite of Indonesia was used to manufacture a number of blades circa 1800, including “superbly fashioned kris daggers” (Bevan and De Laeter 2002: 17). A decade later, James Sowerby forged a sword from a meteorite taken from Cape of Good Hope, which was presented to Czar Alexander of Russia (Burke 1986: 232-3). The famed Damascus blades (made of patterned steel) have alternately been claimed to have originally been made of meteorites or merely made in mimicry of distinctive pattern found in meteoritic iron. Such blades were said to have the ability to slay dragons (Cashen 1998).

There is also a deep connection between legends of dragons and meteors. In medieval and renaissance European literature, meteors are frequently referred to as dragons (Dall’Olmo 1978). In his 1741 account of several meteors, Thomas Short described them as a “frightful fiery Dragon” and a “frightful Glade of Fire, or ‘Draco Volans’” (627-9). This connection between dragons and meteors can even be found in Revelation 12:3-4, where “there appeared another wonder in heaven; and behold a great red dragon, having seven heads and ten horns, and seven crowns upon his heads. And his tail drew the third part of the stars of heaven, and did cast them to the earth....”

Therefore, given Tolkien’s probable familiarity with references to meteors and meteorites in literature, Biblical scripture, and European folklore, and the presumed connection between Gurthang’s black color and flaming edges and the appearance of a falling meteorite, it is not surprising that he

would have been motivated to openly define the cursed sword Anglachel as having a meteoritic origin. But what motivated Tolkien to make this change as an addition to “The Quenta” circa 1930?

An increasing number of meteorite “falls” and “finds” were reported around the world in the early twentieth century (e.g. Ward 1917; Quirke 1919). Interestingly, a meteorite was observed to fall in Scotland on the afternoon of December 3, 1917. It was accompanied by a “startling flash and a series of thunder-like detonations” and three fragments were recovered, one after passing through the roof of a cottage (Denning, 1918: 129; Anon. 1918: 105). It is most unlikely that Tolkien would not have heard about this event through the popular press. There was also a flurry of research identifying ancient meteorite craters in the 1920s and 1930s.

Without a doubt the most widely-publicised meteorite-related story in the early twentieth century was the so-called “Tunguska Incident.” At 11:30 A.M. on June 30, 1908, a meteoroid, probably of stony composition and approximately 200 ft across, exploded five miles above the remote forests of the Tunguska River in Siberia. The energy released is estimated to have been “roughly fifteen million tons of TNT – a thousand times more powerful than the Hiroshima bomb and matching a large hydrogen bomb” (Schaefer 1998: 74). Due to the remoteness of the area (and the distractions of World War I and the Russian Revolution), Russian scientists did not investigate the event until 1921, and the scene itself was only thoroughly explored in 1927-1930. What they found was out of a modern-day disaster movie. The team, led by Leonid Kulik, curator of the Meteorite Department of the Mineralogical Museum at Leningrad, was greeted by the charred corpses of millions of trees laid out in a radial pattern for about twenty five miles in all directions, pointing away from the blast site (Anon. 1929: 34). Eyewitnesses spoke of heat so intense that “my shirt nearly caught fire” and “I felt as if I were enveloped in flame” (Whipple 1930: 290-1). Kulik reported that the traumatic event had “caused the evolution of a new tribal religion” which said the blast was sent by “a God named Agdy (meaning Fire) to punish the wicked.” The blast site itself was considered to be “accursed” by the natives of the area (Crowther 1931: 316).

Reaction in Britain

In 1930, British scientists drew two very important connections between the Tunguska incident and curious events that had been noticed in Great Britain around the time of the explosion. While reading an account of Kulik’s research, meteorologist C.J.P. Cave connected the date of the event to a series of strange and previously inexplicable pressure change readings that had been recorded by sensitive microbarographs in London, Petersfield, Cambridge, and other locations in England. Several months later, comet expert F.J.W. Whipple presented a paper to the Royal Meteorological Society in which he directly linked the strange signals to the Tunguska event and explained the mechanism of their formation as shock waves in the atmosphere. This link between the “great aerial disturbance” in Tunguska and “a remarkable series of pressure waves” recorded in England was reported in numerous places, including *The Geographical Journal* (Anon. 1930: 176). Immediately following Whipple’s presentation, several British scientists connected the Tunguska incident to other strange atmospheric effects that had been noted in late June-early July 1908, when it “failed to get dark at all in the south of England” for several nights and it was bright enough at midnight that “a game of cricket was played on Durdham Down, Clifton” (Denning 1930: 178; Whipple 1930: 301). It

is highly possible that Tolkien himself may have observed the strange twilights of 1908, especially given his penchant for noting strange weather (as reflected in his published letters), and it is highly likely that he would have read at least one of the flurry of published articles on the Tunguska event appearing between 1928-30.

There is one further connection to meteorites and their lore that must be explored as a possible source of inspiration for the sudden appearance of meteoritic iron in the *legendarium* circa 1930. In the July 1928 issue of *Scientific American* there appeared a popular-level article on the Tunguska incident authored by comet specialist C.P. Olivier. On the page directly following Olivier's article is another entitled "A Miniature Meteor Crater," by famed amateur telescope maker A.G. Ingalls. In this brief work he described a meteorite crater near the village of Kaali in Estonia. Its true nature was originally described in 1922, when J. Kalkun drew comparisons between this structure and Arizona's Meteor crater. Detailed geological studies, beginning in 1927 and 1929, found evidence that the Kaali crater and eight smaller craters on the island of Saaremaa were caused by the fall of iron meteorites totaling a thousand tons (Spencer 1933: 233; Veski et al. 2001: 1368). Modern analysis places the power of the explosion as between that of the Hiroshima bomb and the Tunguska event, and suggests that the Kaali crater was formed roughly 2400-

2800 years ago. Research by Veski *et al* posits that it created an "ecological catastrophe," resulting in widespread wildfires. They estimate that "farming, cultivation and possibly human habitation in the region" was interrupted for a century (2001: 1367).

As was the case in the tribal religion of the Tungus natives, it is reasonable to expect that the record of such an event might be found in the mythology of the peoples affected. For example, a 1500-1600 year old meteorite impact in Abruzzo, Italy has been connected with a legend that the local tribe's conversion to Christianity was motivated by "a new star fall[ing] to earth during a pagan festival (Santilli et al. 2003: 313). Similarly, a mythological description of a brilliant meteor appears among the tales of the natives of the Chaco region of Argentina, apparently derivative from the formation of a local cluster of meteorite craters four thousand years ago (Santilli et al. 2003: 319). In *Höbevalge* (Silverwhite), his 1976 exploration of the legends and history of the Finno-Ugrians and Baltic countries, Estonian politician Lennart Meri made the claim that runo 47 of the *Kalevala* contains a description of the meteorite impact at Kaali (Kaali Meteorite Craters n.d.). In the poem, a stray red spark escapes from the heavens and wreaks havoc upon the earth below. In runo 47, lines 103-120 it is said:

Luthien

Jeffrey Macleod



Mallorn XLIV

*Then the sky was cleft asunder,
All the air was filled with windows,
Burst asunder by the fire-sparks,
As the red drop quick descended,
And a gap gleamed forth in heaven,
As it through the clouds dropped downward...
Said the aged Väinämöinen,
"Smith and brother, Ilmarinen!
Let us go and gaze around us,
And the cause perchance discover,
What the fire that just descended
What the strange flame that has fallen
From the lofty height of heaven,
And to earth beneath descended.
Of the moon 'tis perhaps a fragment,
Of the sun perchance a segment!"* (Kirby 1985: 601)

Given Tolkien's love of the *Kalevala*, it is not unreasonable to posit that perhaps he came to the same conclusion as Meri, several decades before the latter's book. Even if he was unaware of the existence of the Kaali crater itself, it is certainly possible that he made the connection between these lines of the poem and a meteorite fall. After all, Tolkien conceded that "in the matters of myth and fairy-story... I have

always been seeking material, things of a certain tone and air, and not simple knowledge" (Carpenter 2000: 144). Indeed, the suggested connection between the sun, moon, and meteors in the *Kalevala* may be echoed in Tolkien's abandoned theories of meteors in "The Hiding of Valinor" and "The Quenta Silmarillion."

Conclusion

The meteoritic origin of the sword Anglachel (and its mate Anguirel) is not inconsistent with Tolkien's earlier writings, as he was aware of meteors and meteoritic phenomena. Given his presumed knowledge of medieval and renaissance literature, European mythology, and Biblical scripture, it is reasonable that he would attach a nefarious personality to a sword so made, and connect it to the slaying of a dragon. Most interestingly, there exists at least circumstantial evidence to suggest that the apparently sudden introduction of the meteoritic nature of these swords may have been motivated by real-world events circa 1930 with which Tolkien would have been familiar. However, in the end, only the good professor knows for sure the identity of the muse that motivated him to make this fascinating (and enduring) addition to his legendarium.

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