
WATER RITUALS AND OFFERINGS TO THE MAYA RAIN DIVINITIES

Cristina Vidal-Lorenzo^{1*} and Patricia Horcajada-Campos²

¹ *Universitat de València, Department of Art History, Av. Blasco Ibáñez 28, València, 46010, Spain*

² *Universidad Complutense de Madrid, Departamento de Historia de América y Medieval y Ciencias Historiográficas, C/ del Profesor Aranguren s/n, Madrid, 28040, Spain*

(Received 13 October 2019, revised 24 December 2019)

Abstract

This paper presents the study of several offerings unearthed by the authors at the Maya archaeological sites of La Blanca and Chilonché (Petén, Guatemala) which are interpreted as remains of rain-invoking rituals. This interpretation is based on the characteristics of these offerings, their materials and placement, and the analogy observed between them and the images from some iconographic sources, specifically the Postclassical codices. The study is completed by a description of the rituals related to water rituals based on a range of ethno-historical and ethnographic sources.

Keywords: rain, ritual, Chaahk, Chac Chel, Maya

1. Introduction

The Ancient Maya inhabited a wide territory of south-eastern Mesoamerica, characterized by great environmental diversity, including coastal plains, mangrove and swamp areas, volcanoes, wet and dry broadleaf forests, savannahs and cloud forests. In a setting with such a diversity of ecosystems the climate varies widely, being temperate and cold in the highlands and very hot and humid in the lowlands; as a result, vegetation and exploitation of resources considerably differ across the area. The alternation of rainy and dry seasons (typical of subtropical areas) also has a major influence on the economy and lifestyle of the population, especially with regard to the control of water reserves. Obviously, the prolonged absence of this precious element in areas of such extreme heat would have serious consequences for the survival of the inhabitants, just as excessive and continuous rains could produce floods and other natural disasters that were not unknown to the Maya people. Thus, in order to ensure water supply during the dry season, the Maya built a hydraulic system of channels, reservoirs and *aguadas* or ponds designed to fully exploit their natural resources.

*E-mail: cristina.vidal@uv.es, tel.: +34 963983330, fax: +34 963864496

The ruling elites exerted tight control over these resources – both water for human consumption and water considered to be sacred. Among these resources were the *cenotes* and underground rivers of the north of Yucatan, seen by the Maya as natural gateways connecting the Earth's surface and the underworld or the realm of darkness, where they believed that life had begun [1]. Likewise, they believed that the dry surface of the Earth was the carapace with water-lily motifs of a huge turtle floating over the ocean of primordial waters, continually renewed by underground torrents. According to their mythological beliefs, the gods of lightning and thunder cracked the turtle shell and a youthful Maize god came out from it, carrying with him the corn seeds, until then remained hidden in the Earth, symbolizing his annual rebirth [2] - hence the imperative need to worship these divinities. These symbolic images of their cosmic vision were represented in numerous works of art, especially in painted ceramics and codices. By contemplating them during annual agricultural ceremonies they could evoke these mythical geographies and recreate events closely related to the renewal of the Cosmos, the success of harvests and the continuation of life. So, to a large extent, this control over the water and land resources was made effective through religion.

To this end, from the earliest times of Maya history, Maya people performed rituals to the supernatural powers in order to secure an adequate water supply and to guarantee the fertility of crops. These rituals were carried out in private and in public ceremonies whose traces can be found in archaeological excavations of ancient Maya cities. The analyses of these remains broaden our knowledge of the artefacts and other precious items (marine shells, jade beads, sea snails) used in these celebrations. Examples of this are the discoveries made in the acropolises of La Blanca and Chilonché, two Maya urban settlements located in the Mopan River Valley (Petén, Guatemala), which have been the object of archaeological excavations by the La Blanca Project over the last two decades [3], and which will be presented as case studies in this paper.

The worship of the rain gods endured throughout the colonial period and still survives in many Maya communities, thus giving us other valuable sources of ethno-historical and ethnographic information which, together with the iconography, have been fundamental to the analysis and interpretation of this evidence.

2. Case studies

The archaeological vestiges recovered in excavations at La Blanca and Chilonché, which testify to a variety of rituals for bringing rain, belong to the Postclassic period (1000-1500 A.D.), one of the most controversial in the history of the Maya. This is because many uncertainties do still exist on what really happened at end of the Terminal Classic period (850-1000 A.D.) and the centuries following the 'collapse' of the Classic Maya civilization. As a result of this crisis throughout the Maya territory, the cities and other urban settlements were abandoned by their primitive inhabitants and, especially those in the forest, were

quickly buried by dense vegetation. Some of them continued to be visited or occupied by sporadic settlers, who converted the ancient constructions of the elites, already semi-destroyed, into places of worship and even funerary spaces. This happened in both La Blanca and Chilonché, two political entities where monumental acropolises were built in the Classic period, crowned by palaces with several rooms.



Figure 1. Postclassic pots recovered at La Blanca and Chilonché during archaeological research. Provenance: a) 6J2 Palace/Room 3 of La Blanca, b) 6J2 Palace/Room 6 of La Blanca, c) 6J2 Palace/Room 8 of La Blanca, d) 6J2 Palace/Room 9 of La Blanca, e) 6J2 Palace/Room 16 of La Blanca, f) 3E1-South Palace/Room 2 of Chilonché. (Photos by P. Horcajada-Campos, © PLB 2015).

At La Blanca, at least two different occupations have been documented after its abandonment [4]. The first dates back to the Terminal Classic period, when funeral bundles of some individuals were placed inside the rooms of its palaces (some of which contain the widest vaults of the whole Maya region [5]). The second wave of occupants dates from the Postclassic period, to which the set of pots (*ollas*) placed in the corners of the rooms of the multi-chamber 6J2 Palace belong. These pots are the focus of this case-study.

A total of five pots were found placed upside-down in the debris that covered these abandoned rooms. The first pot was placed at a short distance from the vault spring of Room 3, thus indicating that this room was uninhabitable, as it had been completely covered over by the collapse. According to the type-variety system of the Maya ceramic classification, based on the paste characteristics, form, surface finish, form and decoration, the pot belongs to the Pozo Unslipped type, Pozo group, of the Montículo Unslipped ware (Figure 1a). Unfortunately, these pots have very rough surfaces because they are unslipped; as they lack decoration, their classification is sometimes difficult. The other four pots were found in Rooms 6, 8, 9 and 16 of the same palace. The one in Room 6 belongs to the Chilo Unslipped type, Chilo group, of the Uapake Unslipped ware, while the other three belong to the same type as the one in Room 3 (Figure 1b-e).

Similar discoveries were made in Chilonché, where we found two pots also placed upside-down in the 3E1-South Palace of its main acropolis. One of them was found in Room 1S next to abundant remains of coal, and belongs to the same ceramic type as the specimen found in Room 6 of La Blanca (Figure 2). The other was exhumed in the contiguous room (2S), next to small freshwater snails and coal, and it belongs to the Pozo Unslipped type, Pozo group, of the Montículo Unslipped ware (Figure 1f).

Although the type of these seven pots varies, the fact that they were all placed according to the same pattern, upside-down and close to the corners of the rooms, suggests that they were left intentionally as offerings during rituals – presumably water rituals, as we will demonstrate later. Likewise, in the central room (3S) of the same palace, an altar - made with reused building materials – was found and, next to it, an interesting offering composed of three censers, one of which bears, on its front, the face of a deity. The facial features indicate that the god is Chaahk, the ancient Maya rain god *par excellence*, and also the god of lightning and thunder (Figure 3). Next to these censers, there were eleven shell beads, two jade beads, flakes and flint projectile points, freshwater snails and animal bone fragments - most of them elements related to the aquatic environment.

However, to confirm our initial hypothesis that these remains reveal the existence of rain-invoking rituals in these ancient sites in the Mopan Valley, we must turn to other sources that provide information on these rites among the Maya. Firstly, different iconographic sources were analysed. In these sources deities and other sacred beings related to water - represented on artistic works from the Classic and Postclassic periods - were analysed using the iconographic-iconological method. The hieroglyphic texts that sometimes appear next to these

images, especially in the representations of Chaahk, were another important source of information. Special attention has been paid to masterpieces of the Postclassic period, for two fundamental reasons: first, because of the temporal proximity to the archaeological materials presented in this case study and secondly because most of the rain-related images belong to this period. They are abundant in the Postclassic Maya codices, in particular in the *Madrid Codex* and the *Dresden Codex*.



Figure 2. Postclassic pot found at 3E1-South Palace/Room 1S of Chilonché. (Photo by P. Horcajada-Campos, © PLB 2012).

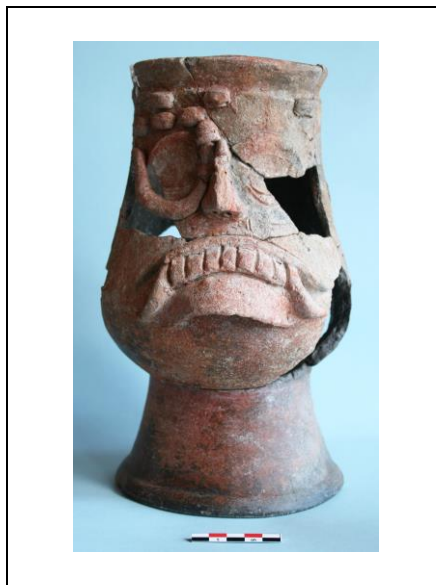


Figure 3. Effigy-censer with the face of the rain god Chaahk on its front, recovered at 3E1-South Palace/Room 3S of Chilonché. (Photo by P. Horcajada-Campos, © PLB 2012).

At the same time, several texts written during the colonial period have been consulted in order to find references to water rituals among the ancient Maya. The works that have provided relevant information on the subject are: *La conquista de México*, by Francisco López de Gómara [6], dated in 1552, Fray Diego de Landa's *Relación de las cosas de Yucatán* [7], written around 1566; documents of the Alcalde Mayor de Yucatán, Don Diego Quijada [8], dated between 1561-1564, and *El Informe del cura de Yaxcabá, Yucatán 1813 (Costumbres, hechicería, etc.)* by Bartolomé José del Granado Baeza [9].

Finally, we reviewed the abundant ethnographic documentation and other modern-day studies on different Maya groups that contain references to ceremonies related to water. This ethnographic documentation is completed with the data recorded by the authors as part of the field work carried out in Oxkutzcab (Yucatán) in 2017.

3. Results and discussion

The association of the upside-down pots with rain ceremonies is based in the fact that some codices contain images of the goddess Chak Chel (goddess O) pouring out the water stored in vessels onto the Earth in the form of rain (both life-giving and destructive rain) (Figure 4). This image of a female deity pouring life-giving water from a vessel also recalls Ixmucané, the female protagonist of the *Popol Vuh*, one of the main works of Maya literature which tells (among many other things) the story of the emergence of light, the foundation of time and the creation of the human beings that would have populated this new cosmos thanks to the intervention of this deity. In one of the most dramatic passages in this mythological story, this goddess, known in late texts as Chak Chel and Ixchel, appears in the river holding a vessel from which the water escapes because it was intentionally pierced by a mosquito sent by her grandchildren Hunahpú and Ixbalanqué, the male protagonists of the poem. We have interpreted this loss of water as the gradual loss of the goddess's knowledge and fertilizing power that she had in primordial times until the birth of a new era illuminated by a new sun [2, p. 66]. That is to say, a pierced vessel cannot fulfil its function of pouring out the water that will fertilize the Earth: this water must come from a non-perforated vessel placed upside-down, like the ones that Early Postclassic Maya people left in the palaces of La Blanca and Chilonché. This would lead to interpret the inverted *olla* as the female uterus, and the flow of the water inside as a metaphor for birth and for the continuation of life: hence the frustration of the old woman Ixmucané, whose perforated vessel has lost its original function.

In these images, Chak Chel generally appears next to the god Chaahk (Figure 5). The god has a striking appearance, with curved elements bordering the inferior part of the eyes forming a semicircle, a nose with a protuberance or curved piece on the top, bulging lips, and teeth of the upper jaw aligned, flanked by great curved fangs. Occasionally, the forehead shows a double row of what appear to be corn grains. As all these facial characteristics have been identified in the effigy-censer of Chilonché (Figure 3), we identify the figure as the god

Chaahk, although we stress that some of the features are shared with the Mexican god Tlaloc, with whom Chaahk is occasionally confused. The presence of shells, freshwater snails and jade beads next to this censer is further testimony to the link between the offerings and rain-invoking rituals.

The presence of offerings closely related to Chak Chel and Chaahk in Chilonché reflects the importance in these ceremonies of invoking primordial gods of both sexes to implore the arrival of rainwater to fertilize the land, and thus ensure the success of the crops and agricultural productivity. The numerous offerings comprising a wide variety of artefacts found in the caves of Balankanché, located 4 km west of Chichén Itzá, several of which are decorated with the effigy of the rain god, are a particularly interesting discovery. These effigies were identified at the time as the god Tlaloc [10], but a detailed iconographic analysis of them has shown that, in our opinion, in fact they combine features of this deity of Mexican origin with characteristics of the Maya god Chaahk. This fact would reinforce the interpretation of these offerings proposed by Vail and Hernández: “We believe that the majority of the artifacts from Balankanche are likely the result of rituals performed over a period of many years associated with renewing the world and replicating the acts performed by the deities Chaak and Chak Chel in primordial times. These include the pouring of water from jars, the use of spindle whorls to make cotton, and the symbolic grinding of maize to form humans. Whether these rituals were performed by women deity impersonators or by men is a question that cannot be answered at present.” [11]

But how were these ceremonies performed, and who officiated at them? To answer this question, we consulted ethno-historical and ethnographic sources. One of the earliest textual references to ancient Maya rain-invoking ceremonies is provided by Francisco López de Gómara in 1552, in his chronicle *La conquista de México*. He describes how the inhabitants of Cozumel, an island in the Mexican Caribbean, went on processions, made offerings of quail, burned resin, and sprinkled the image of a rain god with water [6, p. 69]. López de Gómara does not mention when these processions and offerings took place, but presumably they were carried out at the end of the dry season.

In the *Relación de las cosas de Yucatán* the friar Diego de Landa narrates that in the month of Mac, corresponding to the month of March, the aged persons of Maya people of Yucatan and the oldest among them, held a festival in honour of the *chaces*, the gods of grains, and the god Itzamnaaj (Itzamna) and offered them food in order to obtain a good year of rain for their crop: “The people and the priest and officials assembled in the court of the temple where they had erected a heap of stones with its steps, and all very clean and ornamented with green foliage. The priest gave incense prepared beforehand for the host, who burned it in the brazier, and so they say the evil spirit fled away. This done, with their accustomed devotion they anointed the first step of the heap of stones with mud from the well, and the other steps with a blue paste, and they scattered smoke from the incense many times, and invoked the Chacs and Itzamna with their prayers, and devotions, and made their offerings. This finished they comforted

themselves, eating and drinking what had been offered, very confident of the good year, as a result of their services and invocations.” [7, p. 163-164]

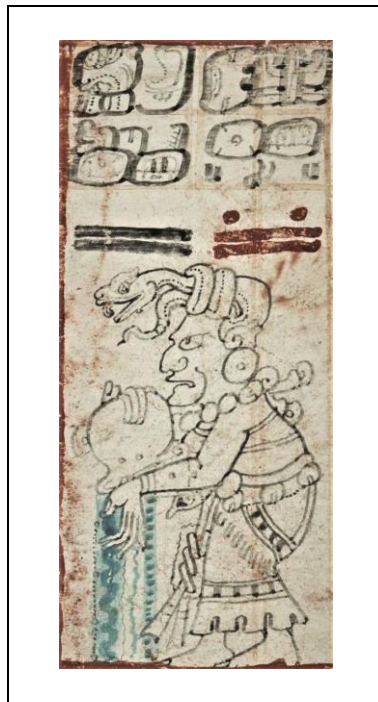


Figure 4. Goddess Chac Chel wearing the serpent headdress, emptying a vessel, *Codex Dresdensis*, p. 39b. SLUB Dresden, Mscr.Dresd.R.310: Dresdner Maya-Handschrift [<https://katalogbeta.slub-dresden.de/id/0-1646762169/#detail>].



Figure 5. God Chaahk painted in blue and goddess Chac Chel wearing the symbolic serpent and spindle wounds headdress, pouring out life-giving rain from the sky onto the Earth, *Tro-Cortesianus* or *Madrid Codex*, page 30a, Museo de América, Madrid.

They called this ceremony *tuppkak*, which means “extinguishing the fire” [12], possibly alluding to the high temperatures reached at that time of year in the region, and the use of water jugs to douse the fire.

The legal documents of the government of Diego Quijada, Mayor of Yucatan between 1561 and 1565 (published by Scholes and Adams) record several trials of indigenous people accused of idolatry by the Spanish authorities. One of these documents, dated 1565, states that some inhabitants of the city of Valladolid (Yucatan) were placed under interrogation, charged with sacrificing and worshipping idols on a mountain near the town of Chemax. In their respective declarations they mention that they had made eight idols, drank and sacrificed a dog, burning its heart with copal, “to an idol that was called Itzamna and Chac [and] Ix Ku and Ah Bacab to give them health and to rain on their sowing” [8, vol. II, p. 333].

Later colonial documents mention another ceremony called *tich*, “sacrifice or ceremony practiced by Indians before harvesting their sowings to propitiate the genius of the mount” [12, p. 791]. One of these documents was written by Bartolomé José del Granado Baeza in 1813, a priest of Yaxcabá, municipality of Yucatan, in response to a series of questions sent by the Bishop of Yucatan. In it, he denounces the fact that this ceremony is still being carried out on those dates. A table is built for its celebration, on which offerings of different foodstuffs are placed: a sacrificed turkey, bread or corn tortillas, as well as *jícaras* (bowls) with *pitarrilla* (a drink prepared from the bark of the *balché* tree, dried in the sun and fermented with honey) and then the priest burns the copal as incense. The author points out that this *pitarrilla* is the “first water, or first liquor” [9, p. 20]. He also indicates that the ceremony begins with the Trinity-invoking prayer, followed by the Creed, and at the same time “they sprinkle the four winds, invoking the four Pahahtunes, who are lords or guardians of the rains” [9, p. 19], using a sprinkler moistened in the holy liquor of the *jícaras*. The ceremony concludes with the ingestion of the food by the participants.

This description bears many similarities to the ceremony held today in the Yucatan peninsula at the end of the dry season, between the end of April and May, called *Ch'a Cháak*, or “request for rain” [12, p. 121]. Although this ceremony has several variants, here we present its general features compiled from various ethnographic sources and also through our field work [13-18]. An essential element is the altar-table or ceremonial altar, where the ceremony takes place. This table represents the communal space, that is, the place inhabited by the community performing the ceremony. The legs of the table sink into the Earth, communicating it with the underworld. It is covered by plant-shaped arches that symbolize the celestial vault. Around the altar-table, in the four cardinal points, arches representing the dwellings of the *chaako'ob*, the lords of rain, rise. In the centre of each of these arches, there is a cross on which the *jícaras* containing the offerings are placed. A creeper emerges from each of the arches, joining them to the firmament. Its purpose is to guide the lords of rain along the right path, making sure that they do not pour the water in other places. The names of these

chaako'ob vary in each community and often reflect a Christian influence: examples are Yuum Michael Archangel or Yuum Gabriel Archangel.



Figure 6. The *h-men* and the altar-table with offerings during a *Ch'a Cháak* ceremony in Oxkutzcab. (Photo by C. Vidal-Lorenzo, 2017).



Figure 7. Breads made with corn dough and wrapped in vegetable leaves, cooked underground during the *Ch'a Cháak* ceremony. (Photo by C. Vidal-Lorenzo, 2017).

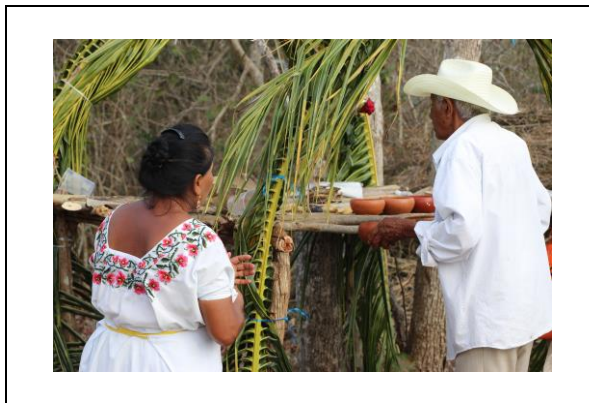


Figure 8. An active female participant in the *Ch'a Cháak* ceremony next to the *h-men* and the ceremonial altar. (Photo by C. Vidal-Lorenzo, 2017).

In April 2017, we attended a *Ch'a Cháak* ceremony performed by a community of Oxkutzcab (Yucatan). Once the altar was ready for the ceremony, food and drinks were brought for use in the ritual. During the ceremony, food and drinks were offered to the rain god and the rain lords (Figure 6). Among the food, we found bread made with corn dough, cooked underground and wrapped in vegetable leaves (Figure 7); chicken or turkey and *balché* liquor were also found. Through prayers in Spanish and Maya languages, the *h-men* or priest pleaded with their gods and other celestial beings to send rain.

In addition to prayers, pleas and invocations, it is important to feed the sacred beings, so this food and drink is offered to them during a large part of the ritual. At the end of the ritual, the *h-men* and all the participants and attendees consumed the food and drunk the holy liquor.

As well as the shape of the altar and the names given to the rain lords, there are other significant differences in the ceremonies carried out in the various communities. An important one is the role played by the participants. In some communities, women cannot take part in the ceremony, because of the belief that they can drive away the rain lords. Nevertheless, they are indirectly involved as they prepare the food that will be consumed in the ritual. In other communities, the presence of women at the *Ch'a Cháak* ceremony is permitted - for instance, there were active female participants in the ritual we witnessed at Oxkutzcab (Figure 8).

4. Conclusions

In this paper we have presented the study of vestiges from the Postclassic period retrieved from archaeological excavations carried out at the Maya urban settlements of La Blanca and Chilonché. We interpret the unearthed objects as offerings to the rain divinities. The review of the iconographic and epigraphic sources from the same period, specifically the *Madrid Codex* and *Dresden Codex*, has allowed us to associate the pots - placed upside-down in the corners of the palatial rooms at both sites - with the images of their primordial gods, Chaahk and Chak Chel, pouring water from vessels. This interpretation is supported by the discovery, in the central room of one of the Chilonché palaces, of an altar of the same period. Next to the altar, a censer bearing the effigy of the god Chaahk together with other objects of aquatic origin were also found.

Ethno-historical sources have provided information on the continuity of these rituals during colonial times, despite the efforts of the Spanish ecclesiastical authorities to eradicate them. These sources have shed more light on how the rituals were performed. Since this tradition has continued to present days, we were particularly interested in attending one of the *Ch'a Cháak* ceremonies held in Yucatan at the end of the dry season. Although this ceremony is actually the result of the syncretism between pre-Hispanic and Catholic religion, our in-depth analysis demonstrates the persistence of Maya elements and provided new insights into the practice of these rituals in pre-Hispanic times.

Of all the ancient Maya rituals, the ones associated with rain endured throughout the colonial period, and still survive to this day in many Maya communities. One of the main conclusions of this study is that the crisis of the Terminal Classic period and the abandonment of the cities rendered many of the rituals performed for the ruling elites obsolete, but the ones related to agriculture and the success of harvests remained vitally important until these days. During the dry season the temperature in the Mayan region is extremely high, and in this period of the year the *milpas* are burned in order to prepare the farmland for a new harvest season. At the end of this season the sowing takes place and abundant rain is needed. However, rainfall in itself is not enough; the rain has to arrive in sufficient quantities, and at the right moment; too much water or too little, or simply its presence or absence at a particular time of the year, could have dire consequences for crops.

Finally, we should stress that the ritual placement of the pots upside-down as offerings, associated with Chaahk but above all with the goddess Chac Chel, has not survived. In fact, it appears to have died out during the colonial period. This may have been due to the goddess's gradual loss of prominence, comparable to Ixmucané's waning power in the *Popol Vuh* poem. The couple Chaahk and Chac Chel, one male and the other female, fade away entirely, and only Chaahk remains as the main deity of the *Ch'a Cháak* ritual. This would also explain why some communities forbid the presence of women in these ceremonies.

Acknowledgment

This research would not have been possible without the support of: The Spanish Ministry of Science, Innovation and Universities through the funding of various coordinated research programs (reference numbers BIA2011-28311-C02, BIA2014-53887-C2 and PGC2018-098904-B-C22), the Generalitat Valenciana (Project Mayatech-Prometeo 2016/155), the Universidad Complutense de Madrid and the Comunidad de Madrid (Programa Atracción de Talento Investigador, Ref. 2018-T2/HUM-11060), as well as the support of Fundación Palarq and the Spanish Ministry of Culture and Sport, through the funding of La Blanca Project (2004-2019). We thank the archaeologist José G. Huchim for enabling us to attend a *Ch'a Cháak* ceremony in Oxkutzcab in 2017, and The Dresden Library and Museo de América for their permission to publish Figures 4 and 5.

References

- [1] C. Vidal-Lorenzo and P. Horcajada-Campos, *Water Rituals in Ancient Maya Culture*, Proc. of 11th European Symposium on Religious Art, Restoration & Conservation, M.L. Vázquez de Ágredos-Pascual, I. Rusu, C. Pelosi, L. Lanteri, A. Lo Monaco & N. Apostolescu (eds.), Kermes Books, Torino, 2019, 75-77.
- [2] C. Vidal-Lorenzo and M. Rivera-Dorado, *Popol Vuh*, Alianza, Madrid, 2017, 82.
- [3] C. Vidal-Lorenzo and G. Muñoz-Cosme, *Arqueol. Mex.*, **23(137)** (2016) 60-67.

- [4] C. Vidal-Lorenzo and G. Muñoz-Cosme, *La crisis de La Blanca en el Clásico Terminal*, in *Millenary Maya Societies: Past Crises and Resilience*, M.-C. Arnauld & A. Breton (eds.), Mesoweb, 2013, 92-105, online at: www.mesoweb.com/publications/MMS/7_Vidal-Munoz.pdf.
- [5] G. Muñoz-Cosme and C. Vidal-Lorenzo, *Restauro Archeologico*, **25(1 Special issue)** (2017) 12-25.
- [6] F. López de Gómora, *La conquista de México*, in *Crónicas de América*, J.L. de Rojas (ed.), Dastin, Madrid, 2000.
- [7] D. de Landa, *Relación de las cosas de Yucatán*, A. Tozzer (ed.), Papers of the Peabody Museum of American Archaeology and Ethnology, Vol. XVIII, Harvard University, Cambridge, 1941.
- [8] F.V. Scholes and E.B. Adams, *Don Diego Quijada Alcalde Mayor de Yucatán 1561-1564*, Antigua Librería Robredo, de José Porrúa e Hijos, México, 1938.
- [9] B.J. del Granado Baeza, *Informe del cura de Yaxcabá, Yucatán 1813*, (*Costumbres, hechicería, etc.*), V. Rea (ed.), Biblioteca Aportación Histórica, México, 1946.
- [10] E.W. Andrews IV, *Balankanché, Throne of the Tiger Priest*, Middle American Research Institute, Tulane University, New Orleans, 1970.
- [11] G. Vail and C. Hernández, *Rain and Fertility Rituals in Postclassic Yucatan Featuring Chaak and Chac Chel*, in *The Ancient Maya of Mexico: Reinterpreting the Past of the Northern Maya Lowlands*, G.E. Braswell (ed.), Routledge, London, 2014, 301-302.
- [12] A. Barrera (ed.), *Diccionario maya Cordemex*, Ediciones Cordemex, Mérida, 1980, 825.
- [13] T. Gann, *The Chachac, or rain ceremony, as practised by the Maya of southern Yucatan and northern British Honduras*, Proc. of the 19th International Congress of Americanists, Americanists Society, Washington, 1915, 409-418.
- [14] A. Villa, *The Maya of east central Quinana Roo*, Carnegie Institution of Washington, Washington, 1945, 111-117.
- [15] S. Terán and C. Rasmussen, *Jinetes del cielo maya. Dioses y diosas de la lluvia en Xocén*, UADY, Mérida, 2008.
- [16] M.H. Ruz, *Arqueol. Mex.*, **16(96)** (2009) 35-39.
- [17] D. Murillo and P. Chávez, *Una tradición campesina que perdura: El ritual del C'ha Cháak en los mayas de Yucatán*, in *Agua en la cosmovisión de los pueblos indígenas en México*, Secretaría de Medio Ambiente y Recursos Naturales, México, 2016, 145-157.
- [18] B. Love, *Estud. cult. Maya*, **37(1)** (2011) 121-148.