



BOOK OF MORMON CENTRAL

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Knowledge Systems

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Knowledge Systems

Overview

Every civilization possesses a vast body of knowledge unique to its view of and experience with its environment. For instance, for at least three millennia Chinese civilization conceived in its own way a vast array of information organized in a unique manner that defined what was Chinese. As recently as a hundred years ago the Chinese had their own unique ways of thinking about all areas of human concern, such as geography, botany, agriculture, cuisine, medicine, art, literature, mathematics, astronomy, technology, government, and ethics. Now modern knowledge systems have either been laid over the top of or have completely replaced many of the old ways in China, as in all other parts of the globe. The modern world and its ways of thinking developed out of one earlier area civilization—the western European tradition—in just the last few hundred years. In the process, the West has come to dominate virtually every former civilization and culture by the force of science, a European invention, and the resulting technological power, economic might, military prowess, and communications capabilities. But if we want to try to understand one of those former civilizations—whether it be Chinese or Mesoamerican—we need to step back from our own frame of reference and see the world through their eyes.

The Spanish Conquest of Mesoamerica was an early stage in the spread of those western European ideas and institutions. In the New World the sudden arrival of the new ways almost totally overwhelmed patterns of living that had been accumulating for thousands of years. Those now-extinct conceptions and behaviors were as different from European manners of thought and action as were traditional Chinese modes.

Within the Mesoamerican culture area we detect local differences in details, yet much key knowledge was held in common throughout the area. For example, while each group's calendar differed slightly from those of their neighbors, the principles used to form them all were essentially the same. Meanwhile, structures were

planned and built in all portions of the area on the same architectural principles and, as far as possible, with similar materials, despite obvious variation in styles. Musical instruments and rhythmic forms, disease diagnosis and treatment, and astronomical conceptions were all generally shared across the regional cultures. Thus knowledgeable persons from one region could carry on informed discussion with their peers anywhere else within the Mesoamerican territory.

Here we will consider two key knowledge systems, making written records and the astronomically based calendar.



VISUALIZING BOOK OF MORMON LIFE

Does the Book of Mormon indicate the development of broadly shared ways of thinking and doing among its various peoples? Yes, at numerous points. For instance, the people of Zarahemla in the third century B.C., although of different language and cultural heritage at first contact, learned the language of the Nephites and came to follow their governmental scheme and laws (see Omni 1:14–9). The reverse of the process must also have gone on in respect to other knowledge. The system of weights, measures, and money employed by the Nephites had visible similarities to, and apparently was derived from, the Jaredite system, probably through the “Mulekites” as intermediaries (see Alma 11:4).¹¹⁹ Nephite priestly dissenters, the Amulonites, taught the Nephite writing system among the Lamanites (see Mosiah 24:4), who then produced their own books (see Helaman 3:15).¹²⁰ A cult known as the order of Nehor spread throughout Nephite territory and far into Lamanite country in a matter of a few years (see Alma chapter 1; 14:16; 21:4; 24:28). The Jaredite-originated¹²¹ secret society pattern became widespread throughout Nephite and Lamanite lands (see Ether 8:9–19; Helaman 6:26–30; 3 Nephi 3:9; 4 Nephi 1:46).¹²² Trade, which was conducted throughout the entire geographical area, was facilitated by, and in turn facilitated, the sharing of common knowledge systems (see Mosiah 24:6–7; Helaman 6:7–9; 4 Nephi 1:46).



The transmission of sophisticated elements of cultural knowledge through the generations in Mesoamerica depended on written records. This fine Jaina-style figurine from around A.D. 700 underlines how the control of books conferred power on the lowland Maya elite, one of whom is shown here, and on the elite in other Mesoamerican societies.



This figure, the "Scribe of Cuicuilan," is named after the place in Oaxaca where it was found. It is considered to represent a keeper of records. Observers have noted its general similarity to representations of Egyptian scribes, although it is not clear what that might mean.

Writing and Records

In only one part of the New World was genuine ancient writing in use on a regular, culturally significant basis. That was Mesoamerica. For nearly twenty-five hundred years before the Spaniards arrived we find direct evidence for writing in the form of actual remains of documents (mainly on stone) and indirect evidence through representation in art depicting characters, documents, or scribes. At least fifteen different scripts are known from this area, and their use stretched over millennia.¹²³ The earliest writing was already quite sophisticated. That implies that still earlier written material awaits archaeological discovery.

Aztec records are the best described. They included "annals of ancient times, contemporary events, year counts, accounts compiled yearly, specific records for each year, books of each day and day-by-day counts or diaries."¹²⁴ Some of the records constituted histories of peoples that incorporated accounts of "victories, defeats, the lives of rulers, memorable ceremonial occasions," and even "the

adventures of individual heroes, often in intimate and vivid detail."¹²⁵ Letters were also exchanged.

We know a good deal about the Mayan writing tradition from four preserved Mayan books or codices, sixteen lineage histories from Yucatan (the Chilam Balam records, written in the European alphabet soon after the Conquest), and inscriptions on many stone monuments. The Maya "used to write their histories, and the ceremonies and method of sacrifices to their idols, and their calendar, in books." Also "they had written records of . . . the prognostications of their prophets and the lives . . . of their lords."¹²⁶ Tax and trade records were also kept.¹²⁷ Other Mesoamerican peoples had similar types of documents.

Records of the types mentioned were surely kept long before as well, in the Classic and even the Pre-Classic period, before A.D. 300. In fact, many of the documents recorded at the time of the Conquest were "simply transcriptions of the old hieroglyphic manuscripts" put into Spanish characters.¹²⁸

On a large, carved stone that is now part of a wall at Monte Alban is this Zapotec inscription. It dates to the early centuries A.D. Inscribed stelae (large free-standing stones) or panels like this were often used in Mesoamerican architecture and site planning to evoke religious devotion in or communicate political propaganda to the public.

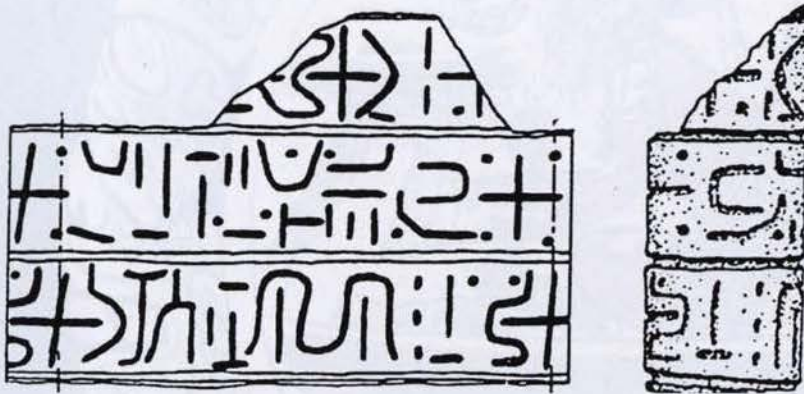


A Classic-era painted plate shows a Maya dignitary (or perhaps a deity) painting a codex with a brush.





One of the most interesting of the obscure writing systems is found only on this roller seal that was uncovered accidentally at the site of Tlatilco, just west of Mexico City. From other materials at the site, the writing appears to date between 400 and 700 B.C. Experts have suggested that it represents writing even more advanced than the hieroglyphic or pictorial writing typical of Mesoamerica.¹²⁷



This is how the whole inscription on the Tlatilco roller seal looks when rolled out. Carl Hugh Jones has compared these characters to those on the Anthon transcript, which Joseph Smith copied from the record that he translated. His conclusion was that only a few of the characters were not shared by the two sources.¹²⁸



In a little vignette on a Maya vase, a rabbit busily paints on a codex. A rabbit was thought to be visible on the face of the moon, and the animal was a patron of scribes.



VISUALIZING BOOK OF MORMON LIFE

According to the Book of Mormon account, the carving of texts on stone was being done at the behest of royalty as early as the sixth century B.C. (see Omni 1:20–2). By the first century B.C., the Nephite history reports that “there are many records kept of the proceedings of this people, by many of this people, which are particular and very large” (Helaman 3:13). Moreover, the tradition of literacy probably continued after the destruction at Cumorah among “robbers” (Mormon 8:9; these were either ex-Nephites or totally other people) and among descendants of former Nephites who had defected to the Lamanites (see Moroni 9:24). Anyway, the Lamanites were earlier said to have copied the Nephite pattern (see Mosiah 24:6), so the tradition of written records would likely have continued among them regardless of what happened to ex-Nephite groups.



Our understanding of writing in Mesoamerica is far from complete. Here are samples of apparent scripts that have been discovered but for which we have little or no historical or cultural context.

BOOKS

In the sixteenth century the European invaders found large numbers of books in use that the natives held in great respect. Those hand-produced books are called codices (singular, codex). Michael D. Coe supposes that “there must have been thousands of such books in Classic times” (A.D. 300–900).¹³¹ Most records were destroyed by zealous Spanish priests who suspected (correctly) that they were an integral part of the old religious system that they wanted to destroy completely.¹³²



VISUALIZING BOOK OF MORMON LIFE

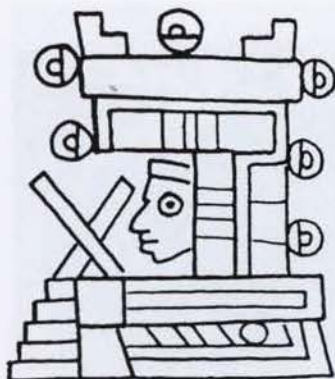
The Book of Mormon reports that books were used by the Jaredites, Nephites, and Lamanites from perhaps the third millennium B.C. until at least A.D. 400. “Many books” were in use among the Nephites in the first century B.C. (Helaman 3:15; see 3:13). Mormon, the last major writer in the Nephite tradition, buried a whole library of such documents during his people’s final days in the late fourth century A.D. (see Mormon 6:6; compare 1:3).



The Madrid Codex constituted an almanac of astrological predictions dating around the time of the Spaniards’ arrival.



An artist has accurately reconstructed the processes of papermaking, ink preparation, and codex painting among the Maya. The basics were the same throughout much of Mesoamerica.



Details of how Mesoamerican astronomers made their observations are nowhere described, but sketches like this from an Aztec source, the *Codex Borbonicus*, let us know that sighting devices were used to assist.

Calendar, Astronomy, and Astrology

Every Mesoamerican people considered their calendar to be more than a practical tool for keeping track of time. A calendar was more like a pseudo-scientific model of the unfolding of each individual's and society's history and fate.

There was not just a single calendar but several. One system was built around 13 numbered days (a sort of "week"). A separate cycle of 20 days provided a rough equivalent to a "month." In the 20-day cycle each day was named for a god. The two cycles ran in parallel. Thus a day would be labeled, say, 4 according to the first count but Chuen in the second. Another day 4 Chuen would not come around again in the meshing of the two cycles for 260 days (making one kind of "year"). But there were other counts going on simultaneously. A 360-day "year" and, for different purposes, a 365-day "year" were also counted. Cycles of the moon were also tracked, and there probably was a 7-day "week" (one-fourth of a lunar month) as well. Even the cycle for the appearance of Venus was calculated. Mastering this maze of interlocking counts clearly involved a high degree of expertise, constant attention, and books.

In the best-known regional version, that of the Maya in Yucatan, the most basic year consisted of 360 days (marking one

Maya *tun*). Twenty *tuns* formed a *katun* ($20 \times 360 = 7,200$ days) or approximately 20 of our years. Each *katun* period was identified by the name of the day that began it—*katun 11 Ahau* had its start on the day that was named 11 Ahau. The way the cycles meshed, it would be 260 *tuns* (256 of our years) before the day 11 Ahau would again begin a *katun*. To refer to *katun 11 Ahau* would define a period of history somewhat like our speaking of the fifteenth century.

The Maya believed that each period of this calendrical history would essentially reenact what had gone on during the last era when the same calendar label had been in use.¹³³ If *katun 11 Ahau* had proved disastrous before, according to the astrological almanac, then look out the next time 11 Ahau was slated to begin the *katun*; it too would bring bad news.

Astronomy as the accumulation of a mass of information on the heavenly bodies for its own sake was unknown. The observations were to construct or document astrological models. Thus even though enough data had been collected and conceptualized that certain eclipses could be predicted, the interest of the Mesoamericans was not in the eclipse as such but in the sacred significance that they supposed was behind it.

This sketch uses meshed gears to show how separately running calendar cycles combined to determine the changing designations of the days in the Maya calendar.





VISUALIZING BOOK OF MORMON LIFE

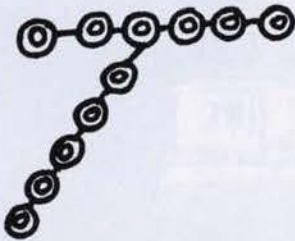
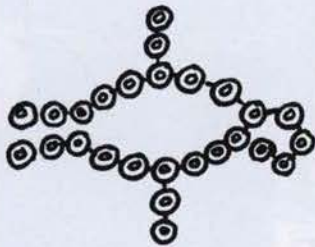
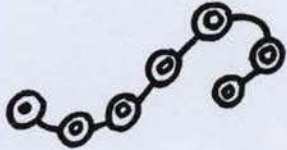
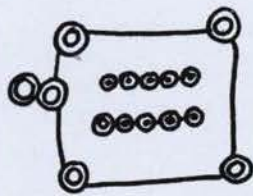
While little is said in the Nephite record about their calendar, the few glimpses we get show us that they took calendrical cycling and its fateful consequences seriously, in general agreement with Mesoamerican thought.

The Nephites used several calendrical systems that ran concurrently. In the first place, as Randall P. Spackman has convincingly argued,¹³⁴ their founders must have maintained the moon-based calendar of the

Jews after they left Jerusalem (see Omni 1:21). Another count of years was begun with the departure from the land of Judah. Later, at least two other counts were employed, and all four were meshed. How the cycles related was historically very significant.

Third Nephi 1:1 shows the pattern most clearly: the 91st year in the era of the rule of judges over the Nephites coincided with the end of the 600th year since Lehi departed from Jerusalem. Moreover, the year was

Architecture sometimes reflected the calendar. This pyramid at the site of El Tajin in northern Veracruz has 365 niches that are meant to represent the days of the solar year. Masonry designs elsewhere use calendar-significant numbers such as 13, 52, and 260 in this same general way. (The idea may have seemed natural for those concerned with astronomy; one old Korean observatory consisted of a tower that contained 366 stones laid up in courses of 28—the number of days in the lunar month.)¹³⁵



related to astronomical phenomena—"signs" (3 Nephi 1:4; see 1:8, 9), and particularly a sign involving the failure of a regular night of darkness (see 3 Nephi 1:8; Helaman 14:3). The 600-year interval had first been prophesied by founder Nephi₁ (see 1 Nephi 10:4; 19:8; 2 Nephi 25:19). Samuel, the Lamanite prophet, reiterated the prediction with greater detail in 10 or 11 B.C. In five more years, he announced, the great sign of the coming of the Messiah would be given. There would occur a night without darkness, a new star would appear, and there would be many signs and wonders in heaven (see Helaman 14:2–6). The signs appeared as scheduled. By the 100th year of the reign of the judges, 609 Nephite years had passed since Lehi's departure (see 3 Nephi 2:5–7). "Now the Nephites began to reckon their time from this period when the sign was given" (3 Nephi 2:8).

The pattern of calendrical, astronomical, and prophetic calculations among the Nephites was confirmed a few years later when the record reports the great physical catastrophe that marked the crucifixion. "And now it came to pass that according to our record, and we know our record to be true, for [it was kept by a prophet] . . . if there was no mistake made by this man in the reckoning of our time, the thirty and third year had passed away; and the people began to look with great earnestness for the sign which had been given by the prophet Samuel, . . . darkness for the space of three days" (3 Nephi 8:1–3).

The sense of inevitability that the Nephites felt about calendrical prophecy is also like that in Mesoamerica. Both Alma₂ and Samuel foresaw the destruction of the Nephite people as definitely going to occur some "four hundred years" after the birth of Christ (see Alma 45:10; see 45:11–2; Helaman 13:5; confirmed by Moroni₂ in Mormon 8:6). (I have suggested further parallels to patterns of Maya calendrical prophecy in another publication.)¹³⁶

A vignette in the story of Nephite-Lamanite warfare underlines how the calendar could shape their behavior in a Mesoamerican manner. A massive Lamanite expeditionary force was on the verge of gaining control of the narrow neck of land from the Nephites when they camped on the beach near the city Bountiful, their last obstacle (see Alma 51:26–32). The Nephite captain Teancum crept into the enemy camp at night and silently killed the enemy leader (see Alma 51:33–4). The next morning happened to be the astrologically significant (in Mesoamerican terms) first day of the new year. "Behold, when the Lamanites awoke on the first morning of the first month, behold, they found Amalickiah was dead in his own tent. . . . When the Lamanites saw this they were affrighted; and they abandoned their design in marching into the land northward, and retreated with all their army into the city of Mulek" (Alma 52:1–2). The timing of Teancum's act of psychological warfare could not have been better, nor more instructive about the powerful role of calendrical expectations.



These Aztec symbols (the six symbols in the vertical column above, from Sahagun) were used by astronomers to represent some of the bodies or constellations they observed in the heavens. Incidentally, the practice of connecting circles with lines to represent a constellation was known only in China and in ancient Mesoamerica.¹³⁷ The four symbols on the right were used by the Maya. Note the rabbit in the moon motif in both Aztec and Maya symbols.

ARCHAEOASTRONOMICAL ALIGNMENTS

Lines of sight to where the sun, moon, and stars appeared on the horizon at key times in the calendar were used in picking sites for settlements and aligning structures thereon (somewhat in the manner of the Chinese with their pseudoscience, geomancy, by which they erected and oriented structures in accord with the supposed flow of forces in the earth). For example, V. Garth Norman has shown that the key structures in the main group at the site of Izapa, near the border between the state of Chiapas and Guatemala, are lined up in relation to each other, to the stand-

ing stone monuments, and to mountain peaks on the horizon over which the sun or moon rose or set at crucial calendar dates.¹³⁸ The entire site was consciously laid out and built as a kind of cosmic calculator before the Christian era.

Orientations of this sort are found throughout Mesoamerica and must have been begun early, because the original spots on which important sites were founded were chosen with this thinking in mind. This map¹³⁹ shows some of the cities that were sited in relation to an adjacent peak that was astronomically significant.



VISUALIZING BOOK OF MORMON LIFE

Latter-day Saint readers may find it interesting that at least three major sites were laid out in relation to sunrise over Cerro El Vigia in the Tuxtla Mountains of southern Veracruz, since it is the likely site for the hill Cumorah of the Nephites and the hill Ramah of the Jaredites.¹⁴⁰

CITIES ALIGN WITH PEAKS AT SOLSTICES

▲ Mountain Peaks

● City Sites

