

# WESTERN MESOAMERICAN CALENDARS AND WRITING SYSTEMS

## PROCEEDINGS OF THE COPENHAGEN ROUNDTABLE

Edited by

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Dedicated to the memory of Ana Díaz



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# A Few Words on the Copenhagen Roundtable and its Proceedings

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This volume brings together recent studies of the writing systems of Mesoamerica. Whereas some of the studies are purposefully focused on individual features or specific signs in a given writing system, others provide a more general overview and supply a synthesis of the current state of knowledge on a particular writing system. In this it bears remarking that Mesoamerica is one of the few places in the world where writing was developed, along with the other 'hearths of literacy' such as Egypt (3400 BC-AD 394), Mesopotamia (3200 BC-AD 75), the Indus Valley (2800-1600 BC) and the Yellow River Valley of China (1400-1200 BC). At such hearths, after the initial development of writing, we see the florescence of a series of related and derived scripts and this is what can be observed for Mesoamerica as well.

In addition to the hieroglyphic writing of the Maya, which is celebrated for its graphic intricacy and for its phonetic decipherment, from the 1950s onward (Coe 1992; Knorosov 1958; Stuart 1992), nearly a dozen other writing systems have now been documented for Mesoamerica. Other writing systems, which to date have resisted a coherent phonetic decipherment include (from east to west): 1) Cotzumalhupan, 2) Olmec, 3) Isthmian, 4) Zapotec, 5) Mixtec, 6) Ñuñe, 7) Teotihuacan, 8) Epiclassic, 9) Toltec (Tula & Chichen Itza), and 10) Gulf (El Tajín) (see Berlo 1989; Caso 1928, 1962, 1966; Chinchilla Mazariegos 2011; Curtis 2020; Domenici 2017; Helmke and Davletshin 2019; Helmke and Nielsen 2011, 2021; Houston 2004; Houston and Coe 2003; Jansen and Broekhoven 2008; Justeson 1986, 2012; Justeson and Kaufman 2018; Kaufman and Justeson 2001, 2004, 2008; Lacadena 2010a, 2010b; Lacadena García-Gallo 2008; Langley 1986; Macri and Stark 1993; Marcus 1976, 2006; Moser 1977; Rivera Guzmán 2008; Rodríguez Martínez et al. 2006; Smith 1973; Taube 2000, 2011; Troike 1978; Urcid 2001, 2012; Velásquez García 2008, 2010; Whittaker 1992).

One writing system that has attracted renewed attention in recent years is that of the Aztec, which for a long time was treated as a type of incipient proto-script making almost abusive use of the rebus principle (see Morley 1915: 29-30). Furthermore, its phonetic status has often been called into question and raised as a matter of contention (Nicholson 1973; Wright Carr 2009). Despite these incongruences, the

foundations of the scholarly work on Aztec writing and its original phonetic decipherment can actually be traced back to nineteenth century, to the works of the French Americanist and Philologist Joseph Marius Alexis Aubin (1849) and of the Mexican medical doctor and intellectual Antonio Peñafiel (1885). Taken together, these works convey a lucid understanding of the foundational elements of Aztec writing, involving logograms, phonograms and semantic determinatives to record Nawatl, the language of the Aztec (Lacadena García-Gallo and Wichmann 2011; Whittaker 2021; Zender 2008). As such, these scholars should be credited with the decipherment of Aztec writing, their intellectual breakthroughs finding their rightful place among the ranks of early deciphers such as Jean-François Champollion, whose decipherment took place just three decades earlier. More recent studies have come as a rejoinders to these pioneers, once more confirming that this writing system is wholly phonetic and shares many key structural features and points of commonality with other logophonetic writing systems, most notably that of the Maya (Davletshin 2021; Lacadena 2008; Lacadena García-Gallo 2018a, 2018b; Lacadena García-Gallo and Wichmann 2011; Thouvenot 1987; Valencia Rivera 2021; Velásquez García 2019; Whittaker 2009, 2021).

The papers drawn together here were first presented at a conference held on 9 and 10 December 2020. The conference was organised within the framework of a research project under the joint direction of Jesper Nielsen and Christophe Helmke, entitled *The Origins and Developments of Central Mexican Calendars and Writing Systems*. Since 2019, this multi-year project has been generously funded by the Velux Foundations (Grant 115078), and is focused on the development of the writing systems of Central Mexico, and on demonstrating the internal structure, functioning and relations of the scripts to each other, and on presenting a synthesis of the current understanding of Central Mexican writing systems. In addition to fieldwork focusing on western Mesoamerican writing systems (particularly Teotihuacan, Epiclassic and Aztec writing), the project also involves two doctoral scholarships, granted respectively to Mikkel Bøg Clemmensen and Rosa-Maria Worm Danbo, who initially organised and convened the conference.



The thirteen named days of the trecena headed by the date '1 Water' (detail of Book 4, folio 82v, from the Florentine Codex, dated 1577). Reproduced from photograph in the World Digital Library Collection  
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The conference was to be held at the University of Copenhagen in Denmark, but given the outbreak of Covid-19 and the global pandemic, we were forced to hold it virtually over Zoom. Although often beleaguered with criticisms, this format proved itself to be highly effective and allowed us to share our results in a concerted and intensive manner, drawing in scholars from Mexico, Guatemala, Europe and Russia. The timing of the conference was necessarily liminal, given that we needed to account for eight time zones, spread over some 10,713km. The working papers had been completed ahead of the conference and were shared among the presenters so as to better tailor their own presentations and also to prepare comments for the discussions. Each presenter was given ample time to present their papers, and at the close of each session, we held an extensive discussion period, envisaged around an actual circular table. Although elusive, this roundtable as it were provided the format and structure of interactions allowing us to share ideas, reactions and precisions with our co-presenters. These discussions and the comments of our colleagues allowed each of the presenters to subsequently revise their papers before final submission to the present volume.

Given the focus on Western Mesoamerican writing systems and the calendrical systems of these scripts, during the planning of the roundtable, we thought that it would be appropriate to correlate the date of the event to the Aztec calendrical system as used in Central Mexico at the time of the conquest. Based on accepted correlations between the Aztec and Julian Calendars then in use (see Broda de Casas 1969; Caso 1967), we were able to suggest that the conference began on the day named *Ome Itzkwintli* or '2 Dog' (9 December) and ended on *Eyi Osomatli* or '3 Monkey' (10 December) in the 260-day ritual calendar, being the second and third day in the fortnight named *Se Atl* '1 Water'. This fortnight (albeit of thirteen days), was thought to be presided over by a supernatural turkey, the large and much bejewelled, and perhaps somewhat crazed *Chālchīwtotolin*. The solar year in which the conference took place (i.e. 2020) would correspond to *Chikonawi Kalli* '9 House'. Such dates were rife with signification and were often the source of divinations in Precolumbian times. Thus after announcing these calendrical correlations to our colleagues, and looking up the associated auguries of these dates, we were amused to find out that the date '2 Dog' "is a good day for being trustworthy, a bad day for

trusting others of questionable intent" (Voorburg 2020). An interesting start to a conference. The following day, '3 Monkey' was likewise apt, in that it is "A good day for light-heartedness, a bad day for seriousness" (Voorburg 2020), likewise appropriate given that this was the close of our roundtable. Furthermore the day 'Dog' was rather suitable given that this day is associated to the northern cardinal direction (think Scandinavia), whereas 'Monkey' is associated to the west (think Mesoamerica). Auguries that were made all the more evocative, given that it was watched over by *Piltzintekwintli* the 'young lord' as *Yowaltekwintli*, or 'Lord of the Night', but here in his guise as a deity linked to the rising sun and with healing... Somewhat ironic since we held the conference during some of the year's darkest days. These anecdotal observations aside, we can now turn to the volume itself, commenting on its structure and providing summaries of each of the chapters.

The guiding structure of this volume, and that of the foregoing conference, is predominantly chronological, presenting contributions pertaining to the earliest writing systems first, and ending with the latest. The volume thereby starts with the Classic (c. AD 250-650) writing system of Teotihuacan, before going on to the Ñuiñe writing system, which is can now be dated to between the fourth and tenth centuries. This is followed by a chapter on the Epiclassic (AD 650-1000) writing system of Central Mexico, leading to the Postclassic (c. AD 1000-1519) writing system of the Aztec, which endured into the seventeenth century, surviving the Spanish conquest by several decades. As such, the latter chapters bridge the Precolumbian and Colonial divide and draw on sources from both major periods.

The first chapter by Davide Domenici provides an overview of the writing system of the Classic metropolis Teotihuacan. He notes that it is no longer in doubt whether Teotihuacan had a writing system, but rather how that writing system functioned. In this, Domenici sets out to discuss the specific working principles of the system. After initial considerations of which language the writing system might record, Domenici moves on to discuss different aspects of the system, such as the calendrics, place names, titles and personal names, names of buildings, verbs, and finally the interplay of text and image. Towards the end of the chapter, Domenici considers the uses to which writing was put at Teotihuacan, reflecting upon the texts found in murals

and their relation to the architectural settings and the performances that took place in these architectural spaces.

In Chapter 2, Iván Rivera Guzmán reviews the Ñuiñe writing system of Western Oaxaca. Guzmán discusses past research on Ñuiñe writing and the scholarly efforts that have gone into defining the temporal and geographical limits of this writing system. One of the challenges in the study of Ñuiñe writing is clarifying the glyphs for the twenty days of the 260-day calendar. Guzmán reviews previous research on calendrics and discusses the day signs that still need to be determined securely. The available Ñuiñe inscriptions appear in various contexts, and Guzmán analyses examples from monuments that commemorate conquests, dynastic foundations, and deeds of important individuals. Guzmán ends his chapter by considering the possible relationship between specific languages, notably Mixtec and Eastern Otomanguean languages more generally, and the Ñuiñe writing system.

Chapter 3 follows suit in providing an overview over another Western Mesoamerican writing system, that of the Epiclassic city-states that emerged following the fall of Teotihuacan. In this chapter, Christophe Helmke and Jesper Nielsen use the insights from the known corpus of Epiclassic writing to cast light on the salient aspects of this writing system, including its geographic distribution, characterisation of the glyphic corpus, its chronology of the inscriptions, the graphic characteristics of the writing system, the current state of decipherment, and candidate languages recorded in the writing system. Helmke and Nielsen discuss what is known for each of these aspects and offer their suggestions for future lines of research. This then provides a cohesive overview of the writing system based on the most recent scholarship and providing the authors' most recent interpretations and insights.

In the fourth chapter, we jump forward in time as it takes us to the Late Postclassic and early Colonial writing system of the Aztec. In this chapter, Albert Davletshin challenges previous descriptions of Nawatl writing by adding another category of signs he calls 'notational' signs. Supplementing logograms and phonetic signs, notational signs, according to Davletshin, cover dates, tribute items, titles, verbs, and more. Davletshin devotes the main part of his chapter to a study of the linear texts of the *Codice en Cruz*, focusing on the sign that depicts a woven throne with backrest, usually known under the Nawatl term *ikpalli*. Davletshin argues that this sign is not an element of iconography, as previously held, but rather an unrecognized notational sign for the title of *tlatoani*, 'ruler, king', and thus an example of how notational signs were used to record, in this case, titles in Nawatl writing.

In Chapter 5, Margarita Cossich Vielman studies two colonial documents, the *Lienzo de Tlaxcala* and the *Lienzo de Quauhquechollan*. The documents represent the conquest of Guatemala from the perspective of two of the nine indigenous groups that were allied with the Spanish soldiers in this effort. Cossich focuses on the similarities and differences in the route of conquest represented by the two indigenous documents, as well as on the hieroglyphic writing found in the documents. Both documents use Nahuatl hieroglyphic writing and Cossich uses them to study the differences in the scribal traditions, such as the tendency to use infixes among the Quauhquechollan scribes.

The two last chapters focus on the calendars and chronological systems of colonial Central Mexico. In Chapter 6, Mikkel Bøg Clemmensen discusses the circular calendars, known as 'calendar wheels', produced during the colonial era. While several recent studies have claimed a European origin for the circular shape of the calendar wheels, Clemmensen instead sets out to explore the possible Precolumbian antecedents for this format. Clemmensen discusses three Precolumbian examples of circular calendars and compares these to the early colonial manuscript known as the Boban Calendar Wheel. Noting several thematic and stylistic overlaps, Clemmensen concludes that the Boban Calendar Wheel draws mainly on a Precolumbian tradition, casting doubt on the idea that the indigenous scribes were copying a European format.

Whereas penultimate chapter focused on the continuity from the Precolumbian calendrical tradition, the seventh, and last, chapter by †Ana Díaz focuses on the changes that the Nahua chronological system underwent in the hands of colonial writers. In this chapter, Diaz fuels the hypothesis that the annual cycle of eighteen *veintenas* and five extra days was never an autonomous calendar before the conquest. According to Díaz, the ethnocentric use of the Julian calendar as a model resulted in the representation of the *veintenas* as 'months' and the postulation of an independent indigenous annual calendar as the main chronological system working in parallel with the 260-day *tonalpohualli*. It is Díaz' argument, based on linguistic, glyphic, and iconographic sources, that the *tonalpohualli* was the sole chronological system before the conquest, and that the *veintenas* were recorded through this system rather as an autonomous means of tallying time.

With the close of our roundtable, we awaited the resubmissions of the manuscripts, the participants having had the chance to update their contributions based on our discussions and peer-feedback. On 19 January, 2021, we were shocked to learn of the untimely passing of Ana Díaz. This was, forty days

after the end of our roundtable, or precisely two *veintenas* as Ana would not have failed to remark. Ana Guadalupe Díaz Álvarez was a distinguished researcher of the Instituto de Investigaciones Estéticas of the Universidad Nacional Autónoma de México. She held the position of academic coordinator and assistant to the director of the preeminent Museo Nacional de Antropología (from 2010 to 2012). In 2015, she obtained the Fulbright-García Robles Research Scholarship enabling a visiting scholarship to the Art Department of Harvard University. In 2018, she won the Mesoamerican Studies Chair awarded by the Agencia Mexicana de Cooperación International para el Desarrollo and in 2019, she was awarded the Miguel León-Portilla Special Chair of the Instituto de Investigaciones Históricas. Despite this great loss, we will cherish having spent time together discussing what she loved most as part of our roundtable and are proud to present some of her last work, among these pages.



As anyone working with Mesoamerican languages and writing systems knows, but it bears repeating here, the orthographies used for the various languages and language families can be highly confusing and are not for the faint-hearted. Indeed, even professionals working in the area are often disparaged by the great variety of orthographies in use, even for a single language. The rich orthographies of Mesoamerica have a long history, spanning the five centuries from the first encounters between the alphabet of the Old World, and the logophonetic of the New World—with Europeans grappling as to how best to render long versus short vowels, lateral affricates, contrasting voiced stops, glottalized consonants and a wide range of tonal contrasts. As a result, and owing to the great linguistic diversity of Mesoamerica, there is a wide range of orthographies in place, spanning from those devised in the wake of the Spanish conquest in the sixteenth and seventeenth centuries, to the fine-tuned and linguistically informed orthographies. In addition, there are also a range of established conventions for certain language families resulting in differing spellings for comparable phonemes even in the same studies

and publications. As editors to this volume, we have thus entertained many different solutions, including a systematised orthography for all contributions, but given that some papers are focused more specifically on epigraphy, and others lean more on ethnohistoric sources where colonial orthographies are the norm, and others still range freely between epigraphic and linguistic conventions, this proved impossible. As a result, we have therefore maintained the orthographies selected by each author for each of the individual submissions, but have striven to ensure that these are all internally coherent.

Rather than publish papers in both English and Spanish, we have chosen to unify the volume by publishing all the contributions in English, with papers submitted in Spanish translated by the editors. However, to enable greater dissemination of these papers and facilitate citation by our colleagues on either side of the Atlantic, we also provide Spanish summaries of each of the contributions at the close of the volume. We hope that this proves to be a suitable and functional solution.

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