Cisalpine Celtic literacy

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Abbreviations

AE   *L'Année Épigraphique.*

CIE   *Corpus Inscriptionum Etruscarum*, ed. Carl Pauli et al. (Berlin 1885–).

CII   *Corpus Inscriptionum Italicarum*, ed. Ariodante Fabretti (Augusta Taurinorum 1867)..

CIIC   *Corpus Inscriptionum Insularum Celticarum*, ed. Robert A. S. Macalister (Dublin 1945).

CIL   *Corpus Inscriptionum Latinarum*, ed. Theodor Mommsen et al. (Berlin 1863–).

ET/ET²   Gerhard Meiser: *Etruskische Texte*, 2 vols (Hamburg 2014).

Hesp   Javier de Hoz et al. (eds): *Hesperia. Banco de datos de lenguas paleohispánicas* (2005–), URL: https://hesperia.ucm.es.

Im.It.   Michael H. Crawford et al. (eds): Imagines Italicae*: A corpus of Italic inscriptions*, Bulletin of the Institute of Classical Studies supplement 110, 3 vols (London 2011).

InscrAqu Johannes Baptista Brusin (ed.): *Inscriptions Aquileiae* (Udine 1991–1993).

IPSTS   *Index of potters' stamps on terra sigillata 'Samian ware'*, ed. Felix Oswald (Margidunum, East Bridgford, Notts 1931).

LexLep   *Lexicon Leponticum*, ed. David Stifter et al. (Wien 2009–), URL: https://lexlep.univie.ac.at.

LV   Giovan Battista Pellegrini & Aldo Luigi Prosdocimi: *La Lingua Venetica*, 2 vols (Padova/Firenze 1967).

MLH   *Monumenta Linguarum Hispanicarum IV, Die tartessischen, keltiberischen und lusitanischen Inschriften*, ed. Jürgen Untermann (Wiesbaden 1997), 349–722.

Ogham 3D Ogham in 3D, URL: https://ogham.celt.dias.ie.

RIG G/I   *Recueil des inscriptions gauloises I, Textes gallo-grecs*, ed. Michel Lejeune (Paris 1985).

RIG E/II/1 *Recueil des inscriptions gauloises II/1, Textes gallo-étrusques. Textes gallo-latins sur pierre*, ed. Michel Lejeune (Paris 1988), 1–54.

RIG L/II/2 *Recueil des inscriptions gauloises II/2, Textes gallo-latins sur instrumentum*, ed. Pierre-Yves Lambert (Paris 2002).

RIG M/IV *Recueil des inscriptions gauloises IV, Les legends monétaires*, eds Jean-Baptiste Colbert de Beaulieu & Brigitte Fischer (Paris 1998).

RIIG   *Recueil informatisé des inscriptions gauloises*, ed. Coline Ruiz Darasse et al. (2022–), URL: https://riig.huma-num.fr.

RIU   *Die römischen Inschriften Ungarns*, eds László Barkóczi, et al. (Amsterdam – Budapest – Bonn 1972–2001).

TIR   *Thesaurus Inscriptionum Raeticarum*, ed. Stefan Schumacher et al. (Wien: 2013–), URL: https://tir.univie.ac.at/.

Lexicon Leponticum – concept and implementation

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Abstract

The digital edition and etymological dictionary of Cisalpine Celtic, *Lexicon Leponticum* (LexLep), has now been online for thirteen years. I want to take this opportunity to take stock of what has been achieved so far, present the status of the site as of 2023, and cast a look into its future.

1. History

LEXICON LEPONTICUM was first created during the original LexLep project, which ran from 2009 to 2011 at the Department of Linguistics of the University of Vienna.[1] The project's initiator and director David Stifter and a team of graduate students[2] succeeded in setting up a Semantic MediaWiki system which was initially intended to function primarily as an etymological dictionary of the Cisalpine Celtic language(s) Lepontic/Cisalpine Gaulish; testing the software constituted a core project goal. The necessity of providing information like datings and provenance about the epigraphical sources themselves and of discussing reading variants – factors which are of supreme importance in the study of fragmentarily attested languages – soon led to the extension of the site's source section into a full edition of the inscriptions. Even though the data entered into LexLep was needs based on previous print editions (primarily MORANDI 2004 and SOLINAS 1995) and involved little original research beyond occasional autopsies and improved linguistic

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[1] Austrian Science Fund (FWF) project no. P21706 *An interactive online etymological dictionary of Lepontic.* In 2012, a six-month extension was funded by the Celtic Research Trust.

[2] Technical staff: Martin Braun, Marcel Schwarz; data entry: Michela Vignoli, Eva Lettner, Chiara Dezi, Anna Adaktylos, Corinna Scheungraber.

analyses, the wider scope of the site together with the unforeseen complexity of the technical aspects went beyond the project's means in terms of time and personnel. At the end of the project, LexLep was fully functioning as a system, but skeletal in terms of content. Though the site's search and statistics functions proved useful in addressing research questions concerning for example the use of the letter san (STIFTER 2010) and the development of writing direction within the corpus (STIFTER 2019: 104), LexLep did not achieve its full potential as a searchable online Digital Humanities tool.

After eight years in which activity on LexLep was restricted to the occasional addition of major new inscription finds (VS·1, VS·2, VR·21–34, BG·41.1–30), a thorough revision and extension of the edition began in 2020. The two-year project CCeLL – *Cisalpine Celtic Language and Literacy* led by myself at the University of Vienna[3] initiated the transformation of the site from a searchable data repository into an original edition based on the in-person re-examination and documentation of all inscriptions. In the course of the project, the entries for 177 inscriptions and their associated pages (archaeological sites, linguistic forms, etc.) were revised, completed and augmented by a commentary including a discussion and full list of references.[4] 32 inscriptions were added to the corpus.[5] 75 documents and specimens of seven coin types in 18 repositories were examined,[6] and new photographs of 61 documents were added to LexLep. The LexLep team would like to take this opportunity to thank the numerous colleagues in museums and monuments offices in Italy, Switzerland, Germany, Austria, France, the Netherlands and the UK who have been incredibly kind and helpful in answering questions about the whereabouts of objects and in hosting members of the LexLep team at their institutions.[7]

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[4] A list of publications which resulted from the work on the LexLep edition can be found at https://lexlep.univie.ac.at/wiki/The_Project\#Publications; see esp. SALOMON 2022 and 2023.

[5] A list of inscriptions in LexLep which are not included in earlier print editions can be found at https://lexlep.univie.ac.at/wiki/Concordance.

[6] A list of the examined documents can be found at https://lexlep.univie.ac.at/wiki/Property:date_autopsy.

[7] https://lexlep.univie.ac.at/wiki/The_Project\#Acknowledgements.

Work on LexLep will continue during a two-year Marie Skłodowska-Curie fellowship[8] conducted by myself and mentored by David Stifter at the University of Maynooth, starting in June 2023. One of the aims of the project CLINIAR – *Celtic Literacy in Northern Italy and the Alpine Region* is to complete the examination and documentation of the inscriptions and the revision of the entries, which will result in a fully annotated edition of the sources in combination with an exhaustive etymological dictionary.

2. Corpus

LexLep currently contains 510 inscriptions – a somewhat inflated number which is due to the fact that multiple sections of one document are counted separately. The number of documents (i.e. inscribed objects) is 435, and includes several subcorpora:

I. The corpus of Cisalpine Celtic inscriptions proper, i.e. inscriptions in a Celtic language written in the Lepontic alphabet (ca. 450 documents). Technically, many inscriptions cannot be assigned to the corpus based on strict linguistic or palaeographic criteria, being too short or fragmentary to permit a clear classification – a considerable number of pre-Roman graffiti are part of the corpus by virtue of their find place, dating, and/or general typological similarity to identifiably Celtic documents. LexLep proceeds in accordance with previous printed editions in this regard, including all documents which were considered relevant by Solinas (1995), Morandi (2004) and other scholars, and adding any material which was subsequently published as evidence of Cisalpine Celtic literacy.

II. Alphabetically and partly also linguistically Latin inscriptions which (potentially) contain Celtic language (i.e. onomastic) material (29 documents excluding the Latin parts of bilingual inscriptions). Here, again, LexLep follows previous collections in including such inscriptions as can be considered to be part of the pre-Roman epigraphical production due to their find context, palaeographic features and/or stylistic aspects; the

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large amount of Celtic onomastic material attested in Roman epigraphs from northern Italy is beyond the scope of the edition.

III. Alphabetically Camunic inscriptions which have been argued to be linguistically Celtic (3 documents).

IV. Alphabetically Venetic inscriptions which have been argued to be linguistically Celtic (5 documents) – again, the great number of Venetic inscriptions which contain etymologically Celtic names is not part of the corpus; this also goes for Raetic inscriptions.

V. Alphabetically and linguistically Etruscan and Sabellic inscriptions which feature Celtic onomastic material (10 documents) – included in full due to their comparatively small number.

VI. The 'Ligurian' inscriptions of the Lunigiana region (5 documents), which have been considered to be linguistically and/or alphabetically Celtic by some scholars (cf. the contribution of Bernard Mees in the present volume).

VII. (Potentially) linguistically Celtic documents from Carnia, Noricum and Pannonia, being negligible in number and technically 'Cisalpine' (3 documents, partly overlapping with group IV).

The sigla system of LexLep follows the principle introduced by Pellegrini & Prosdocimi 1967 (LV) for the Venetic inscriptions: a two-letter code for the find area followed by a sequential number. To distinguish North Italic inscriptions from other corpora, the manner in which area code and number are separated is different for each of them: a space for Venetic (Es 1), a middle dot for Cisalpine Celtic (CO·1), a hyphen for Raetic (SZ-1). In LexLep, the area code refers to an Italian province, Swiss canton, or national equivalent in other countries. LexLep assigns its sigla to inscriptions of all groups except V to ensure that all relevant documents can be referred to unambiguously, even when they are not (yet) part of another edition; multiple sigla for individual documents in different editions (e.g. LexLep SP·1 = ET² Li 1.3) as a result of slowly growing corpora and the expansion of editions are to an extent unavoidable.

3. Functionality

LexLep is constructed with the software Semantic MediaWiki. The data are organised into nine fundamental categories: inscriptions, the objects on which they are written, the sites and find spots[9] where these objects are from and the museums in which they are kept, the words and morphemes which are attested in the inscriptions, the letters which are used to write them, and the phonemes that these letters denote. Every item in one of these categories has its own page with the pertinent information and links to all immediately related pages. Information about the items is presented in two ways: basic data are encoded in a tabulated section on top, while the commentary provides a discussion, contextualisation, and references. The data in the table section is semantically annotated, allowing the automatic retrieval of information within the system, and is thus largely searchable. Simple searches are most easily conducted by either – for relations between items – using the lists of attestations on the individual item pages, or – for properties of items – by clicking on the name of a property, on whose pages maps and statistics are provided. Complex customised searches can be conducted via the search masks or the 'advanced search' button in the navigation menu. Search results can be retrieved in the formats JSON, CSV, RSS and RDF; individual pages can be downloaded in PDF and RDF format.

LexLep also provides a full bibliography whose entries link to the pages on which they are mentioned, and a concordance with past editions (PID, Tibiletti Bruno 1981, Solinas 1995, Motta 2000, Morandi 2004). The section entitled 'Cisalpine Celtic' contains overview chapters on a range of topics related to the study of the Celtic language remains south of the Alps.

To enable scholars to conduct detailed research into issues of palaeography, the characters and character variants which are used to write Cisalpine Celtic inscriptions – viz. the letters and punctuation signs of the Lepontic or Lugano alphabet and of the other involved writing

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[9] Sites are modern communities to which finds can be assigned unambiguously and uniformly (unless the find place is outright unknown), so that they can be displayed on a map. The category 'field name' covers more precise find spots – anything from an excavation or archaeological site to a literal field name – for documents where such details are known.

systems – are recorded as individual items. To each 'archigrapheme' (alpha, san, etc.) are assigned numbered image files which display the character variants; the files are semantically annotated and linked to the inscriptions in which they are attested. This avoids the issues which come with both downloadable and web fonts; it allows us to describe and classify the character variants more easily, and to make changes when new analyses cause a re-assessment of the data.

The core of the edition is the dictionary, which is split into two parts: the 'Dictionary of Attested Forms' (i.e. the list of words) and the 'Morphological Lexicon' (i.e. the list of morphemes). The Dictionary contains all Celtic linguistic forms which are or can be argued to be attested in the inscription corpus. Uncertainties regarding the reading, segmentation and analysis of inscriptions are taken into account by listing all plausible forms; all lemmata are defined as 'certain', 'probable' or 'uncertain'. The forms are not normalised, but appear in transliteration exactly as they are spelled in the respective inscription(s); any variation in spelling/phonetics or formation is reflected in separate lemmata. This avoids any distortion of the evidence through potentially flawed efforts at standardisation and interpretation – we do not understand the material sufficiently well to be able to standardise with any pretence of confidence. Inflected forms are also listed separately to enable the tracking of the attestation of inflectional endings. The Dictionary of Attested Forms thus serves as a word index more than as a reference work of Old Celtic languages such as the DLG or LEIA. The latter function is fulfilled by the Morphological Lexicon, which supplements the Dictionary by providing a list of attested or possibly attested morphemes in normalised Gaulish spelling. It includes lexical as well as derivational and inflectional morphemes which can be identified, compared with elements of Transalpine Gaulish or other Celtic languages and thus integrated into the larger context of Celtic historical linguistics, and which can thus be used to find specific linguistic elements in Cisalpine Celtic that are not masked by spelling quirks of the Lepontic alphabet. It also serves to create links within the Dictionary between the non-standardised attested forms which are related to each other.

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4. Outlook

Beside the extension and update of the LexLep edition in terms of content and functionality, future projects related to the site will be concerned with broader issues of Digital Humanities and the position of LexLep within an ever-growing network of digital edition and lexicography endeavours. LexLep and its sister site *Thesaurus Inscriptionum Raeticarum* (TIR), which covers the Raetic inscriptions, are unusual among digital epigraphic editions of ancient languages insofar as they do not employ a markup language – viz. the state-of-the-art TEI XML standard for digital epigraphy EpiDoc[10] – to organise the data, but run on an adapted version of the open-source content management system MediaWiki with a number of semantic extensions. With EpiDoc being increasingly considered the standard tool for our purposes, this sets limits to the interoperability and reusability of the LexLep data. The use of a MediaWiki software does, however, also have some advantages, not the least of which is the comparatively low participation threshold for editors, beside convenient inbuilt features like the history function, which renders the release of site versions unnecessary, and the excellent community support for WikiMedia software which provides troubleshooting help and regular software updates.

One focus in the future development of LexLep will therefore lie on efforts to increase data interoperability and to integrate the site into the Linked Open Data nexus in ancient history, epigraphy and philology. It is our goal to participate in FAIR – Findable, Accessible, Interoperable, Reusable – epigraphy[11] and make our work useful to scholars of all disciplines and research needs. The most immediate desiderata in this respect are the interlinking of the documents in LexLep with the Texts section of the Trismegistos portal[12] (as already achieved in the TIR) and concurrent update of the latter's inventory of Cisalpine Celtic inscriptions, and the alignment of our linguistic data and analyses with the digital edition of Transalpine Gaulish RIIG – *Recueil Informatisé des Inscriptions Gauloises* (see the contribution of Coline Ruiz Darasse in this volume).

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[10] https://sourceforge.net/p/epidoc/wiki/Home/.
[11] https://www.csad.ox.ac.uk/fair-epigraphy.
[12] https://www.trismegistos.org/.

In its digital format, LexLep has the potential to fulfil the otherwise practically unattainable ambitions of epigraphic edition: to be exhaustive, and to remain complete. We are therefore particularly grateful to Martin Braun (University of Vienna), the original IT mastermind of the LexLep and TIR sites, for his continued commitment and support, which has saved the editions from succumbing to PHP updates and other calamities which regularly threaten online academic resources. Thanks to a group of scholars who are dedicated to the LexLep project and its impact beyond funded projects, the site will – for the foreseeable future – be continuously improved and updated with new documents, analyses and literature.

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