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Edited by Deborah Hayden and Paul Russell.

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## Cryptography and the alphabet in the “Book of Ádhamh Ó Cianáin”

Deborah Hayden<sup>1</sup>

This chapter examines two small items of a grammatical nature in the compilation now catalogued in the National Library of Ireland as MSS G 2 and G 3, which contains some of the earliest extant Irish-language material from the post-Norman period. Much of this compilation was written in the fourteenth century by the Fermanagh scribe Ádhamh Ó Cianáin, seemingly for his own use. The items in question reflect engagement with doctrine on cryptography and the letters of the alphabet as transmitted in some versions of the tract known as the *De inventione linguarum* (or *litterarum*), a text which circulated in several Continental Latin manuscripts from as early as the ninth century. The evidence that these entries provide for the relationship between the G2–G3 compilation and texts preserved in later Irish manuscripts will be discussed, as well as their significance for our understanding of Ádhamh’s broader compilatory motives.

**Keywords:** Ádhamh Ó Cianáin, alphabet, *Auraicept na nÉces*, cipher, *De inventione litterarum*, manuscript compilation, Roman numerals

The two fourteenth-century vellum codices that are now catalogued in the National Library of Ireland as MSS G 2 and G 3 (formerly Phillipps MSS 7021 and 7022 respectively) contain some of the earliest extant Irish-language material from the post-Norman period, including a number of items concerned with elementary grammar.<sup>2</sup> Several of the texts in G 2 and G 3 have been edited and analysed individually since the manuscripts were acquired by the National Library in the first half of the twentieth century (on which see Flower 1931), and two key studies have attempted to outline some of the thematic, historical and palaeographical

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1. I am grateful to Liam Breatnach and Paul Russell for reading a draft of this paper and offering many useful comments and corrections. I alone bear responsibility for any errors or shortcomings that might remain.

2. Both codices have been digitised, and can be viewed on the ISOS website.

characteristics of the two codices and their scribes on a broader level (Carney 1969; Ó Muraíle 2005). While the present contribution will refer in passing to some of these previous studies for contextual purposes, its chief focus will be two small and hitherto little discussed items in the second half of the compilation (G 3) that pertain to early medieval grammatical tradition, and in particular its most fundamental aspect: the letters of the alphabet. It is argued that these two seemingly insignificant entries can shed some further light on the overall character of the G2–G3 compilation and its relationship to other surviving early Irish vernacular material, as well as on the grammatical interests of its scribes and the kind of source material that may have been available to them.

### The “Book of Ádhamh Ó Cianáin”: scribes and contents

In her catalogue of the Irish-language manuscripts held in the National Library of Ireland, Nessa Ní Shéaghdha argued that G2 and G3 had originally formed a single volume that had already been divided before it was acquired by the Irish scholar Edward O’Reilly in the nineteenth century (Ní Shéaghdha 1967: 12). Together they form a miscellany of texts, many of which appear to have been written for the scribe’s own use rather than for a particular patron. The composition of G2–G3 has been dated to as early as 1344 by way of its substantial genealogical contents, and its principal scribe was most probably the “canon and learned historian” Ádhamh Ó Cianáin, a member of what was one of the leading hereditary learned families in western Ulster between the fourteenth and seventeenth centuries; his death at Lisgool, County Fermanagh is recorded in the *Annals of the Four Masters* under 1373 (Ó Muraíle 2005: 387).

Two colophons written in the manuscript by Ádhamh establish that he wrote at least some of the texts in the compilation for himself, and on folio 8r he stated that he had drawn upon the book of his great teacher (*leabhar a oidí moir*), Seáan Ó Dubhagáin, a well-known fourteenth-century scholar associated chiefly with the Connacht territory of Uí Mhaine and the lordship of the Ó Ceallaigh (O’Kellys) in east Galway (Ó Muraíle 2005: 398). If the dating of the manuscript to around 1344 is correct, it suggests that the Ádhamh may have been a fairly young man when he wrote it, and indeed in his study of a series of short prose and verse excerpts in G3, James Carney identified several signs of what he referred to as “juvenile immaturity” or “the experimental playfulness of the student” in portions of the compilation that were written by Ádhamh. For example, in the upper margin of folio 66r, where some rather fanciful illustrations have been added to the bottom of the page, Ó Cianáin has written two lines of verse with no word separation. In another case, which will be discussed in more detail below, he appears to have

swapped the manuscript with another student, who has written a verse excerpt in cipher in the margin (Carney 1969: 128). It is possible, therefore, that at least some of the contents of the G2–G3 compilation can be viewed as the product of a classroom setting, much like the glossing found in scholastic colloquy texts, as discussed by Paul Russell elsewhere in this volume (see pp. 135–40).

Ó Cianáin’s hand has been identified in texts from other manuscripts, such as in a lengthy genealogical poem from Royal Irish Academy MS 23 O 4, and – with considerably less certainty – in some of the fourteenth-century leaves in the Book of Fermoy (Ó Muraíle 2005: 402; Carney 1987: 692). Ádhamh also may have been related to two other important scribes of the fourteenth century with the same surname (Ó Muraíle 2005: 402–405). The first is the “learned historian” Ruaidhrí Ó Cianáin, who was the principal scribe of the *duanaire* now known as “The Book of Magauran”, written for Tomás Mag Shamhradháin, chief of Tullyhaw, Co. Cavan, at some point in the first half of the century (McKenna 1947; on this MS see further below, pp. 53–54). The second figure is Seáan Ó Cianáin, who died in 1400 and was declared in the annals to have been an honourable historian based around Enniskillen, County Fermanagh. This Seáan was responsible for penning the genealogical material that occupies the first ten folia of the composite manuscript now known as Oxford, Bodleian Library MS Rawlinson B 506, and his possible relationship to Ádhamh is indicated by a colophon on folio 7r of that manuscript in which he declares that *Seaan O Cianan ro sgrib an leabursa dAghamh O Cianan fa coingeall gan eSean da tabairt do neoch ele gan cet da Seaan*, “Seáan Ó Cianáin wrote this book for Adam Ó Cianáin on condition that he does not give it to anybody else without permission from Seáan” (Ó Cuív 2003: I, 221). Thus although we cannot say with any certainty what the relationship between the three scribes may have been, we might speculate that Ádhamh belonged to a fairly active family of scribes working during a significant portion of the fourteenth century.

About half of National Library of Ireland MS G 2, or the first portion of Ádhamh’s book, contains genealogical material, along with tracts on the lore of place- and personal names and a few fairly lengthy poems. It also preserves a small cluster of texts on the profession of poetry and related matters, such as two short passages on the grades of poets, Latin scholars, churchmen and lords on the one hand, and poetic retinues on the other. These are followed by two poems written in the artificial style known as *Bérla na Filed* (“The Speech of the Poets”), a term used for a handful of extant compositions written almost exclusively in arcane language and typically accompanied by glosses. That this last group of texts was probably written by Ádhamh Ó Cianáin rather than by another scribe is indicated by a marginal note on folio 35v in which he signs his name and claims that he wrote this book *do fen* “for himself” (Ní Shéaghda 1967: 22; see also the note on fol. 36r).

G2 also contains two tracts that are concerned with matters of a strictly grammatical nature, however, both of which appear to have been written in the hand of the principal scribe. The first is a short tract on the declension of the word *fer* “man” on folio 11, which is noteworthy because it is the earliest surviving example that we have of this material. These paradigms also survive in a considerably expanded form elsewhere as part of the vernacular grammatical compilation known as *Auraicept na nÉces* (“The Scholars’ Primer”), a heavily glossed collection of grammatical and pseudo-historical lore, the composition of which dates chiefly to between the eighth and eleventh centuries (Calder 1917 and Ahlqvist 1983; see also the chapter by Ahlqvist in this volume). That compilation is extant only in manuscripts that post-date the G2–G3 codices, but several of these later witnesses can, like Ádhamh’s book, be associated more or less indirectly with the figure of Seáan Ó Dubhagáin. For example, the late-fourteenth century Book of Uí Maine (RIA MS D ii 1) was also known as the ‘Leabhar Uí Dhubhagáin’ (Ó Muraíle 1989), while TCD MS E 3. 3 (1432) was written at some point in the fifteenth or sixteenth century by a certain Diarmuid Ó Dubhagáin (Ahlqvist 1983: 22). Seáan Ó Dubhagáin’s school may thus provide some of the earliest traceable evidence for the circulation of *Auraicept*-material in Ireland, and it is probable that at least some of this would have been available to Ádhamh during his period of scholarly training there. The declensional material in G2 is presented as a distinct tract, introduced by a heading and a space left blank for the addition of an initial, after which the various case-forms of the noun are listed in columnar form following various prepositions (for discussion see Ahlqvist 1974 and Ahlqvist 1983: 29–31). Here again, on folio 11v, Ádhamh has written a note at the end of the tract declaring that he has copied this material for his own use (Ní Shéaghda 1967: 18). The second grammatical tract in G2 occurs on folio 49, and is written in a much neater, but seemingly identical, hand. This is a poem of sixty quatrains on the gender and declension of Latin nouns, drawn from books five through seven of Priscian’s well-known *Institutiones grammaticae* – probably directly, as suggested by the poem’s editor, David Greene, who ascribed it to the Middle Irish period (Greene 1952–1954).

The second half of the manuscript – that now known as “G3” – contains significantly more in the way of grammatical texts. This section of the compilation can also be characterised in broad terms a “miscellany”, in that its contents include such varied items as a copy of the *Banshenchas* (a text on the lore of famous women), followed immediately by a tract illustrating different types of metre. It also contains extracts from the *Sex Aetates Mundi* (on which see Ó Cróinín 1983 and Tristram 1985) and related works on biblical themes, such as the didactic composition *Dúan in Choícat Cest* (“Poem of the Fifty Questions”), which deals with various Old Testament topics (Tristram 1985: 285–293). There is even a striking image of Noah’s Ark on folio 16v. Other texts include a poem on the boyhood

deeds of Achilles, a medical recipe, a wisdom-tract, and various prognostications of the weather. James Carney identified the intervention of several other scribal hands in this part of Ádhamh Ó Cianáin’s book, some of which were probably contemporary with that of the main scribe, and some not (Carney 1969: 124–126). The last twenty-five folia of G 3 do appear to have been written by Ádhamh, however, and exclusively contain grammatical and prosodic material, only some of which has been published. The first in this series is a short question-and-answer text on how to classify the letters of the alphabet into vowels, consonants, semi-vowels, etc., clearly based closely on the works of Latin grammarians such as Donatus and Priscian (Ahlqvist 1987). This is followed by a copy of the tract on metrical faults in bardic poetry (McKenna 1940 and Bergin 1955); a short list of verbal nouns (Ó Cuív 1964–1966); a fragmentary tract on conjugation; and finally a series of four poems on the subject of infixed pronouns (Ó Riain 2008), letters of the Ogham alphabet, pronouns and prepositions, and poetic rime (Ó Riain 2013) and metre (Thurneysen 1891: 106) respectively.

This final cluster of texts constitutes a full third of G 3, and when we separate out the material in the part of the manuscript that Carney believed to have been written by other scribes or added at a later date, and add the two grammatical texts from G 2 that are in Ádhamh Ó Cianáin’s hand, we can begin to discern a particular interest on the part of our principal scribe with material of a fairly elementary grammatical nature. This is not to say that Ádhamh was not an important contributor of other types of texts found in the G 2–G 3 compilation, the bulk of which would seem to be his work, but one might argue that the not insubstantial quantity of grammatical matter – which he repeatedly asserts to have written for himself, and seemingly in a classroom setting – may inform the speculations of previous scholars that the compilation is in large part a product of his school-days.

Having thus attempted to paint a picture of Ádhamh Ó Cianáin’s interests and activity by setting out the overall contents of the G 2–G 3 compilation, we might turn our attention to two additional items in Ó Cianáin’s manuscript that point, both directly and indirectly, to the scribe’s engagement with source-texts of a grammatical nature, and more specifically with doctrine on the letters of the alphabet.

### A quatrain in cipher

The first of the two items in question is a single quatrain that has been written twice in G 3: once in cipher in the lower margin of folio 15v, and a second time in plain text in the lower margin of folio 16r. The item immediately preceding the version of the quatrain on fol. 15vb of G 3 is a copy of an eleventh-century tract on

different types of metres that can be thematically grouped with the prosodic material at the end of the G 3 codex (Thurneysen 1891:67–105; McLaughlin 2005: 119–136).<sup>3</sup> The immediate surroundings of the second version of the quatrain on folio 16r are somewhat different, however, since the first column of that page contains two short poems on biblical topics. The first (lines 1–6) is a composition of two quatrains on the descendants of Adam, and the second (lines 11–z) consists of eleven quatrains concerned with the calculation of years between biblical events (Ní Shéaghdha 1967: 24). Both texts consist of versified accounts of Old Testament history akin to those found in works such as the Irish *Sex Aetates Mundi*, extracts of which are found on folios 18 and 24 of the G 3 codex. The verso of folio 16 continues this biblical theme with the aforementioned image of Noah's Ark.

The scribe of the marginal quatrain in cipher on fol. 15v was evidently not Ádhamh Ó Cianáin, who was responsible for the main text on folios 15 and 16; however he would seem to have been his contemporary, since he has written a note at the bottom of 15v, immediately after the quatrain, in which he identifies himself as “Gilla Pádraig” and implores that *ni melladh meraighi so 7 ar Dhia re Adumh na foillsigheadh do duine eli e*, “this is no crazy deception, and for God's sake let Ádhamh not show it to anybody else” (Carney 1969: 128). Carney took this cipher and note as one of the signs of “juvenile immaturity in portions of the manuscript undoubtedly written by Ádhamh Ó Cianáin” (ibid. 1969: 123), and indeed if the speculations that Ádhamh was quite a young man and a student when he wrote the text are correct, we might wonder whether this mysterious “Giolla Pádraig” might have been a fellow pupil of his at the school of Seaán Ó Dubhagáin.<sup>4</sup>

Gilla Pádraig's plea does not seem to have been heard, however, since not only has the quatrain been written again in plain text in the lower margin of folio 16r, but a key to the cipher has been added in further up that page next to a table in which the letters of the Latin alphabet are equated with numbers written in Roman numerals. And indeed, the cipher is so simple that one hardly needs the help of the key to figure it out, as it concerns only the five vowels of the alphabet: one dot is equated with the letter *a*; two with *e*, three with *i*, four with *o*, and five with *u* (see Plate 2.1).

3. Thurneysen did not, however, use this particular witness for his edition. The tract is the third in the series of metrical treatises edited by him; it is incorrectly cited in the National Library Catalogue as “Thurneysen's Tract II” (Ní Shéaghdha 1967: 23).

4. Nollaig Ó Muraile (2005: 408) has suggested that the signatory may be the Giolla Pádraig Ó Cianáin whose death is recorded in the *Annals of Ulster* and the *Annals of the Four Masters* under the year 1504, but there is little evidence to support this supposition, and moreover it would require us to assume that the scribe in question had a different Ádhamh in mind when he wrote the marginal entry.

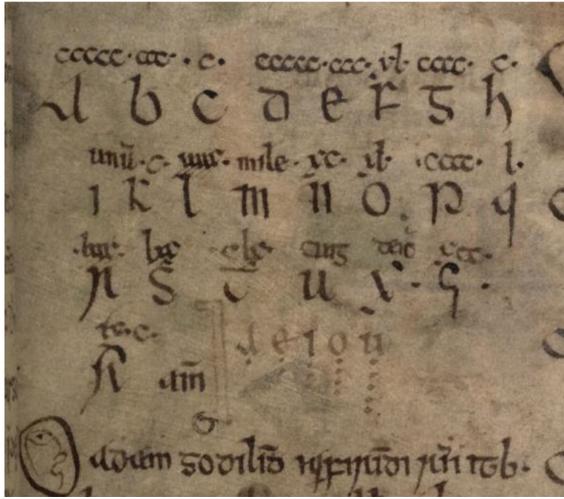


Plate 2.1 NLI MS G3, fol. 16r (reproduced by kind permission of the National Library of Ireland)

The version of the quatrain that is written in this cipher is found in the bottom right-hand corner of the preceding page, namely fol. 15vb. The faintness of the ink used by the scribe of that interpolation has made it difficult to reproduce a satisfactory image of it here; however most of the script can be discerned fairly clearly from the digital version of the manuscript provided on the ISOS website. I have read that text as follows:

D: :bith:r d. :l d·th ·br· g:r ·gh· c<sup>5</sup> ng:ign· ·cr·nd c:c:s:th:r sn·s sn·th ·ch<sup>1</sup>:l g?rm:<sup>6</sup> ·  
sh<sup>1</sup>:l fr: b: :g· m·ir

Using the key to the cipher given on folio 16r, we can decode the quatrain as follows:

Dobithir dael dath abra  
ger agha co ngeogna acrand  
caisithir snas snath achuil  
g?rmi a shuil fri buga mair.

5. My reading of four dots following the letter *c* here is very tentative, as the ink is extremely faint on the right-hand side of the page. However, one dot is clearly visible to the upper right of the letter, where the top dot in a unit of four is positioned in the following word; furthermore two or possibly three dots are just barely visible immediately below this.

6. It is possible to make out a number of dots between the letters *g* and *r* here, in particular what would appear to be three dots before *r* and three following *m*; however the ink is too faint for the word to be clearly legible.

The scribe has for the most part adhered to the system of the cipher key that is illustrated on the following page of the manuscript, with the exception that there is some ambiguity in the reading of the penultimate word. The five dots between the letters *b* and *g* are arranged as two sets of two vertical dots with one dot in between, rather than as five dots positioned in a single vertical line as seen in the key. It is perhaps significant that this format is identical to the distinctive sign used by Ádhamh Ó Cianáin for the *cenn fo eitte*, which Carney describes as “four or five dots arranged like the markings on playing cards in four and five of a suit” (Carney 1969: 124). If we were to follow the cipher key on fol. 16r strictly here we would need to read the sequence of letters as *e-a-e*, but it is also possible to interpret them as a different arrangement of the dots representing the letter *u*, which elsewhere is written as five vertically positioned points (e.g. *a chuil*, *a shuil*). The reading *buga* is supported, furthermore, by the plain-text version of the quatrain written in the inferior margin of folio 16r.<sup>7</sup> This is not entirely legible, but I have transcribed the visible words as follows:

[...] uibhithir dael dath abhra ger agha congeogna acrand caisith [??]  
 [...] snaithi a chuil guirmi a shuil fri bugha mair

Before turning to consider the significance of the cipher itself, it is worth commenting on the relationship of the marginal quatrain itself to the wider Irish manuscript tradition. First, it is noteworthy that we find precisely this same quatrain, again written in both plain-text and cipher, in two sixteenth-century copies of the grammatical compilation *Auraicept na nÉces* (on which see above, p. 38): namely those found in British Library MS Egerton 88 and Dublin, Trinity College MS H 2. 16 (1318), also known as “The Yellow Book of Lecan” (YBL). The relevant section from the latter witness is illustrated in Plate 2.2 (cf. Calder 1917: 209).

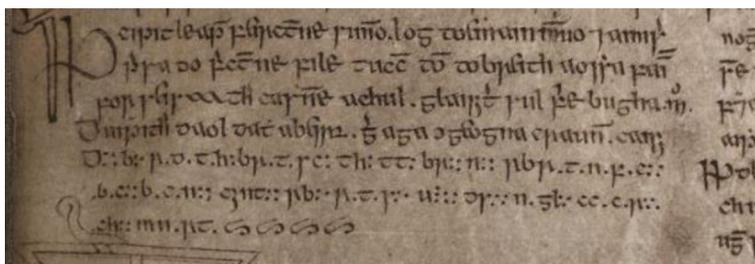


Plate 2.2 TCD MS H.2.16 (1318) “The Yellow Book of Lecan”, col. 524 (reproduced by kind permission of Trinity College Dublin)

7. The quatrain begins with the last line of the manuscript page, and continues in the penultimate line.

The close relationship between the Egerton 88 and YBL manuscripts, written within a year of each other in the 1560s, has been established (O’Sullivan 1999). Their similarity is further evidenced by the transmission of the quatrain and cipher, which shows little variation between these two witnesses but is not found, to my knowledge, in any other copies of the text. However, it is difficult to make out the relationship between the text and cipher in these manuscripts without the help of the G3 witness, and it would seem that the arrangement of the dots in the two copies of the *Auraicept* had become confused in the course of transmission, which probably involved one or more intermediary witnesses.

Using the readings in G3, however, it is possible to work out the meaning of the quatrain itself and to identify its probable source. This is the second verse in a poem of three quatrains from the tale *Tochmarc Treblainne*, “The Wooing of Treblann”, of which only a single, badly damaged copy survives in the Book of Fermoy (RIA MS 23 E 29, pp. 67a1–71b9), the contents of which were written between the fourteenth and sixteenth centuries. The poem in question is recited by Treblann’s servant after she has been sent to Crúachain to view the warrior Fergus mac Róich on behalf of her mistress, who has heard wondrous things of his valour and beauty. The servant gives, in what are admittedly somewhat clichéd terms, an overwhelmingly positive review of what she has seen (ed. Meyer 1921: 169; I have made some modifications to the translation by Jennings 1997: 75):

“Atchonnac-sa fêine Fróech  
arnach faca lôech budh mō,  
dergithir partaing (a) beöil,  
gilithir eöin Locca Lō.

**Duibithir dael (d)ath a bräi,  
gēr a ghäi congegna ą crand,  
caisighthir (sn)as snäth a chüil,  
guirme ą süil fri mbugha barr.**

Mungēnair bean aga mbiadh,  
nī a(?) ciabh fri tibhra tond,  
dergi ą grūaidhi risin grēin  
domhear mo chéill is mo chonn.”

Adc.

[‘I myself saw Fróech,  
and I have not seen a greater warrior,  
as red as Parthian leather his lips,<sup>8</sup>  
as bright as the birds of Loch Ló.

8. Stokes (1891:222) notes that the word *partaing* “is founded on Lat. *parthicus* (pellis) ‘leather dyed of a scarlet-red, prepared by the Parthians’”.

As black as a beetle the colour of his eyebrows  
 Sharp his spear until its shaft killed (?)<sup>9</sup>  
 As curly as a wood-shaving the hair of his head,  
 As blue his eyes as a [blue-bell] flower-head.  
 Happy the woman whom he will have,  
 (hair against dimple of his skin)  
 as red his cheeks as the sun;  
 he distracted my sense and my reason.']

Thus however much the inclusion of this quatrain in the margin of G 3 may simply reflect the “juvenile immaturity” of Ádhamh and his fellow pupils at the school of Seán Ó Dubhagáin, it can also be said to provide a good example not only of how extraneous marginal inscriptions of this sort can provide valuable evidence for texts that have otherwise been lost or only scantily preserved, as well as useful clues to the relationships between different manuscripts and the transmission of the texts in them on a wider level.

We can, of course, really only speculate regarding the reasons underlying the inclusion of the quatrain and cipher in the *Auraicept*-compilation. One noteworthy point, however, is that the interpolation follows not long after a discussion of grammatical degrees of comparison that is based closely on Latin sources (Calder 1917: 202–209, lines 3261–3492; Ahlqvist 1983: 42–44). We might wonder, therefore, whether the quatrain originated as a marginal gloss intended to illustrate equative forms, such as *duibithir* “as black as” and *caisighthir* “as curly as”, which

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9. I am uncertain of how to translate this line, which is given in the *DIL* as an illustration of the verb *con-goin* “wounds, pierces”. Jennings seemingly took the form *con-gegna* to be a past third singular relative form of the verb when she translated the line as “sharp his spear which its shaft pierced”; however this rendering gives little sense. The form *gegnasom* is attested in the YBL copy of *Táin Bó Cuailnge* as the past third singular of the simple verb *gonaid* “wounds, kills” with the addition of an emphasising pronoun *-som*, i.e. “he killed” (Strachan and O’Keefe 1905: 50); similarly the sentence *is iat geogna Cuchulainn dia ragaib armu* “’Tis they whom Cuchulainn slew when he (first) took arms” is found in one of the prose tales of the Rennes *Dinnsenchas* (Stokes 1895: 83). The past conjunct form of *gonaid* is attested in the form *ro gequin* (see *DIL*, s.v. *gonaid*), and we might therefore expect something similar for the corresponding form of the deuterotonic verb *con-goin*. *Co n-* could also be the nasalising conjunction meaning “so that, until” when followed by verbal forms in the indicative. Only the copies in the Book of Fermoy and NLI G 3 contain a second *a* after the word *congegna* and before the word *crand*; this is not attested in the copies of the quatrain in YBL and Egerton 88. If not an instance of dittography, the *a* could either be a third-singular possessive pronoun or the neuter form of the definite article, since the word *crann* “tree, shaft, spear” was neuter in the Old Irish period. The object may be simply left understood, in which case we might render the sentence as “sharp his spear until his/its/the shaft wounded/killed”, i.e. Fergus’ once-sharp spear had come to be dulled due to constant use on the battlefield.

have no counterpart in Latin grammar and thus provide an interesting point of comparison between that language and the Irish vernacular. A close parallel for this might be identified in the much-discussed poem *Domfarcai fidbaide fál* (“A woodland hedge overlooks me”), which was long held to be an example of early Irish monastic or hermit poetry that rejoices in nature. As Patrick Ford has more recently pointed out, however, that poem survives only in the margin of a copy of Priscian’s grammar that deals with the ways in which the pronoun entered into composition in Latin, and itself contains no less than five examples of infixed pronouns in its eight lines. Much like the equative case that is illustrated in our quatrain from *Tochmarc Treblainne*, infixed pronouns were a distinctive feature of Old Irish that had no parallel in Latin, and the poem *Domfarcai fidbaide fál* may have been written in the margin of the St Gall manuscript in order to illustrate this distinction in the context of Priscian’s discussion of Latin pronouns. Both examples might thus be seen as representative of a kind of “grammar poetry” through which the medieval scribe can be seen to enter into a dialogue with his text (Ford 1996 and 1999: 18; for further discussion see also Melia 2005).

Moreover, when we consider the example of this quatrain alongside the transmission of the declensional tract on forms of the noun *fer* “man”, which, as noted above, was copied by Ádhamh in G2 and appears in much expanded form in all surviving copies of *Auraicept na nÉces*, we can begin to see something of a connection between Ó Cianáin’s compilation and the textual tradition of the *Auraicept*. Both of these items are preserved individually in Ádhamh’s compilation, but have been elsewhere worked into the fabric of what we now think of as “*Auraicept na nÉces*”, i.e. a compilation dealing almost exclusively with grammatical matters. Given the superior readings of the quatrain and cipher in G3, it seems likely that the direction of transmission of this material was from Ádhamh’s manuscript to the two sixteenth-century copies of the *Auraicept* rather than from some earlier version of the latter to Ádhamh’s manuscript, although it is of course not easy to discern just how direct the course of transmission might have been. Nonetheless, these examples suggest that further examination of the grammatical contents of the G2–G3 compilation may provide some additional insight into how the *Auraicept* acquired the form in which it is preserved in its surviving witnesses, and into the compilatory methods of its medieval copyists.

Having considered what the quatrain itself can tell us about the connections between Ádhamh’s manuscript and other extant copies of vernacular texts, we might now turn to look at what the cipher itself can reveal about the nature of Ádhamh’s grammatical sources. The cryptographic practice of replacing the five vowels of the Latin alphabet by various numbers of dots is quite a common feature in medieval manuscripts, particularly those with Insular association (Levison 1946: 290–294; Bischoff 1954a: 16). Levison has argued that the

diffusion of this cipher may have derived from the later recension of a text known as the *De inventione linguarum* (or *litterarum*) that was widely circulated on the Continent during the Carolingian period (on the title of the text see Levison 1946: 291 and Derolez 1954: 285). In his seventeenth-century edition of the *De inventione* tract (*PL* 112, cols 1579–1583), Melchior Goldast attributed the work to the Frankish Benedictine monk Hrabanus Maurus, who was archbishop of Mainz in Germany during the reign of Charlemagne and studied under the famous Carolingian scholar Alcuin, though Goldast's attribution has not been universally accepted (Levison 1946: 291). In his more recent account of the tract's manuscript transmission, René Derolez distinguished between two main versions of the text. Goldast's edition was clearly based on Version "A", which seems to have circulated in Germany and survives in several witnesses, of which the oldest dates from around the end of the eighth century. Conversely, the two oldest manuscripts of Version "B", which was known in France, date to the tenth century (Derolez 1954: 290–354).

The *De inventione* text, as it is transmitted in most manuscripts, consists of a survey of certain alphabets, in particular those of the three sacred languages (Hebrew, Greek and Latin). In Goldast's edition we find a list of the symbols and names for each letter of the alphabet, preceded by a short prose passage concerned with the legend of its invention. Such legends were widely circulated in the medieval period, and often drew on accounts similar to those found in Isidore's *Etymologiae*, which attributes the invention of the Greek alphabet to Cadmus and cites the nymph Carmentis as the inventor of the Latin letters (Lindsay 1911: I, iii.6 and I, iv.1). In the Carolingian period, legends of this nature naturally played a central role in promoting vernacular literary culture and in endowing a cultural tradition with authority, since they reflected the perceived necessity of protecting knowledge acquired by men before the Flood and of preserving it beyond ephemeral or fallible human memory by setting it down in writing. As Treffort has shown, this idea is reflected in grammatical discussions of the most fundamental element of written language, the letter. Thus the anonymous treatise known as *Quae sunt quae*, which dates from the Carolingian period, glosses Isidore of Seville's etymology of the word *littera* as follows (Munzi 2004: 32; Treffort 2013: 47–53):

Quid est littera? Littera autem dicta est quasi legitera, eo quod legentibus iter praebeat vel quod in legendo itere[n]t<ur>. Litterae sunt indices rerum, signa verborum: quibus tanta vis est, ut nobis dicta absent<i>um sine voce loquantur. Usus litterarum repertus propter memoriam rerum: nam ne oblivione fugient, litteris alligantur.

[What is a letter? The letter, *littera*, sounds almost like *legitera*, because it shows the way to those who read or because people walk while they read. Letters are the indicators of things, the signs of words. Their strength is such that they may recount to us the words of those who are absent without using a voice. The use of letters was discovered for the remembrance of things: indeed, so that things may not fade into oblivion, they are bound to letters.]

Given the close links between Carolingian grammatical culture and the composition of *Auraicept na nÉces* (on which see for example Poppe 2002), is not surprising to find very similar legends about the origins of language in that text. Thus the *Auraicept* attributes not only the invention of the Ogham alphabet, but also the invention of the Hebrew, Greek and Latin alphabets, to the Irish scholar Fénius Farsaid (Calder 1917: 88–89, lines 1132–1135; cf. McLaughlin 2009):

Is e in fer cetna tra Fenius Farsaidh arainig inna *ceithri* aipgitri-sea .i. aipgitir Ebraidi 7 Grecca 7 Laitinda 7 in beithi-luis-nin in ogaim 7 is airi is certiu in dedenach .i. in beithe air is fo deoidh arricht.

[Now Fenius Farsaidh is the same man that discovered these four alphabets, to wit, the Hebrew, Greek, and Latin alphabets, and the Beithe Luis Nin of the Ogham, and it is for this reason the last, to wit, the Beithe is more exact because it was discovered last.]

It may be significant that, alongside this attribution, the alphabets of all four languages have been juxtaposed in columnar form listing not only the alphabetic symbols but also their corresponding letter-names, much as they appear in the *De inventione* text (Calder 1917: 85–9, lines 1129–1146; and 229–232, lines 4132–4228). In the longer recension of the *Auraicept* (i.e. that represented chiefly by the copies in Egerton 88 and the Yellow Book of Lecan), the Roman numeral values of the Greek letters have been added alongside the letter names and symbols, a feature which can also be seen in Goldast’s edition of the *De inventione*. Plate 2.3 shows a section of the relevant page from the Yellow Book of Lecan, where the Greek alphabet has been written along the bottom left-hand margin with the letter-names alongside them, and the Roman numerals have been inserted above the latter. In this section of the *Auraicept* compilation, we can thus see a clear similarity between the contents of the *De inventione* tract and the Irish vernacular grammatical tradition as regards doctrine pertaining to the origins of the alphabets.

In addition to the account of the alphabets for the three sacred languages, several versions of the *De inventione* tract include other related material, such as rune symbols and Latin abbreviations. Importantly for our purposes, the text also illustrates two ciphers that are attributed to the eighth-century Anglo-Saxon

scholar Boniface, and consequently referred to as the *notae Bonifatii*. In the first of these, each letter of the alphabet is replaced by the letter following it, and in the second varying numbers of dots are used in place of the five vowels. Like the Hebrew, Greek and Latin alphabets, these ciphers are also accompanied by a short prose passage on their origin (*PL* 1581–1582; my translation):

...fertur quod sanctus Bonifacius archiepiscopus ac martyr, ab Angulsaxis veniens, hoc antecessoribus nostris demonstrarit: quod tamen non ab illo in primis coeptum est, sed ab antiquis istiusmodi usum crevisse comperimus.

[It is said that the archbishop and martyr Boniface had shown these to our ancestors when he came from the Anglo-Saxons; yet we tend to believe they were not invented by him, but that such a usage had arisen from the Ancients.]

We can thus identify two points of similarity between the *De inventione* tract that circulated in Continental manuscripts and the vernacular Irish manuscript tradition. First, the presentation of the alphabets of Hebrew, Greek, Latin and Ogham in various copies of *Auraicept na nÉces* bears a distinct similarity to that found in the *De inventione* text, both in terms of the inclusion of the alphabetic symbols, names and numeric values themselves, and also with regard to the juxtaposition of legendary accounts concerning their invention. Second, the dot-cipher attributed to St Boniface in several versions of the *De inventione* text has been employed by one of the scribes of Ádhamh Ó Cianáin's book for a marginal quatrain, which has in turn worked its way into two witnesses of the *Auraicept*.

On the basis of these similarities, we might speculate that some version of the *De inventione* tract could have been known to the scholars at the school of Seáan Ó Dubhagáin; however this evidence alone cannot prove the point decisively. As Derolez has observed (1954: 287), some of the material in the *De inventione* tract – certainly the Hebrew, Greek and Latin alphabets – must have been so current that many scholars could have easily reproduced some of its contents without reference to a written exemplar. Moreover, Roisin McLaughlin (2009: 2–3) has argued on linguistic grounds that the portrayal of Fénius as the inventor of all four alphabets was a relatively early development within the tradition of commentary on the *Auraicept*, possibly dating to around the beginning of the Middle Irish period. Although no witnesses of the *Auraicept*-compilation survive that can be dated to earlier than the fourteenth century, the conventional dating of Middle Irish to *ca* 900–1200 would place the composition of the section on the alphabets to a period roughly contemporary with several of the surviving witnesses of the “B” recension of the *De inventione* tract. Any influence that the latter had on Irish grammatical doctrine as it is reflected in the *Auraicept* therefore probably had a long history before the surviving copies associated with Ó Dubhagáin's school were produced.

A general fascination with alphabet-based ciphers, moreover, is presumably what underlies the dizzyingly complex series of cryptograms that make up the *Lebor Ogaim* (“Book of Ogham”) preserved alongside a copy of the *Auraicept* in the fifteenth-century Book of Ballymote (Calder 1917:272–313). Indeed, there is an obvious affinity between the form of the vowel-cipher attributed to Boniface and the representation of vowels in the Ogham alphabet, which consisted of notches or short scores over a stem-line. However, the latter arranges the five vowels in a different order, such that one dot = A, two = O, three = U, four = E and five = I (McManus 1991:1–2). The ordering of vowels in the G3 cipher in accordance with that found in the Latin alphabet rather than the Ogham one is therefore noteworthy.

Despite these reservations about the direct influence of the *De inventione* tract on the use of the vowel-cipher in Ádhamh’s manuscript or on alphabetic doctrine in related texts such as the *Auraicept*, the second entry in G3 to be discussed in the following section demonstrates that that cryptogram was not the only feature known to the manuscript’s principal scribe that can be associated with the *De inventione* tradition, therefore providing some further evidence that material associated with that text was familiar to the students at Seáan Ó Dubhagáin’s school.

### The numerical key to the alphabet

The second feature of G3 to be examined here is the rather peculiar numeric key to the alphabet written in the first column of fol. 16r, next to which the dot-cipher for the five vowels of the alphabet has been added, seemingly in a different pen (see Plate 2.1). The dot-cipher does not appear to be intended to complete the alphabetic table, however, since the latter already includes the five vowels *a*, *e*, *i*, *o* and *u*. The table is positioned – perhaps significantly – between two poems on themes of biblical chronology, and is written in the form of a grid with a series of Roman numeral values inscribed above each letter.

The original cataloguer of the G3 codex, Nessa Ní Shéaghdha, thought that the numerical values in this table were “a key to the letters in the following item, which often stand for numbers” (Ní Shéaghdha 1967:24). The subsequent text is a poem of eleven quatrains on the number of years between biblical events, including the first five ages of the world, in which Roman numerals are employed frequently to represent years; it begins with the words *Ó Adhamh go dilind* (“from Adam to the Flood”) and, as argued above (p.40), clearly bears a close relationship to the kind of biblical chronology found in texts such as the Irish *Sex Aetates Mundi*. In his subsequent study of the G3 codex, James Carney disagreed with Ní

Shéaghda, arguing that the chronological poem was “completely independent” of the alpha-numerical table, but he offered no further clues as to its origin (Carney 1969: 126 n 2). By examining the manuscript from a wider compilatory perspective, however, one might argue that both of these arguments had some basis: for while the table may not have been written specifically for the poem on biblical chronology, its inclusion in the manuscript at this particular point may reflect the use of source-material in which this material was quite frequently juxtaposed.

Of course, like the vowel cipher discussed in the previous section, alpha-numeric equations are in themselves not an unusual feature of medieval manuscripts. In the version of the *De inventione* tract published by Melchior Goldast in the sixteenth century, for example, the numerical value of each letter of the Greek alphabet has been expressed by a Roman numeral placed beside it, and, as shown above, this reflected in the presentation of the Greek alphabet in the

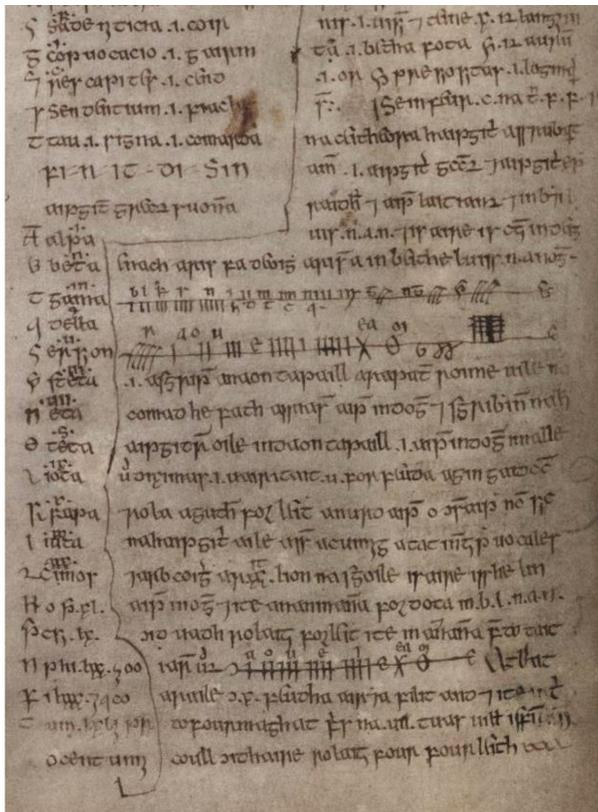


Plate 2.3 TCD MS H 2. 16 (1319) ‘The Yellow Book of Lecan’, col. 534 (saec. xvi) (reproduced by kind permission of Trinity College Dublin)

longer recension of *Auraicept na nÉces* (Plate 2.3). This system undoubtedly has its origins in the fact that Greek letters were, unlike Latin ones, also used to write numerals, with the first nine letters standing for the numbers 1–9, the next nine for multiples of 10, and the following nine for multiples of 100. The use of Roman numerals to express the values of the Greek letters may have derived from the computistical work of the eighth-century Anglo-Saxon scholar Bede. In his widely known treatise *De temporum ratione* (“On the reckoning of time”), Bede adapted the number values for Greek letters to the Latin alphabet for largely cryptographic purposes, because he felt that this system of calculation provided a more straightforward means of using finger-reckoning as a secret sign-language than the system of multiples and combinations of the letters I, V, X, L, C and D of the Romans (ed. C. W. Jones 1977: 271–273; trans. Wallis 1999: 11–12):

Est alterius modi computus, articulatum decurrens, qui, quoniam specialiter ad paschae rationem pertinet, cum ad hanc ex ordine uentum fuerit, opportunius explicabitur. Potest autem et de ipso quem praenotauimus computo quaedam manualis loquela, tam ingenii exercendi quam ludi agendi grati figurari; qua literis quis singillatim expressis uerba, quae hisdem literis contineantur, alteri qui hanc quoque nouerit industriam, tametsi procul posito, legenda atque intellegenda contradat, uel necessaria quaeque per haec occultius innuendo significans uel imperitos quosque quasi diuinando deludens. Cuius ordo ludi uel loquelae talis est: cum primam alphabeti literam intimare cupis, unum manu teneto; cum secundam, duo; cum tertiam, tria; et sic ex ordine ceteras. Verbi gratia, si amicum inter insidiatores positum ut caute se agat admonere desideras, .iii., et .i., et .xx., et .xix., et .v., et .i., et .vii., et .v. digitis ostende; huius namque ordinis literae, ‘caute age,’ significant. Potest et ita scribi, si causa secretior exigit. Sed haec Graecorum computo literisque facilius disci simul atque agi possunt, qui non, ut Latini, paucis hisdemque geminatis suos numeros solent exprimere literis; uerum toto alphabeti sui caractere in numerorum figuras expenso, tres qui plus sunt numeros notis singulis depingunt, eundem pene numeri figurandi, quem scribendi alphabeti ordinem sequentes...:

[There is also a second type of computation worked on the joints of the fingers which, since it pertains to the reckoning of Easter, will be more conveniently explained when we have arrived at that point. From the kind of computation I have just described, one can represent a sort of manual language, whether for the sake of exercising one’s wits, or as a game. By this means one can, by forming one letter at a time, transmit the words contained by those letters to another person who knows this procedure, so that he can read and understand them even at a distance. Thus one may either signify necessary information by secret intimation, or else fool the uninitiated by as if by magic. The method of this game or language is as follows. When you wish to show the first letter of the alphabet, hold up “one” with your hand; for the second, “two”; for the third, “three” and so on

in that order. For example, if you wish to warn a friend who is among traitors to act cautiously, show with your fingers 3, 1, 20, 19, 5 and 1, 7, 5; in this order, the letters signify *caute age* (“act cautiously”). It can be written down in this manner, if greater secrecy is demanded. But this can be more easily learned and manipulated using the letters and numbers of the Greeks, who do not, like the Latins, express numbers by a few letters and their duplicated forms; rather, they depict the figures of numbers with individual signs, by means of all the letters of the alphabet, plus three additional numbers ...]

There is thus an early precedent for the association of Roman numeral positional values with letters of the Latin alphabet. However, the numeric key to the alphabet included in G 3 assigns Roman-numeral values to the Latin letters that do not correspond to the formulation established by Bede. If we were to follow the system of numerical equations set out in the technical introduction of his computational tract, we would expect for example A to equal 1, B to equal 2, K to equal 10, T to equal 100, and so on. Instead, however, the alphabetic grid in G 3 gives the following values:

A = 500 (ccccc)  
B = 300 (ccc)  
C = 100 (c)  
D = 500 (ccccc)  
E = 300 (ccc)  
F = 40 (xl)  
G = 400 (cccc)  
H = 100 (c)  
I = 1 (unum)  
K = 100 (c)  
L = 50 (xxxxx)  
M = 1000 (mile)  
N = 90 (xc)  
O = 40 (xl)  
P = 400 (cccc)  
Q = 50 (l)  
R = 80 (lxxx)  
S = 70 (lxx)  
T = 160 (clx)  
V = 5 (cūig)  
X = 10 (deich)  
Y = 190 (xcc)  
Z = (reading unclear)

In some cases the association between letter and Roman numeral made here is not very difficult to establish: for example, the seven basic Roman numeral symbols, namely I, V, X, L, C, D and M, are all assigned their expected values of 1, 5, 10, 50, 100, 500 and 1,000 respectively. Other examples suggest that some of the values have their basis in a written word-form of the numeral, e.g. N = 90 (possibly for Latin *nonaginta*), or T = 160 (possibly for Greek *tetra*, since  $4 \times 40 = 160$ ). For some letters, however, the origin of the values is considerably more obscure.

In his study of the G3 codex, James Carney noted the existence of a nearly identical alphabetic key in the prose section of the Book of Magauran, which, as has been noted above, was written primarily by Ruaidhrí Ó Cianáin, who may have been a close relation of Ádhamh (Carney 1969: 127; see above, p. 37). In that context, the table is headed *trachtadh do reir Ellaisime ar an aibidil and so sis* (“here is an interpretation of the alphabet according to Ellaisime”);<sup>10</sup> it is also juxtaposed with another short prose passage headed *trachtad ele ar an aibidil and so* (“here is another interpretation of the alphabet”), which consists of a short passage of divination based on the initial letter of an individual’s name (McKenna 1947: 437–8; Hyde 1915: 223–4).

Carney stated that he was unaware of the existence of the numeric table anywhere else, but I have identified two other versions of the doctrine in Irish manuscripts, one in verse form and the other in prose. The former, which I have edited and translated in the Appendix to this chapter, is found only in British Library, Additional MS 30,512, a codex written mostly by the fifteenth-century scribe Uilliam Mac an Lega.<sup>11</sup> The poem constitutes an important piece of evidence not only for knowledge of the Continental names of letters in Irish circles, but for also their pronunciation, which is occasionally evidenced by the rhyme-scheme of the poem’s metre. Moreover, the manuscript context for the versified version of the alpha-numeric table is strikingly similar to that in which the alphabetic grid is found in G3, in that the poem is juxtaposed in BL MS 30,512 with another series of quatrains on a the biblical and chronological theme of the Five Ages of the World, beginning *Se bliadna .l. gen ail* (ed. and trans Tristram 1985: 283–284). The second parallel for the numerical doctrine in G3 is a brief prose passage from TCD MS H 3. 17 (1336), p. 851, headed *Numerus literarum incipit*; there the values of the letters are simply listed in alphabetic order. There are some variations across the different witnesses in terms of the numbers assigned to different letters, but many of these might be explained as copying errors, which could have easily arisen

10. McKenna (1947: 437) states that the name *Ellaisime*, which is presumably in the genitive case here, is unknown; I can offer no further suggestions.

11. With the exception of two late, derivative transcripts in TCD MS H 1. 11 (1285), fol. 142 (s. xviii), and British Library MS Egerton 146, fol. 118 (s. xviii/xix).

when dealing with a long list of Roman numeral figures. Crucially, however, all four witnesses of this material from the Irish tradition – the grid on folio 16r of G 3, the interpolation in the Book of Magauran, the poem in BL MS 30512 and the prose list in TCD MS H 3. 17 – begin by assigning the letter “A” a value of 500, while the values attributed to the letters readily associated with Roman numerals (C, D, I, M and X) are consistent across the different versions.

Some clues to the origin of this doctrine can be gleaned from parallels in Continental manuscripts, which also lead us back again to the transmission of the *De inventione* tract on the alphabets. In two manuscripts belonging to what Derolez called the “B” version of that text (Strasbourg, Bibliothèque nationale et universitaire MS 326 (Lat. 275), fols 109v–110r, and Paris, Bibliothèque nationale MS Lat. 5239, fols 235r–236r; see also above, p.46), a series of Roman numeral values almost identical to ours has been written alongside the letters of the Latin alphabet. Derolez (1954: 335) argued that these peculiar letter-values represented a system of indications of distance derived from the ancient *agrimensores*, or Roman surveyors. He based this hypothesis on his identification of a parallel table of values that has been appended to a list of Latin *notae* or abbreviations for common words, found in an eighth-century grammatical manuscript where they seem to have this function (Paris, BN Lat. 7530; for the text see *GL* IV, 330). Given that one of the features of the *De inventione* tract in several manuscript witnesses is a brief alphabetical list of these *notae*, it is possible that the peculiar numerical values for the Latin alphabet were added to the Paris and Strasbourg witnesses of the tract by association.

This is not to say, however, that the table of peculiar letter-values was associated exclusively with the *De inventione* tradition in later manuscripts. For example, the table is also found independently of this material on folio 257r of the twelfth-century encyclopedia of universal history known as the *Liber Floridus*, compiled in the late-eleventh or early-twelfth century in Northern France. In that witness, the Latin alphabet and its corresponding numeric values have again been listed in grid form, much as they appear in Ádhamh Ó Cianáin’s manuscript, but the table occurs on a page concerned exclusively with listing Roman numerals alongside their equivalents in words rather than with doctrine on foreign or exotic alphabets. We can still draw a contextual parallel between that Continental witness and the transmission of the numerical table in Irish tradition, however, since the verso of folio 257 in the *Liber Floridus* contains material relating to biblical chronology. Clearly the inclusion of elementary doctrine on the forms of Roman numerals and the words and values that they represented was considered a key component of a compilation dealing with matters relating to Christian history, suggesting that Carney was too dismissive in stating that the numerical table and

the poem following it in G 3 were “completely independent” of one another (see above, p. 50). Thus here again, as with the cipher on the previous page of that manuscript, we can see a connection between the material in Ádhamh Ó Cianáin’s manuscript and doctrine that was initially disseminated through the *De inventione litterarum* text, but we can also surmise that this doctrine may have worked its way into Ádhamh’s manuscript at some remove from that tradition.

### Grammar, computus and manuscript compilation

In light of this evidence, and by way of conclusion, it is worth making a few more general observations about the character of Ádhamh’s manuscript with regard to the placement of the two entries that have been discussed above, on folio 15v and 16r respectively. In the earliest extant witness of the *De inventione* tract, which is found in the late-eighth or early-ninth century St Gall MS 876, we find the material on alphabets in its “natural habitat”: for there is almost completely surrounded by grammatical texts, such as tracts by Donatus and Pompeius. This is also the case for the earliest example of our numeric table, which, as we have seen (p. 54), is preserved in a list of *notae* from an eighth-century grammatical manuscript. Subsequently, however, this doctrine on the origins of the alphabets came to be included in manuscripts of a more miscellaneous nature, often in what seem to have been largely encyclopedic collections intended for school use. In particular, several extant copies of the *De inventione* tract occur in collections that consist almost exclusively of computistical material and related texts, typically including Bede’s aforementioned treatise *De temporum ratione*. This is certainly the case for the tenth-century Paris and Strasbourg witnesses, which contain a series of numeric values for the Latin alphabet almost identical that found on folio 16r of G 3. For example, the Strasbourg manuscript includes a treatise on the names of the winds, poems on the months and signs of the zodiac, and various astronomical tables, while the Paris manuscript encompasses fragments on climates and weather, a copy of Bede’s *Chronicon*, texts on prognostics, and lunar calendars (Derolez 1954: 329–335).

The inclusion of material relating to the alphabets and to grammar more generally in such “computistical encyclopedias” probably owed no small debt to Bede’s account of finger-reckoning in the first chapter of his *De temporum ratione*, which not only places doctrine on the alphabets within a computistical context, but also explicitly links the concepts of letters and numbers with cryptographic practices and secret communication (Wallis 2007b). A striking example of this association is St John’s College MS 17, written at the Benedictine monastery of Thorney Abbey

in Cambridgeshire in the early twelfth century.<sup>12</sup> While that manuscript does not contain a copy of the *De inventione* tract itself, it does incorporate some alphabetic tables on folio 5v that clearly derive from that tradition, including both of the ciphers attributed to Boniface. Its compiler, Byrhtferth of Ramsey, also seems to have been familiar with the Irish Ogham alphabet, since he included an inscription in that alphabet on folio 7 of the manuscript (Sims-Williams 1994). In addition to this, the manuscript preserves a great deal of material on subjects associated with time-reckoning and calendars, such as astronomy, cosmology, geography, medicine, mathematics and prognostications. It also attests to the close relationship between the study of grammar and computus in the medieval educational curriculum on a wider level by its inclusion of a series of tracts on verbs and prepositional prefixes, as well as short texts on orthography and prosody. A good example of this is folio 3v of the manuscript, which contains a tabular listing of the various grammatical forms (cardinal, ordinal, distributive, etc.) of numbers from 1–20, and then by 10s to 100. Wallis (2007a) has argued that that this material probably originated with Priscian’s *De figuris numerorum* (GL III, 404–417), but came to be associated with computus manuscripts at an early stage, since “mastering the grammar of numbers was of considerable utility to the student of *computus* who had to understand verbal descriptions of multiplication and division operations, as there was yet no notation for these procedures.” On a broader level, she notes that the inclusion of grammatical material in a manuscript that is on the whole concerned with computus can be viewed in terms of the medieval pedagogical perception that concepts such as time and number were inextricable from grammar: prosody, for example, concerns the spoken word unfolding in time, as well as the measurement of factors such as syllabic quantity and accentual or metric rhythm (Wallis 2007c).

It is argued here that we can view significant portions of “Book of Ádhamh Ó Cianáin”, and in particular the two alphabetic items that have been examined in this discussion, through the lens of such computistical compilations as are attested in other Insular and Continental manuscripts. Not only are the two alphabetic ciphers on folio 16r of G 3 a kind of “micro-level” reflection of doctrine transmitted in the *De inventione litterarum* manuscript tradition, but the material surrounding these entries in G 3 also reflect the more “macro-level” compilatory methods found in later manuscripts that contain copies of the *De inventione* text or of material derived from it. Several of the non-grammatical items copied by

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12. A full digital facsimile of this manuscript, accompanied by folio-by-folio commentary, transcriptions and background essays, can be found on the “Calendar & the Cloister” project website (<http://digital.library.mcgill.ca/ms-17>).

Ádhamh into his book are chronological or computistical in nature, such as biblical synchronisms and prognostications of events from weather conditions. In particular, the items immediately surrounding our numerical key to the alphabet on folio 16r, with which the key to the vowel-cipher has been juxtaposed, are poems on biblical chronology, followed on the verso of the folio by an image of Noah’s Ark. Whether the juxtaposition of the numeric table with the vowel-cipher was simply a coincidence or resulted from a closer familiarity with the transmission of the *De inventione* tract on alphabets and the *notae Bonifatii* is perhaps impossible to determine. The occurrence of other versions of the doctrine on Roman numeral values alongside material of a computistical nature suggests, for example, that Ádhamh may have drawn the numeric table from an intermediary source. Certainly it can be affirmed, however, that this section of his manuscript reflects aspects of the “encyclopedic strain” of computistical compilations that circulated outside of Ireland during the Carolingian period and afterwards, of which grammar, and in particular study of the alphabet and its cryptographic functions, formed an essential part.

## Conclusion

This discussion has sought to shed light on two very specific aspects of one of our earliest Irish-language manuscripts from the post-Norman period, as a kind of case-study into the sources and compilatory motivations of its principal scribe, Ádhamh Ó Cianáin. If we agree with James Carney’s argument that the G2–G3 compilation was largely the work of his school-days, we might be inclined to view the marginal and seemingly insignificant entries concerned with the letters of the alphabet as rather trifling signs of juvenile playfulness or immaturity, as Carney described them. Nevertheless, it can also be said that they provide us with some important clues regarding the nature of Ádhamh’s source-material, as well as to the close relationship between grammatical doctrine and the study of history and computus in the medieval period: all of which were clearly considered to be integral elements of the educational curriculum. The juxtaposition of this same alphabetic material in Insular and Continental manuscripts alongside texts concerned with universal history and computistical matters informs the overall character of Ádhamh’s manuscript, where the two alphabetic ciphers occur alongside not only biblical texts, but also genealogies and legendary lore of people and places: all of which might have been understood as pertaining to the same broad theme of historical chronology.

Since the above observations have been inspired by medieval Irish doctrine on the most elementary aspect of grammatical study – namely the letter – it seems fitting to conclude with a citation from one of the earliest extant testaments to computational learning in medieval Ireland. This is the so-called “Munich Computus”, which was probably composed in southern Ireland during the early eighth century (Warntjes 2010: 60 and 80), and may therefore have been contemporaneous with some of the earliest strata of the vernacular grammatical compilation *Auraicept na nÉces* (Ahlqvist 1983: 36). Here too, we can see the extent to which grammatical and computational knowledge were interwoven, since the author has worked a definition of the sentence into his account of the “atom”, itself defined as the smallest, indivisible part of the cosmos (Warntjes 2010: 10–11):

*Atomos nomen Grecum est et interpretatur indiuisibile, Ysidoro dicente: Atomos philosophi dicunt quasdam in mundo partes minutissimas, ut uisui non pateant, nec sectionem recipiant. ... Et littera <atomos> in oratione pronuntiatur, Donato grammatico dicente: Littera est pars minima uocis articulate. Id ipso dicente litteram partem esse minimam, eo quod diuidi non potest. Iterum Donato dicente: Sententia soluitur in oratione, oratio soluitur in syllabis, sillaba soluitur in litteris. Littera non habet in quo soluatur, et atomos dicitur.*

[*Atomos* is a Greek term and is to be translated as indivisible, as Isidore says: the philosophers call certain smallest parts in the cosmos *atomos*, as those can neither be seen, nor can they be divided further... A letter is declared to be an *atomos* in a sentence, as the grammarian Donatus says: a letter is the smallest part of any utterance. The same person says that a letter is the smallest part, because it cannot be divided. Furthermore, Donatus says: A passage is resolved into sentences, a sentence is resolved into syllables, a syllable is resolved into letters. A letter has nothing into which it could be resolved further, and (consequently) it is called *atomos*].

To the eighth-century Irish computist, just as the atom constitutes the smallest indivisible element of the cosmos, so the letter forms the most fundamental basis of textual expression. Mastery of the alphabet was the cornerstone by which all other learning and tradition could be preserved in written form, and traditions relating to the invention of various alphabets, as reflected in both Irish and Continental sources, therefore formed a central part of any attempt to chronicle Ireland’s origins and to trace its place within the wider scheme of Christian history and scientific thought.

## Appendix I

The following poem is found in British Library, Additional MS 30512, fol. 34ra18–34rb5, most of which was written by the prolific fifteenth-century scribe Uilliam Mac an Lega. Robin Flower (1926: 473–474) has dated the section of material to which this item belongs to the pre-twelfth-century period, but offers no further observations in this regard. There are two later transcripts of the poem from this manuscript in TCD MS H 1. 1 (1285), fol. 142 (s. xviii), and British Library MS Egerton 146, fol. 118 (s. xviii/xix). The composition constitutes an important piece of evidence not only for knowledge of the continental names of the Latin letters in Irish circles, but also for their pronunciation, which is in at least two instances determined by the metre known as *sétnad mór* (Murphy 1961: 49; on the features of this metre see below, pp. 60–61).<sup>13</sup>

The contents of our poem can be compared to a handful of Latin-based tracts on the letters of the alphabet that survive in medieval Irish sources. For example, a short text found in RIA MS 23 P 2 (also known as “The Book of Lecan”) contains a reference to the *tri neichi fognos do litir .i. ainm 7 fidar 7 cumachta* “three things which are subject to a letter, i.e. name and symbol and power” (Meyer 1918: 297, lines 10–11). This statement clearly reflects the widespread doctrine of Latin grammar that every letter has three properties: its *nomen* “name”, for identifying it in discussion or teaching; its *figura* “shape”, or the written character; and its *potestas* “sound-value” or “pronunciation” (on this theme see also Hayden 2014a: 30–31). As noted in the preceding chapter of this volume (p. 47), it is evident from the alphabetic tables included in the vernacular grammatical compilation *Auraicept na nÉces* that Irish authors were familiar with the tradition of listing the names of Hebrew and Greek letters after their respective symbols (Calder 1917: 86–87), and discussion of the names of the Ogam letters is a prominent feature of the *Auraicept* as well (e.g. Calder 1917: 88–93, lines 1147–1200; for analysis see McManus 1991: 2–3 & 34–39). Discussion of the sound values of certain letters is found in another short text, also closely based on Latin sources, which attempts to explain the order of the vowels on the basis of their perceived points of articulation (Patricia Kelly 2002); however that text survives only in fragmentary form, and does not deal at all with consonants.

Some further clues to how the letter-names were pronounced are provided, however, by vernacular commentary relating to the classification of the Latin letters into vowels (a, e, i, o, u); semi-vowels (f, l, m, n, r, s, x) and mutes (b, c, d, g, h, k, p, q, t). Such commentary is a feature of both the *Auraicept* and the short tract on letters from the Book of Lecan just cited. It is also found in a separate text copied into NLI MS G 3 by Ádhamh Ó Cianáin (see above, p. 39), which has been described by Ahlqvist (1987: 6) as “a fairly uncomplicated...re-telling in Irish of the fundamentals of Latin grammarians’ views on how to classify the letters of the alphabet”, ultimately based on sources such as Priscian, Donatus and Pompeius. While the letter-names themselves are not spelled out in these sources but are rather simply given as symbols, they are nonetheless accompanied by the standard definition of semi-vowels as consonants that are preceded by a vowel, and of mutes as consonants that are followed by a vowel. Thus in the *Auraicept*, the vowels that accompany consonants in their pronunciation are referred to as *tuistídi* “supporting vowels” (lit. “progenitors”) (Calder 1917: 36–37, lines 478–483). In the G3 text, moreover, it is further specified that all of the semi-vowels are preceded by the vowel

13. In the Early Modern period, this metre came to be referred to simply as *séadna(dh)*, while *séadna(dh) mór* was used in reference to a metre with a slightly different syllabic structure (Knott 1934: 16–17; Ní Dhomhnaill 1975: 78–79).

*e* save the letter *x*, which is preceded by *i*; and that only the six mutes *b*, *c*, *d*, *g*, *p* and *t* are followed by the vowel *e*, while *h* and *k* are followed by the letter *a* and *q* by the letter *u* (Ahlqvist 1987: 7–8). The syllable-count and rhyme pattern of the *sétnad mór* metre (on which see the following section) indicate that this was the system of pronunciation underlying the letter-names in our poem, even though the letters themselves are always written as single characters in the manuscript. However, we might also observe that since the letter-names in the poem must have represented stressed words, the five vowels of the alphabet as well as the vowels following mute consonants must necessarily have been understood to have long quantity. Thus in the second quatrain, the letter “d” at the end of the last line must have been pronounced as *dé* in order to rhyme with the monosyllabic word *gné* at the end of the second line of that quatrain. In some cases the peculiarities of Irish phonology must also be taken into account. Thus the symbol “r” at the end of the fifth quatrain must have been pronounced as *eir* instead of *er* in order to rhyme with the monosyllabic end-word of line *b*, namely *ceil*, where the final consonant has a palatal quality.

One further similarity with the Latin grammatical tradition that may be noted here is the fact that no letter-name is given in the poem for *h*, which is instead referred to here as *tinfiugh* “aspiration”. This is clearly a reflection of Priscian’s oft-repeated statement that *h* is not a letter but a “mark of aspiration” (*nota aspirationis*) (*GL* II, 8, 22; 12, 20; 35, 24); comparable doctrine is found in both the *Auraicept* (Calder 1917: 56–59, lines 766–769) and in the G3 tract on letters (Ahlqvist 1987: 8). Apart from these manifestly Latin-based discussions, however, Irish vernacular sources only offer occasional glimpses of the full letter-names of the Latin alphabet. One example is found in legal commentary relating to the etymology of the word *senchas* “tradition”, where word is derived from the form *fénchas* because *f tallad as ría n-es* “*f* was taken out of it to be replaced by *es*” (*CIH* 345.12 and 1651.21).

## The metre of the poem

The metre known as *sétnad mór* is reasonably well attested in Middle- and Classical Irish verse (Breatnach 2015: 76–77), and is cited in a Middle-Irish metrical tract that dates to the tenth century (Thurneysen 1891: 20 and Murphy 1961: 49). Its basic characteristics are that 1) lines *a* and *c* must be octosyllabic with disyllabic endings, while lines *b* and *d* must be heptasyllabic with monosyllabic endings (a structure typically represented as  $8^2 + 7^1$ ); and 2) there must be end-rhyme in the final words of lines *b* and *d*. In the strictest form of *sétnad*, the final word of line *c* would rhyme with the stressed word preceding the final word of line *d*, and this stressed word should not be separated from the final word of *d* by anything longer than a monosyllabic, atonic word. Every stressed word in the final line would make full rhyme with another word in the quatrain, and there would be alliteration in each line, with the final word of line *d* alliterating with the preceding stressed word; the final of *a*, moreover, would alliterate with the first stressed word of line *b* (Knott 1934: 16–17).

The rules for metrical rhyme are considerably looser in Irish verse than they are in English. Perfect rhyme occurs between words of which the stressed vowels are identical, while all of the consonants subsequent to the first stressed vowel are of the same quality and class (six of the latter were recognised, namely voiced stops, voiceless stops, voiceless spirants, voiced spirants and lenited liquids, unlenited liquids and *s*). Alliteration occurs between stressed words beginning with a vowel or with the same radical consonant (i.e. the underlying initial sound irrespective of any mutation); thus articles, prepositions, conjunctions and preverbal particles were ignored

for alliterative purposes. Alliteration is prevented if the alliterating words are separated by any stressed word (Knott 1934: 4–11). Syllable-count and end-rhyme between lines *b* and *d* were generally considered the two most important features of a metrical composition, while internal rhyme and alliteration were counted as ornamentation and were not always used consistently in looser forms of verse.

While there are some problems with the syllable-count in our poem as it stands in the sole surviving copy, some of these may be explained by way of copying errors in the transmission of this material or by ambiguities with regard to the written forms of numbers and letters that were intended by the characters given in the text, since the poem contains numerous abbreviations. As might be expected, however, the author has adhered to the rules of syllable-count and rhyme in *sétnad* better than he has to the rules of alliteration associated with this metre. Given that the poem was probably intended primarily as a didactic tool rather than as a composition for formal presentation, it is possible that strict adherence to all the rules of the *sétnad*-metre would not have been required.

In order to clarify where the poem may have been most susceptible to copying errors or ambiguity, I have provided below a transcription of the poem as it stands in the manuscript, followed by a reconstructed text in which the number- and letter-names have been written out in full. This is followed by a series of notes on individual lines of the poem.

## Transcription

A aós cumtha estigh co n-ecosdaib gan gleo ngaircc arim gecha littri lerdai. isin apghitir ergnai aird

Cuic .c. for .a. is *éd* adberim. xl. for .b. bith imgne .c. citus is ced a ferand .u. c. adberam for .d.

Ceirí .c. ar .e. do *chuala* .x.l. for .f. níró. íííí. c. ar .g. tria *thinriumh* .iii. c. ar tinfiugh nígú Unair for .í is *éd* adberim .x.l. for k radh gan breíg. l. for .l. is *radh fhiri*. techtaid .m. mile na meit

Nochat for .n. xx. l. o. x. l. for .p. na ceil. a. u. for .q. cen cobladmur .l. xxx. adbul for .r.

Sesga for .s. atchuala .l. x. 7. c. for .t. truím a .u. for .u. ceim *co n-airdi*. a deic for .x. gairgi gluinn

Sesga is .c. for .y. na ceilid .l. xxx. ar .z. cian roclos. ic *airbirt uadha* ataimne is iat *sin* a n-airim i fos

Finnta-su a tiagernaigh *trealmaigh*. airim na liter cen báos. rí *nímhe nterass* do rí. do *shaegal* is taes. a aes. c.

## Restored text

1	A aós cumtha éstigh co n-écos daib gan gleo ngaircc árim gecha littri lerdai isin apghitir ergnai aird.	Listen, o friends so that I may relate to you without bitter strife a reckoning of all the numerous letters in the alphabet of great wisdom.
5	Cúic cét for “á” is ed ad-berim Daichet for “bé”, bith im’ gné “Cé” citus is cé d a ferand Cúic cét ad-beram for “dé”.	Five hundred for “a”, it is that which we say, 40 for “b”, being in my form (?), “c” moreover, 100 is its domain, 500 we say for “d”.

9	Ceithri cét ar “é” do-chuala Cethracha for “ef” ní ró Ceithri cét ar “gé” tria thinriúm Trí chét ar “tinfíugh” ní gó.	Four hundred for “é” I have heard, 40 for “f” is not too much, 400 for “g” through its course, 300 for aspiration (“h”), it is no falsehood.
13	Unáir for “i” is ed ad-berim Daichet for “ká” rádh gan bréig Coíca for “el” is rád fhíri techtaid “em” míle ’na méit.	Unity for “i”, that is what we say, 40 for “f”, a statement without deception, 50 for “l”, it is a true statement, “m” has a thousand in its size.
17	Nóchat for “en”, .xx.l. “ó” Cethracha for “pé” ná ceil a cúig for “qu” cencob bladmur Ochtmoga adbul for “eir”.	Ninety for “n”, ... “o”, 40 for “p”, do not conceal it; 5 for “q”, though it is not renowned, vast 80 for “r”.
21	Sesga for “es” at-chuala Sesga ocus cét for “té” truim a cúic for “ú” céim co n-airdi a deic for “ix” gairgi gluinn.	60 for “s” I have heard, 160 for weighty “t” 5 for “u”, a noble step, ten for “x”, roughness of a deed of prowess (?).
25	Sesga is cét for “ui” ná ceilid Ochtmoga ar “sted” (?) cían ro-clos. Ic airbirt uadha atáimne Is iat sin a n-áirni i fos.	160 for “y”, do not conceal it; 80 for “z”, long it was heard. We are practising from it, Those are their reckonings here.
29	Finnta-su a Thiagernaigh trealmaigh áirim na liter cen báos rí nimhe na t...as do rí, do shaegal is t’áes.  A áes .c.	Discover, o powerful Tigernach, A reckoning of the letters without folly, king of heaven of the ..., for a king (?), your life and your age.  O friends.

## Notes on the text

**Line 1:** The first line only has six syllables instead of eight; clearly something has been left out here by the scribe.

**Line 6:** The syllable count in this line would require a disyllabic word here rather than the trisyllabic *cethracha*, as in lines 10 and 18; the same disyllabic form would also be required in line 14. O’Rahilly (1950: 354) has noted that examples of the periphrastic vigesimal numeration exemplified by the form *daichead* (< *dá fíchid* “two twenties”) already occur in Old Irish, and that the form *dá fíchead* is better attested than the dual *dá fíchid* (cf. O’Brien 1938: 366). *Dá fíchead* was trisyllabic with the main stress on the second syllable, but this form gave rise to the disyllabic *daichead* in spoken Irish, as “attested in stress-verse from the first half of the seventeenth century” (Ó Cuív 1970: 110). If Flower (1926: 473–474) is correct in dating the section of material in BL MS 30,512 to which our poem belongs to the pre-twelfth century period, this may provide an even earlier attestation of the disyllabic form.

**Line 12:** On the use of *tinfíugh* “aspiration” for the letter *h*, see above, p. 60.

**Line 14:** The form *cethracha* for ‘forty’ would provide alliteration for this line, but, as in Line 6, would render it hypersyllabic. As noted in the introduction, the syllable-count would have been considered the more important feature.

**Line 17:** The form *nóchat* for the nominative singular of “ninety” is late. In Old and Middle Irish *nócha* was a dental stem, with *nochat* or *nóchad* being the genitive singular form; David Greene (1992:530) has argued that the shift to an *ō*-stem declension (nsg. *nochad*, gsg *nóchaid*) in this and other decads in Early Modern Irish may have been caused by confusion in the spoken language between nominative forms such as *seachtmhogha*, *ochtmhogha* and the ordinals *seachtmhadh*, *ochtmhadh*, etc.

There are two further problems with the text in this line. The first is that the meaning intended for the Roman numeral .xx.l. is unclear. Three Latin versions of this doctrine – namely the numbers given in the *De inventione* tradition, those in the *Notae Papianae*, and those in the *Liber Floridus* – assign a value of LX (= 60) to the letter *o*. The vernacular prose version in TCD MS H 3.17 likewise gives *sesca* “sixty”. If we assume that the form .xx.l. in our poem is the result of miscopying at some stage, and reconstruct something like *sesca for “ō”* for the second half of the line, we would have our required count of eight syllables. This approach would not, however, resolve the second problem, which is that the line should end in a disyllable that alliterates with the first stressed word of *b*. It is possible that something like *for “ō” sesca* might have been intended. Alternatively, we could compare the text of our poem to the values assigned to the letters *o* and *p* in the G3 table, which are 40 (xl) and 400 (cccc) respectively. It may be that the value of “xl” given to *o* in that text was carried over to the following letter *p* and that an additional “x” crept in before this, while the value ‘cccc’ has somehow dropped out of the text altogether. Both solutions are equally speculative.

**Line 21:** The value given for the letter *s* in most other copies of this material is 70 (= *sechtmogo*). A trisyllabic word would provide the missing syllable in the line here, and it is possible that *seasca* (60) has been written in error here due to the presence of this word at the start of the following quatrain, although see also below, note on Line 25.

**Line 22:** The line still provides seven syllables if the initial syllable of *ocus* is elided.

**Line 25:** Elision of the word *is* “and” gives the required syllable count here. Several other copies of this material give the values CL (=150, or *caega ar cét*) for the letter *y*. The Latin name for the letter “y” was *ī Graeca*, but the pronunciation of the letter *y* as *ui* in Irish sources is confirmed by other manuscripts, e.g. RIA MS D v 2, p. 76b, where the word *luirg* is written *lyrg*; BL MS Egerton 88: *i mbriugin y Dergae* for *i mbriugin ui Dergae* (O’Grady 1926:93); TCD MS H 3. 18, p. 388 marg. inf. : *membrym* for *membrium*; and BL Harleian MS 5280, fol. 6r: *Lydh* for *Luidh*. I am grateful to Liam Breatnach for supplying me with these references.

**Line 26:** There is some ambiguity with regard to the reading of this line. Elision of the preposition *ar* after the word *ochtmoga* allows for the required syllable count if we assume that the letter *z* was pronounced as a monosyllable. This letter was borrowed into Latin from the (disyllabic) Greek *zēta*, which is the word-form of the letter given in Melchior Goldast’s edition of the *De inventione*. Its name may have already been pronounced as a monosyllable by the early medieval period, but I have been unable to identify any explicit discussions of this issue in Irish sources. The earliest citations of the monosyllabic English pronunciation *zed* (< French *zède*) attested in the *Oxford English Dictionary* are from the late sixteenth century; moreover Barry Lewis has pointed out to me that the Welsh grammar of Gruffud Robert, published in 1567, specifies that the letter *z* should be pronounced as the monosyllabic *zed* (John Williams 1939:17). The use of rhyme in the poem is not systematic enough to determine whether the name of the letter has a long vowel or not. In Irish manuscripts, the letter *z* is interchangeable with *st-* in loanwords: thus for example the word *Zephyr* “west wind” is written *stefir* (see *DIL*, s.v.), while the

Latin word *psalmista* has been rendered as *psalmiza* in the early fifteenth-century manuscript known as the *Leabhar Breac* (RIA MS 23 P 16; see for example fols 30b33 and 36a42). In his Latin commentary on the *Ars maior* of Donatus, the ninth-century Irish grammarian Sedulius Scottus notes that *Duplex dicitur z, quia pro duobus s et <s>d ponitur...ut massa pro maza et Messentius uel Mesdentius pro Mezentius*, “z is said in two ways, since it is put for double s and sd...as in *massa* for *maza* and *Messentius* or *Mesdentius* for *Mezentius*” (Löfstedt 1977b: 18). The Ogam letter-name assigned to the letter z was *straif*, as distinct from *sail* for the letter s (McManus 1997: 38).

The numerical value given for the letter z also varies considerably in other manuscript versions of this doctrine. The copies of the *De inventione* that contain this material give DC (= 600, or *sé chét*); the *Liber Floridus* (fol. 257r) gives DCCC (= 900, or *noí cét*); and the *Notae Papianae* gives *mille* (= 1000, or *míle*). The reading for this letter in G3 is unclear, but the final letter in the Roman numeral looks rather like a “c”.

**Line 29:** The adjective *tigernach* means ‘lordly’; however it could also be used substantively as a personal name. As the form seems to be in the vocative here, I have taken it as the latter in this case. See also *DIL*, s.v. *trelmach* “equipped, armed”, which I have translated figuratively here as “powerful”. I am uncertain of the identity of the dedicatee in question.

**Line 31:** In the manuscript there is a suspension mark over the letters *n* and *t* in this line, followed by the letters *-ass*. I am uncertain of the expansion intended, which must give four syllables in total, with the last word consisting of two syllables rhyming with *shaegal* in order to fit the metre. It is possible that something has been left out by the scribe here.

**Line 32:** *Ríg* is the dative form of the noun *rí* “king”, and therefore would be the expected form after the leniting preposition *do* “to, for”. The sense of the line as a whole is unclear with this reading, however. One possibility is that *do rí* is a corruption of the perfect third-singular form of the verb *rímid* “counts, reckons, estimates; recounts, relates” (attested as *ro rím* in *DIL*, s.v. *rímid*). The perfective particle *do* regularly replaced *ro* in later Irish. The meaning might then be something like “he (the *rí nimhe*?) has reckoned your life and your age”, with the object being the Tigernach invoked in the first line of the quatrain.