LANGUAGE AND EPIGRAPHIC CULTURE 'OGAM' [1]

1. Overview and state of the art

1.1. Language definition & classification

Old Irish *Ogam* (pronounced [ˈoɣəm]), in Modern Irish spelling *Ogham* [ˈoːm], is the name of a writing system, not of a language.[2] The language that is prototypically written in Ogam script is the earliest known stage of the Irish language, called Primitive Irish.

The origin of the name *Ogam* is disputed (cf. Thurneysen 1937). It displays a blatant similarity with *Ogma*, the name of an Early Irish mythological, semi-divine figure, whose name in turn evokes that of the Gaulish mythological figure *Ogmios* (Ὄγμιος), mentioned by the 2nd-century Greek author Lucian of Samosata as a *psychopompos* (Hofeneder 2006) and attested as an underworldly figure on lead-tablets from Bregenz (Austria). The connections, if there are any, among the mythological figures and the writing system are unclear.

In an Isidorian-style etymology it has been suggested to analyse the word *Ogam* as a compound *og-úaimm* 'pricker-pricking' (McManus 1991: 152–153, Sims-Williams 2018: 119), despite serious formal difficulties with this explanation (it has the wrong inflectional class; syncope, i.e. loss of the middle vowel, should not occur in the derivative *ogmóir* 'one who is skilled in writing Ogam'). This etymology would also remove the basis for a connection with the names *Ogma* and *Ogmios*.

Formally more satisfactory is to regard the word *ogam* as related to Greek ὄγμος 'furrow, course of heavenly bodies, swathe' and Vedic *ájma-* 'course, track' < Proto-Indo-European *$h_2o\hat{g}mo$-*, a nominal derivative of the PIE root *$h_2e\hat{g}$-* 'to drive'. It is a corollary of this etymology that the Proto-Celtic cluster *gm was retained as such in Irish, which was disputed by Thurneysen (1937: 196), albeit on weak grounds. The meaning of the Greek and Sanskrit words can be combined under the primary meaning 'track, furrow', which also yields a reasonable semantic motivation for Ogam. Its letters consist of 'furrows' incised into a stone, which could be viewed as the 'tracks' left by the chisel. If the names *Ogmios* and *Ogma* are connected with this, they have to be interpreted as adjectives of the meaning 'having to do with tracks, furrows'. Such an explanation, however, sheds little light on the attributes of the two mythological figures.

The Irish language forms part of Goidelic, one of the four known branches of the Celtic branch of the Indo-European language family. The adjective 'Gaelic', which is sometimes used in connection with Irish, refers to the entirety of diachronic and diatopic variants of Irish and its offshoots Scottish Gaelic in Scotland and Manx on the Isle of Man and is not normally used with special reference to the Irish language, except for scholars from Scotland who use Old and Middle Gaelic as alternative names for what is commonly referred to as Old and Middle Irish.

From *c*. the 8th century onwards, the self-designation for the Irish language is *Goídelc*, a word that is borrowed from Welsh *gwyddel* 'wild'. It is not entirely clear, what the language was called before that time. Early legal texts employ the expression *bélrae na Féne* 'language of the Féini', but this may be regionally restricted to the north of Ireland. In medieval Latin sources, the term *Scotica lingua* 'Scottish' is used, and it is conceivable that a similar term was used in the native language originally as well.

Apart from a handful of geographical names from the beginning of the Christian era, Irish is attested from approximately the 5th century A.D., at first exclusively in Ogam inscriptions. The early period of Irish is traditionally called Primitive Irish and roughly encompasses the 4th–6th centuries. This is followed by Archaic Old Irish in the 7th century, Old Irish (8th–9th centuries), Middle Irish (10th–12th centuries), and the modern Gaelic languages, Modern Irish (since *c*.

[2] The Old and Modern Irish versions of the name are equivalent. The Old Irish form will be used throughout this article.

1200), and Scottish Gaelic and Manx, which are both fully attested only from the modern period. Ogam inscriptions of the so-called orthodox tradition belong basically to Primitive Irish and, in the latest phase, to Archaic Irish. The inscriptions from later periods form a secondary, antiquarian tradition that differs functionally and orthographically from the orthodox tradition. The late inscriptions belong to Old and sometimes Middle Irish, and occasionally from even later still. Since *c.* the 7th century, Irish is abundantly attested as a fully developed literary language in manuscript sources with a very rich written tradition (cf. Thurneysen 1946: 4–9; Stifter 2009: 59), but this lies outside the focus of this article.

In late antiquity and in the early medieval period, Irish was spoken on the island of Ireland (the extent of Irish in Ireland at that time is unknown), and in neighbouring areas in Britain that had been colonialised from Ireland: the Isle of Man, areas along the west coast of Britain, ranging from Cornwall over Wales (especially Pembrokeshire, Carmarthenshire, Gwynedd, and Anglesey), and Argyllshire, the medieval Dál Ríata in the south-west of Scotland, from where the language spread further across Scotland during the middle ages. From the 6th century, Irish was probably also spoken by small population groups on the North-Atlantic islands, from the Faroes up to Iceland. In these places, the language was later replaced by Norse.

Typologically, Primitive Irish differs substantially from the later stages of the Irish language. Although all stages of Irish are inflectional, in Primitive Irish the inflectional endings are still fully preserved, overtly recognisable, and resemble closely the corresponding endings in other ancient Indo-European languages, especially those of the related ancient Celtic language Gaulish. In the younger stages of Irish, on the other hand, and most markedly in Old Irish, inflection has transformed into an intricate system of internal alternations of vowels and consonants, regular alternations of initial consonants (= mutations), and of the addition of overt endings, although their morphological prominence has been much reduced compared to Primitive Irish. Although the transition to this radically different grammatical system took place precisely during the period of Ogam writing, only a small part of it is observable in the Ogam inscriptions, namely predominantly the changes that affected the vowels. This is largely due to the defective system of expressing consonants in Ogam (see below).

With the rarest exceptions, only words in the genitive singular of a wide range of nominal stem classes are attested in the Ogam inscriptions. The inscriptions give no information about verbal morphology or syntax. The only syntactic feature that is observable in Ogam inscriptions is that genitives are invariably postposed to their head nouns, as is the case in all later stages of Irish, with the exception of Old Irish poetical style where it is possible to prepose a genitive for stylistic effects. All later stages of Irish, as well as the earliest phases of the closely related British Celtic languages, are VSO languages. This can be resonably assumed for Primitive Irish as well.

In most of the mentioned areas, Irish was in contact with other languages. Nothing can be said with certainty about the linguistic situation of prehistoric Ireland. It is possible, if not likely, that languages other than Irish were spoken in Ireland before the middle of the 1st millennium A.D., but apart from a number of possible loanwords, and the controversial claim of substratal structural influence on the Insular-Celtic languages, nothing survives of these languages (for further literature cf. Mac Eoin 2007 and 'Part 2. Typology and Language Contact' in Karl & Stifter 2007: 101–299). Perhaps there were British Celtic speech communities in Ireland, but their areal and temporal extents are unknown. From the beginning of the 1st millennium A.D., there was interaction especially with British Celtic and Vulgar Latin on the islands of Britain and Man, and with Pictish in the northern parts of Britain, modern day Scotland. With the immigration of Germanic peoples into Britain in late antiquity, Irish speakers came into contact with varieties of Old English and, from the 9th century, with Old Norse.

From the period of primary use of Ogam onwards, Irish personal names and placenames, and occasionally other words, have also been transmitted in Latin manuscript texts. However, since this is at the same time the kernel of the later, fully literate Old Irish tradition, it is not usually considered to be *Nebenüberlieferung*, i.e. indirect documentation of the language of Ogam. Irish in the Ogam script and Old Irish in the Latin script follow quite different orthographic principles, and there does not seem to be influence from the former upon the latter. The

fully written manuscript tradition of Old Irish sets in towards the end of the classical Ogam period, roughly around the middle or in the later half of the 7th century, although the earliest manuscripts with Irish writing that survive until today date only from the 8th and 9th centuries. It seems as if the first centres of manuscript writing in Old Irish were located in the north-east of Ireland (e.g., Bangor, Armagh), whereas the main area of Ogam activities is in the south and southwest of the island – whatever the underlying causes for this dichotomy are.

1.2. Location and chronology of inscriptions

Approximately 400 Ogam texts are known from Ireland and from those parts of Britain that are or were settled by Irish- or Gaelic-speaking populations in the past. The distribution of the inscriptions is very uneven, both among the countries mentioned, but also within each of the countries. In Ireland there are around 330 stones. They are mainly found in the south, in a wide arch that spans from the south-west, where they are particularly densely clustered in Kerry, along the south coast up to Wexford, and extending from there northwards through the counties of Kilkenny and Kildare, on the western slopes of the Wicklow Mountains.

One particular region in the south, namely the Waterford–East Cork area, had an old dynastic link with Wales. This connection suggests itself as a channel of transmission for the art of writing between those two countries which are also the centre of the tradition by the sheer number of extant texts. Wales has forty inscriptions, concentrated in the south-west and the north-west (Swift 2007; for Britain see Charles-Edwards 2013). Cornwall and Devon together have half a dozen stones. From England, a single stone is known. On the Isle of Man, eight stones are known, some of which in combination with Runic inscriptions. The Gaelic-settled parts of Scotland, medieval Dál Riata, furnish six stones (Forsyth 1998: 48), but Ogam inscriptions are also found outside the Gaelic areas. 29 stones are from the Pictish kingdoms (Forsyth 1998: 48–49, map: 45), two of them in Ogam and Roman script. Pictish Ogams are mostly found along the east-coast of Scotland, the Orkneys, and the Shetlands. The Pictish stones appear to be non-Irish in language. Their interpretation is very uncertain, since not even the reading of all stones has been agreed upon. The status of the Pictish language itself is unclear, but it is believed that it was perhaps a British-Celtic language. With the exception of the Pictish stones, Ogam is an exclusively medieval Irish phenomenon. The employment of Ogam as a token Celtic script in the marketing of ancient Celtic sites on the Continent has no historic basis.

Since the 19th century, many Ogam stones have been removed from their original sites and are put up in museums or other protected areas. However, still a great number of stones can be encountered *in situ* in Ireland. They can be difficult to access because of their remoteness or because they are found on private lands. New Ogam stones are occasionally discovered, usually in archaeological excavations, or in renovation work of buildings, for instance churches or walls, where they were reused as part of the structure. Newly found stones are often fragmentary, especially if they belong to the re-used type.

Since it is not possible to assign dates to rock, unless in geological dimensions, the dating of Ogam inscriptions depends on circumstantial information, such as accompanying archaeological finds, which are few, or linguistic and palaeographic arguments, which can be circular. Accordingly, the dates assigned to inscriptions by different scholars can vary considerably. Bilingual stones in Britain can also be dated through the palaeography of the portions in Latin script. Only very rarely can names on Ogams be identified with historical persons (critical McManus 1991: 52–54), or with politically important septs, tribes and dynasties. The dating of individual Ogam stones is, generally speaking, a minefield of palaeography, linguistics, philology, and archaeology.

The dating of the writing system as such is no less of a challenge. Scholars in the early and middle part of the 20th century were inclined to see in Ogam an Irish invention of great antiquity, going back to the 1st century a.d. (e.g. Carney 1975) or even earlier. The *communis opinio* today is that the earliest extant stones belong to the early 5th century (Sims-Williams 1993: 135), or

maybe the late 4th century (but see Harvey 2017: 58). The archaeological evidence of the Silchester Stone (CIIC 496) lends support to this view. The stone can be dated archaeologically to the 4th or early 5th century, which harmonises with the archaic phonology of its inscription (Clarke et al. 2000). The emergence of Ogam coincides roughly with the time when Christianity set foot in Ireland (cf. Swift 1997). It is suggestive to think of a connection between the two events. For instance, it is conceivable that Ogam was devised as a vernacular counterpart to Latin literacy which was a prerequisite for embracing the Christian tradition.

However, whether this time is close to the invention of the script is disputed. From a linguistic point of view, any time between the 1st and the 5th century is possible (Harvey 2001; and more pronouncedly 2017: 59). The 5th–7th centuries are regarded as the classical phase of Ogam. Inscriptions from this period make up the so-called 'orthodox' Ogam corpus, as against the stones from the 8th century and later which are called 'scholastic' Ogam, a phase in which the practice is no longer continued in a direct line, but is under influence from Old Irish manuscript writing (McManus 1991: 129–132). Even when Ogam had gone out of use in its primary function in Ireland, it remained a firm reference point for professionals in the poetic art throughout and long after the middle ages, as a manifestation of an original Irish intellectual culture (Poppe 2018). In Scotland and on the Isle of Man, the Ogam tradition lasted longer, until the end of the Viking period.

1.3. Historiography and state-of-the-art

Knowledge of the meaning of the Ogam characters never died out in Ireland, but was transmitted without interruption throughout the medieval and modern period in Irish scholarly circles. Therefore, unlike other ancient writing systems, it did not have to be rediscovered and deciphered by modern scholars. Ogams have been the object of antiquarian interest for centuries, even going back to middle ages. For instance, *In Lebor Ogaim* 'the Book of Ogam' is an Old Irish tract about the values of the letters and various cryptic variants of the alphabet, a tract which survives in several manuscript copies from the 14th to the 17th centuries (Royal Irish Academy MS 23 P 12 308–314 (A.D. 1390), Trinity College Dublin MS H.3.18, 26.1–35.28 (A.D. 1511) and National Library of Ireland MS G53 1–22 (17th century), and fragments in British Library Add. 4783). A gorgeously illustrated page showing several types of Ogam writing from the 14th-century Book of Ballymote is frequently reproduced. From manuscripts like these, modern scholars derived their elementary information of how to decode this writing system.

The authoritative modern introduction to Ogam is McManus 1991 who presents it in a wide cultural context. He discusses hypotheses about the origin of Ogam, and its evolution over time, from a genuine writing system to an object of antiquarian interest. The standard handbook and lexicon from a linguistic point of view is Ziegler 1994. An extensive linguistic analysis is also found in Sims-Williams 2003.

The most common printed reference point for Ogam inscriptions is *Corpus Inscriptionum Insularum Celticarum* (CIIC) edited by Macalister 1945. References to Ogam inscriptons are often in the form CIIC X or M X, where X is the number in Macalister 1945. Inscriptions that have been discovered since then are variously referred to by their first publication, or by the name of the place (usually the townland) where they were discovered. Concise corpora without archaeological information are included in McManus 1991 and Ziegler 1994. McManus (1991: 65–77) has a list of stones discovered after 1945 until the 1980s.

The stones in Scotland have been collected by Forsyth 1996. The stones from Wales are also treated in Nash-Williams 1950, Okasha 1993, Thomas 1994, and especially in Redknap & Lewis 2007 and in Edwards 2007 and 2013.

Several attempts have been made to create digital online corpora of Ogam. Very early in the internet age, Gippert started the Ogam-project on the webspace of the TITUS-project (Universität Frankfurt; Gippert 2001a; cf. also Gippert 2001b). The site contains original photos of *c*. 70 stones, but was last updated in 2001. The *Celtic Inscribed Stones Project* (CISP; Davies

2002) was created in 2002. The comprehensive collection of the data and of previous scholarship renders it useful as a bibliographic resource, but the technology is outdated, and the presentation of the information lacks clarity and a guiding hand. CISP only provides illustrations culled from previously published sources. The project was likewise not continued after the early 2000s. All of this is now superseded by White's *Ogham in 3D*, a searchable multimedia database at the Dublin Institute for Advanced Studies. It uses up-to-date technology to create 3D images of Ogam stones. The data collection has so far been focussed on Ireland, of which *c.* 155 stones have been captured. Because the project lacks continuous funding, progress is slow at the moment. *Ogham in 3D* provides each stone with an individual name that consists of the place of origin, followed by a Roman numeral in the case of places where more than one stone were found.

New stones are usually published in local or national archaeological journals of Ireland and the other countries. Celtic Studies journals such as *Peritia*, *Ériu*, or *Studia Celtica* occasionally include articles on linguistic aspects of Ogam.

1.4. The language

Despite the meagreness of their content, Ogam inscriptions are a source whose value for historical linguists cannot be overestimated. Ogam inscriptions are famous for their diachronic linguistic variation. They are effectively our only source of knowledge of the Irish language at a crucial period in its historical development shortly before and around the middle of the 1st millennium A.D., when it underwent most radical transformations within the very short time span of two to three hundred years. Primitive Irish in Ogam script resembles Old Irish as much, or as little, as Latin resembles French, even though in the case of Irish only around three centuries separate the two stages of the language.

What caused the language to change so dramatically within such a short time is historically unknown. One possible cause is contact-induced change, brought about by language replacement via a rapid shift within a few generations from one language to another, in this case from an unknown language, most probably non-Celtic and perhaps non-Indo-European, to a Celtic language that itself was transformed from a language with ancient Celtic characteristics to a language with the typical characteristics of a New Celtic language, i.e. Goidelic/Irish. The changes did not happen in a vacuum. Structurally similar transformations affected languages in entire North-West Europe during the middle of the 1st millennium A.D., not only including the British Celtic languages, but also the Germanic and some Romance languages (GUPS = 'Great Upheaval of the Phonological System').

Ogams are effectively our only direct source of knowledge about this transition of Irish. Some of the most important prehistoric Irish sound changes can be observed in these forms, e.g. raising, lowering, apocope, syncope (cf. McCone 1996: 105–132; Garrett 1999), of which the inscriptions reflect the various stages of the linguistic transformations. Their relative dates derive exclusively from how much the word forms have progressed phonologically. The various stages in the evolution allow in turn to define relative chronological periods. For instance, Ziegler (1994: 36–52) defines four major stages, whereas Sims-Williams (2003: 334–341) operates with a more fine-grained system of 15 sub-periods within four larger periods, which sometimes diverge from Ziegler's. Those few cases where names can be identified with historical persons, or where inscriptions can be dated archaeologically, allow a calibration of the linguistic stages.

In rare cases, Ogam inscriptions reveal phonological developments or features that would not be recoverable without their evidence. The fact that short *o* in final syllables became *a* in prehistory would be impossible to recover from Old Irish. Occasionally, words in Ogam feature non-etymological vowels that break up consonant clusters. Eska 2010–2 argues that these are not engravers' errors but early evidence for subphonemic svarabhakti that does not find expression in Old Irish.

At the same time, a number of other crucial phonological developments that also took place during the GUPS cannot be represented in Ogam. For instance, changes such as the above-mentioned apocope and syncope had lenition and palatalisation of consonants as concomitant effects. Ogam has no way of representing lenited and palatalised sounds. Their presence must be inferred indirectly. Also, the initial mutations, which are so characteristic of Irish, have no graphic representation on Ogam.

Because of these substantial changes during the Ogam period, it is practical to distinguish between the Primitive Irish at the beginning of the Ogan period ('Early Primitive or Early Ogam Irish') and the form of the language towards the end ('Late Primitive or Late Ogam Irish'), when the language has become very close to the Old Irish.

Phonology

Early Primitive Irish had a fairly straightforward phonological system that consisted of 13 basic consonants, most of them also with a geminate counterpart, two glides, and five vowels, all of which stood in a binary length opposition. Apart from the length oppositions, all sounds could be expressed in the Ogam writing system.

Table 1   Consonants of Early Primitive Irish

	plosive	nasal	fricative	glide	liquid
bilabial	b b:	m m:		w	
dental	t t: d d:	n n:			l l: r r:
alveolar			s s: (= sᵗ)		
palatal				j	
velar	k k: g g:		x		
labiovelar	kʷ kʷ: gʷ gʷ:				

x is an allophone of the non-dental plosives before *t* and *s*. The lack of *p*, lost in the Common Celtic period, creates a gap in the phonological system. In loanwords, *p* is substituted by the nearest sound available, the labiovelar *kʷ*, e.g. VulgLat. *primiter* 'priest' → PrimIr. QRIMITIR.

Table 2   Vowels of Early Primitive Irish

	front		back
close	i i:		u u:
mid		e e:	o o:
open		a a:	

In addition to the ten vowels, there are three diphthongs, *ai̯*, *oi̯* and *au̯*.

Towards the end of the Primitive Irish period, at the beginning of Old Irish, this system had been transformed into a complex system of 45 consonants and 11–14 vowels, plus *c*. a dozen diphthongs. Most of the crucial oppositions within the consonant system (fricatives vs. plosives, palatalised consonants, geminated sounds) cannot be adequately expressed in the Ogam writing system.

Table 3   Consonants of Old Irish

	plosive	nasal	fricative	liquid
labial	p b pʲ bʲ	m mʲ β̃ β̃ʲ	f β fʲ βʲ	
dental	t d tʲ dʲ	n: n n:ʲ nʲ	θ ð θʲ ðʲ	l: l l:ʲ lʲ r: r r:ʲ rʲ
alveolar			s sʲ (= ʃ?)	
velar	k g kʲ gʲ	ŋ ŋʲ	x ɣ xʲ ɣʲ	
glottal			h	

Table 4 Vowels of Old Irish

	front		back
close	i iː (y)		u uː
	eː		
mid	e (œ)	ə	o oː
	(ɛː)		
open		a	ɑː

Morphology

Words on Ogam inscriptions consist almost exclusively of personal names in the genitive singular, and those names are almost exclusively masculine, e.g. CUNAMAQQI AVI CORBBI 'of Conmac descendant of Corb' (CIIC 162). A very small number of inscriptions appear to be in the dative case, i.e. dedicated to the recipient, e.g. BIGU MAQI LAG['for Bec, son of of Lag[' (CIIC 276; MAQI 'son' is in the genitive, however).

There is no morphological variation observable in the corpus aside from the one that is a consequence of phonological changes. Three stages of phonological development can be distinguished for the endings: 1. the earliest period when all sounds are still retained in final syllables; 2. second, loss of final consonants (usually -*s*); 3. the final period with complete attrition of all final syllables except ones which originally consisted of a long vowel followed by a consonant. This is illustrated by the variation LUGUDECCAS (CIIC 263) ~ LUGUDECA (CIIC 286) ~ LUGUDEC (CIIC 4) whose endings show consecutive stages of the regular loss of final syllables. The genitive singulars of Ogam:

	stage 1	stage 2	stage 3	Proto-Celtic
o-decl.	-I	-Ø	-Ø	< *-ī
ā-decl.	-IAS/-EAS	-IA/-EA	-E/-A	< *-i̯i̯ās << *-ās
i̯o-decl.	-I	-I	-I	< *-i̯i̯ī
i̯ā-decl.	-IAS/-EAS	-IA/-EA	-E	< *-i̯i̯ās
u-decl.	-OS	-O	-O/-A	< *-ou̯s
i-decl.	-OS	-O	-O/-A	< *-oi̯s (?)
cons.decl.	-AS	-A	-Ø	< *-os
n-decl.	-ONAS	-ONA	-ON	< *-onos

Around a dozen examples display the ending -AIS/-AI, which seems to belong to i̯o-stem nouns or, perhaps, to i-stem nouns, but a fully satisfying explanation is still lacking (Ziegler 1994: 55–58). Other case endings are extremely rare. The o-stem genitive plural is attested once in TRIA MAQA (stage 2) 'of the three sons'. Possible examples of nominative singular are ENIGENA (ā-stem; stage 1 or 2), unless it reflects an archaic genitive in *-ās, and perhaps in TRENAGUSU (u-stem; stage 2), unless it is a spelling for the genitive in -OS. Possible examples of the o-stem dative singular are AMADU, BIGU (stage 1 or 2).

Compound names of the inherited Indo-European type are very common among the names, but simple names, hypocoristics and monomial formations, can be found beside them as well. The names are analysed etymologically in the lexicon section of Ziegler (1994: 121–252); their morphology is discussed in detail in McManus (1991: 101–118) and in Ziegler (1994: 66–89).

Syntax

Ogam inscriptions reveal nothing about syntax, apart from the fact that dependent genitives follow their head nouns, e.g. COILLABBOTAS MAQI CORBBI MAQI MOCOI QERAI 'of Cóelboth, son of Corb, son of the sept of Cíar' (CIIC 244). This conforms with the word order of the better attested later stages of Irish. However, in the case of patronymic formulae, the occurrence of the head, the individual's name, before the dependent noun, the father's name, could be pragmatically motivated because of the higher salience of the individual, and so cannot be used as a strict proof of head-dependent marking.

Lexicon

Practically no word classes apart from nouns are attested. Only once is a numeral, the genitive of 'three' TRIA attested. KOI, probably meaning 'here (lies)' is a formula word restricted to early stones in Ireland. Appellative nouns outside of personal names are extremely rare. The few words that are found with some frequency are, first of all, the word for 'son' MAQI in numerous historical permutations. Depending on the age of the stone, this can be written in a number of different ways: MAQI is the oldest spelling, but MAQ with loss of the ending is found on later stones, as well as MAC, which shows that the sound $*k^u$ (written Q) had become plain k (written C) by that time. These changes can also give rise to the hypercorrect spelling MACI on later stones. In all variants, the second consonant can also be spelt double, allowing for eight different spelling variations of this word, not counting a few sporadic other variants (Ziegler 1994: 204). Only once is the genitive plural of 'son' found: TRIA MAQA 'of the three sons'.

The next-commonly occurring word is MUCOI (again in many permutations), meaning something like 'from the sept' (McManus 1991: 119–120; Ziegler 1994: 211–212), followed by AVI 'grandson' (Ziegler 1994: 132). One element that recurs a few times, but never outside Ireland, and only on late stones, is ANM (Ziegler 1994: 128–129). It could be the word for 'name' or, perhaps, for 'soul'. Another word for family relations, NIOTTA 'nephew', occurs twice (Ziegler 1994: 215). CELI 'client' has five attestations (Ziegler 1994: 148). All other nouns occur only once, ATAR 'father', INIGENA 'daughter', MEMOR 'memory', QRIMITIR 'priest', VELITAS 'poet'.

Languages other than Irish

A number of puzzling inscriptions from Scotland may contain Ogam inscriptions that are not in Irish, but in a local language. Although legible, they defy interpretation. They are suspected to be in the Pictish language, an ancient and early medieval language spoken in Scotland, and possibly a member of the British-Celtic language family, but very little can be said about them.

1.5. The texts

Ogam inscriptions are traditionally transliterated in capital letters. The inscriptions consist almost exclusively of personal names in the genitive singular. These names are, with two or three exceptions in Wales, exclusively masculine. It has not been possible so far to determine the purpose of Ogam inscriptions beyond all doubt, but it is most likely that they are primarily funerary. Arguments in favour of this notion are that the inscriptions only record personal names, and that there are no repetitions of names, i.e. each stone is individual. The stones seem also to have served secondary purposes. Sometimes they can be found on historical boundaries between regions, which makes it likely that they were also erected with the purpose of boundary markers in mind, or that they were later reinterpreted for such a function. In an extended sense, they may also have served as legal documents (cf. McManus 1991: 163–166). Apart from minor fashions in the use of formula words, such as ANM 'name' or KOI 'here', there seems to be no development discernible in the use of Ogam.

Types of supports

Ogam inscriptions are almost exclusively found on upright stones and are by their size and nature intrinsically public. 'Public' is here meant in the sense that the purpose of writing is not of a personal nature that only includes the creator of the text, as, for instance, in note-taking, or a specific addressee, as in the case of letters, but that the inscription is visible and accordingly 'speaks' to anybody who sees it, even to those who cannot actually read it. The medium itself is already a message. Ogam stones range in height from around half a metre to man-size or

occasionally higher. The tallest known exemplar is CIIC 66 from Faunkill and the Woods with 4.7 metres. Fragments can measure only a few centimetres. The texts are preponderantly inscribed along the edges of the stones, usually running from left-hand bottom upwards, across the top, and down to the right-hand bottom, although variations in the arrangement can occur. Occasionally, inscriptions are found on the face of a stone, in which case usually a base-line is added to imitate an edge along which the letters are arranged. This arrangement appears to be influenced by scholastic usages of Ogam.

Other types of supports (e.g. silver brooch, spindle-whorl, knife handle, comb, etc.) are extremely rare.[3] They are known from Ireland, Scotland, and Northern England and typically belong to the period of 'scholastic' productions of Ogam inscriptions in the later Old or Middle Irish periods. Unlike the bulk of Ogam inscriptions, these types of support attest to a more private outlook in writing. Early medieval narrative texts make occasional mention of the use of Ogam on wooden sticks for everyday writing purposes (McManus 1991: 157–163), but this has not so far been corroborated by archaeological finds, even though the conditions in Ireland, for instance in bogs, would be favourable to preserving such objects. It is possible that these literary passages are medieval antiquarian fictions.

In the scholastic or antiquarian Ogam tradition from the 8th century onwards, Ogam appears occasionally in manuscripts, however, not as a regular script, but with an explicitely demonstrative or ornamental purpose, quite patently written by the scribes for their own amusement, or as a possibility to show off their education, or to convey a message that is only accessible to the initiates. Scholastic Ogam text displays a very different orthography from orthodox Ogams, namely an orthography that follows the rules of Old Irish in Latin script. Tell-tale signs are the use of the letter *h* to indicate lenition, which is never so done in authentic Ogam, and of the vowel *i* to indicate palatalisation. In scholastic Ogam the direction of writing is indicated by an arrow, and the vowels, which are notches on the stones, have been replaced by transverse perpendicular strokes. Also, spaces between letters are more systematically employed than in orthodox stone inscriptions.

The relationship of Ogam with inscriptions in other scripts and languages

From the 8th century, the half-uncial Roman script largely replaces Ogam as a medium for monumental stones. Old Irish Roman-script inscriptions consist exclusively of commemorative inscriptions with a very limited inventory of formulae. Whereas Ogam inscriptions can be found dotted across the country, with a centre of gravity in southern Ireland, the Roman inscriptions are closely connected with monastic centres, e.g. Clonmacnois. The Roman inscriptions of early medieval Ireland have never been systematically studied. Their extent and number is unknown.

In Ireland, Ogam stones are almost exclusively monolingual in Irish. Three or four Ogam stones of the traditional type (CIIC 19, 176, 186, doubtful 170, cf. McManus 1991: 61) are 'bilingual' Irish and Latin, but bilingual only in the sense that they contain inscriptions in the two languages. In fact, there do not appear to be obvious connections between the texts. Very occasionally, Ogam inscriptions of the scholastic type accompany Roman-style inscriptions (McManus 1991: 131). Ireland (CIIC 54, 11th century) and the Isle of Man (CIIC 483, 12th century) contain also very late examples of stones with Runic and Ogam inscriptions.

The situation is very different in Britain. Of the slightly under 50 Ogam inscriptions that are known from the area of the former Roman province of Britannia, only five stones are monolingual Irish. The others are bilingual and usually contain Latin or Old British versions of the Irish text. Only rarely do they differ in content, but in many cases the Roman-script version is fuller or more prominent, and can be regarded as the main message of the inscribed stone. The Ogam versions occupy literally a marginal place on the stones. The texts belong largely to the early period of Ogam writing, as endings are typically preserved. The British stones show less variation in the types of affiliations than the Irish ones do. Preponderantly, son–father relationships are found. Finally, only in the Welsh stones we do find a number of inscriptions that are dedicated to women.

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[3] See: https://de.wikipedia.org/wiki/Kategorie:Ogham-Inschriften_auf_Kleinfunden.

1.6. The writing system

Aside from literary fictions, no reliable historical evidence exists about the place and date of the invention of Ogam. It is commonly believed that it was invented by someone, perhaps in Britain, who was familiar with Latin writing and the Latin grammatical tradition, but it is impossible to specify a place. The motivation for the invention may have been to give the Irish language a cultural status of equal height alongside Latin. At least in its graphic inventory, the script is uniform, and there appears to be no period of experimentation. This points to the creation of Ogam as a solitary, punctual event in history by a single individual.

Even if they are ultimately inspired by it, the Ogam letters are not just a cipher for the Latin writing system, i.e. they are not simply the Latin letters transposed into an abstract code of notches and strokes. Instead, the chosen values of the Ogam letter seem to be the result of a competent phonological analysis of the target language. Letters of the Latin alphabet which represent sounds that are lacking from Primitive Irish, such as P or X, have been discarded, and for phonemes of Primitive Irish which cannot be adequately represented by a single letter in the Latin script, separate letters have been created in Ogam, e.g. Q and G^w (the latter traditionally transliterated NG, but see Sims-Williams 1993: 145–151). Another remarkable trait deviating from Latin is that Ogam makes a distinction between the vowel U and the consonant V (Sims-Williams 1993: 140–143).

One way to approach the date of Ogam is to make chronological inferences from the phonological system that it expresses. Ogam is unsuited for the phonological system of Old Irish from *c.* 600 onwards. If we start from the premise that Ogam was created for a specific historical phonological profile of Irish, then it must reflect the stage of Primitive Irish before the rise of the dichotomy between the neutral and palatalised consonant series, and before the phonemisation of lenition. In other words, Ogam must have been devised at a stage before the two most momentous soundchanges, namely apocope and syncope. The earlier of these, apocope, has been approximately dated to 500 A.D., the later one, syncope, to the mid-6th century. The oldest Ogam inscriptions do in fact bear this out quite nicely. It is also evident in the distinction between the two letters Q and C, reflecting etymologically correctly Proto-Celtic [k^u] and [k], which very soon afterwards fell together indiscriminately as C [k]. In inscriptions from the 6th century onwards, the two are confused, an unmistakable chronological indicator. A lot of considerations therefore conspire to the early 5th century as the origin of Ogam.

However, the implicit postulate of this is that at the time of its creation the Ogam writing system mirrored perfectly the phonology of its target language, which is not more than a hypothesis. Even if the consonant signs of Ogam were able to represent the language of its time perfectly, the vowels certainly did not. Ogam cannot graphically express the crucial distinction between long and short vowels (nor is an attempt made at distinguishing between single and geminate consonants), and therefore it was never a perfect writing system in the first place.

As regards its shape, Ogam is a curious script that consists of strokes and notches engraved on the edges of objects, typically standing stones. When edges are missing, occasionally a straight line can serve as an artificial edge. As a consequence of the exposed position of the inscriptions on that part of the stone that is most vulnerable, namely the edge, very often the texts are weathered and letters are difficult to read or have been lost.

The letters are arranged in four groups for which the Irish term *aicme* [ˈakʲmʲe], pl. *aicmi* [ˈakʲmʲi] 'class' is used. Each class is characterised by a specific type of stroke or notch which occurs one to five times, depending on the letter. The native word for 'letter' is *fid* [ˈfʲið], pl. *fedae* [ˈfʲeðe], which also means 'tree, wood'. The first *aicme* has strokes perpendicular to the right of the edge, the second aicme transverse across the edge, and the third perpendicular to the left. There is grammatical thinking behind the arrangement of the script since all vowels are grouped together in one *aicme*, the notches, whereas all consonants are represented by strokes. Within the consonant *aicmi*, there is no really evident ordering principle, but the first *aicme* contains many continuants, whereas dentals and voiceless gutturals are all in the third *aicme*,

and voiced gutturals in the second *aicme*. From the names of three letters of the first *aicme*, B L N, the Ogam alphabet is commonly referred to as *Beth-Luis-Nin*.

⊤ Beith 'birch' ⊤⊤ Luis 'rowan?' ⊤⊤⊤ Fern (V) 'alder ⊤⊤⊤⊤ Sail 'willow' ⊤⊤⊤⊤⊤ Nin 'ash?'	╱ Muin 'vine?' ╱╱ Gort 'ivy?' ╱╱╱ nGétal (Gʷ?) 'wounding' ╱╱╱╱ Straif (St?) 'sloe?' ╱╱╱╱╱ Ruis 'elder-tree?'	⊥ Úath (H?) 'white-thorn?' ⊥⊥ Dair 'oak' ⊥⊥⊥ Tinne 'holly, elder' ⊥⊥⊥⊥ Coll 'hazel' ⊥⊥⊥⊥⊥ Ceirt (Q) 'apple-tree?'	┼ Ailm 'pine?' ┼┼ Onn 'ash' ┼┼┼ Úr 'heath?' ┼┼┼┼ Edad 'aspen?' ┼┼┼┼┼ Idad 'yew?'

Fig. 1 The Ogam sequence of letters

The most common letter names display an arboreal bias (fig. 1), but this may be more accident than design: not all of them refer to trees, and several alleged tree-names are in fact dubious and unattested outside of the Ogam context. Besides, there is a large number of alternative names for the letters (McManus 1988; 1991: 34–39).

In the 'post-orthodox' period, more signs were added to the Ogam signary (fig. 2). They are called *forfeda* (earlier *forfedae*) [ˈforfʲeðe], sg. *forfid* [ˈforfʲið] 'extra-letters' (McManus 1991: 141–144; Sims-Williams 1992). Their names tend to be even more obscure than those of their orthodox siblings. They were created to cater for sounds or letter combinations that had become important in Old Irish, but which had been absent from Primitive Irish. Even from their shapes, which do not achieve the elegant economy of the original set of letters, it is evident that the *forfeda* are intrusions to the system. They are found – albeit rarely – on stones in Ireland and in Pictland, but they are more at home in the scholastic, antiquarian tradition of the middle ages.

✗	Éabhadh (EA/EO)
◊	Ór (OI/OE)
⊔	Uilleann (UA/UI)
✖	Ifín (IA/IO)
–	Peith (P)
▦	Eamhancholl (Æ)

Fig. 2 The *forfeda* (with approximate graphic value)

Consonants are commonly found in geminate spelling. Despite claims to the exact opposite, there seems to be a slight statistical correlation between non-lenited consonants and orthographic gemination (Harvey 1987a). Such a spelling convention is reminiscent of the later orthographic practices of Old Irish in the Latin alphabet and could be indicative of influence from a parallel Roman-letter writing tradition. Abbreviations of names and generic nouns appear not to be used in the inscriptions – or if they are, they are not indicated by any graphic means.

The transliteration of Ogam into Latin letters is easy and unambiguous for all commonly used signs. There is one corresponding Latin letter for each of the Ogam letters. The transliteration rules have been transmitted in medieval manuscripts. There is only minor uncertainty regarding some letters, which is, however, of no real practical importance. The letter *Fern* can be transliterated either as V, which is the modern practice, or as F, which is the pre-modern practice. This has to do with the fact that the sound $*u̯$, for which the letter had originally been devised in Early Primitive Irish, regularly became *f* at the beginnings of words by Old Irish. The letter *nGétal* is transliterated NG in the medieval tradition, but it is accepted today that it represented the voiced labiovelar g^u originally (Sims-Williams 1993: 145–151). Again, this sound was affected by a general change during the Primitive Irish period, cf. OIr. *gétal* 'wounding' < PrimIr. $*g^u antlo$-. In the case of the letters *Straif* and *hÚath*, their original value is unclear. Z and H are their values in the medieval tradition. The three letters NG, Z, H have it

in common that their value cannot be ascertained on the basis of the orthodox inscriptions: Z and H never occur in inscriptions at all, and NG is only found twice in unclear contexts. All other signs are well attested and uncontroversial.

1.7. Personal onomastic formula

The sole function of Ogam stones is to record an onomastic formula. All elements of the formula appear in the genitive case. The formula begins with the name of an individual, practically always male, followed by the name of his father or, more rarely, by the name of the grandfather or a further-removed ancestor (see Ziegler 1994: 27–29 for the variants of the formula). Ancestors can also be females. Whether they are mothers, grandmothers or mythical ancestor figures cannot always be determined, e.g. MAQQI-ERCCIA MAQQI MUCOI DOVINIA 'of Mac-Ercae son of from the sept of Duibne (fem.)' (CIIC 175). In this case, the father is not actually named, but referred to only by his tribal affiliation. Bare individual names are rare, e.g. CUNOVATO 'of of Conath/Connad (?)' (CIIC 11). The name of the recipient of the stone is in most cases followed by a generic noun that indicates his relationship to the ancestor, most commonly the word for 'son'.

The basic formula can appear in a great number of variations. If grandfather or rather an ancestor further removed in time is indicated instead of the father, the element AVI 'grandson, descendant' occurs, which corresponds to OIr. *aue*, *ua* and the Modern Irish name element *Ó*, or more commonly the word MUCOI. This is probably identical with the fossilised Old Irish word *moccu*. It is believed to be a gentilic term meaning 'belonging to the sept of' and contrasts with the strictly parentilic terms *mac* and *aue*. The decline of the system where family affiliation was the prime concern is said to have occurred between the 7th and the 8th centuries, but MAQI 'son' is preponderant already in the early Ogams.

Although it is comparatively rare that the individual's name is followed by two ancestors, the various elements can be combined into more complex structures which amount to mini-genealogies, e.g. CUNALEGEA MAQI C[ ]SALAR CELI AVI QVECI 'of Conlang son of *C[ ]salar, client of the descendant of *Ciche (?)' (CIIC 275).

In all of the Ogam corpus, only two or three women occur as recipients of the inscriptions, all of them found on stones in Wales. The female counterpart to MAQI is INIGENA 'daughter', OIr. *ingen*, e.g. INIGENA CUNIGNI AVITTORIGES 'of the daughter of Cuinén, namely Auitoria' (CIIC 362). Despite the complete lack of female recipients in Ireland, female and feminine names are not absent from the Irish stones. Female names are found not uncommonly as ancestor figures in inscriptions with the formula AVI or MUCOI (see above).

Illustration: Ogam stone CIIC 187 from Cill Maoilchéadar / Kilmalkedar, Co. Kerry, Ireland. The inscription reads ANM MAILE-INBIR/ MACI BROCANN 'name/inscription of Máel Inbir son of Broccán.
Foto: © Nora White (Ogham in 3D: https://ogham.celt.dias.ie/stone.php?lang=en&site=Kilmalkedar&stone=187._Kilmalkedar&stoneinfo=inscription)

2. Current problems in the study of the language and the epigraphic culture, and main future challenges

2.1. Linguistic problems

The study of words and names from Ogam inscriptions forms an integral part of the diachronic study of the phonology and the nominal morphology of Irish, especially of Old Irish. As such, the material figures prominently in handbooks and diachronic grammars of Irish, for example in Thurneysen 1946, McCone 1996, Sims-Williams 2003, to name but a few, and

especially in onomastic studies of Irish, e.g. Uhlich 1993, Ziegler 1994. Due to the character of the sources, Ogam inscriptions play no role in the discussion of the verbal morphology and of the syntax of Irish. Likewise, because of the limitation of the corpus in size and in genre, Ogam material makes only limited appearances in etymological studies of Irish. Although there are many specific problems associated with the study of Primitive Irish as a language, the nature of these problems is of a very different order from that encountered in the case of other fragmentarily attested languages. Where information about grammatical features is missing, these gaps can usually be filled by backward reconstruction on the basis of the well-attested later stages of the language.

No regional linguistic variation has been observed in the Ogam corpus so far. Any variation that is found (and there is a lot) is *a priori* mapped onto diachrony. The fact that the inscriptions are so heavily skewed towards one region (the south and south-west of Ireland), and that no good external methods for dating exist, complicates all diatopic research. Progress in the study of epigraphic or archaeological aspects of the stones, coupled with greater insights into the regional distribution and spread of the inscriptions, and further identifications of names with historically known individuals may perhaps allow to identify regional linguistic differentiation in the future. The big caveat in this context is that the language of the slightly younger Old Irish period is notoriously dialectally undifferentiated, or, to be more precise, no secure dialectal markers have been identified within the linguistic variation of Old Irish. This *may* mean that no dialects were present at that stage of the language – with according repercussions for the preceding Ogam Irish stage, although alternative explanations for the state of affairs are possible. No consensus has been reached on this issue yet. Diatopic variation in the Ogam corpus may be a worthwhile research question to pursue.

A more fundamental language problem lies on the fringes of the 'Ogam world' and has to do with the Ogam stones in Scotland. The difficulties start with a simple question like in what direction to read the inscriptions, and they end with the fundamental uncertainty about the language or languages in which the texts are written.

2.2. Epigraphic problems
The question of the precise where and when of the invention of Ogam remains unanswered and will perhaps never be solved. Probably the primary – and sole – model for the use of writing on standing stones in Ireland was that of Roman literacy as practiced for public purposes in the Roman parts of the neighbouring island of Britain (cf. McManus 1991: 6–31). In fact, it has been suggested that Ogam was invented in Britain and not in Ireland. Nevertheless, the inspiration was transformed in a remarkably creative way into something that does not bear any superficial resemblance with the model any longer. Whoever first used Ogam probably lacked the practical experience that Roman stonemasons had with regard to the availability of suitable materials and with the techniques of engraving, and cruder versions of these were applied to the Irish inscriptions. The uniformity of the writing system from the earliest time without evidence for an early period of experimentation points to the creative act of a single person. This special feature of Ogam would warrant a closer look in a wider comparative-typological study of the emergence of writing systems, confronted with other scripts invented by individuals (e.g., Glagolitic by Kyrillos and Methodios, the Cherokee alphabet by Sequoyah), as opposed to scripts that arose through a long process of emergence in a community of practitioners. This may help to clarify the relationship of Ogam to other writing systems around the time.

Given the very narrow functional purpose and the very restricted textual genre, most types of sociologically informed research that can be carried out for other ancient epigraphic cultures are inapplicable to Ogam. Inasmuch as there were no urban agglomerations in medieval Ireland, the question of a public vs. a private use of writing becomes almost meaningless – to some extent, this was no opposition at all. The only possible opposition is that between inscriptions placed inside or outside buildings or similar structures. With the exception of a tiny number of late inscriptions on smallish objects, all known inscriptions have an exclusively outward-looking character, that is to say they are found on large stones, often very large, 'in the countryside'

where they must have been visible to a large number of people. Today, Ogam stones are sometimes found for instance inside church walls or as part of other structures (e.g., the lintel in Uaimh na gCat, Rathcroghan). Such usages are probably secondary uses of the stones, but a more focussed functional study of this question might prove useful. Research into potential private usages depends crucially on new archaeological discoveries. It needs to be stressed, though, that any new discovery of an Ogam inscription that does not resemble very closely the model of the 400 known stones would be a sensation in itself.

Their precise function of Ogam stones is not agreed upon: the fact that all names found on Ogams are unique supports the idea that they were erected for a sepulchral function and not purely for a demonstration of influence, wealth or power. In the latter case one could expect to encounter the same name on several stones at least in a number of cases. Ultimately, however, Ogam stones and Ogam inscriptions (which need to be studied separately in this regard) may be multifunctional in that they probably served several different medial, social and legal functions, at the same time or at subsequent stages. Some Ogam stones were certainly reused as territorial markers. Since it cannot be assumed that literacy in the Ogam script extended beyond a very small segment of society, the primary message may not have been encoded in the text, which would have been accessible only to a limited number of initiates, but rather in the act of writing and in the text-bearing object as such.

Being of rock, the objects cannot be dated without circumstantial evidence. This can be archaeological evidence (very few have been excavated; often the stones have been removed from their original position), or linguistic information deriving from the stage of language development observable in the inscription. Other potentially useful approaches may be palaeography (although little is known so far about stylistic distinctions in letter shapes), linking names with persons that are known from historical sources (especially annals and genealogies), insights into the geographic diffusion of Ogam writing, or maybe even dating of the lichen growing inside the strokes and notches (Harvey 2001: 38). Each of these methods can probably be refined when better data is available. Arriving at a reliable chronology, and especially being able to identify reliably the earliest inscriptions, would perhaps permit more insights into the time, place, and the cultural context of the invention of Ogam.

The relationship of Ogam writing and the Latinate writing tradition of Ireland is not clear in the details. On the surface, the two traditions seem to exist in two entirely distinct worlds, but it has been suggested that some idiosyncracies of the spelling of Old Irish in the Latin script have their roots in Ogam usage (Harvey 1987a; 1987b). There appears to be also only a very limited continuation of the epigraphic tradition of Ogam in the Latinate style. The number of large stones, which are so typical of Ogam, is very small in the Latin epigraphic tradition of Old Irish. On the other hand, the very formulaic nature of Old Irish inscriptions is reminiscent of Ogam.

2.3. Writing system problems

Unlike other writing systems, no period of early development and experimentation is observable in the orthodox Ogam corpus – or the relevant features have not been identified yet. Since the meaning of the Ogam signs has always been known, it never had to be deciphered, and their reading poses no systemic problem, outside of practical difficulties that are created by physical damage to the objects. A minor challenge may be posed when trying to read occasional cryptic Ogams, i.e. Ogam inscriptions that were deliberately written in an obscure code, probably for entertainment or as an intellectual game.

There are no controversies over the meanings of the core of the character set. As for the very marginal characters NG, Z, H, maybe future discoveries of very early inscriptions that feature these letters may help to clarify some of the questions.

A major question is the original support for Ogam inscription. Although almost all Ogam inscriptions are found on large stones, the nature of the script suggests itself naturally to be used on the edge of wooden sticks or similar, more easily workable objects. This receives some support from the literary record where the use of Ogam on sticks occurs as a narrative motif. However, no such objects have so far been found. This is all the more significant as medieval

wooden objects are regularly salvaged from the ground by archaeologists, since the specific soil conditions especially in bogs help to preserve wood for millennia in Ireland.

2.4. Edition problems

The main printed corpus, Macalister's *Corpus Inscriptionum Insularum Celticarum* (CIIC) from 1945, is outdated since the number of stones has constantly grown in the more than seventy years since its appearance. Macalister's corpus provides the most widely used system of siglas. Although the book is arranged in a regional order, the siglas are strictly sequential. Consequently, newly found stones cannot be inserted into the sequence where they would belong geographically. There is no system of siglas for stones that have been discovered since. CIIC includes not only Ogam stones, but any early medieval Celtic inscription from Ireland and Britain, which dilutes the focus somewhat. Almost all stones are illustrated, usually by Macalister's original drawings, occasionally by black-and-white photos of a quality that does not meet modern requirements.

Digitisation of the corpus is in progress through the *Ogham in 3D* project, and it is done on a very high technological and scholarly standard that can easily serve as a benchmark for comparable undertakings elsewhere. The main problem is of a practical nature: the project is carried out by a single person who is dependent on sporadic funding. Given that the work of 3D-scanning is very labour- and time-consuming, progress is slow. If AELAW is to be continued in some form, it is highly advisable that the Ogham in 3D project should be included, in order to help create funding streams to keep the work going. With the growth of *Ogham in 3D*, reference should be made to this resource. While this system allows for an unambiguous identification, it may appear a bit daunting to persons who are not familiar with Irish placenames. Perhaps a practical, region-based shorthand system of sigla should be developed.

It is traditional to represent Ogam texts only in Latinate transcription and not to use Ogam character fonts in editions, except in the rarest circumstances. No diacritics need to be used to render ordinary Ogam characters in the Latin script. Since Ogam characters (including the *forfeda*) were added to Unicode already in 1999 (version 3.0), there is no practical obstacle to make use of Ogam fonts in modern editions as well. The Unicode block for Ogam is U+1680–U+169F. The Ogam characters are displayed in conventional desktop computer applications, as well as on common social media platforms, but the font is not included in the standard Unicode fonts that are pre-installed on Windows computers.

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Illustration: Ogam stone CIIC 241 from Cill Bheanáin / Kilbonane, Co. Kerry, Ireland.
Right angle: B[AID(?)]AGNI MAQI ADDILONA "of Báetán son of *Aidliu"
Left angle: NAGUN[I(?)] M[U(?)]C[O(?)] B[AI(?)]D[A]N[I(?)] "of *Nugne (? for Mugne?) from the sept of Báetán"
Face of stone: NIR[???]MN[I]DAGNIESSICONIDDALA/ AMIT BAIDAGNI (unclear)
Photo: © Nora White (Ogham in 3D: https://ogham.celt.dias.ie/stone.php?lang=en&site=Coolmagort&stone=241._Kilbonane)

Illustration: Ogam stone CIIC 304 from An Chreathánach Theas / Crehanagh South, Co. Waterford, Ireland.
Reading: VOCAGNI MAQI CUR[I]T "of *Fochán son of Cúrid (?)"
Photo: © Nora White