TI CAN TITZIL CAAN, TI CAN TITZIL LUUM

A Collection of Papers
About the Relationships Between
The World Directions, the Calendar, Prognostications
And the Mayan Deities

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I would like to thank Victoria Bricker, both for her numerous observations and suggestions in the various exchanges of correspondence between us, and for sending along pertinent articles authored by her. This has been of great help in getting me to focus in on various details, especially in such things as the question of the relationship between the **ah cuch haaboob** and world directions as shown in the various Mayan hieroglyphic texts, the consideration of the idea that there were calendar reforms which took place both prior to the arrival of the Spanish and perhaps afterwards, and general comments about the workings of the Mexican calendar and how that relates in particular to the Fejérváry-Mayer Codex and the question of **trecenas**. Particularly helpful have also been the various observations and comments given in the publication which she and Helga-Maria Miram published in 2002, "*An Encounter of Two Worlds, The Book of Chilam Balam of Kaua*."

I would also like to thank René Acuña for reading through these papers and making various comments which have been very helpful in sharpening my focus on certain questions dealing with the Mexican calendar, and in particular for his thoughts on the calendarical information presented by Antonio de Herrera y Tordesillas in his publication *Historia general de los hechos de los castellanos en las Islas y Tierra Firme del mar Océano que llaman Indias Occidentales*.

ABBREVIATIONS

The following abbreviations are used in the papers written by me:

BMTV	*Bocabulario de Maya Than de Viena*
CAM	*Coordinación Alfabética* of Juan Pío Pérez, 1898
CMM	*Calepino Maya de Motul*
DB	Vocabulary collected David Bolles
DMM	*Diccionario Maya de Motul*, also known as Motul II
DMSF	*Diccionario Maya de San Francisco*
JPP	*Diccionario de la Lengua Maya* of Juan Pío Pérez
PCML	*Post Conquest Mayan Literature*

INTRODUCTION

This collection of papers concerns itself with the question of the relationships between the Mayan calendar, the world directions and their associated colors, and the various attributes and deities which are ascribed to the calendar and the world directions.

Throughout the Mayan colonial literature[1] there are glimpses of an intricate system which relates the workings of the Mayan calendar to world directions, world direction colors, deities which represent or inhabit these various world directions, prognostications as to how a certain day, year or **katun**[2] will turn out, and what the fate of a person born on a given day will be. Unfortunately, there is never a full explanation in the literature written by the Maya themselves of how all of these parts are interconnected. However, as we read through the various reports written by the Spanish friars about the Maya and also about the Mexicans a fuller picture emerges.[3] Added to this there are the various hieroglyphic codices written by the Maya and the pictorial codices painted by the Mexicans which add to our knowledge of how this intricate system worked.

The approach in the papers presented here (with the exception of the Thompson paper given on pages 147-189) is to begin with what was written by the Maya themselves. The assumption is that they are the best source of information when it comes to such things as what the actual names of deities, day names, and things associated with the world directions are. This is especially true when it comes such things as day names and deities discussed in this collection of papers. It becomes very quickly apparent when taking this approach that the Spanish writers were woefully inadequate in understanding and writing down this information. Despite this problem, and even some fundamental structural problems which are to be found in the writings by the Spanish writers, it is clear that they got their information from native people who were knowledgeable about their culture.[4]

For more than a century and a half various researchers have been trying to piece the information provided by these various sources together. Perhaps the two most

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[1] The Mayan literature which concerns us here comes from the various Books of Chilam Balam and the Ritual of the Bacabs. This material was written down beginning in the latter part of the 16th century, and continued to be added to and retranscribed up through the 18th century. There is much more than this material which was written by the Maya, as for example letters, land treaties, legal documents, medical recipes, family histories and such like, but by their nature they are not concerned with the questions which are addressed in this collection of papers.

[2] At the time of Spanish contact a **katun** was a period of 24 years. However, as the name implies, originally the term **katun** meant a period of 20 **tuns**, or 360 day cycles. It is not clear when the calendar reform took place, but there are hints that it might have happened in the late 1300's, Christian era. For a discussion on the Mayan calendar see pp. 119-142 of this publication.

[3] The names of these writers are well known. For the Maya they are principally Landa, Lizana and Cogolludo, and for the Mexican culture they are Sahagún, Durán and Tovar, with early Mexican lay writers such as Muñoz Camargo and Ixtlilxochitl adding greatly to the material supplied by Sahagún, Durán and Tovar.

[4] For the Maya, the two names which come to the fore most often in this respect are Gaspar Antonio Chi and Juan Cocom, both members of Mayan ruling families.

important people in this field are Eduard Seler and J. Eric Thompson, and numerous references are made to their works in these papers. However, it should be pointed out that most often these researchers began with the Spanish writings, and thus accustomed themselves with names of Mayan things taken from the Spanish perspective. Perhaps because if this, much of the misinformation which began with the Spanish writers has continued on through to the present day.

In the case of the Mayan language this is especially unfortunate. That is because spelling a name correctly, be it of a place, a day or month, or of a deity, lets us know more about what the name means. Unlike English, where we long since have lost connections with many such names (although it is sometimes possible with some effort to ferret the meaning of these names out), in the Mayan language names do for the most part have meaning,[5] so it is imperative that the spelling of these names be respected.

In the papers presented here, with the exception of the Thompson paper, an effort is made to give, whenever possible, the correct spelling of the various names in question. For an example of this see pages 2-3 where the names of deities which represent the year-bearers are discussed. There, the names from Landa and their equivalent names from the Mayan sources are given.

For a clearer picture, here are the names of these deities from Landa and the Mayan sources presented side by side:

Year Bearer[6]	Landa	Mayan texts
Kan	Canzicnal	Ah Can Tzic Nal
Muluc	Zacziui	Ah Zac Dziu
Hiix	Hozanek	Ah Can Ek
Cauac	Hobnil	Hobnil

The reader will note that in Thompson's paper he uses the Landa spelling convention in his presentation of these deity names, and, as mentioned, there continues to be a residual effect of the inaccurate spelling practices of Landa and other Spanish historians of the period on today's spelling of these names in both academic papers and in the popular literature.

An additional problem with Landa is that he was not always correct in the presentation of ideas. There can be little doubt that this was in part due to the very intricate nature of the Mayan calendrical system which would be difficult for an outside observer to comprehend without extended study of the system. An

[5] An example of a situation in which this statement does not appear to hold true is with some of the names of the days of the **uinal**. For a discussion of this see Appendix E.

[6] As will be noted in footnote 11 below, there is a problem with Landa in that he is off by one quadrant when equating the world directions to the year bearers. He equated the south year with the year bearer **Kan**, the east year with the year bearer **Muluc**, etc. It is probable that he equated the **Kan** years with the color **kan** (yellow, the color of south), and this threw him off by one quadrant. Further complicating the situation, the new year ceremony which Landa describes on pages 29r-30r for the year bearer **Kan** happens during the final five day-month of the year **Cauac**, often called **U Uayab Yaab**, which begins with the day **Cauac**. Apparently Landa assumed that the new year's ceremony was in honor of the year bearer **Cauac** when in fact it is in honor of the following year bearer **Kan**. In the table presented here Landa's error has been corrected.

example of this problem is that in his calendar exposition Landa transposed the year bearers by one quadrant, a problem which will be noted both in my papers and in the one by Thompson. The cause of this transposition will be explored briefly in footnote 9 on page 2 of the following paper.

In general then, while the Spanish historians are of great help in filling in the gaps of knowledge about how Mayan and Mexican systems worked, their lack of accuracy makes it very desirable to consult the works of the native writers, and where possible use these works as a first resort rather than as an afterthought.

Coincidence or By Design?

Throughout this collection of papers the reader will notice that there are many phenomena regarding such things as the calendar and its relationship with the world directions, world direction colors and associated attributes which appear to be coincidental. Some examples these apparently coincidental phenomena are:

1) There is an orderly progression of world directions for the days of the **uinal**, going in a counterclockwise direction so that the days which are the **ah cuch haaboob** or year bearers also have their world directions occurring in a counterclockwise rotational progression. This is of course a function of the fact that the 20 days of the **uinal** will make 18 complete cycles before the year is finished, making 360 days, leaving the five days of the **uinal** which have to be counted before the seating of the next year. This factor also makes it so that only four days of the **uinal** fall on the first day of the year. Is it coincidence that by counting five days forward and assigning each day a world direction that the next year bearer is also one world direction counterclockwise from the previous one?

2) There are 13 numbered days which are combined with the 20 named days of the **uinal** which creates the calendar round of 260 days, called **U Xoc Kin** by the Maya and **U Tzol Kin** by the Mayanists. It happens that this cycle of 13 days makes 28 cycles before the end of the year, giving 364 days or one day shy of a complete year. Thus, the first day of the ensuing year has a numerical coefficient one greater than the previous year, and therefore there is an orderly progression of numbers for the year bearers, i.e.: 1 Kan, 2 Muluc, 3 Hiix, 4 Cauac, 5 Kan, 6 Muluc, etc., through a cycle of 52 years (13 numbers x 4 year bearers) until the year bearer 1 Kan reappears. This cycle of 52 years was called by the Maya **U Bubukil Haaboob**. Is it a coincidence that such an orderly progression is achieved by combining the 260 day calendar round with the 365 day calendar?

3) While most Mayanists believe that the Maya did not have a leap year mechanism there is evidence within the literature written by the Maya themselves that there must of been a leap year mechanism, although such a mechanism is not discussed in their literature. However, taking the various pieces of evidence together it appears that at the end of the 52 year cycle 13 truly “nameless days” (**ixma kaba kin**, that is days during which the cycle of named days of the **uinal** was stopped and not counted) were allowed to pass before beginning the 52 year cycle on the day 1 Kan once again. While this system is not as exact as our present Gregorian calendar, it is as exact as the Julian calendar which preceded our present mode of reckoning. Is it coincidence that such a combination of the

260 days cycle, the 365 day year plus 13 nameless days at the point where these two cycles would coincide again to begin the next 52 year cycle would keep the Mayan calendar in tune with the solar-agricultural year?

4) At the time the material in the Books of Chilam Balam was beginning to be written, i.e. in the late 1500's, there appears to have been two systems of counting periods of time longer than 52 years. While there is a certain amount of inconsistency in the references to these two systems, it appears that one system was called **U Buk Xoc Katun** (the Count of the Katuns) and the other **U Buk Xoc Ahau Katun** (the Count of the Ahau Katuns). The difference between a **Katun** and an **Ahau Katun**, according to the literature written in the Books of Chilam Balam, is that the **Katun** is based on the 360 day calendar round called a **tun** and keys off a day **Ahau** every 360 days while the **Ahau Katun** is based on the 365 day year and is keyed off the year bearer **Cauac** every 24 years with the following day **Ahau** giving its name to that **Ahau Katun**. **U Buk Xoc Katun** is therefore 360 days or one **tun** x 20 **tuns** x 13 cycles which is the number of cycles needed to begin repeating the number sequence again, giving 93,600 days or a little more than 256 years. **U Buk Xoc Ahau Katun** on the other hand is based on an **Ahau Katun** of 24 years in length x 13 cycles giving 312 years needed to begin repeating the number sequence again.

It should be mentioned that it takes 6 calendar rounds of 52 years, or 6 **U Bubukil Haaboob**, to complete one **U Buk Xoc Ahau Katun**. (6 x 52 years = 312 years.) Thus, using the dating system in which the day of the **U Xoc Kin** or 260 day sacred calendar, the day of the month of the **Haab** or 365 day annual calendar, and the number of the **Ahau Katun** are given, then there is only one day within the 312 year **U Buk Xoc Ahau Katun** which can be designated by this date.

Again, the question arises as to whether it is coincidental that the Mayan calendar as presented by the Books of Chilam Balam, in which the 260 day sacred calendar, the 365 day annual calendar, the 52 year calendar round and the 312 year **Ahau Katun** cycle all come to such a neat series of coinciding dates and rounds, or are these series of cycles and rounds the result of long years of observation? Again, on this subject the Mayan sources are silent.

While most of the description by Landa of how the Mayan calendar worked appears to be based on the 20 **tun** or **Katun** system he has the following comment:

Llámanles a estos en su lengua Katunes, y con ellos tenían, a maravilla, cuenta de sus edades, y le fue así fácil al viejo de quien en el primer capítulo dije (Juan Cocom), había trescientos años después, acordarse de ellos. Y si yo no supiera de estas sus cuentas, no creyera se pudiese así acordar de tanta edad.[7]

The question is, when using the number 300 years was Landa referring to the number of years which were counted using **Katuns**, which in fact were roughly 256 years for one cycle of **Katuns**, or was "the old man", meaning Juan Cocom, being

[7] For a translation see Tozzer 1941. p. 167: They call these katuns in their language, and by them they kept the account of their ages marvelously well. And thus it was easy for the old man of whom I have spoken in the first chapter to remember (traditions) going back three hundred years. For if I had not known about these computations, I should not have believed that it would be possible to have knowledge of so long a time.

able to remember historical data back 312 years or one cycle of **Ahau Katuns**, which would indicate that he was using the **Ahau Katun** system for his historical reckoning?

In the papers presented here these various question will be looked at. Question 1 will be looked at in Appendix B of the first paper, with references to supporting material to be found in that paper's other Appendices. Questions 2, 3 and 4 will be looked at in the article *The Mayan Calendar, The Solar - Agricultural Year, and Correlation Questions* which begins on page 125.

The Question of Calendar Reform

The suggestion has been made that the Maya went through a calendar reform, somewhat not unlike that which Pope Gregory XIII carried out and implemented on the Christian calendar on February 24, 1582, and going further back in time like that which Julius Caesar carried out on the Julian calendar in 45 BC. Some researchers have surmised that the Mayan calendar reform, at least for northern Yucatan, might have taken place during the early 1500's, others have placed it in the late 1300's, while still others have placed the calendar reform to have taken place even earlier, perhaps in the 900's. This reformed calendar is often referred to as the Mayapán calendar. (See for example Edmonson, 1982, p. 197, Edmonson, 1986, p. 11, Edmonson, 1988, p. 127, Rice, 2004, p. 75, Bricker and Miram, 2002, pp. 42, 69-71, etc., Bricker, 2010, pp. 322, 326.)

Given that the Mayan calendar appears to have been operating since at least several centuries before the Christian era, it is not out of the question that such a reform, or more probably several such reforms, could have taken place. It is further not out of the question that by the time the reform or reforms took place those people who were responsible for taking care of the calendar would have noticed certain patterns which the two cycles, the 260 day calendar round and the 365 day year, formed as they went through their cycles.

There is thus this question: is what is presented here in these papers concerning the Mayan calendar as presented by the Books of Chilam Balam a matter of coincidence, or, especially with the thought that there might have been a calendar reform sometime prior to the arrival of the Spaniards, are the intricacies of the Mayan calendar as presented in the Books of Chilam Balam and discussed in these papers something which was accomplished by design? There is unfortunately no indication in the literature written by the Maya that the latter was the case, so this question will have to be shelved until further research shows that one or the other principle is operating here.

Ti Can Titzil Caan, Ti Can Titzil Luum

(To the four corners of the sky,
to the four corners of the world.)
A look at the World Directions, their Colors and their Attributes

by David Bolles

In common with other Mesoamerican cultures, the Maya combined the four world directions and the center of the world with world directions colors and various attributes which were believed to be associated with these world directions. This concept of designating colors and attributes to the world directions is not unique to the cultures of Mesoamerica, but extends to many cultures not only throughout the Americas but also into Asia.

Despite the commonality of this practice, it is interesting to note that the actual colors which are attributed to the world directions vary from culture to culture. The Maya used the following color scheme:

East	Red
North	White
West	Black
South	Yellow
Center	Green

Of the various known color schemes from other cultures the only one to match the one of the Maya is that of the Oglala Sioux, and this most certainly is only by random chance.[8]

Note that the Mayan color scheme is listed counterclockwise starting with the East. As will be seen as we look at the various attributes of the world directions and also the rituals which include naming the deities which are to be found in the four corners of the world, it is standard to begin with the East and continue in the counterclockwise direction, and, when included, to leave the center of the world for last.

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[8] A sample of color schemes from Mesoamerican and North American cultures:

	East	North	West	South	Center
Apache					—
Aztec					—
Cherokee					
Cheyenne					—
Lakota					
Maya					
Navajo					—
Pueblo					—
Sioux					—
Tarascan					

See Appendices A & J for further information about world direction color schemes.

Aside from colors[9] being attributed to each world direction as was common amongst the various Mesoamerican cultures, there was the set of four year bearers[10] which were also linked to the world directions and their associated colors. Furthermore, there was a set of deities which were linked with each of these year bearers:[11]

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[9] It has been suggested that the colors used for the world directions are based on the color of various varieties of corn, namely red, white, purple and yellow. However, there are also other plants which also come in these various color varieties. Principal among them is the **nicte** tree (*Plumeria sp.*) which has the following color varieties: red, white, purple and yellow. Thus, it is not clear whether it is corn which gives the color to the world directions or whether it is coincidental that the colors of corn match the world direction colors.

For the **nicte** tree see Roys, 1931: "Nicte: Plumeria sp. Lit. flower-tree. Frangipani. This is a generic name for Plumeria; see Chac-nicte, Zac-nicte, Zabac-nicte etc...." Concerning the use of the **nicte** tree: it is considered to be good to plant the **nicte** trees bearing the appropriate colored flowers, aligning them with the correct world directions, along the perimeter of one's property. This is thought to keep out the evil spirits or winds and in general to protect the property around which these trees are planted. However, today few people take the time to plant the **nicte** tree in this manner, but many yards do have a few of these trees planted in a seemingly random pattern.

There is an alternative theory as to the meaning of the world direction colors, at least for the Mayan color scheme. There is the suggestion that the colors represent the attributes of each particular world direction. Thus, the color red to the East represents the rising sun and the land of rebirth, the color white to the North represents the colder region of the world, the land of ice and snow, the color black to the West represents the setting sun and the land of death, the color yellow to the South represents the heat of the midday sun and the warmer regions of the world, and green at the center of the world represents the land in which things grow. However, the trouble with this theory is that this color scheme only applies to the Maya, and can not be applied to most of the neighboring cultures. It also presupposes that the Maya were aware that north of their land lay a region where ice and snow existed. Given that amongst the Maya there were traders (**ah ppolom**) who had extensive trade routes throughout much of Mesoamerica, the northern South American coast and the Caribbean islands, it is not inconceivable that they were aware that there were such regions, but the idea seems to be rather a stretch of the imagination.

Since neither of these theories is substantiated in the writings by the Maya we will leave this question inconclusively.

[10] There are 20 named days which make up the **uinal** or 20 day month. Due to the mathematics of the Mayan calendar, only four of these named days fall on the first day of the year. These days are called **ah cuch haaboob** or year bearers. The days which were the year bearers at the time of conquest were **Kan**, **Muluc**, **Hiix**, and **Cauac**. See Appendix F for two pre-Columbian calendars.

[11] This list of deity names is derived from Landa. However, Landa, or perhaps the transcribers of the existing manuscript copy which is the sole source of our information provided by Landa, was very inaccurate in the spelling of many Mayan words. It is fortunate that three of the first-named deities, **Ah Can Tzic Nal**, **Ah Zac Dziu** and **Ah Can Ek**, are mentioned in sources written by the Maya themselves, and thus we are able to reconstruct these names. The fourth name, **Hobnil**, (cavity, chest) seems reasonable and is often used in connection with native bee hives which used to be housed in hollowed-out logs. A further problem with Landa is that he is off by one quadrant when equating the world directions to the year bearers and equated the south year with the year bearer **Kan**, the east year with the year bearer **Muluc**, etc. It is probable that he equated the **Kan** years with the color **kan** (yellow, the color of south), and this threw him off. His text reads:

Landa, 1966, pp. 62-63: La primera, pues, de las letras dominicales es Kan. El año que esta letra servía era el agüero del Bacab que por otros nombres llaman Hobnil, Kanalbacab, Kanpauahtun, Kanxibchac. A este le señalaban a la de medio día. La segunda letra es Muluc; señalabanla al oriente y su año era agüero del Bacab que llaman Canzienal, Chacalbacab, Chacpauahtun, Chacxibchac. La tercera letra es Ix. Su año era agüero del Bacab que llaman Zaczini, Zacalbacab, Zacpauahtun, <63> Zacxibchac y señalabanle a la parte del norte. La cuatra letra es Cauac: su año era agüero del Bacab que llaman Hozanek, Ekelbacab, Ekpauahtun, Ekxibchac; a esta señalaban a la parte del poniente.

World Direction	Color	Year Bearer[12]	Deities[13]
East	Red	Kan	Ah Can Tzic Nal, Chacal Bacab, Chac Pauahtun, Chac Xib Chac
North	White	Muluc	Ah Zac Dziu, Zacal Bacab, Zac Pauahtun, Zac Xib Chac
West	Black	Hiix	Ah Can Ek, Ekel Bacab, Ek Pauahtun, Ek Xib Chac
South	Yellow	Cauac	Hobnil, Kanal Bacab, Kan Pauahtun, Kan Xib Chac

[12] As mentioned in the previous footnote, Landa was off by one quadrant in the presentation of the year bearers. This has been corrected here.

[13] The meanings of these deity names are as follows:

Ah Can Tzic Nal	Male[a] four-times reverenced corn[b]
Chacal Bacab	Red Bacab[c]
Chac Pauahtun	Red Pauahtun[d]
Chac Xib Chac	Red Male Rain God
Ah Zac Dziu	Male White Cowbird[e]
Zacal Bacab	White Bacab
Zac Pauahtun	White Pauahtun
Zac Xib Chac	White Male Rain God
Ah Can Ek	Male Four Stars / Male Snake Star[f]
Ekel Bacab	Black Bacab
Ek Pauahtun	Black Pauahtun
Ek Xib Chac	Black Male Rain God
Hobnil	Cavity[g]
Kanal Bacab	Yellow Bacab
Kan Pauahtun	Yellow Pauahtun
Kan Xib Chac	Yellow Male Rain God

a) The reader will notice the English word "male" used as an equivalent for two different Mayan words: **ah** and **xib**. **Ah** placed before a word or place name indicates that the person indicated is male. The female counterpart is **Ix**. **Xib** can be a stand-alone word meaning "male". Its female counterpart is **chup**.

b) **Can tzic** is also applied to cloth made for tribute. See DMM: Pati de 4 piernas: can tzuc; can tzic; can heb.

c) **Bacabs**: Roys, 1965, p. 143: Bacab. One of the four deities stationed at the four world-quarters. They were sky bearers and apparently had other functions as well....

d) **Pauahtun**: Roys, 1965, p. 157: They are associated with the Chacs, or rain gods, and the Bacabs, or sky bearers; also occasionally with the "four changing winds"... The last association is sometimes called can-hel ("four-change").

e) **Dziu**: *Tangavius aeneus involucratus*, Lesson. Red-eyed cowbird.

f) The word **can** in the name **Can Ek** can mean either "snake" or "four". There are unfortunately no examples of usage of this name in the Mayan literature which clarify the meaning of **can** in this context.

g) As noted in footnote 10, **hobnil** means cavity or hollowed-out space. Actually, the word **hobnil** is the abbreviation of **hobonil**. For the use of **hobonil** with the word **cab** = "honey", resulting in the meaning "bee hive", see BMTV: Colmena: v hobonil cab .l. v cheel cab.

Some Rituals Illustrating The Use of the World Directions, Their Colors and Their Attributes

Throughout the texts written by the Maya in Latin script which have their origins in the late 16th century into the 17th century, principally in the Books of Chilam Balam, there are various texts and rituals which illustrate something of the nature and importance of the world directions, their colors and their attributes.

A good place to start is with pages 1-3 of the Book of Chilam Balam of Chumayel. These pages contain what appear to be five different rituals. Of these five rituals the first, second, fourth and fifth involve world directions.

Ritual 1 (lines H001-H006)[14] gives the names of the founders of the Canul, Cauich, Noh, and Puch lineages. From the folio numbering it is clear that the first folio of the Chumayel is missing. It seems evident that this ritual was already begun on the now missing folio, with the final line of each stanza of the ritual talking about the attributes of the hut or arbor (**pazel**) of the lineage in question.

Ritual 2 (lines H008-H039) lists the attributes of **ah muzen cab** (a deity of the bees) in his four aspects, each one with its world direction, corresponding world direction color and arbor (**dzulbal**).[15] [16]

Ritual 3 (lines H040-H047) tells of the measuring of the land in an unspecified 11 Ahau Katun and gives a list of the names of the people who took part in this project.

Ritual 4 (lines H049-H065) is a list of the names of people who became **ah hol poop**[17] and their associated world directions.

Ritual 5 (lines H067-H074) is a flower ritual. A **h-men**[18] apprentice of Kom Cẖeen, Don Elutario, claims that these are the words one would say while placing the different colored **nicte** flowers in the pathway of a potential victim in order to kill him through witchcraft.

Of these rituals Rituals 2 and 5 are most illustrative for the purposes of this paper.

For the edited version of Rituals 1-5 see Appendix C.

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[14] The line numbers here and throughout this paper refer to line numbers used in *Post Conquest Mayan Literature*.

[15] While both **pazel** and **dzulub / dzulbal** are glossed in the colonial vocabularies as "ramada" which is translated here as "arbor", in general the **pazel** is a more substantial construction than the **dzulub / dzulbal**.

[16] Mention should be made of the fact that there is reason to believe that Rituals 1 and 2 are related to Codex Dresden, pages 29c-31c. As can be seen in Appendix C which shows a comparison of Ritual 2 with pages 29c-31c of the Codex Dresden, this is where the ritual-almanac using glyphs T 15.667:47 and T 1.667:130 begins.

[17] **Ah hol poop**: "head of the mat", a town official who oversaw the training of dancers and other participants for feast days and kept the paraphernalia which was needed for these occasions. See CMM: Ah hol poop: principe del combite. ¶ Item: el casero dueño de la casa llamada poopol na donde se juntan a tratar cosa de republica y enseñarse a baylar para las fiestas del pueblo.

[18] **H-men**: "shaman". The apprentice is called **idzat** in Mayan.

Ritual 2, edited version

chac tok tun u tunil ti lakin
chac imix yaxche[19] u dzulbal ah chac muzen cabe[20]
chacal pucte u cheob
ix chac yak yiziloob
ix chac ak yibiloob
chac ix kan dzulen yulumoob
ix chac oppool yiximoob

zac tok tun u tunil ti xaman
zac imix yaxche u dzulbal ah zac muzen cabe
zacal pucte u cheob
ix zac pucte yiziloob
zac ib yibiloob
ix zac tan ulum yulumoob
zac ixim yiximoob

ek tok tun u tunil ti chikin
ek imix yaxche u dzulbal ah ek muzen cabe
ekel pucte u cheob
ix ek chuch iz yiziloob
ek ib yibiloob
ix ek buul u buuloob
ix ek ucum yulumoob
ix ek hub yiximoob, ek akab chan u naloob

kan tok tun u tunil ti nohol
kan imix yaxche u dzulbaloob ah kan muzen cabe
kanal pucte u cheob
ix kan pucte yiziloob
ix kan pach buul u buuloob
ix kan pucte ucum yulumoob
ix kankan nal u naloob

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[19] Throughout this paper the reader will see the word **imix**, either alone as a name of one of the days of the **uinal**, or combined with other words as the name of a tree: **imix che**, **imix yaxche**. It is assumed that these alternative names are the ritual names of the ceiba or kapok tree, *Ceiba pentandra* (L.) Gaertn., which is normally called **yaxche** in Yucatec Mayan.

[20] In the facsimile this deity is written as **ah mucen cab**, but elsewhere in the colonial manuscripts and also in modern pronunciation it is **ah muzen cab** as shown. See the facsimile of page 1 of the Chumayel on page 29 of this paper for the original paleography.

The writer of the Chumayel with some frequency left the cedilla off **ç**, and given that in the standard orthography of Colonial Yucatecan Mayan **c** is always hard as in the English **k**, there are at times questions as to how a word in the Chumayel is to be pronounced. In this case we have the modern pronunciation of this name to go on, plus examples of the name being spelled correctly in other source texts.

Ritual 2, translated

red flint is the stone of the east
red ceiba of abundance is the arbor of Red Muzen Cab[21]
red bullet trees are his trees
red vines are his camotes
red vines are his lima beans
red parrots are his turkeys
red toasted corn is his corn

white flint is the stone of the north
white ceiba of abundance is the arbor of White Muzen Cab
white bullet trees are his trees
white bullet trees are his camotes
white lima beans are his beans
white breasted turkeys are his turkeys
white corn is his corn

black flint is the stone of the west
black ceiba of abundance is the arbor of Black Muzen Cab
black bullet trees are his trees
black tipped camotes are his camotes
black lima beans are his lima beans
black beans are his beans
black pigeons are his turkeys
black speckled corn is his corn, black dark little corn is his corn

yellow flint is the stone of the south
yellow ceibas of abundance are the arbors of Yellow Muzen Cab
yellow bullet trees are his trees
yellow bullet trees are his camotes
yellow backed beans are his beans
yellow bullet tree pigeons are his turkeys
yellow corn is his corn

One of the interesting features of this ritual is the use of the word **dzulbal** = "arbor", which in the vocabularies is usually given as **dzulub**. The use of arbors is a common feature amongst the Plains Indian cultures, and apparently was common in Yucatan as well. Today these structures are usually called **pazel**, and the colonial vocabularies gloss both **dzulub** and **pazel** as "ramada". For the Plains peoples the purpose of these arbors is to provide a shady place for resting outside of the lodge, but in Yucatan they are more often constructed in the gardens plots, called "milpa" in Spanish and **col** in Mayan, to provide both shade and protection from rain, and to store items which are to be kept in the garden.

[21] Literally, "he who bring forth honey", from the verb root **muz** = "to issue forth, to gush forth", and **cab** = "honey".

The Wild Bees and Their Flowers

Ritual 5, edited version

chac ix chuuah cab[22] u caboob ti lakin
chac lol u luchoob;
chachac nicte u nicteiloob

zac ix chuuah cab u caboob ti xaman
zac lol u luchoob;
zac ix pach dza[23] u nicteiloob

ek ix chuuah cab u caboob ti chikin
ek lol u luchoob;
ek ix laul nicte u nicteiloob

kan ix chuuah cab u caboob ti nohol
kan lol u luchoob;
kan tzac nicte u nicteiloob

Ritual 5, translation

Red female wild bees are the bees to the east.
Red flowers are their drinking gourds,
deep red plumeria flowers are their flowers.[24]

White female wild bees are the bees to the north.
White flowers are their drinking gourds,
white *Commelina elegans* flowers are their flowers.

Black female wild bees are the bees to the west.
Black flowers are their drinking gords,
black laurel flowers are their flowers.

Yellow female wild bees are the bees to the south
Yellow flowers are their drinking gords,
yellow conjured flowers are their flowers.

As mentioned above, the **h-men** apprentice Don Elut from Kom Cheen claims that this is a ritual which is chanted while placing the four colors of **nicte** flowers, in the appropriate world directions, on the pathway where the intended victim will walk in order to kill him through witchcraft. However, it seems rather strange that the **Ix Chuuah Caboob** are included in this ritual.

[22] See CMM: Ah chuuah cab: unas avejas silvestres.

[23] Probably a misspelling for **pah dza**: *Commelina elegans* H.B.K., Whitemouth Dayflower.

[24] Note that there are two words for "flower": **lol** and **nicte**. The word **lol** is applied to large petaled flowers such as squash flowers whereas **nicte** is applied not only specifically to the plumeria flower but also other flowers which are delicate in structure. For **lol** see CMM: Lol: rosa o flor de hojas anchas como de calabaças, de bexucos, de xicaras, de algodon, y otras assi grandes. For **nicte** see BMTV: Flores y rosa, de yeruas o árboles pequeños: nic, nicte.

The Pillar of the Sky

The following ritual, which has three parallel versions in the Books of Chilam Balam of Chumayel[25] and Tizimin,[26] and in the Codex Pérez,[27] is a good illustration of a ritual which includes the center of the world. Each of these versions are somewhat different in their presentation of the material, so the following is a composite of these three sources.

U Yocmal Caan

ca ualci cantul ku, cantul bacab
lay hayezoob cab lae
tu chii tun ca dzoci hay cabile

ca ualhi chac imix che tu lakin peten
lay u yocmal caan
lay u chicul hay cabil
lay u coycinah u che bacab
culic chac tan pidzoy, chac xib yuy, chac oyal mut

ca ualhi zac imix che tu xaman peten
lay u yocmal caan
lay ualic zac chic
lay u chicul hay cabil
lay zac imix che; ualic cu chic
culic zac tan pidzoy, zac xib yuy, zac oyal mut

ca ualhi ek imix che tu chikin peten
lay u yocmal caan
lay u chicul hay cabil
culic ek tan pidzoy, ek xib yuy, ek oyal mut

ca ualhi kan imix che tu nohol peten
lay u yocmal caan
lay u chicul hay cabil
culic kan tan pidzoy, kan xib yuy, kan oyal mut

ca ualhi yax imix che tu chumuc peten
lay u yocmal caan
lay u chicul hay cabil
culic yax tan pidzoy, yax xib yuy, yax oyal mut

[25] Chumayel, p. 43.

[26] Tizimin, p. 12r.

[27] Codex Pérez, p. 118.

The Pillar of the Sky

Then the four gods, the four bacabs stood up.
Thus then they destroyed the world by flood.[28]
Then, after the destruction of the world:

The red tree of abundance[29] was set up in the east of the land.
This then is the pillar of the sky.
This then is the sign of the destruction of the world by flood.
Then the bacab bent the tree.
to seat the red breasted pidzoy, red male oriole, red retiring[30] mut-bird.[31]

The white tree of abundance was set up in the north of the land.
This then is the pillar of the sky.
Then the white coati stands up.
This then is the sign of the destruction of the world by flood.
This then is the white tree of abundance where the coati stands up
to seat the white breasted pidzoy, white male oriole, white retiring mut-bird.

The black tree of abundance was set up in the west of the land.
This then is the pillar of the sky.
This then is the sign of the destruction of the world by flood.
It seats the black breasted pidzoy, black male oriole, black retiring mut-bird.

The yellow tree of abundance was set up in the south of the land.
This then is the pillar of the sky.
This then is the sign of the destruction of the world by flood.
It seats the yellow breasted pidzoy, yellow male oriole, yellow retiring mut-bird.

The green tree of abundance was set up in the center of the land.
This then is the pillar of the sky.
This then is the sign of the destruction of the world by flood.
It seats the green breasted pidzoy, green male oriole, green retiring mut-bird.

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[28] While **hay cabil** is usually glossed as "destruction of the world" in the vocabularies, its components indicate that this is destruction by flood. See DMM: Dilubio: bul cabil; hai cabil. In the Popol Vuh there is the story of the destruction of a previous creation of the world by flood. Even today there is memory of this event, which in Yucatan is said to preceed our present world, which in turn will be destroyed by fire. While one could say that this cycle of destruction and rebirth is based on Judeo-Christian beliefs, there are in fact various features within these stories which indicate that they are native to Mesoamerica.

[29] The **imix che** is not listed in the vocabularies, but it is assumed that it is an alternative name, used mainly in rituals, for **yaxche**, the ceiba or kapok tree (*Ceiba pentandra* (L.) Gaertn.). Previously, on pp. 5-6, we have seen another alternative name: **imix yaxche**. It is traditional to plant a ceiba tree in the central plaza or **kiuic** of a town, and has sacred significance.

[30] The word **oyal** is probably related to **oyol** and has various meanings from "defeated" to "fainting" depending on the context. "Retiring" in the sense of "shy" is chosen here, but perhaps some other of the various English equivalents is what is actually meant.

[31] Both from the context and by association it is clear that three species of birds are being talked about here. The **yuy** , or usually **yuyum**, is the oriole, *Icterus mesomelas mesomelas*, Wagler. **Mut** is a bird of the Cracidae family. (**Mut** also means the fame or prognostication of a person.) This leaves the **pidzoy** which is unregistered, but because it is "red-breasted" this indicates that it is also a bird.

The Use of World Direction Colors
and Associated Deities
In the "Ritual of the Bacabs"

The "Ritual of the Bacabs" is an unique text in that it is devoted almost solely to various chants, mostly to be used in curing various illnesses. The first portion of Text II, Bacabs pages 4-7, is presented here to show something of the nature of these chants. Aside from introductory remarks what is presented is a passage which gives the four world direction colors, in this case in association with various trees and bushes.

It should be noted that at times only the first two world direction colors are given. Thus, for example, in line 10 only "Red Ix Chel, White Ix Chel" is given. The assumption is that the other two aspects of this deity are to be understood.

One interesting feature of the "Ritual of the Bacabs" is that there are a few cases where the world direction colors are presented in a clockwise manner. At this time there is no explanation for this contrary listing of the world direction colors.

V thanil balam mo tancase, [32]
v coil tancas lae
hun ahau, hunuc can ahau
can ahau bin cħab,
can ahau bin akab[33] ca sihech
mac cech tah cħab, mac cech tah akab
u cħabbech kin chac ahau
colop u uich kin ca sihech
max a na, max a coob, max a cit
ca cħabtabech chacal ix chel, sacal ix chel
yx hun ye ta, yx hun ye toon[34] [35]
la a na, la a cob, la a cit

---

[32] As typical with many older colonial texts, "u" and "v" are used interchangeably for the vowel "u" and the consonant "w" in this manuscript.

[33] The words **cħab** (create) and **akab** (night, darkness) are frequent pairs throughout the rituals, occurring more than 30 times. It is not really clear as to how this pair of apparently antonymous words should be translated.

[34] As typical with many older colonial texts, "i" and "y" are used interchangeably for the vowel "i" in this manuscript. Conversely, at times "i" is used to represent the consonant "y".

[35] **Hun Ye Ta / Hun Ye Ton**, from **ix** = female, **hun** = one or unique, **ye** = sharp point, **ta** = flint knife, and **ton** = penis. A goddess pair mentioned in Landa. They are given as **Ix Hunie** and **Ix Hunieta** in the Tozzer edition, and **Ixbunic** and **Ixbunieta** in the Porrua edition. Perhaps the one given as **Ixhunie** is given as such because Landa did not want to include the word **ton**.

Landa, 1966, p. 7: Que el año de 1517, por cuaresma, salió de Santiago de Cuba Francisco Hernández de Córdoba con tres navíos a rescatar esclavos para las minas, ya que en Cuba se iba apocando la gente. Otros dicen que salió a descubrir tierra y que llevó por piloto a Alaminos y que llegó a la Isla de Mujeres, (a la) que él puso este nombre por los ídolos que allí halló de las diosas de aquella tierra como a *Ixchel* (Ix Chel), *Ixchebeliax* (Ix Chebel Yax), *Ixbunic* (Ix Hun Ye), *Ixbunieta* (Ix Hun Ye Ta), y que estaban vestidas de la cintura abajo y cubiertos los pechos como usan las indias...

can ci tu pach acantun,
can ci tu pach maxcal sihech[36]
u cool cħabe, u cool akabe[37] [38]
kan cħaah lo che, kan cħaah lo tunich ca sihech
u cool akab ah ci tancase
cech u cool cħabe, cech ah co tancase
cech nicte tancase, cech balam tancase
cech ah mo tancase, cech ceh tancase[39]

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[36] Typically, the word **maxcal** is accompanied by the word **acantun** throughout the rituals. The following are comments on **acantun** and **maxcal**. Note that **dzulbal** is also paired with **acantun** and **maxcal**. It is apparent that huts constructed in various manners had ritual signifigance.

Acantun: stone hut, cave, and perhaps ceremonial hut, from **ac** = arch and **tun** = stone. From the context in the "Ritual of the Bacabs" it seems that **acantun** is some type of structure. A conjecture can even be made that **acantun** is an alternative word for **actun** = cave. In the "Ritual of the Bacabs" **acantun** is paired four times with **dzulbal** = arbor and is also paired with **maxcal** = bath house several times. Landa calls the four **Acantuns** piedra = stone, presumably meaning a stone idol, but perhaps the name really meant the site which contained the idol.

Maxcal: steam bath house, sauna. Called **temazcal** in Spanish, from **temazcalli** = bath house in Nahuatl (**tema** = bath and **calli** = house). From the archeological evidence in Yucatan and from the present-day existence of **temazcallis** in the highlands of Mexico and Guatemala it seems that **maxcals** were mostly either in-ground structures with a wickiup type roof or occasionally below-ground structures, often built into a hillside. In the "Ritual of the Bacabs" Roys translates **maxcal** as being an unidentified plant (see CAM: Maaxcal: závila (Aloe Vera)), but **maxcal** is often paired with the word **acantun**, which might be an alternative spelling for **actun** = cave, and in two instances with **dzulbal** = arbor, which Roys believes to be a ceremonial hut. Further, **acantun** and **dzulbal** are often paired in the Bacab manuscript without **maxcal**. It would thus seem that Arzápalo (1987) is correct in his translation of **maxcal** as **temazcal**.

[37] This is the first of many instances of the use the word **cool / col / coil** and variations thereof with the words **cħab**, **akab**, and occasionally **kin**. It would seem that all of these lines should be translated similarly, but in Roys and Azápalo that is not the case. Confusing the issue is that one of the alternatives uses the word **coolba** which in the CMM is given as follows: Coolba: irse afloxando. ¶ Coolbanac: cosa que se va afloxando. While this may seem to be a different meaning than that generally accepted for **cool / coil** = "crazy / demented", CMM gives the following for **cool**: Co ol: loco, desatinado, sin juizio. ¶ hach co a uol: muy loco eres. Perhaps there is some relationship between "aflojar" (= to loosen) / "destatar" (= to untie) and "desatinar" (= to go crazy / to become demented) in both the Mayan and Spanish languages which in colloquial terms means "crazy". Throughout this Bacabs passage these words will be translated as "demented".

[38] While the words **cool / coil** in modern Mayan means "rabid" in its various meanings, in order to avoid ambiguity it seems best to translate these words as "demented". It appears that the sickness rabies did not exist in the Americas until the coming of the Europeans. (See Vos et al, in press.) While the older vocabularies use the word "rabia" to define these two Mayan words, it is clear that it is used only in the sense of "mad" or "furious". It was not until the Diccionario of Juan Pío Pérez, 1877, that **coil** is given as "rabia" meaning hydrophobia. See the American Heritage Dictionary in which three different meanings apply to the word "rabid": rabid: adjective. 1) irrationally extreme in opinion or practice: *a rabid isolationist; a rabid baseball fan.* 2) furious or raging; violently intense: *a rabid hunger.* 3) affected with or pertaining to rabies; mad. Origin: L *rabidus* raving, furious, mad, equiv. to *rab*(*ere*) to rave, be mad + *-idus.*

[39] The concept of illness includes the idea that winds and spasm were the origin / bearers of illness, a belief that has persisted among the Maya until the present day.

max a che, max a uaban
bax u tas a dzulbal ca sihech
chacal tancas che sacal tancas che
ekel tancas che kanal tancase che
chacal kantemo sacal kantemo
ekel kantemo kanal kantemo a che
la a che cech mo tancase
chacal has max sacal has max
ekel has max kanal has max
chacal kokob max sacal kokob max
ekel kokob max kanal kokob max[40]
chacal nicte max sacal nicte max
ekel nicte max kanal nicte max
la a che cech nicte tancase max tancase, cech co tancase
u lubul bin ycnal yx hun pudzub kik, yx hun pudzub olom
u coolba cħab, u coolba akab
ti tu kax u kinam ycnal ix hun pudzub kik, yx hun pudzub olom

[40] The text begins in the line above with **chacal kokob max** and then reads "y.y.y.". Similarly in the next line the text begins with **chacal nicte max** and then reads "y.y.y.". This is the equivalent to "etc., etc.' etc.", meaning that the four direction colors are carried out as has been done in this edited version.

Translation of Text II

The words for Jaguar-Macaw Seizure, a demented seizure.[41]
Hun Ahau, Hunuc Can Ahau,[42]
4 Ahau[43], they say, is the creator,
4 Ahau, they say, is the night when you were born
Who is your creator? Who is your night?
You are created by Kin Chac Ahau,[44]
Colop u Uich Kin[45] when you were born
Who is your mother? Who is your lineage? Who was your father
You were created by Red Ix Chel, White Ix Chel,[46]
Lady unique point of the obsidian blade, lady unique point of the penis[47]
This is your mother, this is your lineage, this is your father
above directly behind the stone hut,
above directly behind the sweat-bath where you were born,
demented creator, demented darkness.
The kan ch̓aah is the tree, the kan ch̓aah[48] is the stone when you were born

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[41] It is difficult to find the most appropriate word to use to translate the word **tancas / tamcaz / tamacaz**. See the following vocabulary entries: CMM: Tamacaz: enuaramiento o pasmos, gota coral o enfermedad de frenesi que enmudece, entonece, y ensordece al que tiene tamacaz. BMTV: Frenesí: tamcaz .l. tamcaçil. ¶ Frenético está: tamcaçil v cah .l. tamcaz yan ti. / Pasmo de enbaramiento: tamcaz, v hadz tamcaz .l. v hadz booy. ¶ Pasmado, el que lo tiene: ah tamcaz .l. haadzal tumen tamcaz.

[42] **Hun Ahau** ("One Lord") is an alternative name for the god of death. See Landa, 1966, p. 60: También había en este lugar un demonio, príncipe de todos los demonios, al cual obedecían todos y llámanle en su lengua *Hunhau.* **Hunuc Can Ahau** ("Unique Four Lord"), although unregistered, is probably the quadripartite aspect of this deity.

[43] This is probably the day 4 Ahau and not some deity.

[44] It seems that the reverential title **Kin Chac** is an alternative to **kinich** meaning "powerful, respected". There is some question as to how to interpret the word **kinich**. While there is no vocabulary entry which resolves this question it appears that the suffix **–ich** in this case has nothing to do with "eye", but rather converts a word root to an adjective. Thus: **bekech**, **cilich**, **nohoch**, **nucuch**, etc. It appears that the most appropriate translation for **kinich** is something along the lines of "powerful, respected". Thus, **Kin Chac Ahau =** "powerful lord", often used in conjunction with the deity **Colop u uich Kin**.

[45] **Colop u Uich Kin**: BMTV: Idolo maior que tenían estos indios de esta tierra, del qual decían proceder todas las cosas y ser él incorpóreo, y por esto no le hacían ymagen: Colop v vich Kin.

Roys, 1965, p. 145: Colop-u-uich-kin ("snatcher-of-the-eye-of-the-sun" or "-day"). "The principal idol [god], which the Indians of this land had, and from whom they said all things proceeded, and who was incorporeal, hence they made no image of him" (BMTV, f. 129r.). Cited in incantations for various seizures, kanpedzkin at the head of a man (kanpedzkin tu pol uinic), and a worm in the tooth (nok ti co) (MS pp. 34, 35, 45, 52, 108, 134, 172). Apparently a solar-eclipse god.

[46] "Red Ix Chel, White Ix Chel". **Ix Chel** is the goddess of medicine, child birth, weaving, and numerous other woman's activities. Her sanctuary was on the island of Cozumel. See footnote 73 for more information about **Ix Chel**..

[47] See footnote 33 for more information about this pair of goddesses.

[48] **Kan ch̓ah** normally refers to a snake. See Roys, 1965, p.135: Kan ch̓ah ("yellow or orange drop"). A large nonpoisonous snake.

in the demented darkness of Ah Ci Tancaz,[49]
you, the demented creator, you, Ah Co Tancaz,[50]
you, Nicte Tancaz,[51] you, Balam Tancaz,[52]
you, Ah Moo Tancaz,[53] you, Ceh Tancaz,[54]
Who is your tree? Who is your bush?
What prepares your arbor when you are born?[55]
Red tancaz che, white tancaz che,[56]
black tancaz che, yellow tancaz che
Red kante moo, white kante moo, [57]
black kante moo, yellow kante moo are your trees.
This is your tree, you, Moo Tancaz
Red mamey max, white mamey max[58],
black mamey max, yellow mamey max
Red kokob max, white kokob max, [59]
black kokob max, yellow kokob max.
Red nicte max, white nicte max,[60]
black nicte max, yellow nicte max.
This is your tree, you, Nicte Tancaz, Max Tancaz,[61] you, Co Tancaz.
It falls beside Ix Hun Pudzub Kik, Ix Hun Pudzub Olom,[62]
demented creator, demented darkness.
It gathered strength beside Ix Hun Pudzub Kik, Ix Hun Pudzub Olom

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[49] "Drunken Spasm"

[50] "Demented Spasm"

[51] "Plumeria (Erotic) Spasm"

[52] "Jaguar Spasm"

[53] "Macaw Spasm"

[54] "Deer Spasm"

[55] CMM: Taz.ah,ab: allanar o tender como colchon, ropa de cama o otras, y llanar o tender alfombra, yerua o heno para echarse a dormir.

[56] Here the trees are associated with the world direction colors. The quadripartite principle was very important in Maya worldview, which is amply reflected throughout this source. All the trees and plants are named in association with the world-directional colors and, even though in nature they do not occur with those colors, the pattern of symbolism is adhered to.

[57] *Acacia angustissima* Miller (Kuntze).

[58] Mamey: *Calocarpum mammosum* (h.) Pierre; *Mammea americana* L.

[59] **Kokob** is an unidentified but well-known poisonous snake. **Max**, or properly **maax**, can be the spider monkey, but here probably refers to the wild chili, *Capsicum frutescens*, L. It is not certain what type of plant the **kokob max** might be.

[60] Literally, "plumeria wild chili". As with the **kokob max** plant, the **nicte max** is also unidentified.

[61] "Spider monkey Spasm"

[62] "Unique escaping blood, unique escaping clotted blood"

A Modern Ritual with Mentions of the Four Corners of the Sky, Four Corners of the Earth

The following is a curing ceremony which was done in 1970. The object of the ceremony was to cure a middle-aged woman who was suffering from anemia. What is noticeable about this chant is that while the four corners of the sky, the four corners of the earth are called upon, naming the deities and objects using the four world direction colors is absent. This is true of all the modern rituals which I have knowledge of.

This is not to say that knowledge of the world direction colors is missing in Yucatan today. As noted in footnote 8 on page 2, people, especially those who have been brought up in traditional families, have this knowledge and, as an example, know in which direction each color of the **nicte** tree should be planted.

SANTIGUAR

Ich kaba dios, mehenbil dios, espiritu santo, amen.

Ti beyoritas cin bin xolaan pix cin katic u poder cin santiguartic humppel zuhuy uincli ti Ah Cacaboob, Ah Tepaloob, ti Ah Noh Cabiloob, ti can titz caan, can titz luum. Ti beyoritas xan cin bin xolaan pix cin katic u poder cin miztic humppel zuhuy uincli, u zuhuy ocoob, u zuhuy kaboob, u zuhuy puch, u zuhuy tzem, u zuhuy pol, u zuhuy tzotzel u pol yetel u zuhuy zipit che ti Ah Cacaboob, Ah Tepaloob, Ah Noh Cabiloob ti can titz caan, can titz luum, cruz caan, cruz luum, cilich caan, cilich luum, cilich oxil yetel ti trece Ah Balamoob, trece mozon ikoob, trece Ah Cacaboob, trece Ah Tepaloob. Ti beyoritas xan cin bin xolaan pix cin katic u poder cin cħocħiktic, cin uacħiktic u zuhuy uincli, zuhuy tulacal u kakaz ikoob, u tuzbil ik, u keban ik, u kokol ik, u zinaan ik ti Ah Cacaboob, Ah Tepaloob, Ah Noh Cabiloob, Ah Euanoob, ti can titz caan, ti can titz luum, ti cruz caan, cruz luum, ti cilich caan, cilich oxil. Cin cħocħiktic, cin uacħiktic, cin cħocħiktic, cin uacħiktic, (etc., etc. until the whole body has been swept with the bundle of zipit che)

Ti beyoritas xan cin bin xolaan pix actan zuhuy mesa yetel zuhuy balamoob, zuhuy ciboob, zuhuy zip cheob, zuhuy santosoob, zuhuy tulacal. Beyoritas xan cin miztic zuhuy hol, zuhuy pach, zuhuy tzem, zuhuy kaboob, zuhuy ocoob, zuhuy tulacal xan. Cin cħocħiktic, cin uacħiktic, cin cħocħiktic, cin uacħiktic, (etc., etc. until the whole body has been swept with the bundle of zipit che)

Ich kaba dios, mehenbil dios, espiritu santo.

Chen tin bin, chen tin bin, ca hoken ti hunppel xay be. Ca tu uacacinba tumen c' yumil caan Jesus Cristus. Ca tu cħocħ kat tin chi, "Max a yum, max a na." Ca tin ualic, "In na zuhuy Santa Maria yetel in yumil caan Jesus Cristus. Zen zublacen utial in kubic in meyah ti max tu chiltal tu yokol cab tuux tu hokol kin. Tech ca hokol ti santo gloria xan yetel cin kubentic xan in zuhuy santo meyah xan."

Ich kaba dios, mehenbil dios, espiritu santo, amen, yetel tin can titzcinba uaye xan.

Amen.

BLESSING

In the name of god, god the son, the holy spirit, amen.

Right now I am going on my knees asking for the power to bless a virgin body to the brown-earth-beings, the rulers, the great earth-beings, to the four corners of the sky, the four corner of the earth. Right now also I am going on my knees to ask for the power to sweep a virgin body, its virgin legs, its virgin hands, its virgin back, its virgin breast, its virgin head, its virgin hair of its head with a virgin "zipit che"[63] bush to the brown-earth-beings, the rulers, the great earth-beings to the four corners of the sky, four corners of the earth, the cross of the sky, the cross of the earth, holy sky, holy earth, holy trinity and to the thirteen jaguars, thirteen whirlwinds, thirteen brown-earth-beings, thirteen rulers. Right now also I am going on my knees asking for the power to clean out the spirits, to untie the spirits from the virgin body, virgin everything (ridding it of) the evil spirits, the lying spirit, the sinning spirit, the dirty spirit, the scorpion spirit to the brown-earth-beings, the rulers, the great earth-beings, the Euans,[64] to the four corners of the sky, to the four corners of the earth, to the cross of the sky, cross of the earth, to the holy sky, holy trinity. I clean out the spirits, I untie the spirits, I clean out the spirits, I untie the spirits, etc.

Right now also I am going on my knees in front of the virgin table with virgin jaguars (clay figurines) virgin candles, virgin zip che bushes, virgin saints, virgin everything. Right now also I am sweeping the virgin head, the virgin back, the virgin breast, the virgin hands, the virgin feet, the virgin everything also. I clean out the spirits, I untie the spirits, I clean out the spirits, I untie the spirits, etc.

In the name of god, god the son, holy spirit.

I am just going along, I am just going along, when I come out on a fork in the road. Then I am stopped by our lord in heaven Jesus Christ. Then he asks me, "Who is you father, who is your mother?" Then I say, "My mother is the virgin saint Mary and my father in heaven is Jesus Christ. I am very embarrassed that I should deliver my work to he who is laying down over the land where the sun comes out. You shall come out of the holy glory also and I deliver also my virgin holy work also."

In the name of god, god the son, the holy spirit, amen, and I four-corner[65] myself here also.

Amen.

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[63] **Zipit che** or **zip che**: *Bunchosia glandulosa* (Cav.) DC.

[64] **Euan**: An unidentified deity which this **h-men**, Don Antonio Hau, enumerates along with the brown-earth-beings, the rulers and the great earth-beings in his various chants. It is also both a family name and a name of a town located between Mérida and Izamal just east of Tixkokob..

[65] The Mayan expression is **tin can titzcinba**. It really means "I cross myself".

Attributes of a Person
Born on a Named Day of the **Uinal**

As mentioned in footnote 9 on page 2, there are 20 named days which make up the **uinal** or 20 day month. Due to the mathematics of the Mayan calendar, only four of these named days fall on the first day of the year. These days are called **ah cuch haaboob** or year bearers. The named days of the **uinal** which were the year bearers at the time of Spanish conquest were **Kan**, **Muluc**, **Hiix**, and **Cauac**. Each of these year bearers are assigned a world direction and a corresponding world direction color as shown on page 3.

There is a text which is called **U Mutil Uinic Zanzamal /** "The Daily Prognostication for a Person", or better said, the prognostication for a person born on a particular day of the **uinal**. There are 5 principal sources for the material given in this text: three from the Chilam Balam of Kaua,[66] one from the Chilam Balam of Chan Cah,[67] and one from the Codex Pérez.[68] A secondary source is from the Chilam Balam of Ixil which gives only the prognostication for the first two days, **Kan** and **Chic Chan**, which are similar to first of the Kaua sources. In Appendix B a composite version of all of these sources is given.[69]

Two of these sources, the Chan Cah and the Pérez, include the world direction for each of days which are also the year bearers. However, based on the information supplied by pages 75-76 of the Madrid Codex and page 1 of the Fejérváry-Mayer Codex, in the exposition given in Appendix B each day is assigned a successive world direction. Based on information derived from these two sources, the corresponding world directions are placed in brackets for each of the days of the **uinal**.[70]

After comparing this set of prognostications in various manners, as for example by corresponding world directions, no pattern of attributes has been detected which can be applied to the purposes of this article.

Other Information
About the Prognostications for Days of the **Uinal**

Aside from this text which is specifically about the prognostications for the various days of the **uinal**, there is further information, especially about whether a day is "good" or "bad", given in two texts which are to be found in the Books of Chilam

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[66] Kaua, pp. 11-12, p. 14 and p. 21.

[67] Chan Cah, pp.1-4.

[68] Codex Pérez, pp. 94-95.

[69] See Appendix B for the composite text and translation. For a transcript of the original sources see *Post Conquest Mayan Literature*, pp. 12-15.

[70] See the comments in Appendix F about pages 75-76 of the Madrid Codex and page 1 of the Fejérváry-Mayer Codex for a possible method by which the world directions are allocated to the **uinal** days. It appears from the way the Fejérváry-Mayer Codex is laid out that each day of the **uinal** is assigned the successive world direction, beginning, in the case of the Mayan calendar, with **Kan** to the East, **Chic Chan** to the North, **Cimi** to the West, **Man Ik** to the South, **Lamat** to the East, **Muluc** to the North, etc. The fact that the mathematics of this system makes for an orderly progression of world directions for the year bearer days is in keeping with other features of the Mayan and Central Mexican calendars.

Balam. In the book "*Post Conquest Mayan Literature*", which is a compilation of the various texts from the Books of Chilam Balam, these texts are referred to as **U Xoc Kin**[71] and **U Tzolaan Ah Cuch Haaboob**.[72]

Because this subject is rather lengthy it is treated separately in Appendix B. There the reader will find various tables giving the frequency which each individual day appears to be **utz** ("good") or **lob** ("bad") in these two texts. As stated at the end of examining these texts, no definitive statement can be made as to what the quality of each day is.

Trecenas

There is however a system of dividing the 260 days of **U Xoc Kin** up into 20 groups of 13 days which are called **trecenas**. Each group starts with the numerical coefficient 1 and ends with 13. These groups do show a tendency towards being groups of good or bad days. This system of grouping the **uinal** days merits further study. It is unfortunately not something which the Mayan writers of the material on the workings of their calendar make any direct reference to, so it is difficult to know any specifics about the **trecenas**, or even what the Mayan name for **trecenas** is.

Further Information About the Prognostications for the **Ah Cuch Haaboob**

Yet another source of information, this time about the quality of the **Ah Cuch Haaboob** or year bearers, is to be found in the collection of year prognostications called the **Cuceb**. The information found in these prognostications is also discussed in Appendix B. And again, no definitive statement can be made as to the quality of the **Ah Cuch Haaboob** based on information derived from this source other than all the year bearers are varying degrees of being bad.

Thus, while perhaps pertinent, none of the data to be found within the material presented in Appendix B is included in the following Summary.

Summary

Taking the above information all together we can deduce that the following are the components for each of the world directions:

Direction:	East
Color:	Red / **Chac**
Year Bearer:	Kan
Uinal days:	Kan, Lamat, Eb, Cib, Ahau
Deities:	Ah Can Tzic Nal, Chacal Bacab, Chac Pauahtun, Chac Xib Chac, Bolon Dzacab
Tree:	red ceiba / red tree of abundance
Arbor:	red ceiba of abundance

[71] "The Count of the Days", meaning the 260 day calendar round. See PCLM lines b001-b519. Source texts: Codex Pérez, pp. 2-24, pp. 51-64 and pp. 140-150, Ixil, pp. 18a-22a and Tizimin, pp. 22r-27v. See also Apeendix F for a hieroglyphic version of **U Xoc Kin**.

[72] "The Account of the Year Bearers". See PCLM lines b550-b808. Source texts: Codex Pérez, pp. 95-99, Kaua, pp. 276-278 and Chan Cah, pp. 115-120.

Direction:	North
Color:	White / **Zac**
Year Bearer:	Muluc
Uinal days:	Imix, Chic Chan, Muluc, Ben, Caban
Deities:	Ah Zac Dziu, Zacal Bacab, Zac Pauahtun, Zac Xib Chac, Kinich Ahau
Tree:	dogwood, plumeria / white tree of abundance
Arbor:	white ceiba of abundance

Direction:	West
Color:	Black / **Ek**
Year Bearer:	Hiix
Uinal days:	Ik, Cimi, Oc, Hiix, Edznab
Deities:	Ah Can Ek, Ekel Bacab, Ek Pauahtun, Ek Xib Chac, Itzam Na
Tree:	plumeria / black tree of abundance
Arbor:	black ceiba of abundance

Direction:	South
Color:	Yellow / **Kan**
Year Bearer:	Cauac
Uinal days:	Akbal, Man Ik, Chuen, Men, Cauac
Dieties:	Hobnil, Kanal Bacab, Kan Pauahtun, Kan Xib Chac, Chacmitan Ch̓ooc
Tree:	cacao / yellow tree of abundance
Arbor:	yellow ceiba of abundance

Direction:	Center
Color:	Green
Tree:	green tree of abundance

The deities listed here are those which are given in Landa as shown on pages 2-3 of this paper. Also given is another set of deities which Landa lists with the year bearers: **Kan** years: **Bolon Dzacab**, **Muluc** years: **Kinich Ahau**, **Hiix** years: **Itzam Na**, **Cauac** years: **Chacmitan Ahau**.[73] There are however a range of deities which have four aspects in ritual texts and are called upon using the four world direction colors. Amongst these are **Itzam Na**,[74] **Ix Chel**,[75] **Piltec**[76] and

[73] For more on these deities see the the artcle "*The Meaning Of Kinich As It Relates To Gods D And G*" beginning on page 99. See also Appendix G for depiction of these gods and their involvement in the new years' ceremonies on pp. 25-28 of the Dresden Codex.

[74] **Itzam Na**: "Lizard House", from **itzam** = "lizard" and **na** = "house". See BMTV: Ydolo, otro que adoraron, que fue hombre, por aber allado el arte de las letras desta tierra: Ytzam Na, Kinch Ahau. Footnote to this entry by Acuña: "Según [Thompson], **Itzam Na** significa "Iguana House". Lo que parece haber escapado a la observación de los teólogos mayistas, es que **Itzam Na** comparte una estructura de nombre con otros dioses de ascendencia tal vez mexicana. **Zipac Na**, por ejemplo, cuya historia pretende relatar el Popol Vuh (1953: 100-10), que, en los Anales de Cuauhtitlan (1945: 4), se llama **Cipac Tonal**, compañera del dios creador **Oxomoco**, y de los cuales se dice allí que "eran de los muy viejos y viejas". Algo así como la pareja de abuelos míticos que el Popol Vuh llama **Ix Mucane** e **Ixpiyacoc**, y que, corrigiendo las perversiones de ese relato espurio, probablemente eran **Hun Cipac Na** e **lx Pi Yax Coc**. Como **Hun Itzam Na** y **Rax Coc Ah Mut**. Porque **itzam**, lo mismo

Uayab Haab.[77] Aspects of these deities are also referenced in the **Cuceb**, as shown in the discussion about the **Cuceb** at the end of Appendix B.

One of the problems which we face when trying to understand the various relationships between the world directions and their assorted components is that certain deities have alternative names. For example, as noted by Beltrán as shown in footnote 72, **Kinch Ahau** (also called **Kinich Ahau** and **Kin Chac Ahau**) is an alternative aspect of **Itzam Na**. As another example, **Lahun Chan** is an alternative aspect of **Ek Piltec**, as shown in Appendix C. These are just two of many examples which show that there are extended relationships between the world directions, their world direction colors, their respective year bearers and a whole host of deities.

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que el presuntamente mexicano **cipactli**, significan "lagarto" (BMTV: 134v; Sahagun 1956, 4: 327). Voces equivalentes, en términos de Landa (Tozzer 1941: 149), al **Imix** inicial de la rueda calendárica. Sobre los nombres de **Ix Pi Yax Coc**, **Oxomoco** y **Yax Coc Ah Mut**, sería desleal de mi parte aventurar interpretaciones. Sospecho, sin embargo, que tales nombres, si alguna vez se declaran, no revelarán nada bueno de su teniente.) See also Cogolludo, 1971, I:232: Con las del occidente vino uno, que era como sacerdote suyo, llamado *Zamná* (**Itzam Na**), que dicen fué el que puso nombres, con que hoy se llaman en su lengua todos los puertos de mar, puntas de tierra, esteros, costas, y todos los parages, sitios, montes y lugares de toda esta tierra, que cierto es cosa de admiracion, si así fué, tal division como hizo de todo, para que fuese conocido por su nombre, porque apenas hay palmo de tierra, que no le tenga en su lengua." For yet another commentary on **Itzam Na** see Beltrán's *Arte*, p. 50: el primero que hallò las letras de la lengua Maya, è hizo el computo de los años, meses, y edades, y lo enseño todo à los Indios de esta Provincia, fue un Indio llamado **Kinchahau**, y por otro nombre **Tzamna.**

[75] **Ix Chel**: a highly venerated goddess whose sanctuary was on the island of Cozumel. She was considered to be the wife of **Itzam Na**. Today the word **chel** is applied to a person who is light-colored in skin tone as well as to the rainbow. For her attributes see Roys, 1965, p. 153: Chel. Chel is the word for "rainbow," but I do not know whether or not there was any association in Maya mythology. She was a goddess of medicine, childbirth, weaving, and probably erotic love. Strangely enough, in this manuscript she is on one occasion called "virgin Ix Chel." As a patroness of medicine, her shrine on Cozumel Island was one of the three most important centers of pilgrimage for both the Mayas and the Tabasco Chontals, although many people went there to obtain forgiveness for sin.

[76] **Ah Piltec** is apparently a Mexican deity which takes on the aspects of the four world directions and the center of the world. A text in Sahagún refers to a deity which it says is "the Wind Priest **Piltzintecutli**" (Book 2, p. 232). The word is perhaps derived from Nahuatl: **pilli** = child / noble / **piltzin** = child, and **tecutli** = noble. This term is somewhat reminiscent to **al mehen** = "noble" in Mayan, which is composed of **al** = "child of a female" and **mehen** = "child of a male".

[77] **U uayab haab**: the name of the final five days in the Mayan year which do not fall into a **uinal**, from **uayab** = enchanted, evil, and **haab** = year. According to Landa and the colonial sources these days fall in July 11 through 15, Julian calendar (= July 21 through 25, Gregorian). These days are also called **ixma kaba kin** (nameless days), **u tich kin** (extra days), **u kail kin** (bitter days), **u chic haban kin** (meaning unclear: however perhaps **u chic haban kin**, which "Roys gets a meaning 'Festival of the Pisote and branches.'" (Tozzer, 1978, p. 157) or **u chicahaan kin** is meant, which would be "impaled days".) As shown in the following quote from Landa, these five days also were embodied and venerated in the form of idols.

Landa, 1966, p. 63: Para celebrar la solemnidad del año nuevo, este gente, con mas regocijo y mas dignamente, segun su desventurada opinion, tomaba los cinco dias aciagos que ellos tenian por tales antes del dia primero de su nuevo año y en ellos hacian muy grandes servicios a los bacabes citados arriba y al demonio al que llamaban por otros cuatro nombres, a saber, Kanuuayayab, Chacuuayayab, Zacuuayayab, Ekuuayayab; y acabados estos servicios y fiestas, y lanzado de si, como veremos, el demonio, comenzaban su año nuevo.

Appendix A

Comparison of World Direction Colors
Of Various Cultures in the Americas and Asia

As stated on page 1 of the article, various cultures both in the Americas and in Asia assign colors to the world directions. Given here is a fuller look at these various assignations. Note that the Maya and the people of Meso-America generally go in a counterclockwise manner when dealing with the world directions whereas most of the other cultural areas go in a clockwise manner:

America	East	North	West	South	Center	CW or CCW
Apache[78]					—	CW
Aztec					—	CCW
Cherokee						CCW
Cheyenne					—	CW
Dakota					—	CW
Hopi					—	CW
Jicarilla					—	CW
Lakota						CW
Maya						CCW
Mescalero						CW
Navajo					—	CW
Objibwa						CW
Oglala					—	CW
Pueblo					—	CW
Seneca					—	CCW
Shoshone						CW
Tarascan						?

Asia	East	North	West	South	Center	CW or CCW
China						CW
Ainu						CW
Korea						CW
Turkic						CW
Kalmyks					—	CW
Tibet-1						CW
Tibet-2						CW
Tibet-3						CW

[78] It has been noted that each Apache tribe has its own color system. See the colors given for the Jicarilla and Mescalero.

Attributes Associated With The World Direction Colors

For the Objibwa, the following are the attributes for each world direction:

North
Color: White (Waabishkaa)
Time of day: Night
Season: Winter
Stage of life: Elder
Medicine: Sweet grass (Wiingashk)

East
Color: Yellow (Ozaawaa)
Time of day: Morning
Season: Spring
Stage of life: Infant
Medicine: Tobacco (Asemaa)

South
Color: Red (Miskwaa)
Time of day: Afternoon
Season: Summer
Stage of life: Youth
Medicine: Cedar (Giizhik)

West
Color: Black (Makade)
Time of day: Evening
Season Autumn
Stageof life: Adult
Medicine: Sage (Mushkodaywashk)

The Shoshone give the following attributes to the world direction colors:

White: purity
Yellow: sun
Red: earth
Blue: sky
Green: the world in which we live.

World direction colors and associated attributes are also listed in chants made by Korean shamans named mudang. As can be seen in the above color chart, the Korean color arrangement agrees with the Chinese and Ainu color arrangements. Korean shamans will call out the four cardinal points plus the center of the world with their associated world direction colors in their rituals as can be seen in the following. Compare with the Mayan chant given on pages 5-6 above:

1. Look there to the East!
   To the East dwells the Blue Genera1.
   There lies the Blue-Glass World.
   Place the Blue Candle in the Blue Lantern.
   Light the Candle in the Blue-Fire Lantern.
   Hang the Lantern on the Blue-Dragon Gate,
   And guide her on the road to Paradise.

2. Look there to the South!
   To the South dwells the Red General.
   There lies the Red-Glass World.
   Place the Red Candle in the Red Lantern,
   Light the candle in the Red-Fire Lantern,
   Hang the Lantern on the Red-Phoenix Gate,
   And guide her on the road to Paradise.

3. Look there to the West!
   To the West dwells the White General.
   There lies the White-Glass World.
   Place the White Candle in the White Lantern,
   Light the Candle in the White-Fire Lantern,
   Hang the Lantern on the White-Tiger Gate.
   And guide her on the road to Paradise.

4. Look there to the North!
   To the North dwells the Black General.
   There lies the Black-Glass World.
   Place the Black Candle in the Black Lantern,
   Light the Candle in the Black-Fire Lantern,
   Hang the Lantern on the Black-Tortoise Gate,
   And guide her on the road to Paradise.

5. Look there to the Center!
   In the Center dwells the Yellow General.
   There lies the Yellow-Glass World.
   Place the Yellow Candle in the Yellow Lantern.
   Light the Candle in the Yellow-Fire Lantern,
   Hang the Lantern verily on Dead Center,
   And guide her on the road to Paradise.

   And with a pair of bluebirds holding a flag,
   Behold! We enter into Paradise![79]

[79] See pp. 84-86: Mu-ga: The Ritual Songs of the Korean Mudangs.

There are various opinions about the Tibetan world direction colors, but it appears that colors in the cells labeled Tibet-1 are the usual colors. Aside from the colors listed in Tibet-2 and Tibet-3 there are other sequences as well. Note that the Kalmyks, who share many cultural traits with the Tibetans, have three of the same world direction colors in common with Tibat-2. A sample of a Tiberan chant from the Tibetan Book of the Dead is as follows:

> May the ethereal elements not rise up as enemies;
> May it come that we shall see the Realm of the Blue Buddha.
>
> May the watery elements not rise up as enemies;
> May it come that we shall see the Realm of the White Buddha.
>
> May the earthy elements not rise up as enemies;
> May it come that we shall see the Realm of the Yellow Buddha.
>
> May the fiery elements not rise up as enemies;
> May it come that we shall see the Realm of the Red Buddha.
>
> May the airy elements not rise up as enemies;
> May it come that we shall see the Realm of the Green Buddha.
>
> May the elements of the rainbow colour not rise up as enemies;
> May it come that all the Realms of the Buddhas will be seen.[80]

There is a difference of opinion about which order the world directions are presented. In general though, it appears that the people north of the Tropic of Cancer go in a clockwise direction while those south of the Tropic of Cancer go in a counterclockwise direction.[81] An example of an exception to this is the Cherokee which name their directions in a counterclockwise direction, but perhaps that is because they brought this cultural traits with them when they migrated northward out of Middle America.[82] The Seneca are also an exception, perhaps because both Cherokee and Seneca speak Iroquoian languages and thus share certain cultural traits.

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[80] See p. 83: Mu-ga: The Ritual Songs of the Korean Mudangs.

[81] Two different people in the Navajo area around Chinle, Arizona, noted that for them the sun begins its circle in the east and then goes south for the mid-day, and then north again for the setting sun, and that is why they do things in a clockwise manner. When I mentioned that the Maya do things in a counterclockwise manner they concluded that the sun must rise for the Maya in the east and then go north for the noon-day sun, which in fact does happen during a brief period during the summer. I am not sure that this is the real explanation, nor have I come across any explanation in the Mayan literature as to why the Maya and the people of Meso-America generally go in a counterclockwise manner when dealing with the world directions and things related to this.

[82] This idea that the Cherokee migrated up from the south, some Cherokees placing the place of origin in South America, is common amongst the Cherokee, with both the Eastern Band in Cherokee, North Carolina and the Western Band around Tahlequah, Oklahoma, recounting a similar story. Of all of the nations who live north of the Mexican border they, along with the Seneca who share similar cultural traits through the Iroquoian language, are the only ones who work in a counterclockwise direction when calling out the world directions. I mentioned that the Meso-Americans also work in a counterclockwise direction to which they responded that of course that would make sense since their folk history says that they come from South America. In fact, in their reproduction of a Cherokee village at the Cherokee Heritage Center in Park Hill, Oklahoma, I was struck by the fact that one could transport the village and many of the culture artifacts from blow guns to metates to house styles to Yucatan and things would not seem that far out of place.

Appendix B

Attributes of a Person
Born on a Named Day of the **Uinal**

As mentioned in footnote 9 on page 2, there are 20 named days which make up the **uinal** or 20 day month. Due to the mathematics of the Mayan calendar, only four of these named days fall on the first day of the year. These days are called **ah cuch haaboob** or year bearers. The named days of the **uinal** which were the year bearers at the time of Spanish conquest were **Kan**, **Muluc**, **Hiix**, and **Cauac**. Each of these year bearers are assigned a world direction and a corresponding world direction color as shown on page 3.

There is a text which is called **U Mutil Uinic Zanzamal /** "The Daily Prognostication for a Person", or better said, the prognostication for a person born on a particular day of the **uinal**. There are 5 principal sources for the material given in this text: three from the Chilam Balam of Kaua,[83] one from the Chilam Balam of Chan Cah,[84] and one from the Codex Pérez.[85] A secondary source is from the Chilam Balam of Ixil which gives only the prognostication for the first two days, **Kan** and **Chic Chan**, which are similar to first of the Kaua sources. What is given here is a composite of all of these sources.[86]

Two of these sources, the Chan Cah and the Pérez, include the world direction for each of days which are also the year bearers. However, based on the information supplied by pages 75-76 of the Madrid Codex and page 1 of the Fejérváry-Mayer Codex, in the exposition given here each day is assigned a successive world direction. Based on information derived from these two sources, the corresponding world directions are placed in brackets for each of the days of the **uinal**.[87]

Ti Lakin
Kan; ix kan yetel ix kokobta u mut,
kayum, idzat,
chac imix che u che

[83] Kaua, pp. 11-12, p. 14 and p. 21.

[84] Chan Cah, pp.1-4.

[85] Codex Pérez, pp. 94-95.

[86] See Appendix B for the composite text. For a transcript of the original sources see *Post Conquest Mayan Literature*, pp. 12-15.

[87] See the comments in Appendix F about pages 75-76 of the Madrid Codex and page 1 of the Fejérváry-Mayer Codex for a possible method by which the world directions are allocated to the **uinal** days. It appears from the way the Fejérváry-Mayer Codex is laid out that each day of the **uinal** is assigned the successive world direction, beginning, in the case of the Mayan calendar, with **Kan** to the East, **Chic Chan** to the North, **Cimi** to the West, **Man Ik** to the South, **Lamat** to the East, **Muluc** to the North, etc. The fact that the mathematics of this system makes for an orderly progression of world directions for the year bearer days is in keeping with other features of the Mayan and Central Mexican calendars.

(Ti Xaman)
Chic Chan; ah tzab u mut,
habin u che,
kak yol, yet man u che,
lob u bel, ah cimzah uinic

(Ti Chikin)
Cimi; cuy u mut,
yet man u che,
ah cimzah uinic, hach lob u bel xan

(Ti Nohol)
Man Ik; ix op, yaxum u mut,
cacau u che, kikel yicħac,
ah uitz u mut, lobil xan

(Ti Lakin)
Lamat; ah calaan, ah cutzal pek u mut,[88]
balam u pol, pek yit,
ah ta chi ach, ah zacach than, ah tzutzuc than,
ah kuxlantanba, ah oczah ya lae

Ti Xaman
Muluc; ah xooc u mut,
chibil mehen, ayikal,
cimcim palaloob, cimcim atanoob, ah cimzah och xan

(Ti Chikin)
Oc; ix kili u cħicħil,
ah cal uah, ma cux ol, ma naat,
ah cen, ah culi u mut,
ah ocen cab, ah oczah ya xan

(Ti Nohol)
Chuen; ah men che, ah men zacal u mut,
ah men, hach ayikal, tulacal u bel hach utz,
tulacal baal bin u bete, ah cux ol xan

(Ti Lakin)
Eb; ah uitz dziu u mut,
ah mol can, ayikal,
ah mahan ayikal, utzul ayikal, u multial u baaluba,
zihol utzul uinic, ma coci, hach utz xan

(Ti Xaman)
Ben; ah kauil u mut, ah kukliz u mut,
ah numya, ah chen bel uinic, otzil

[88] Bricker and Miram read this line as "5 hoil lamat ah calan / ah cutz al / pek u mut", in which the suggestion is made that "ah cutz al" is to be read as "ah cutz ach". See DMSF: Co chi; coch cep; ah cutz; ah cutz ach; ah on: hombre chocarrero, afable.

Ti Chikin
Hiix; ah balam, holcan,
kikel yicħac, kikel u chi,
bak nal xan, ah hantah bak, ah cimzah uinic

(Ti Nohol)
Men; ah dzun acat u mut,
ah men zacal,
hach utz lae, ah zeb u than, ah cilich than xan

(Ti Lakin)
Cib; ah zip u mut,
ah ocol, ah ceel ol, holcan,
ah cimzah uinic, ma utz u beli, lob xan

(Ti Xaman)
Caban; ah colomte u mut,
ah ziyan ppolom, ah ximbal,
ah tok ya, ah dzac ya xan, utz lae,
ah cux ol lae, ah men che xan

(Ti Chikin)
Edznab; ah toh u mut,
ah toh olal,
ah tok ya, ah tok chacuil, edznabil tok u mut,
ah dzac ya, holcan xan

Ti Nohol
Cauac; ah kukum u mut,
kauil cacau u che,
ah dzib, al mehen ahau
amal u lubul u cuch haabe kohaanil u bel

(Ti Lakin)
Ahau; ah cħuuah cot u mut,
ah chibil mehen, ah chibil al, ah cimcim palaloob,
ayikal, ah cux ol, holcan, utz xan

(Ti Xaman)
Imix; ikom u mut,
nicte u che, iximil uah nicte u mut
nicte zoyem uinic, ah tzuc ach, u hach coil uinic

(Ti Chikin)
Ik; yan u ik, ikom u mut,
nicte u che,
hach coil uinic,
ah tzuc ach xan, hach tzutzuc uinic, lob u bel

(Ti Nohol)
Akbal; yalan u mut,
ah numya, ah otzil, ah ceh,
ah chen bel uinic, ma ix baal u bel

Translation[89]
To the East
Kan; little yellow parrot[90] and thrush[91] are his birds of omen,[92]
cantor, student,
red ceiba[93] is his tree

(To the North)[94]
Chic Chan; rattle snake is his prognostication,
Jamaica dogwood[95] is his tree,
fiery spirit, he goes with his walking stick,
his ways are bad, killer of people

(To the West)
Cimi; cuy owl[96] is his bird of omen,
he goes with his walking stick,
killer of people, very bad are his ways also

(To the South)
Man Ik; macaw, blue bird is his bird of omen, [97]
cacao is his tree, bloody are his fingernails,
his prognostication is that he dwells in the hills, bad also

(To the East)
Lamat; drunkard, duck dog[98] is his prognostication,
head of a jaguar, rear end of a dog,
cruel, loud talker, liar,
he abhors everyone, he is a troublemaker thus

---

[89] For alternative translations of three of the source texts for these lines see Bricker and Miram, 2002, pp. 104-109, 112-113 and 128-130. Some thoughts on the meaning of these **uinal** day names are given in Appendix E.

[90] An undetermined variety of small parrot. See BMTV: Papagayo, el menor: ix kan .l. ix kan puta.

[91] *Merula grayi Bonaparte*. Gray's Thrush.

[92] The word **mut** is translated in two ways in this translation depending on the context. If the subject is a bird then the phrase "bird of omen" is used, but if the subject is not a bird then "prognostication" is used.

[93] **Imix che** is the ritual name for **yaxche** = ceiba. See footnote 17.

[94] The brackets indicate that these world directions were not part of the original text, but are assumed to be part of the attributes of the day based on information from the Madrid Codex and the Fejérváry-Mayer Codex. See Appendix F. See also Appendix H which has a figure showing the relationship between the year bearers and the world directions.

[95] *Ichthyomethia communis*, Blake or *Piscidia erythrina*, L. Some common names: Dogwood, Fish poison, Fishfuddletree, Fishpoisontree

[96] An unidentified variety of owl. See CMM: Ah cuy: especie de lechuças.

[97] The **ix op** is an unidentified variety of macaw. See Roys, 1965, p. 138: Op, or ix op. A large macaw with red plumage, bluish wings, a long tail, a yellowish or reddish beak, and a yellowish circle around the eye. / BMTV: Papagallo de Honduras: op. The **yaxum** is *Cotinga amabilis* / Lovely Cotinga. The **yaxum** is often paired with the bird **kuk**, *Pharomachrus mocinno* / quetzal.

[98] Perhaps a type of hunting dog. See footnote 85 for an alternative reading of this line.

To the North
Muluc; shark[99] is his prognostication,
eater of children of men, rich,
killer of children, killer of wives, a killer of opossums also

(To the West)
Oc; magpie is his bird,[100]
he who gets drunk on tortilla,[101] ignorant, not intelligent,
sparrow hawk, screech owl are his birds of omen,
weak, troublemaker also

(To the South)
Chuen; carpenter, weaver are his prognostications,
a maker of things, very rich, all his ways are very good,
he does every thing, intelligent also

(To the East)
Eb; the hill cowbird is his bird of omen, gatherer of snakes, rich,
solicitor for the rich, good rich person, the gatherer of material wealth,
born a good person, not stingy, very good also

(To the North)
Ben; provider of food is his prognostication,[102] false quetzal[103] is his bird of omen,
poor person, lowly person, poverty-stricken

To the West
Hiix; jaguar, soldier, bloody fingernails, bloody mouth, butcher also
eater of meat, killer of people

(To the South)
Men; colorful scribe[104] is his prognostication, weaver,
very good thus, a quick talker, a holy talker also

(To the East)
Cib; sinner is his prognostication,
robber, inhumane, soldier,
killer of people, his ways are not good, bad also

(To the North)
Caban; woodpecker is his bird of omen,
born merchant, traveler,
blood-letter, pharmacist also, good thus,
intelligent, carpenter also

---

[99] **Ah xooc** can be a couple of things: "shark" or "reader / student". In this case, given the rest of the prognostication it seems that "shark" is the correct translation. However, the writer of the Chan Cah writes this as **ah xoc hunbi**[**l**], which means specifically "reader of books".

[100] Here, instead of using the word **mut** the text uses **chichil** which means specifically "bird".

[101] The expression **cal uah** is unregistered. **Cal** is the root word for "drunk" and **uah** means tortilla.

[102] See footnote 103 below for an examination of the word **kauil**.

[103] **Kuk** or **kukum** is the quetzal. The suffix -**liz** means "something like ---". An unidentified bird.

[104] The term **ah dzun acat** is unregistered but appears to be related to **acat** = "pot, ink pot".

(To the West)
Edznab; turquoise-browed motmot is his bird of omen,
contented,
blood-letter, a puncturer of fever, edznabil puncturer is his prognostication,[105]
curer, soldier also

To the South
Cauac; quetzal is his bird of omen,
fruitful[106] cacao is his tree,
scribe, the offspring of kings
every time this day is a year bearer sickness is his way

(To the East)
Ahau; the lifting eagle[107] is his bird of omen,
the eater of children of men, the eater of children of women,
killer of children, rich, intelligent, soldier, good also

(To the North)
Imix; windy is his prognostication,
plumeria is his tree, corn tortilla plumeria is his prognostication,
in utero plumeria person,[108] lustful, a very crazy person

(To the West)
Ik; he has wind, windy is his prognostication,
plumeria is his tree, a very crazy person,
lustful also, a very lewd person, his way is bad

(To the South)
Akbal; his prognostication is lowly,
poor person, miserable person, deer hunter,
just a lowly person, he has no skills

---

[105] This line has three different descriptions of a person who cures by blood-letting through the use of a sharp flint. Blood-letting continues to be a common practice in Yucatan and is usually accomplished today by taking sharp pieces of broken glass and using them as the tool to puncture veins. While there are various conjectures as to the meaning of **edznab**, none are satisfying. See the comments about the day **Edznab** in Appendix E.

[106] Compare with the translation above of **ah kauil** in the prognostication for the day Ben. The word **kauil**, used here as an adjective, is difficult to translate appropriately. The god **Kauil** is thought to be an aspect of the god **Itzam Na** and is occasionally referred to as **Itzam Na Kauil**, and also **Uaxac Yol Kauil** and **Amayte Kauil**. See Roys, 1965:155: "Kauil. The name of a god representing some aspect of food or crops. Kauil-yah means 'to beg for alms.' Kauil is a title of Itzamna, and we frequently find it in colonial Maya literature. (Cf. Thompson, *Maya Hieroglyphic Writing*, 82, 169, 286; Roys, *Chilam Balam of Chumayel*, 152, 165, 168; *The Prophecies for the Maya Tuns*, 170; *The Maya Katun Prophecies*, 38, 48). ... Cf. Uaxac-yol-kauil." Bricker and Miram, 2002:108, give an alternative reading in which they translate **kauil** as "boat-tailed grackle". The vocabularies do not list **kauil** as "grackle", only **kau** and **kauiz**, as for example Beltrán: "Grajo, ò sonate: Kau, kauiz," making the translation of **kauil** as "grackle" unsubstantiated. For an alternative example of the use of the word **kauil** see BMTV: Çigarrón verde: ah kin pocħ ib, ix tahil çak .l. ix kauil.

[107] An unidentified raptor.

[108] The plumeria flower is a symbol of carnal lust. See CMM: Nicte: deshonestidad, vicio de carne, y trauesuras de mugeres.

The Quality of "Good" and "Bad"
as applied to each day of the **Uinal**
and how this might affect the fortune of the Year Bearers

As shown in **U Mutil Uinic Zanzamal**, the prognostications for the quality of each day of the **uinal**, that is whether it is a "good" day or "bad" day, is not specified. There are however two texts which are to be found in the Books of Chilam Balam which do supply these qualities. In the book "*Post Conquest Mayan Literature*" these texts are referred to as **U Xoc Kin**,[109] mentioned in the introductory comments to this paper, and **U Tzolaan Ah Cuch Haaboob**.[110]

U Xoc Kin or the 260 day sacred calendar round as it comes to us in the Books of Chilam Balam is laid out along the Christian year beginning with **10 Oc** on January 1, 1589. As pointed out in Endnote 4 on page 135 of this set of papers, in the process of so doing 105 days of **U Xoc Kin** are given twice (365-260 = 105), and the information given for these reduplicated days confirms that which is given for the corresponding days in the first 260 days.

Tabulation for Good and Bad Days for Days of the **Uinal** in
U Xoc Kin

Day	**utz**	**lob**	**utz, lob xan**	not given
Kan	4	7		2
Chic Chan	4	6	1	2
Cimi	9	4		
Man Ik	5	7		1
Lamat	2	11		
Muluc	6	6		1
Oc	5	6		2
Chuen	2	11		
Eb	3	9	1	
Ben	4	9		
Hiix	1	10		2
Men	4	8		1
Cib	6	7		
Caban	5	5	2	1
Edznab	7	5		1
Cauac	6	7		
Ahau	5	6		2
Imix	4	9		
Ik	2	10		1
Akbal	2	10		1

[109] "The Count of the Days", meaning the 260 day calendar round. See PCLM lines b001-b519. Source texts: Codex Pérez, pp. 2-24, pp. 51-64 and pp. 140-150, Ixil, pp. 18a-22a and Tizimin, pp. 22r-27v. See also Apeendix F for a hieroglyphic version of **U Xoc Kin**.

[110] "The Account of the Year Bearers". See PCLM lines b550-b808. Source texts: Codex Pérez, pp. 95-99, Kaua, pp. 276-278 and Chan Cah, pp. 115-120.

Using the arbitrary criteria that 9 days or greater for either "good" or "bad" days out of 13 days total would show a tendency towards good or bad for any given day, note that in this table only the day Cimi is predominantly good. This is especially strange considering the fact that from both its name and from the prognostication for a person born on this day that it would be seem that Cimi would be considered to be a bad day. It should also be noted that there are 7 days which are predominantly bad: Lamat, Eb, Ben, Hiix, Imix, Ik and Akbal.

In order to see if the quality of a day of the **uinal** was affected by its numerical coefficient the following table was extracted from the information given in the **U Xoc Kin**. As can be seen, there seems to be no statistical edge one way or another for most of the coefficients with only the number 2 showing a specific tendency, in this case towards bad days.

Tabulation of Day Coefficients for Good and Bad in
U Xoc Kin

Day Coefficient	**utz**	**lob**	**utz, lob xan**	not given
1	6	12		2
2	4	16		
3	6	12		2
4	8	10		2
5	7	12		1
6	7	13		
7	5	14	1	
8	6	13	1	
9	7	9	2	2
10	5	12		3
11	8	8	2	2
12	7	10		3
13	10	8		2

It is difficult to see how the above information would in any way be related to the prognostications for the year bearers, which is our purpose here in looking at this question.

Trecenas

or the Grouping of Days by the Numerical Coefficients 1 through 13

In the Primeros Memoriales, on pp. 283r – 303r, there are prophecies for the 20 trecenas, or sets of 13 days which are group by the numerical coefficients 1 through 13. For **U Xoc Kin**, these would be the sets of days which begin with 1 Kan, 1 Caban, 1 Oc, etc. While there is no overt indication that the Maya were interested in this grouping of days, it is interesting to note that statistically at least 7 of these trecenas show a marked tendency towards being either good or bad, indicating that perhaps there is something of a unified prophetic nature at work for at least these trecenas. The trecenas in question are 1 Muluc and 1 Ahau, which show 10 or more good days, and the trecenas 1 Ik, 1 Men, 1 Ben, 1 Cimi and 1 Chuen which have 10 or more bad days. If we widen the envelope to include those trecenas which have 9 days either good or bad, we can add another

3 trecenas to this list: 1 Imix in the good column and 1 Cauac and 1 Edznab in the bad column.[111]

Tabulation for Good and Bad Days in the Trecenas of
U Xoc Kin

Day	**utz**	**lob**	**utz, lob xan**	not given
1 Kan	4	8	1	
1 Caban	5	7	1	
1 Oc	5	8		
1 Akbal	4	7		2
1 Cib	6	7		
1 Muluc	11	2		
1 Ik	1	11		1
1 Men	0	11		2
1 Lamat	4	7		2
1 Imix	9	3		1
1 Hiix	7	6		
1 Man Ik	2	8	1	2
1 Ahau	10	3		
1 Ben	0	11		2
1 Cimi	1	11		1
1 Cauac	4	9		
1 Eb	7	4		2
1 Chic Chan	9	3	1	
1 Edznab	2	9		2
1 Chuen	1	10		2

Should the information from this table have any bearing on the fortune of the year bearers then it is somewhat at odds with the good and bad years as shown in the Dresden:[112]

Year Bearer	Dresden	Trecenas
Kan	"good"	"somewhat bad"
Muluc	"good"	"good"
Hiix	"bad"	"somewhat good"
Cauac	"bad"	"bad"

[111] For a thought about the reason for the number 13 see O'Crouley, 1972:5: "The method of counting by thirteens was observed not only in years but also in months; although the latter consisted of only 20 days, the Indians began to count on reaching 13. This seems to be a lunar calculation since they divided the movement of that planet into two sequences: the first from its rising after the sun to reaching opposition, 13 days; the second, an equal number of days from [in the manuscript a blank] to its appearing in the morning."

This statement appears to be based on Gemelli, 1700:52: "Questo contar per tredici, oltre l'osservarsi negli anni, si praticava eziandio ne' mesi; ìmperocchè quantunque il lor mese fusse di 20. giorni, ad ogni modo giunti al novero decimoterzo, tornavano da capo. Il voler indagare la cagione, perche ciò facessero, è un tentar l'impossibile; potrebbe esser però, che seguirassero anche in ciò il loro calcolo della Luna. Eglino distingueano il moto Lunare in due tempi; il primo di vigilanza, dall' *Orto Heliaco*, o nascimento Solare, sino all'opposlzione, di 13. di; e'l secondo del sonno, d'altrettanti, sino all'occultazione mattutina."

[112] See Appendix G, in particular the comments by Thompson about Dresden pp. 25-28.

U Tzolaan Ah Cuch Haaboob

While **U Xoc Kin** refers to the well-known entity of the Mayan calendar, the 260 day calendar round, the text called **U Tzolaan Ah Cuch Haaboob** is rather obscure in its purpose. It has the appearance of wanting to give all 13 of the **uazak pachoob**[113] which make up the calendar round of 260 days, but the source texts only give six distinct **uazak pachoob**. Whether this is because the other 7 **uazak pachoob** are missing or because of some other factor can not be determined.

The reason for saying the purpose of this text is rather obscure is that while the **U Xoc Kin** treats each day of the **uinal** as a day proper, the **U Tzolaan Ah Cuch Haaboob** treats some of the days of the **uinal** as if they are year bearers, even those which are not considered to be the year bearers at the time of Spanish contact. This is really very perplexing since in general the Mayan calendar as given in the Books of Chilam Balam gives only the four days, Kan, Muluc, Hiix and Cauac, as the year bearers. Even the introductory remarks to **U Tzolaan Ah Cuch Haaboob**[114] only talk about the standard year bearer set. How then are we to interpret the material presented in the rest of the section?

The introduction to **U Tzolaan Ah Cuch Haaboob** states that "this (presumably the material which follows, namely the material found on lines b570-b808) is the account of the year bearers". The standard year bearer set of the Colonial times is then given (Kan, Muluc, Hiix, Cauac) and then the introduction goes on to state that "20 is their burden and their omen", seemingly indicating that all 20 days of the **uinal** somehow become year bearers. This idea is supported by the wording of some of the prognostications for the days themselves where there are such comments as "**ma kazi u cuch haabi**" (the burden of the year is not bad), "**utzul haab lae**" (a good year), "**balam haabil**" (jaguar/mysterious year?),[115] "**kintunyaabil**" (year of sun, i.e. drought), "**muan haabil**" (muan-bird year?),[116] all seemingly indicating that these prognostications are indeed year prognostications and not just day prognostications, as was the case for the prognostications of **U Xoc Kin**. In contrast, in the **U Xoc Kin** the prognostications frequently give "**u kinil**" (the day of) whatever activity. Two other features distinguish **U Tzolaan Ah Cuch Haaboob** from **U Xoc Kin**:

1) As can be seen by comparing the table of **U Tzolaan Ah Cuch Haaboob** with the table of **U Xoc Kin**, more days are good than bad in **U Tzolaan Ah Cuch Haaboob**. This is in contrast to **U Xoc Kin** in which the ratio is decidedly in favor of bad days.

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[113] The 20 day weeks of the **uinal**.

[114] Given on lines b550-b661 of PCML.

[115] It is not clear what the meaning of **balam haabil** is nor what purpose it serves. In **U Xoc Kin** there are two day entries which also have the notation **balam haabil**: 12 Hiix and 3 Oc. For 12 Hiix the entry reads **u kin balam haabil**, which makes the meaning of **balam haabil** even less clear. That is, how can the day also be a year?

[116] If the month of **Muan** is the month in which the rainy season begins, then perhaps **muan haabil** means in essence "a year of rain". See page 127 for more about the name **Muan**.

2) In **U Tzolaan Ah Cuch Haaboob** there is little change in the prognostication for a given named day from **uazak pach** to **uazak pach**. The numerical coefficients are virtually unimportant to the prognostication. In contrast, in **U Xoc Kin** there is no apparent order to good or bad days or other comments about any particular day or coefficient aside from those days which constitute the days pertaining to **Ah Tocoob**.[117]

Tabulation for Good and Bad Days for Days of the **Uinal** in
U Tzolaan Ah Cuch Haaboob

Day	**utz**	**lob**	**utz, lob xan**	not given	**haab** comments
Kan	6				2 (**ma kaz u cuch haab**)
Chic Chan		6			
Cimi		2	2	2	
Man Ik	5			1	1 (**utzul haab**)
Lamat	5			1	
Muluc	6				
Oc	4			2	
Chuen	2	2		2	
Eb	5		1		
Ben	4		1	1	
Hiix	6				
Men		4	1	1	2 (**kintunyaabil**)
Cib	6				3 (**balam haabil**)
Caban	6				
Edznab	4			2	3 (**utzul haab**)
Cauac	6				
Ahau	2	3	1		
Imix	6				
Ik	3		1	2	
Akbal		4	2		1 (**muan haabil**)

If it is true that in this text we are looking at the characteristics of year bearers, then based on the information supplied by the above table we have the following information for the year bearers Kan, Muluc, Hiix and Cauac:

Kan	good
Muluc	good
Hiix	good
Cauac	good

There are several problems with this. First, the attributes of "good" for Hiix and Cauac are at odds with the prognostication for these years in Dresden, pp. 25-28, as shown in Appendix G, where is appears the attributes of Hiix and Cauac should be bad.

Second, this listing of "good" is at odds with a text in the Books of Chilam Balam called the **Cuceb**.[118] This text might shine some light on this subject.

[117] See PCML, a220-a252.

[118] **Cuceb** (that which revolves), PCML c001-c568.

The **Cuceb**,
a possible alternative source of prognostications for the Year Bearers

The **Cuceb** is an incomplete set of year prognostications which begin with the year 13 Kan (1593-1594) and ends with the year 7 Kan (1613-1614). It goes through 6 iterations of Kan years and 5 iterations for the Muluc, Hiix and Cauac years. The following is a commentary about these years:

The Kan years appear to be years of drought. The first two, 13 Kan and 4 Kan, contain the phrase **ox multun tzek / ox kokol tzek**.[119] Further indication that these are years of drought is the frequent reference to fire burning over the land, causing the bedrock to explode (8 Kan, 12 Kan) and drought (12 Kan). Deities mentioned in these years: Ah Chaante / Kinich Chaante, Ah Buluc Cħabtan, Chac Uayab Xooc, Ix Kan Itzam Thul, Hunab Ku, Ah Uaxac Yol Kauil.

The Muluc years again appear to be years of drought, except that there is at least some little to eat, with both water and tortillas being rationed. There are also bloody conflicts in which the roads and resting places[120] run with blood. Deities mentioned in these years: Chac Mumul Ain, Ah Buluc Cħabtan, Bulucte Chuen, Ah Uuc Chapat, Ah Uuc Yol Zip.

The Hiix years also appear to dire years, with references of people having to return to the wells and caves for water. There also seems to be references to fighting and to animals such as the **bob** (perhaps a variety of wildcat), **cuy** and **icim** (varieties of owls) scavenging, presumably on human remains, thus indicating a large scale die-off of the human population. There is also reference to clothing, particularly the lack thereof. Deities mentioned in these years: Ah Bolon Yocte, Ah Bolon Kanan, Ah Buluc Cħabtan, Ah Uuc Eb, Chac Mumul Ain, Chac Uayab Xooc, Chac Uayab Cab, Ah Uuc Zuhuy Zip, Ah Uuc Tut, Ah Piltec, Ah Tepan Ciz, Ah Buluc Am / Moctecuzoma,[121] Ah Co Pauahtun, Ix Chac Chuuah.

The Cauac years are again dire, with pestilence, hunger, and the change of clothing, perhaps in reference to clothing styles imposed by the Spanish. Again various meat-eating animals are referenced. Deities mentioned in these years: Ah Uucte Cuy, Ah Uuc Chapat, Ah Buluc Cħabtan, Ah Chacmitan Cħooc, Chac Uayab Cab, Chac Uayab Xooc, Ix Titibe, Kukul Can. Also, three of the four Bacabs are mentioned in the Cauac years: Ah Can Tzic Nal (4 times), and Ah Can Ek and Ah Zac Dziu (one time each).

While these prophecies are supposedly for the years 1593-1614, it should be remembered that they are probably based on historical fact and reflect what happened in the years 1541-1562. In about 1540 an event termed by some to be a mega-drought hit Mexico and lasted into the 1570's. In the highlands of Mexico in particular there was an attendant series of plagues called in Nahuatl Cocoliztli,

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[119] "Three piles of skulls" / "three lots of skull", in which **kokol** in this case appears to be related to a great quantity. See DMSF: Kokol; bolon: gran. ¶ kokol ah tuz: gran mentiroso, o como se dice: la madre de las mentiras.

[120] BMTV: Descansadero en que descansan los indios la carga: heleb, lub .l. lubay.

[121] From one of the texts it appears that Ah Buluc Am ("Eleven Spider") is an alternative name for Moctecuzoma.

which is equivalent to the Mayan term of Maya Cimlal.[122] It thus should not be surprising that most of these years should have dire predictions. Extracting what we can of the above in terms of "good" or "bad" we have the following:

Kan	bad
Muluc	somewhat bad
Hiix	bad
Cauac	bad

This is of course almost the complete opposite of the information given by **U Tzolaan Ah Cuch Haaboob**. Thus, in the end there is no definitive answer to be found here as to what the quality of the year bearers should be in terms of being either "good" or "bad".

[122] CMM: Maya cimlal: vna mortandad grande que vuo en Yucatan, y tomase por qualquier mortandad y pestilencia que lleua mucha gente.

Appendix C

Ritual 1

--- --- u chun u uinicil Ah Canule
ix zac uaxim, ix culun chacah yix mehen pazel, ek u pazel
yaxum u chun u uinicil Ah Cauiche
yahau ah nohol u chun u uinicil Ah Noh
kan tacay u kaba u chun u uinicil Ah Puche
bolonppel yoc ha u canaanmaob, bolonppel uitz u canaanmaob

Ritual 2

chac tok tun u tunil ti lakin
chac imix yaxche u dzulbal ah chac muzen cabe
chacal pucte u cheob
ix chac yak yiziloob
ix chac ak yibiloob
chac ix kan dzulen yulumoob
ix chac oppool yiximoob

zac tok tun u tunil ti xaman
zac imix yaxche u dzulbal ah zac muzen cabe
zacal pucte u cheob
ix zac pucte yiziloob
zac ib yibiloob
ix zac tan ulum yulumoob
zac ixim yiximoob

ek tok tun u tunil ti chikin
ek imix yaxche u dzulbal ah ek muzen cabe
ekel pucte u cheob
ix ek chuch iz yiziloob
ek ib yibiloob
ix ek buul u buuloob
ix ek ucum yulumoob
ix ek hub yiximoob, ek akab chan u naloob

kan tok tun u tunil ti nohol
kan imix yaxche u dzulbaloob ah kan muzen cabe
kanal pucte u cheob
ix kan pucte yiziloob
ix kan pach buul u buuloob
ix kan pucte ucum yulumoob
ix kankan nal u naloob

Ritual 3

ca tun uchci u pach cuchoob;
buluc ahau u katunil uchci u pach cuchoob
ca hoppi u talel ah ppiz luum
lay ah ppizte, yah ppizul u luboob
ca tun tali ah chacte aban chactetic u luboob
ca tali Ah Uucil Yaab Nal hocħ xiutic u luboob
tamuk u talel ah mizcit ahau miztic u luboob
tamuk u talel yah ppizul ppiztic u luboob
heklay u coch lub cu ppizci

Ritual 4

ca cahi u hol poop
ix noh uc u hol poop ti lakin
ox tocoy moo u hol poop ti lakin
ox pauah ek u hol poop ti lakin
ah miz u hol poop ti lakin
batun u hol poop ti xaman
ah puch u hol poop ti xaman
balam na u hol poop ti xaman
ake u hol poop ti xaman
yiban u hol poop ti chikin
ah chab u hol poop ti chikin
ah tucuch u hol poop ti chikin
ah yamaz u hol poop ti nohol
ah puch u hol poop ti nohol
Cauich u hol poop ti nohol
ah couoh u hol poop ti nohol
ah ppuc u hol poop ti nohol

Ritual 5

chac ix chuuah cab u caboob ti lakin
chac lol u luchoob; chachac nicte u nicteiloob
zac ix chuuah cab u caboob ti xaman
zac lol u luchoob; zac ix pach dza u nicteiloob
ek ix chuuah cab u caboob ti chikin
ek lol u luchoob; ek ix laul nicte u nicteiloob
kan ix chuuah cab u caboob ti nohol
kan lol u luchoob; kan tzac nicte u nicteiloob

DRESDEN CODEX, PAGES 29c - 31c
AND
THE BOOK OF CHILAM BALAM OF CHUMAYEL

In reading through the various Yucatecan Mayan colonial books, in particular those called the "Books of Chilam Balam", one finds such phrases as "lay bin u hokzah tu uooh anahte bin" (thus it was said that he took it (that is, the passage in which this line appears) out of the hieroglyphs of the book) (Bolles 2003, line C435), "tin hokzah ti uooh" (I took this out of the hieroglyphs) (Bolles 2003, line C560), and "ca ix u xocahoob tu uoohil" (and thus they read it in the hieroglyphs) (Bolles 2003, line J431). It would thus seem to be a reasonable assumption that the person or persons who originally wrote the Yucatecan Mayan colonial texts from which the various "Books of Chilam Balam" were formed were able to read hieroglyphs and in fact were often transcribing hieroglyphic texts when writing down the material in Latin script.

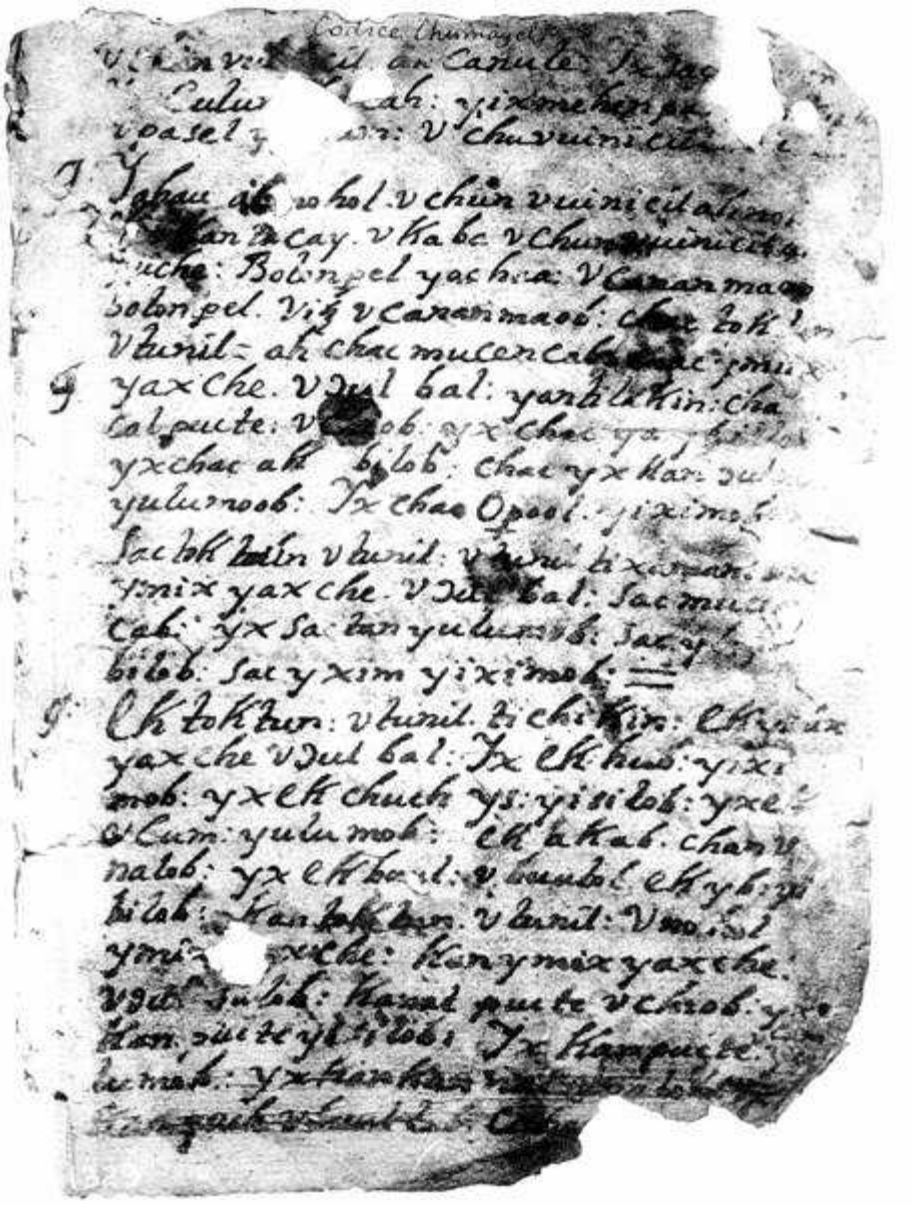
Some researchers have made contributions with this assumption in mind. Maria Cristina Alvarez, in her 1974 monograph "Textos Coloniales del Libro de Chilam Balam de Chumayel y Textos Glificos del Codice de Dresde", wrote about the relationship between pages 30c-31c of the Dresden Codex and the opening passages from the first page of the Book of Chilam Balam of Chumayel. The material from the Chumayel is divided into two parts, called here rituals.

Ritual 1 (Bolles 2003, lines H001-H006) gives the names of the founders of the Canul, Cauich, Noh, and Puch lineages. From the folio numbering it is clear that the first folio of the Chumayel is missing. Since it seems evident that this ritual was already begun on the now missing folio, the founder's name for the Canul lineage is actually not given but has been lost with the loss of the first folio. Note that there is a difference of opinion between Alvarez and myself on how the actual phrasing should be. Generally a phrase such as "u chun u uinicil" (the beginning of the people (i.e. lineage)) should be preceded by a subject just as it is followed by an object as shown by Alvarez. I have therefore shown subjects for these phrases as allowed for by the original text, and go on the assumption that the subject for the first phrase has been lost with the missing folio 1.

Ritual 2 (Bolles 2003, lines H008-H039) lists the attributes of "ah muzen cab" (a deity of the bees) in his four aspects, each one with its world direction and corresponding world direction color. In editing this ritual I have made the assumption that each article mentioned (i.e. "che", "iz", "ulum", etc.) should be mentioned in each paragraph for a world direction.

Maria Cristina Alvarez (1974) believes Rituals 1 and 2 to be related to Codex Dresden, pages 30c-31c. In fact, as can be seen from the accompanying comparison of Ritual 2 with pages 29c-31c of the Codex Dresden, if Alvarez's assertion is correct there seems reason to think that Dresden 29c should be the beginning point for this comparison since that is where the ritual-almanac using glyphs T 15.667:47 and T 1.667:130 begins. It is in the glyph group starting on Dresden 29c that the world directions are given, and these are certainly an integral part of the Latin script ritual.

Alvarez relates Ritual 1 to Dresden 30c-31c mainly because of the use of the phrase “u chun”, found in lines H001, H003, H004, and H005 in the phrase “u chun u uinicil”. While “chun” does mean trunk or base of a plant (“u chun che”, “the trunk of a tree”) thereby allowing Alvarez to equate Ritual 1 with the picture accompanying Dresden 30c-31c which shows four Chacs each seated on the trunk of a tree, the word “chun” as used in the phrase “u chun u uinicil” most certainly means “the beginning of” or “the first of”, the whole phrase being, as Roys translates it (1933/1967), “the first of the men of (family name)”. Of course, because of the fact that there are two or more meanings for many words in the Yucatecan Mayan language puns can be often employed and the use of one “chun” in a picture when in fact the other “chun” is meant might be an example of such a pun.



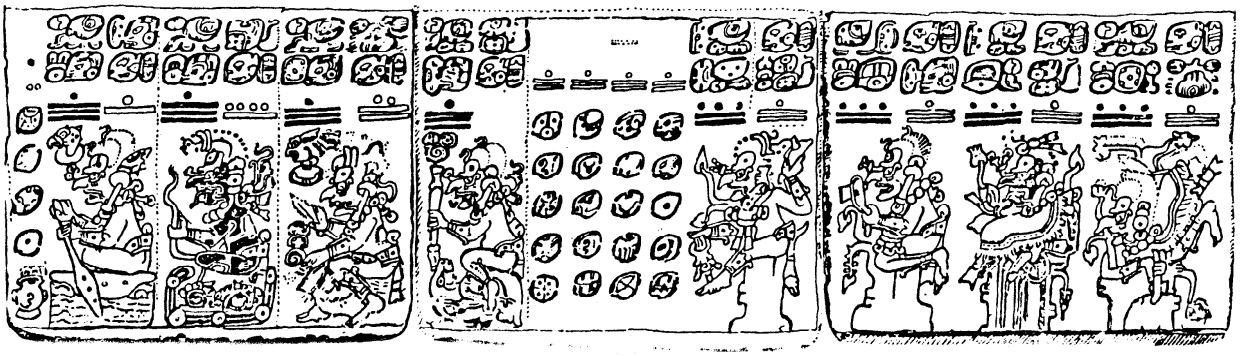
Chumayel, Page 1

DRESDEN CODEX, PAGES 29c - 31c
AND
THE BOOK OF CHILAM BALAM OF CHUMAYEL

Edited version of the text from page 1 of the Chumayel:

--- --- u chun u uinicil Ah Canule.
Ix zac uaxim, ix culun chacah yix mehen pazel, ek u pazel.
Yaxum u chun u uinicil Ah Cauiche.
Yahau Ah Nohol u chun u uinicil Ah Noh.
Kan tacay u kaba u chun u uinicil Ah Puche.

("--- --- is the progenitor of the Ah Canul lineage.
White acacia, drum gumbolimbo tree is the little hut, black is their hut.[123]
The Cotinga amabilis bird is the progenitor of the Ah Cauich lineage.
The king of the southerners is the progenitor of the Ah Noh lineage.
Yellow large billed tyrant is the name of the progenitor of the Ah Puch lineage.")



Pages 29c-31c of the Dresden Codex. Pp. 30c-31c show four **Chacoob** sitting on tree trunks, **chun** in Mayan. Perhaps the phrase **u chun u uinicil** is derived from this scene.

There is an intermediate sentence between the above lines and those shown on the following pages. It reads:

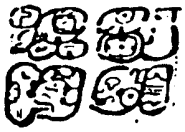
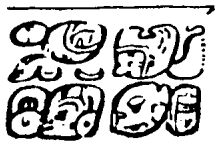
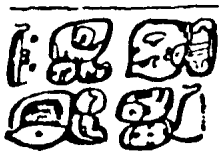
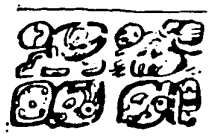
Bolonppel yoc ha u canaanmaob, bolonppel uitz u canaanmaob.

("They guard the nine rivers, they guard the nine hills.")[124]

[123] Roys shows an alternative translation: "the logwood tree is the hut..." The word **ek** has various meanings, among them "black" and "logwood" (*Haematoxylon campechianum*, L.) from which ink is made. However, if this ritual is in some way connected to Ritual 2 then it would seem that **pazel** (hut, arbor) should have a world direction color as is true of its synonym **dzulbal** in Ritual 2. **Ek u pazel** would mean that this hut is in the west. This would also indicate that a phrase with the words **kan u pazel** ("yellow is their hut", that is, the hut in the south) is missing after the line concerning the Ah Puch lineage, a problem not uncommon in the Chumayel.

[124] The place name **Bolonppel uitz** may refer to Salinas de los Nueve Cerros on the Chixoy River in the Peten of Guatemala.

DRESDEN CODEX, PAGES 29c - 31c
AND
THE BOOK OF CHILAM BALAM OF CHUMAYEL

	Transliteration of Glyphs in Dresden		Transcription of the Chumayel Text
	u ɔulbaloob[125]	lakinil	chac tok tun u tunil = ah chac mucen cabe chac ymix yaxche. u ɔul bal: yan ti lakin
	chac xib	ah chac	chacal pucte: u cheob: yx chac ya ybillob yxchac ak bilob:
	u ɔulbal	ah chac	chac yx kan ɔulen yulumoob: Yx chac Opool: yiximob: =
	chac imix che	ti lakinil	
	u ɔulbaloob	xaman	Sac tok tun u tunil: u tunil ti xaman sac ymix yax che. u ɔul bal
	zac xib	ah chac	sac mucen cab: yx sac tun yulumob: sac yb yi bilob:
	u ɔulbal	ah chac	sac yxim yiximob: =
	zac tun	xaman	
	u ɔulbaloob	chikinil	Ek tok tun: u tunil. ti chikin: ek ymix yaxche u ɔul bal:
	ek xib	ah chac	Yx ek hub: yixi mob: yx ek chuch ys: yisilob: yx ek ucum: yulumob:
	u ɔulbal	ah chac	ek akab. Chan u nalob: yx ek buul: u buulob.
	ek che	chikinil	ek yb: yi bilob:
	u ɔulbaloob	nohol	kan tok tun. u nohol ymix [ya]xche: kan imix yaxche: u ɔul balob:
	kan xib	ah chac	kanal pucte u cheob: yx kan pucte yibilob:
	u ɔulbaloob	ah chac	Yx kan pucte. ucum yu lumob: yx kankan nal u naloob
	ti kan che	nohol	yx kan pach u buul lob.

[125] The symbol **ɔ** is the colonial equivalent to **dz**.

ca ualci cantul ku, cantul bacab
f170 lay hayezoob cab lae, tu chii tun ca dzoci hay cabile

ca ualhi chac imix che tu lakin peten
lay u yocmal caan
lay u chicul hay cabil
lay u coycinah u che bacab
f175 culic chac tan pidzoy, chac xib yuy, chac oyal mut

ca ualhi zac imix che tu xaman peten
lay u yocmal caan; lay ualic zac chic
lay u chicul hay cabil
lay zac imix che; ualic cu chic
f180 culic zac tan pidzoy, zac xib yuy, zac oyal mut

ca ualhi ek imix che tu chikin peten
lay u yocmal caan
lay u chicul hay cabil
culic ek tan pidzoy, ek xib yuy, ek oyal mut

f185 ca ualhi kan imix che tu nohol peten
lay u yocmal caan
lay u chicul hay cabil
culic kan tan pidzoy, kan xib yuy, kan oyal mut

ca ualhi yax imix che tu chumuc peten
f190 lay u yocmal caan
lay u chicul hay cabil
culic yax tan pidzoy, yax xib yuy, yax oyal mut

cumtal u caah u lac, u luch, u poop, u dzam u yanal katun lae
ah pay kab tu yum, ah pay oc tu yum

f195 cumtal u caah Chac Piltec tu lakin cab
ah pay kab tu yum, ah pay oc tu yum

cumtal u caah Zac Piltec tu xaman cab
ah pay kab tu yum, ah pay oc tu yum

cumtal u caah Lahun Chan, Ek Piltec tu chikin cab[126]
f200 ah pay kab tu yum, ah pay oc tu yum

cumtal u caah Kan Piltec tu nohol cab
ah pay kab tu yum, ah pay oc tu yum

[126] Note here that **Ek Piltec**, as mentioned on page 24-25, is given an alternative aspect, **Lahun Chan**. For more about **Lahun Chan** see the article "*The Appearance of the God Lahun Chan in the Yucatecan Colonial Mayan Texts, the Dresden Codex, and the Tro-Cortesianus Codex*" beginning on page 111.

Appendix E
The Meaning of the Day Names of the **Uinal**

This is an attempt to give meaning to the various day names of the **uinal**.[127] While some of the names are still intelligible, others have lost their meaning over the centuries, even, apparently, to the Maya at the time of conquest (mid 1500's) when the earliest vocabularies and pieces of Mayan colonial literature were written.

Some of the words for these day names have multiple meanings. However, there is a text given in the Book of Chilam Balam of Chumayel on pp. 60-64 (see below following this list of days) which lists the twenty days of creation. Each of the 20 days have a certain event happening on that day. In some cases it can be deduced which of the various meanings of the day names correspond to that day name based on the activity which takes place during that day.

Kan — Jade bead. (CMM: Kan: cuzcas o picchas que seruian a los indios de moneda y de adorno al cuello. BMTV: Piedras cuzcas en general: maya kan.)

Chic Chan — Snake bite. (DMSF: Chibal: comer carne, pescado o huevos. ¶ yan ua a chiic bak; a chibal bak tu kinil zukin: ¿has comido carne en día del ayuno? DB: Chan: an old word for snake, also the word for "snake" used in Chontal.)

Cimi — Death. (BMTV: Muerte en general: cimil.)

Man Ik — Pass wind / pass spirit. (The meaning appears to be that the spirit (**ik**) passes (**man**) through bodies, giving them life.)

Lamat — Venus. (The word **Lamat** for the planet Venus is not registered in the vocabularies, nor is it used for the planet Venus in the colonial Mayan manuscripts. See for example CMM: Chac ek: luzero del dia.)

Muluc — Perhaps from **mul** = "to gather into a pile". JPP: Mul: v.n. reunirse en monton, amontonarse.

Oc — Foot / enter. Meaning uncertain. (CMM: Oc: pie de hombre y brutos animales, y de mesa y vana. CMM: Occah .l. oceçah: meter; actiuo de ocol.)

Chuen — Maker, artisan. (CMM: Ah chuen: artifiçe ofiçial de algun arte.)

Eb — Stairway. (CMM: Eb: escalera.)

Ben — Go. (DMM: Yr e yda: ben; benel.)

Hiix — Undesignated and unregistered species of wildcat.

Men — Maker, fabricator. (CMM: Men: ocupacion; ocuparse, hazer algo, entender algo.)

Cib — Wax and by extension candle. (BMTV: Çera comoquiera: cib. / DMM: Vela de çera: chamal cib.)

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[127] For a much fuller and somewhat different exposition of this material see Thompson, 1960, pp. 66-103. See in particular page 89.

Caban — Earth. (CMM: Cab: el mundo.)

Edznab — Meaning uncertain. Thompson (1960, p. 89) tentatively suggests "knife blade", perhaps based on the fact that in the Mexican calendar this day in called Tecpatl (flint, flint knife). As a possible confirmation of this the BMTV gives: Lança con cabo de pedernal: nabte. For another possible meaning see CMM: Edz.ah,eb: afixar o afirmar o asentar alguna cosa que quede firme. / Naab: palmo o medida de palmo. The Chumayel sentence shown in the text below seems to favor this second meaning.

Cauac — Meaning uncertain. Thompson (1960, p. 89) shows "Rain / Storm", again based on the Mexican calendar equivalent Quiauitl (rain), but there is no confirmation of this in the various vocabularies.

Ahau — Lord. (CMM: Ahau: Rey o emperador, monarca, principe, o grand señor.)

Imix — Abundance. This meaning is uncertain and unregistered in the vocabularies, but **imix** appears to have something to do with "abundance" as shown in various of the texts given as examples in this paper.

Ik — Wind / spirit. (DMM: Viento y espiritu vital: ik.)

Akbal — Darkness. (CMM: Akbil: cosa nocturna, o cosa de noche.)

Lay u Kay Uchci u Zihil Uinal ti Ma To Ahac Cab Cuchie

The text from Chumayel, pp. 60-64

a060 Bay tzolci yax ah miatz Merchise, yax ah bobat Na Puc Tun,
sacerdote, yax ah kin.
Lay u kay uchci u zihil uinal ti ma to ahac cab cuchie.
Ca hoppi u ximbaltuba tu hunal.
Ca yalah u chich, ca yalah u dze naa,
a065 ca yalah u mim, ca yalah u muu,
"Baal bin c'alab, ca bin c'ilab uinic ti be"
cu thanoob tamuk u ximbaloob cuchie.
Minaan uinic cuchi.
Ca tun kuchiob te ti likine, ca hoppi yalicoob
a070 "Mac ti mani uay lae.
He yocoob lae, ppiz ta uoci."
Ci bin u than u colel cab.
Ca bin u ppizah yoc c' yumil ti dios citbil.
Lay u chun yalci xoc lah cab oc lae:
a075 Lahca Oc.
Lay u tzolaan zihci tumen

Oxlahun Oc — uchci u nupptamba yoc likciob te ti likine. Ca tu yalah u kaba ti minaan u kaba kin cuchi; ximbalnaci yetel u chich yetel u dze na yetel u mim yetel u muu. Zihci uinal; zihci kin u kaba; zihci caan yetel luum; eb ha, luum, tunich, yetel che; zihci u baal kaknab yetel luum.

	Hun Chuen	u hokzicuba tu kinil u mentci caan yetel luum
	Ca Eb	u mentci yax eb emci likul tan yol caan, tan yol ha minaan luum yetel tunich yetel che
	Ox Ben	u mentci tulacal baal, hi bahun baal u baal caanoob
a090		yetel u baal kaknab yetel u baal luum
	Can Hiix	uchci u nixpahal caan yetel luum
	Ho Men	uchci u meyah tulacal
	Uac Cib	uchci u mentci yax cib; uchci u zazilhal ti minaan kin yetel :U:
a095	Uuc Caban	yax zihci cab ti minaan toon cuchi
	Uaxac Edznab	edzlahci u kab yetel yoc ca u cħicħah yokol luum
	Bolon Cauac	yax tumtabci metnal
	Lahun Ahau	uchci u binoob u lobil uinicoob ti metnal tumen dios citbil ma chicaanac cuchi
a100	Buluc Imix	uchci u patic tunich yetel che lay u mentah ichil kin
	Lahca Ik	uchci u zihzic ik; lay u chun u kabatic ik tumen minaan cimil ichil lae
	Oxlahun Akbal	uchci u cħaic ha, ca yakzah luum; ca patah, ca uinichi
a105		
	Hunil Kan	u yax mentci u leppel yol tumenel u lobil zihzah
	Ca Chic Chan	uchci u chictahal u lobil hibaal yilah ichil u uich cahe
	Ox Cimi	u tuzci cimil; uchci u tuzci yax cimil c' yumil ti dios
a110		
	[Can Man Ik	uchci u manzic ik tu yol uinic][128]
	Ho Lamat	lay u tuzci uuc lam chac hal kaknab
	Uac Muluc	uchci u mucchahal kopoob tulacal ti ma to ahac cabe

[128] The line for this day is missing in the Chumayel manuscript. The information in this line was supplied by a woman who originally came from Dzit Nupp but was living in Eb Tun at the time she supplied it. When I asked her how she knew that this was the information for the day Man Ik she replied that her father had books, one of which contained this passage, and often he read these books to the family.

This is the Song of when the Uinal was Born
When the World was still not Created[129]
Chumayel, pp. 60-64

This was told by the first wise man Melchizedek, the first prophet Na Puc Tun, priest, the first priest.
This is the song of how the Uinal was born when the world was still not created.
Then it began to go by itself.
Then said his maternal grandmother, then said his maternal aunt,
then said his paternal grandmother, then said his sister-in-law:
"What will we say when we will see a man on the road?"
they said as they went along.
There here was no man at that time.
Then they arrived there in the east, then they began to say.
"Who passed by here?
Here are the footprints, measure it with your foot."
That is what the woman of the world said.
Then she measured the footstep of our lord god the father.
This was the reason they say "counting off the whole world with footsteps."

12 Oc.

Thus it was said that (the world) was born because of this.

13 Oc[130]	This was when footsteps were used to measure (the world),[131] beginning in the east. Then the names were said at the time when the days had no name. He went with his maternal grandmother, with his maternal aunt, with his paternal grandmother, with his sister-in-law. The uinal was created. The names of the days were created. Heaven and earth were created. Water, earth, rock and trees descended.[132] The things of the sea and the things of the land were created.
1 Chuen	He manifested himself on the day when he made heaven and earth.
2 Eb	He made the first stairway. It descended from the center of the heavens, in the center of the water, when there was neither earth nor rocks nor trees.
3 Ben	He made all things, however many things there are, the things of the heavens, and the things of the sea and the things of the earth.
4 Hiix	Sky and earth were overturned.
5 Men	Everything was made to work.

[129] Compare with Roys, 1933, pp. 116-118 for an alternative translation. Roys gives numerous footnotes to this text which the interested reader should look at.

[130] Note that the coefficient inexplicably goes from 12 to 13.

[131] The word **nupp tanba** means to place one thing next to another. See for example BMTV: Juntarse dos caminos: nupp tanba be.

[132] It appears here that the word **eb** is being used as a verb. Normally **eb** means stairway or ladder. See the day **Eb** below for the normal usage.

6 Cib	He made the first candle. It became light when there was neither sun nor moon.
7 Caban	The earth was first created at the time we did not exist.
8 Edznab	His hand and his foot were firmly placed: then he gathered grain one by one on the land.
9 Cauac	The temptation of the underworld was first considered.
10 Ahau	This was when wicked men went to the underworld because god the father did not appear at that time.
11 Imix	He formed rocks and trees; this he did during this day.
12 Ik	This was when he created the breath of life.[133] The reason it is called Ik is because there is no death in it.
13 Akbal	This was when he took water and watered the ground. Then he shaped it and it became man.
1 Kan	Jealousy was first created because of the evil creation.
2 Chic Chan	This was when evil showed itself wherever it was seen in the face of the population.
3 Cimi	Death was invented. This was when the first death was invented by our lord god.[134]
[4 Man Ik	This was when spirit passed into the soul of man.][135]
5 Lamat	Then Uuc Lam Chac[136] was established[137] on the shore of the sea.
6 Muluc	This was when all the ravines were inundated[138] when the world was not yet created.

[133] **Ik** means both "wind" and "spirit / soul".

[134] Here the word **tuzci** is translated according to the following entry from the CMM: Tuz.ah,ub: inuentar, componer, ordenar, constituir, y estableçer. ¶ v tuzah v sacramentoil confession:

[135] See Can Man Ik above for a note about the source of this line.

[136] **Uuc Lam Chac** = "Seven Submerged Chac". This is the only appearance of this deity, so nothing is known of him.

[137] Here the word **tuzci** is translated according to the following entry from the CMM: Tuz.ah,ub: no refiriendose a persona singnifica fingir, disimular fingiendo. ¶ bin a tuz a calanil: fingiras que estas borracho. ¶ v tuzah v cimil: fingio estar enfermo.

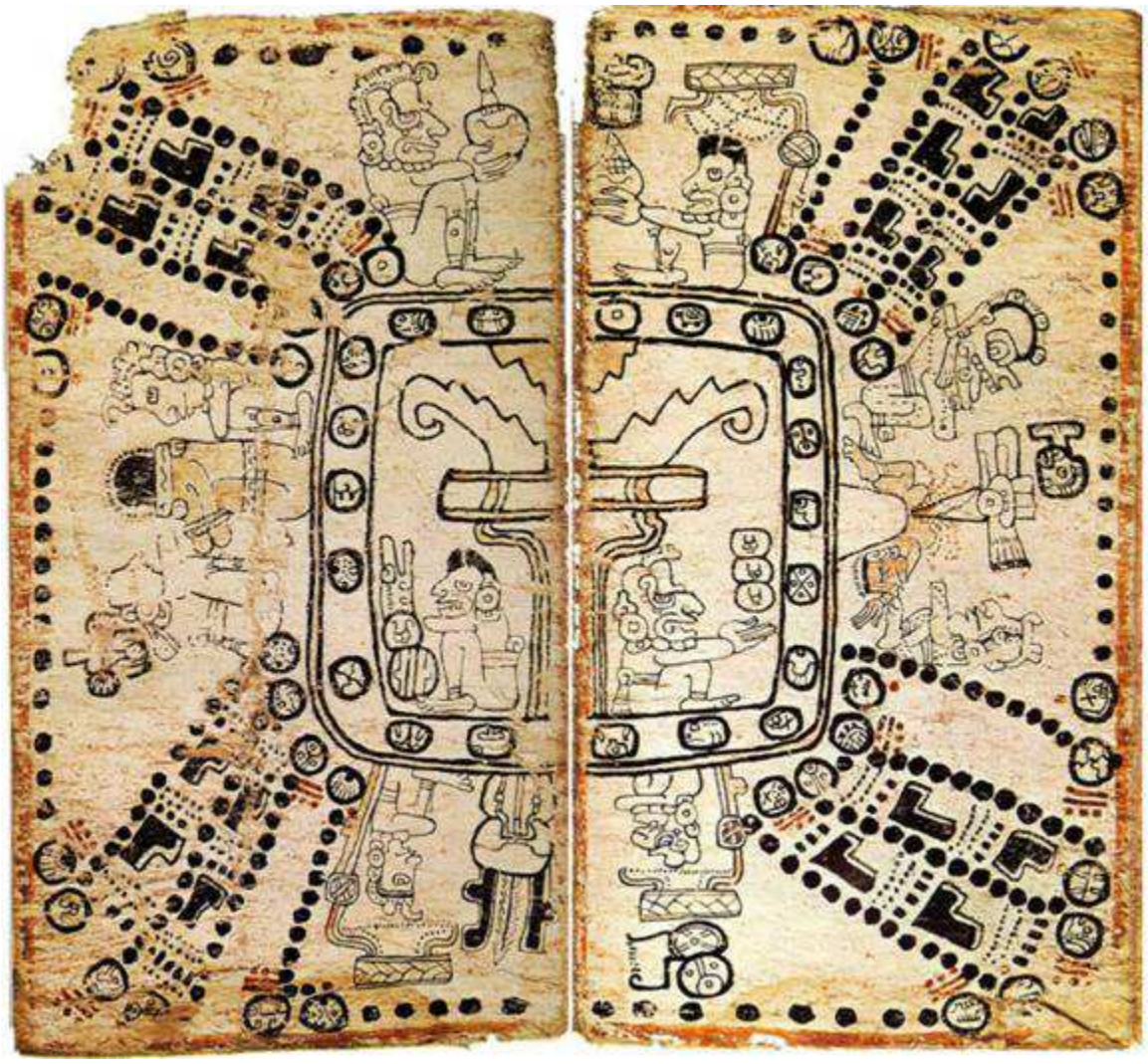
[138] The verb **mucchahal** normally means "to be covered". However, "to be submerged" is also possible as shown by the BMTV: Anegarse el nabío o otra cosa: bulul, bulul nij .l. mucchahal tumen haa. Note that the words **tumen haa** are added to **mucchahal** to specify that "submerged" is meant. Roys has opted for "submerged" in his translation.

Appendix F

Pre-Columbian 260 Day Calendars
Showing Connections between World Directions and the Calendars

The Mayan 260 Day Xoc Kin Calendar

Below is a pre-Columbian visualization of the Mayan 260 Day Xoc Kin calendar with the world directions and gods associated with the world directions. In this depiction East is placed at the bottom, North at the right, West at the top and South to the left. Note the depictions of arbors (**pazel / dzulbal**)[139] to the West and the East, and at the Center of the World.



Pages 75-76 from the Madrid Codex

The dots represent days, and go counterclockwise. The first day in a row of dots carries the coefficient 1 with a day sign and the last day of the row carries the coefficient 13 with a day sign of a day of the **uinal** which is 13 days later. Thus, in the upper right-hand corner there is 13 Caban followed by 1 Edznab which

[139] See pp. 4-6 of this paper for comments about arbors. See also the mention of **dzulbal** in footnote 34.

then, following the dots, goes to 13 Oc followed by 1 Chuen. The user of the calendar is supposed to fill in the intervening numbers and day names.

As discussed on pages 17-22, it is apparent that each day of the **uinal** was given a world direction. These days, related to the world directions, are as follows:

To the East
Kan, Lamat, Eb, Cib, Ahau

To the North
Chic Chan, Muluc, Ben, Caban, Imix

To the West
Cimi, Oc, Hiix, Edznab, Ik

To the South
Man Ik, Chuen, Men, Cauac, Akbal

In the border around the central scene on pages 75-76 of the Madrid Codex there are the 20 days of the **uinal** grouped as follows, going in a counterclockwise direction:

In the right border:
Kan, Lamat, Caban, Ahau, Cib

In the top border:
Imix, Chic Chan, Muluc, Ben, Eb

In the left border:
Cimi, Ik, Oc, Hiix, Edznab

In the bottom border:
Akbal, Man Ik, Chuen, Men, Cauac

Note that with the exception of the days Caban and Eb the grouping of days is the same in both lists. Note too that the order in which the days are presented are mostly the same, but there are some differences which appear to be in error. If these two corrections, that is swapping Caban and Eb and reordering the listing of the day names, are applied to the Madrid list then the following list results:

In the right border:
Kan, Lamat, Eb, Cib, Ahau

In the top border:
Imix, Chic Chan, Muluc, Ben, Caban

In the left border:
Ik, Cimi, Oc, Hiix, Edznab

In the bottom border:
Akbal, Man Ik, Chuen, Men, Cauac

While the order of the days in each group is the same, note that with the exception of the Kan, Lamat, Eb, Cib, Ahau group that the groups in this revised list begin with the second day of each group of the list derived from pages 17-22 and end with the leading day of each group from that list. This discrepancy most probably is the result of the residual knowledge that the day 1 Imix was at one time considered to be the first day of the 260 calendar round, a fact noted by Landa in

his presentation of the Mayan calendar.[140] In part based on the information supplied by Landa, Thompson, in his list of days of the **uinal**, also begins with the day Imix. Taking the idea that 1 Imix was the first day of the 260 calendar, the list of groupings of days, reordered to reflect this fact, reads:

In the top border:
Imix, Chic Chan, Muluc, Ben, Caban

In the left border:
Ik, Cimi, Oc, Hiix, Edznab

In the bottom border:
Akbal, Man Ik, Chuen, Men, Cauac

In the right border:
Kan, Lamat, Eb, Cib, Ahau

The leading days of each group, Imix, Ik, Akbal and Kan, are sequential in the **uinal** and it thus could be assumed that the scribe who made the Madrid Codex was working from a calendar which was based on the idea that 1 Imix was the first day of the 260 calendar. However, by the time the colonial literature was written 1 Kan became the first day for most of the lists of days of the **uinal**.[141] While in general this change does not affect the working of the calendar as a whole, one would think that there was some significance to this change.

In any case, from the foregoing it is clear that this grouping of days in the Madrid Codex is related to the world directions which form part of the attributes of the days of the **uinal**. On page 1 of the Fejérváry-Mayer Codex there is the same system of the grouping of days into world direction groups, although the way this information is presented is different as will be seen in the following discussion about page 1 from the Fejérváry-Mayer Codex.

Perhaps the reader will have noticed a perplexing problem: why is the group beginning with the day Kan placed in the border which faces North sector, the group beginning with the day Imix placed in the border which faces the West sector, etc.? From all of the information presented in this paper it would seem evident that the rotation is off by one quadrant, and that these groupings should be rotated clockwise one quadrant in order to align the Kan grouping with the East.

Equally perplexing is that if the thirteen days or **trecenas**[142] represented by the dots across the outer-most edge of the calendar diagram are supposed to be the ones which are ruled by the world direction of that sector, then why is the series of dots which begin with 1 Kan placed in the West sector, the series of dots beginning with 1 Muluc placed in the South sector, the series of dots beginning

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[140] Landa, 1966, p. 74: Aqui comienza la cuenta del Calendario de los Indios diciendo en su lengua: Hun Imix. (Here begins the count of the Calendar of the Indians saying in their language: 1 Imix.)

[141] Aside from the list of days given on pages 17-22 in **U Mutil Uinic Zanzamal** there are other lists such as **U Kaba Kin** (the name of the days) which appear in Kaua, p. 20, Ixil, p. 2b, Pérez, pp. 93-94 and Tizimin, p. 20. The day 1 Kan also gives its name to the first year in the 52 year cycle called **U Bubukil Haaboob**, and perhaps because of this came to be considered to be the first day of calendar discussions in general. See Appendix H for more on **U Bubukil Haaboob**.

[142] See Appendix B for more on **trecenas**.

with 1 Hiix placed in the East sector, and the series of dots beginning with 1 Cauac placed in the North sector?

Earlier we saw a similar problem with Landa's exposition of the year bearers. In that case Landa had Kan to the South, i.e. shifted one quadrant counterclockwise from the generally accepted world direction for Kan. One would think that the linking of the day Kan with the East would be a constant, but perhaps there is something about the Mayan calendar which we fail to understand.

Mention should be made of the various deities portrayed on pages 75-76 of the Madrid Codex.

The pair of deities pictured in the center are assume to be the creator pair, Ix Chel and Itzam Na.[143] A further assumption is that they are seated under the branched depiction of a yaxche. The hieroglyphs which accompany them are all Ik, which as mentioned in Appendix E has the dual meaning of wind and spirit.

To the East, in the bottom quadrant, are seated the young maize god, Kauil, and Itzam Na facing each other in their arbors. The arbors have the "sky" glyph on the support posts, indicating the celestial nature of these arbors. Between the two gods is the Kan glyph[144] which is sprouting vegetation and roots. To the North, in the right quadrant, are Buluc Ch'abtan[145] in his god F aspect and god A, Cizin / Chacmitan Ahau / Chacmitan Ch'ooc / Hun Ahau participating in a human sacrifice. To the West, in the top quadrant, are seated Ix Chel in her arbor and Itzam Na. Again, the arbor has a "sky" glyph on the support post. Itzam Na holds a sprouting Kan glyph in his hand and Ix Chel appears to hold the Cauac glyph topped off by some unidentifiable symbol. To the South, in the left quadrant, are Buluc Ch'abtan in his god Q aspect and an unidentifiable god[146] seated on either side of a captive being prepared for sacrifice.

Finally, a comment about the **L** shaped items in the ordinal points. It is assumed, since there are 18 of these **L** shaped items, that these represent the 20 day months. At the bottom of page 11 and at the top of page 51 of the Madrid Codex the Madrid scribe used similar **L** shaped items to indicate road or path, so it seems clear that these **L** shaped items, usually with 3 to five dots at the bottom of the **L**, represent feet. It is not unusual to use the word **ximbal** (walk / to walk) in conjunction with movement in the Mayan calendar. The tiny dots, between 16 and 20 of them, probably represent the 20 days within each 20 day month.

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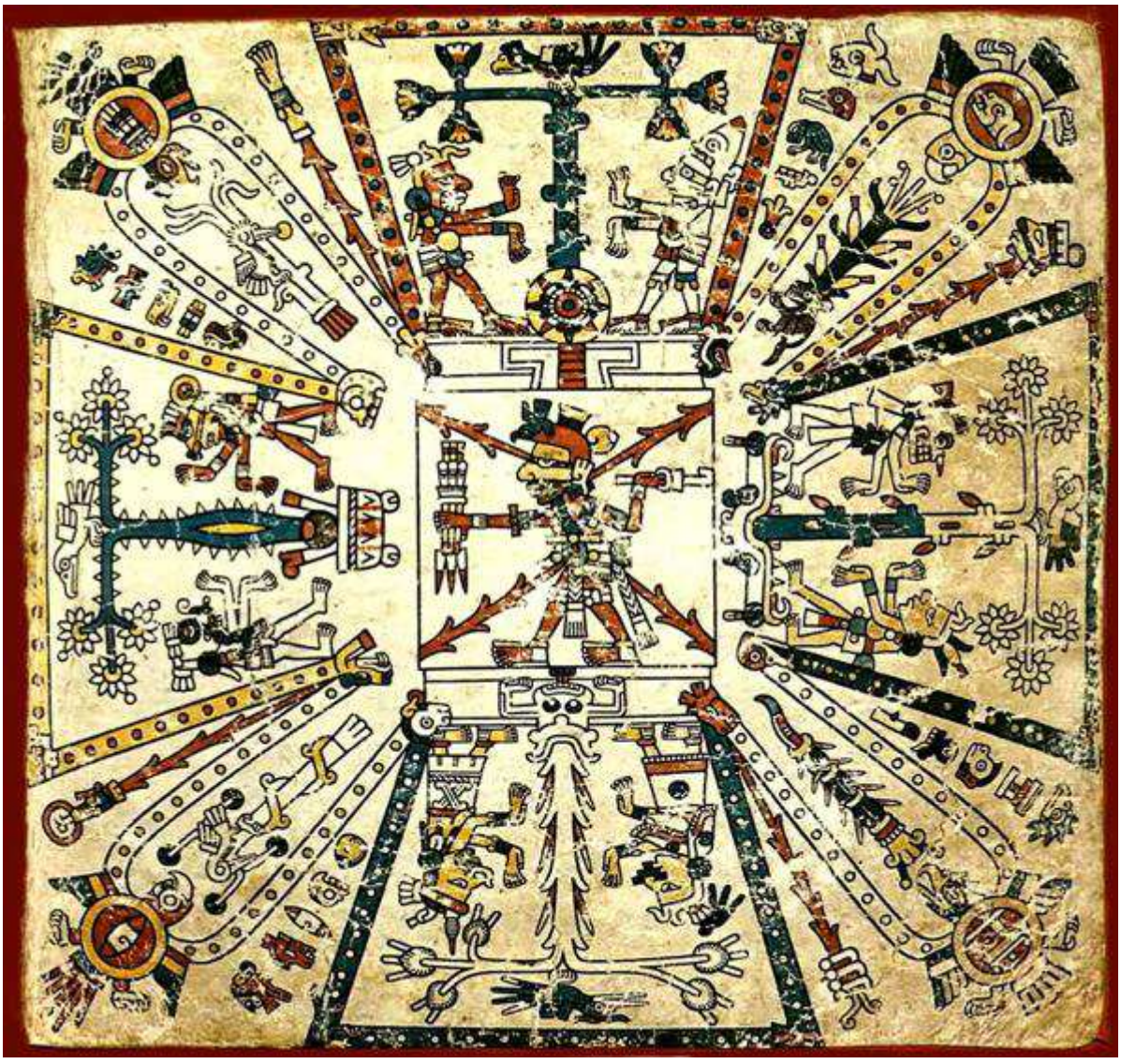
[143] The meanings of the various gods mentioned here, with the exception of **Buluc Ch'abtan**, are given previously in various footnotes throughout this paper.

[144] As pointed out by Thompson (1960, p. 75), the Kan hieroglyph appears to represent a grain of corn. There may be some connection between the word **kan** = "jade bead" and the Kan hieroglyph. As Thompson points out, corn in Yucatecan Mayan is frequently referred to as **gracia** (grace), or in certain parts of Yucatan as **cichcelem gracia** (beautiful / holy grace). Both jade and corn are precious, and perhaps that is what links them. For **kan** = "jade bead" see the discussion about the meaning of the day Kan in Appendix E.

[145] **Buluc Ch'abtan** = "eleven penitent". See CMM: Ah Ch'abtan: beato, hermitaño o gran penitente. / Ch'abtan vinic: hombre abstinente, continente i obseruante de la ley de dios. The reference is probably to the period of abstinence which is to be observed prior to sacrificial rites.

[146] The god can not be identified due to the loss of material in the area where the face should be.

Below is page 1 from the Fejérváry-Mayer Codex depicting a Nahuatl visualization of their 260 day calendar, the tonalpohualli, written in a book called Tonalamatl.[147] While similar to the Madrid Codex in conception, there are some important differences. First, it is rotated 180°, placing the East on top. Second, as noted in the discussion about the variety and diversity of world direction colors on page 1, the world direction colors are different. Here the colors are Red to the East, Yellow to the North, Green to the West and Blue to the South. Third, two items depicted here which are mentioned in this paper but which are not given in the Madrid Codex are the tree and the bird attributes for each world direction.



Page 1 from the Fejérváry-Mayer Codex

[147] **Tonalpohualli** = "day count", from **tonalli** = "sun / day" and **pohualli** = "count". **Tonalamatl** = "day book", from **tonalli** = "sun / day" and **amatl** = "paper / book". **Amatl** is also the name of the fig tree, *Ficus. cotinifolia* and/or *Ficus padifolia* from which paper is made. Both the Mayan language and Nahuatl have an extended meaning for **kin / tonalli**.

The four primary world direction trees are Plumeria to the East, Yellow Thorny Ceiba[148] to the North, unknown tree to the West and Cacao to the South. The four birds perched on the trees are the Quetzal to the East, the Hawk to the North, the Hummingbird to the West and the Parrot to the South.

From this description of the various attributes of each world direction it can be seen that there are some differences between the world direction colors shown in this Tonalpahualli representation and the world direction colors for the Aztecs as shown on page 1. This in part may be explained by the fact that it has been suggested that the Fejérváry-Mayer Codex originates from the Vera Cruz region. Thus, while the commonly accepted color representation for the Aztecs is:

East	Red
North	Black
West	White
South	Blue

here we have:

East	Red	Acatl (Reed)
North	Yellow	Tecpatl (Flint)
West	Green[149]	Calli (House)
South	Blue[150]	Tochtli (Rabbit)

[148] Note that the depiction of the ceiba tree has a yellow patch on the trunk, corresponding to its world direction. Perhaps, just as there are colored ceiba trees for each of the world directions for the Maya as shown on pages 4-6 of this paper, there were in fact ceibas of the four world direction colors for the people who created the Fejérváry-Mayer Codex.

[149] In both the Mayan language and in Nahuatl certain words for color designate both green and blue. In Mayan the word **yax** denotes both, and in Nahuatl the ambivalent words are **matlalin / matlalli** and **xoxouhqui**.

[150] There is a difference in opinion as to which quadrant is the Blue quadrant and which quadrant is the Green quadrant in page 1 of the Fejérváry-Mayer Codex. Most researchers (Seler, Thomas, etc.) state that West is the Blue quadrant and South the Green quadrant. However, from the color plate itself it is not readily discernable which quadrant is the Green quadrant and which quadrant is the Blue quadrant. Herrera (1601-1615), in describing a calendar wheel which must be similar in execution to the Tovar and Durán 52 year calendar wheels, implies that the color grouping is Red / Reed, Yellow / Flint, Green / House, Blue / Rabbit. (See Appendix I for the text of the second edition: 1726, Decada III, Libro II, pp. 74-75.) Gemelli (1700, pp. 60-61, 1704, p. 516) states that the color progression is Red / East / Reed, Yellow / North / Flint, Green / West / House, Blue / South / Rabbit. O'Crouley (1972, p. 5) concurs in this color arrangement: "The first represented the south, called uitztlampa, in hieroglyphics a rabbit on a blue background, called tochtli. The second signified the east. It was called tlathuilcopa, in hieroglyphics a reed on a red field, called acatl. The third was the north and was called mictlampa; it was denoted by a flint-pointed weapon on a yellow background, called tecpatl. The fourth was the west and was called cihuatlampa; it was represented by a house on a green background, with the name of cagli."

In contrast, the Tovar and Durán 52 year calendar wheels show the same color progression as stated by Seler et al of Red, Yellow, Silver / Blue, Green, but the Durán plate lists Red / Flint to the North, Yellow / House to the West, Silver / Rabbit to the South and Green / Reed to the East. (For color images of these two calendars see the middle of Appendix I.) Thus, the alternative color representation in the Fejérváry-Mayer Codex, according to Seler, Thomas, etc., is:

East	Red	Reed
North	Yellow	Flint
West	Blue	House
South	Green	Rabbit

Another indication as to the place of origin of the Fejérváry-Mayer Codex is that the tree for the North is the thorny stage of a young ceiba tree which tends to grow in the tropical rainforest and not in the more arid Mexican highlands.

As mentioned above, three of the four trees are recognizable. Unfortunately, the tree to the West is not immediately identifiable, but the depiction of thorny bark is somewhat similar to that of the Mesquite tree:[151]

East	Plumeria
North	Yellow Thorny Ceiba
West	Mesquite (?)
South	Cacao

It is interesting to note, as shown on pages 24 and 25, that for the Maya the Cacao tree is also the tree of the South. Whether this is coincidental or something which was common to the Mayan – Gulf Coast culture is not clear.

Another feature of the Fejérváry-Mayer Codex which is different from the Madrid Codex is that there is extra information given in the four ordinal points of the figure. Each of these points shows a stream of blood which appears to form a ceremonial staff, a plant, an animal (two birds, a snake and a mammal), an ordinal bird covered by a shield giving the name of the day on which the bird is positioned, and the five named days for the previous cardinal direction. On the top of each of the streams of blood / ceremonial staffs there is a different symbol: the northeast corner (to the East), a hand; the northwest corner (to the North), a leg bone, the southwest corner (to the West), the ribs, and the southeast corner (to the South), a head.[152]

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[151] Perhaps the tree depicted is the **mizquitl** or mesquite (*Prosopis juliflora*, *P. chilensis*, called **catzim** in Mayan). In the Codex Mendoza, on page 2v, the symbol for the town Mizquic is depicted as a thorny tree which looks somewhat similar to the tree in question here. The mesquite is also a tree of general utility, as mentioned on pages 120-121 of Book 11 of Sahagún.

An alternative possibility is perhaps either *Bursera glabrifolia* or *Bursera bipinnata*, often referred to as gumbo limbo trees. *Protium copal* is the principal source of **copal**, but *Bursera glabrifolia* and *Bursera bipinnata* are also trees from which the incense **copal** (**pom** in Mayan) is derived. They have red flaky bark. In Yucatan there is a related species called **chacah** (*Bursera simaruba* (L.) Sarg.) which is of general utility but added to its utility the resin is an acceptable substitute for **pom** when **pom** is not available.

[152] The hand symbol is similar to that on the staff carried by the possum in the depiction of new year ceremonies shown on pp. 25-28 of the Dresden Codex. See Appendix G for these pages. Another depiction of a ceremonial staff with the hand symbol on top of it is to be found on page 31b of the Dresden Codex. That staff is being carried by the Eastern aspect of the rain god Chac. See also page 56 of the Codex Borgia for this staff being carried by the death god. In footnotes 154 and 155 in Appendix G the speculation is made that the hand symbol could be related to the deity **Kabul** ("working hand") which is an aspect of **Itzam Na**.

As for the head symbol, compare its facial markings with the facial markings shown on the deity depicted in the Fejérváry-Mayer Codex, page 44, and also in the lower right-hand quadrant of page 25. For another similar facial marking see Codex Borgia, page 14, middle bottom panel. See also the deity depicted in Codex Cospi, p. 24. (For a color copy of Codex Cospi, p. 24, see Thompson's article (which begins on page 147 of this book) "*Sky Bearers, Colors And Directions In Maya And Mexican Religion*", plate 5a, page 188. The general consensus is that these are representations of Tezcatlipoca, and as Thompson notes in *Sky Bearers...*, "The correspondence between Itzamna and Tezcatlipoca-Itzlacoliuhqui is not very close, but one might note that both

The four ordinal birds are the quetzal in the northeast corner (to the East) bearing the day Acatl on its shield, **alo** parrot[153] in the northwest corner (to the North) bearing the day Tecpatl on its shield, eagle in the southwest corner (to the West) bearing the day Calli on its shield and **cocho** parrot[154] in the southeast corner (to the South) bearing the day Tochtli on its shield.[155] Of the plants represented only the corn plant in the southeast corner (to the South) is recognizable. As a guess, based on their agricultural importance, the other plants are amaranth in the northeast corner (to the East), bean in the northwest corner (to the North) and maguey in the southwest corner (to the West).

One interesting feature is the placement of five **tonalpohualli** days in each of the world directions. This is a spiral of days showing those days which have the coefficient 1 which begin each *trecena*. These days, giving the innermost first and progressing outwards, are:

East: Cipactli, Acatl, Coatl, Ollin, Atl.
North: Ocelotl, Miquiztli, Tecpatl, Itzcuintli, Ehecatl.
West: Mazatl, Quiauitl, Ozomatli, Calli, Quauhtli.
South: Xochitl, Malinalli, Quetzpalin, Cozcaquauhtli, Tochtli.

The progression goes 1 Cipactli, 1 Ocelotl, 1 Mazatl, 1 Xochitl, 1 Acatl, 1 Miquiztli, etc. until it reaches the last day of the *trecena* begun with 1 Tochtli, that is 13 Xochitl, at which point the spiral begins again with the *trecena* beginning with the day 1 Cipactli. For a depiction of this spiral of days see Plate No. 2 in Veytia (1836), "Calendario en Caracol", a facsimile of which is given in Appendix I.

For a fuller discussion of this feature see Seler, 1901-1902, p. 21. The method by which these days are arranged may have implications for the idea expressed on page 17 in which each **uinal** day is assigned successive world directions. Compare also with Appendix H.

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were supreme tribal deities and divine leaders of their peoples."

Further verification that these items are body parts of Tezcatlipoca is the leg bone capping the Northern ceremonial staff. See the upper right-hand corner of page 42 of the Fejérváry-Mayer Codex for a standard representation of Tezcatlipoca with his leg bone exposed.

If this conjecture is correct, then both for the Maya and the Mexicans the hand symbol is an attribute of **Itzam Na / Tezcatlipoca**.

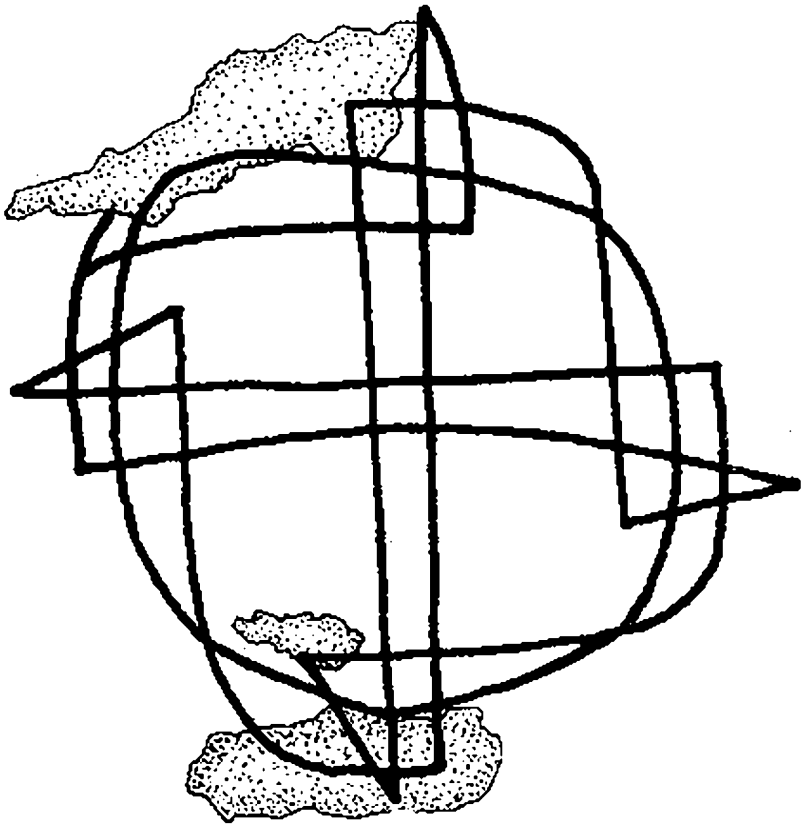
For a parallel occurence in Nahuatl for the name **Kabul** see a note by Ixtlilxochitl (1892, Vol. II, p. 24) about Quetzalcoatl / Huemac in which the conjecture is made that Quetzalcoatl's alternative name Huemac means "large / powerful hand" (from **huey / uey / uei**: "big" and **–mac**: "in the hand" (from **maitl** = "hand" and **–c** = "in")): "Huemac, dicen unos que le pusieron este nombre porque imprimió y estampó sobre una peña sus manos, como si fuera en cera blanda, en testimonio de que se cumplirla todo lo que les dejó dicho. Otros quieren decir que significa el de la mano grande ó poderosa."

[153] Siméon, 1977: **alo**: s. Loro grande.

[154] Siméon, 1977: **cocho** o **cochotl**: s. Loro, del que se distinguen dos especies. (Hern.)

[155] The varieties of birds is supplied by Seler. See Seler, 1901.

A Curious Graffito Representation
From the Temple of the Seven Dolls
Dzibil Chaltun



In the field report "*Excavations at Dzibilchaltun, Yucatan, Mexico*", page 99, (Andrews & Andrews) there is the graffito shown here. Below is the accompanying text which talks about various suppositions as to the purpose of this graffito. Given the interlocking nature of the world directions, the calendar, and various other associations it would seem most probable that the purpose of this graffito is related to the subject matter of this paper. Note that various instances of the design of this graffito have been found in the Mesoamerican area.

> Graffito I (fig. 106), painted in a black pigment, is a roughly circular pattern divided into four quadrants set off by pairs of parallel lines and possessing equal numbers of rectangular, trapezoidal, triangular, and other shapes. The quadrants appear to be symmetrical. I have filled in the missing lines in George E. Stuart's restoration of the grafflto in fig. 106b, and with the exception of one short line branching out from one of the small triangles (an error in the original, or possibly in the restoration?), the design forms a closed system. As is true of several similar graffiti found in Mesoamerica, it is possible to complete the design without lifting the brush from the plaster and without retracing a line already drawn. Each quadrant of the design contains nine enclosed spaces, if the small central box is not counted in any quadrant.

Closely or roughly similar drawings have been reported from eight or nine other sites in Mesoamerica. Maler reported four on the central Usumacinta: one on Lintel 6 at Piedras Negras, one cut in a stone lintel at El Cayo, one incised on a lintel at La Mar, and one carved on a rock on the riverbank at San Lorenzo (1901-03:75, 85, 94, figs. 27, 34a,b, 67). He suggested they had "some special significance perhaps astronomical" (ibid., 85). It may be noteworthy that the design from La Mar (ibid., fig. 34a) shows the small central square darkened by crosshatching, perhaps to indicate that it is not to be counted in any quadrant.

Cirerol Sansores (1955:60ff) illustrated two similar figures painted on the floor of a buried room (Temple II) of the Temple of the Magicians at Uxmal, one of which is much like those from the Usumacinta and from Dzibilchaltun and the other of which apparently was the contorted body of a rattlesnake. Cirerol believed all similar designs represented snakes.

From Str. 5D-33-2nd at Tikal comes a crude rectilinear design, buried by later construction at about A.D. 700, that may be related (Webster 1963:36, 43). Clemency Coggins (personal communication, 1976) notes that the Tikal graffito could date to between 9.3.0.0.0 and 9.12.0.0.0 and that a date toward the end of this span is perhaps more likely. Merwin and Vaillant illustrate a somewhat similar, although possibly not related, graffito from Holmul (1932:90-91, fig. 31c). The floor of Patio A at Zacuala, Teotihuacan, bore a similar design, which Selourné believed represented the game of patolli (1959:54, fig. 37). Identity of this symbol with the patolli game is not likely.

At Chicanna, Campeche, on the floor of Room 5 of Str. II, a clearly related graffito (fig. 115a) appears next to a standard patolli design, confirming that the two are different. Whereas this crudely executed design from Chicanna is similar to the one from Dzibilchaltun and to some from the central Usumacinta, three or four others from the same Chicanna structure are more like the one from Teotihuacan and like the more rectangular (snakelike?) one from Uxmal in that they lack the enclosing circle (fig. 115b-d). Another of these Chicanna graffiti, too, was inscribed near a patolli drawing.

Lucila Diaz Solís, who argues that these graffiti were calendars in the form of a four-petaled flower, with the central cross representing the world and its quadrants and cardinal points, illustrates a similar figure from the Codex Borgia (1968:189, fig. 46). Andrews, cited in Diaz Solís (ibid., 189), believed the graffito was a puzzle. Partially because the designs are sometimes associated with patolli graffiti, his suggestion seems possible, but this interpretation does not preclude an original or continuing astronomical and ritual significance for the symbol.

Clemency Coggins (personal communication, 1976) suggested to me that this graffito might be comparable to the direction chart on page 1 of the Codex Féjérváry-Mayer, in which Seler and Thompson identify the nine Lords of the Night (Thompson 1934: 25-26). The design may indicate the four directions surrounding the central space, and it may also stand for the

yearly, or some other calendrical or ritual cycle. It appears significant that each quadrant in the Dzibilchaltun design, and in others, encloses nine spaces.

Adrian Digby, who is interested in symbols of this kind (e.g., Digby 1974), kindly looked at the graffiti mentioned above. He suggested tentatively that many of them may perhaps represent instructional sketches to show the position of the sun at sunrise, noon, and sunset at the solstices and equinoxes (personal communication, 1975).

We are still unable to assign a definite function to this design and similar ones. It is sometimes associated with designs of the patolli game, but it is clearly not the game itself. It seems to have directional, calendrical, and probably religious significance. And since drawing it involves knowing the precise pattern to follow, it might also have elements of a puzzle to it. These comments probably apply to all the examples noted above, but especially to those from Dzibilchaltun, Uxmal, La Mar, and San Lorenzo.

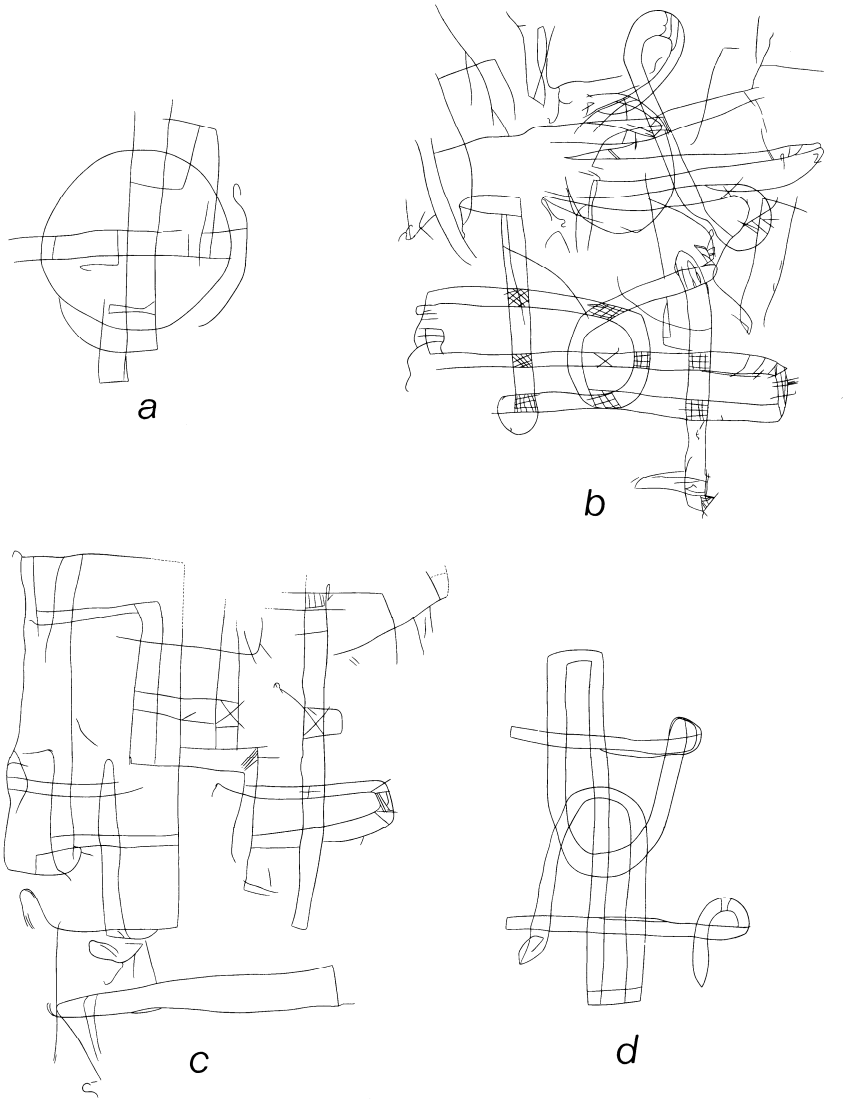


FIG. 115 — GRAFFITI FROM STR. II, CHICANNA, CAMPECHE. *a*, Room 5, on floor. *b*, Room 3, on surface of bench. *c*, Room 3. *d*, Room 2. The graffiti shown in *a* and *d* were placed near drawings of *patolli* games. Drawings by Antonio Oliveros. Orientations and scales unknown.

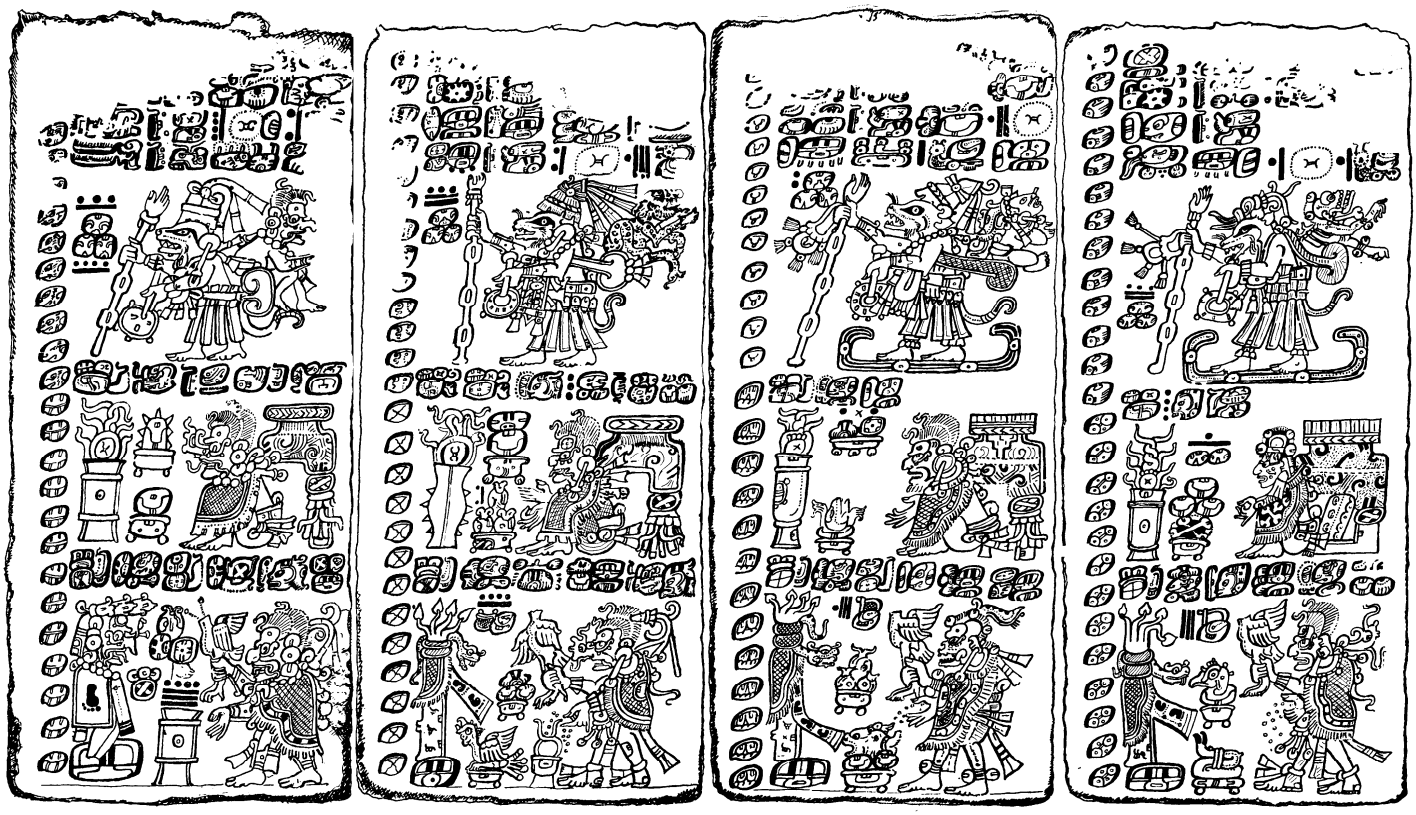
Appendix G

The New Year Ceremonies
Dresden Codex, pp. 25-28

Pages 25-28 of the Dresden Codex show the four new year's ceremonies, each page showing, among other things, the year bearer, the world direction of this year bearer, and the patron god of the year bearer. Note that in the Dresden Codex there is a different set of year bearers than those shown in this paper. These are Ben, Edznab, Akbal and Lamat. The gods for these years are God K: Bolon Dzacab, God G: Kinich Ahau, God D: Itzam Na and God A: Cizin / Chacmitan Ahau.

There seems to be a discrepancy in the order of the world directions, with page 26 showing South when it should show North, and conversely page 28 showing North when it should show South.

Thompson, in his "*A Commentary on the Dresden Codex*" (pp. 89-93),[156] has a lengthy discussion about these pages. Included in this discussion is a comment about the shift in year bearers and the problem of the world directions as depicted on these pages.



25 26 27 28

[156] Appended to this discussion are the pertinent passages from Thompson's *Commentary*, published in 1972. In 1934 Thompson published "*Sky Bearers, Colors And Directions In Maya And Mexican Religion*" in which he makes a preliminary discussion of these pages from the Dresden. It is interesting to note that in that discussion he decided the animals depicted carrying the staffs were dogs or "dog-like" (p. 160), but by 1972 he came to the conclusion that they are possums. A copy of the article "*Sky Bearers, Colors And Directions In Maya And Mexican Religion*" begins on page 147 of this book.

One item of note depicted on these pages is the ceremonial staff carried by the possum. It is capped by a hand symbol, similar to that shown in the northeast ordinal point of page 1 of the the Fejérváry-Mayer Codex shown on page 44 of this paper. In the other hand the possum carries a fan. In the Mayan colonial literature it is common to pair the staff (**xol**) with the fan (**ual**), especially in ritual texts: e.g. **ti caanal ual, ti caanal xol** (to the elevated fan, to the elevated staff).

This staff capped by the hand symbol seems to be the symbol of a deity named **Kabul**, which according the Lizana means "mano obradora", or, somewhat poorly translated, "working hand".[157] **Kabul**, in turn, appears to be an aspect of the rarely mentioned god-king **Ah Itzmal Ulil / Ah Itzmal Ulil Ahau**, which in turn appear to be an aspect of the supreme god **Itzam Na**.[158]

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[157] The name **Kabul** in composed of two parts: **kab** = "hand" and –**ul** which is a suffix which transforms a root word into an actor which accomplishes a task. (Other examples: **canul** = "guardian", from the verb root **canaan** = "to guard", **cambezahul** = "teacher", from the verb root **cambezah** = "to teach".)

[158] **Ah Itzmal Ulil** is also given in the colonial texts as **Ah Ulil Itzmal** and **Ah Ulil Ahau**. Very little can be made of the meaning of the name, nor do the texts in which his name appears help in letting us understand much about him. However, he is thought to be related to the god **Itzam Na** (see footnote 72), and this may well be yet another aspect of him. **Itzmal** is the Mayan name for the town and important archeological site of Izamal and **ahau** means "ruler / lord / king". The question is whether the word **ulil** is in some way related to the suffix -**ul** mentioned in the previous footnote or whether it has something to do with the verb root **ul** meaning "to return".

For the relationship between **Kabul** and **Itzmal Ulil** see Lizana 1633, pp. 5v-6v: "Hay en este pueblo de Itzamal cinco cuyos o cerros muy altos, todos levantados de piedra seca, con sus fuerzas y reparos que ayudan a levantar la piedra en alto. Y no se ven edificios enteros hoy, mas las señales y vestigios están patentes en uno dellos. De la parte de mediodía, <6r> tenían los antiguos a un ídolo, el más celebrado, que se llamava **Ytzamat vl**, que quiere decir "el que recibe y possee la gracia o rocío o sustancia del cielo". Y este ídolo no tenía otro nombre, o no se le nombravan, porque dizen que fue éste un rey, gran señor desta tierra, que era obedecido por hijo de dioses. Y, quando le preguntavan cómo se llamava o quién era, no dezía más destas palabras: **Itz en caan, itz en muyal**, que era decir "yo soy el rozío o sustancia del cielo y nubes".....

"Otro altar y templo, sobre otro cuyo, levantaron estos indios en su gentilidad <6v> a aquel su rey o falso dios **Ytzmat vl**, donde pusieron la figura de la Mano, que les servía de memoria. Y dizen que allí le lleuavan los muertos y enfermos y que, allí, resucitavan y sanavan en tocándolos la Mano. Y este templo era el que está en la parte del puniente y, assí, se llama y nombra **Kalvl**, que quiere dezir "mano obradora". Allí ofrecían grandes limosnas, y lleuavan presentes y hazían romerías de todas partes. Para lo qual hauían hecho quatro caminos o calzadas a los quatro vientos, que llegavan a todos los fines desta tierra y passavan a la de Tavasco y Guatemala y Chiapa, que aún hoy se ve, en muchas partes, pedazos y vestigios della. Tanto era el concurso que acudía a estos oráculos de **Ytzmatvl** y **Tiabul**, que havía hechos caminos."

Note the inconsistency with which Lizana spells **Ytzmat Vl** and **Kabul**. Both these names occur several times in his work and tend towards the spelling shown here. As stated in the previous footnote, the meaning and intent of the name **Kabul** is clear. This is unfortunately not true of **Ytzmat Vl**. As mentioned in the opening paragraph of this footnote, there is a god-king mentioned in the Books of Chilam Balam, **Ah Itzmal Ulil**, and perhaps this is the deity meant in Lizana's text. Thompson (1976: p. 210-212, 216), believes that the reading for this name should be **Itzam Na Thul**, but there is no verification of this reading in the Mayan colonial manuscripts. To this day the pyramid of **Kabul** is an important, although uncared-for building in the pyramid complex at Izamal. Note too the importance given in the Lizana text of the four roads going to the "four winds", with the southern road going all the way to Tabasco, Chiapas and Guatemala. This road system was also used to bring pilgrims to the island of Cozumel where the sanctuary of Ix Chel was located. For more information on this see footnote 73.

NEW YEAR CEREMONIES (pp. 25-28)
Selected Passages
From Thompson's *Commentary*

The presentation of the material is in some respects obscure. For instance, the world directional glyphs, which appear in the bottom third of each page are not in the normal anti-clockwise sequence, but run clockwise, starting with the east associated with Ben on page 25. Seler assumed that the glyphs for south and north had been transposed. I myself believe that not merely the directional glyphs for north and south have been transposed, but the whole of the bottom thirds of pages 26 and 28.

According to Landa, Bolon Dz'acab was associated with East, red and year-bearer Kan; Kinich Ahau with North, white and Muluc; Itzamna with West, black and Ix; and Uacmitun Ahau, a death god, with South, yellow and Cauac. We also learn from Landa that years associated with east and north were fortunate, those associated with west and south were direful.

The sequence of deities seated in temples on Dresden 25-28 is: God K, the sun god Kinich Ahau, Itzamna (God D), and a death god, Zimmermann's A', perhaps equatable with Uacmitun Ahau. Little is known about Bolon Dz'acab, except that his name means literally nine generations, which the Motul dictionary defines as perpetual thing, that is eternal. Seler identifies him with God K, partly, I think, because his glyph often has the number nine attached to it, partly because of his appearance here as god of the year seemingly associated with the east, but in any case, the first of the year-bearers. I have long accepted Seler's identification.

Accordingly, there seems to be complete agreement between Landa and Dresden in this sequence of presiding deities.

However, when it comes to associations with colors, directions, and the auguries for the years there is serious conflict. East, for example, seems to be a year of drought, whereas Landa speaks of it as a year of abundance. However one manipulates the various sections to mark dying years or incoming years there is always conflict. I feel reasonably convinced that the bottom thirds of either pages 25 and 27 or 26 and 28 should be reversed to produce the usual anti-clockwise system and to establish the same relationship between the deity in the middle section and the third section, that is the relationship should be in sequence:

	27	28	25	26
Middle	K	G	D	A
Bottom	A	K	G	D (pp. 25 and 27 reversed)
or Bottom	G	D	A	K (pp. 26 and 28 reversed)

In the first rearrangement the god appears in the bottom section the year after he appears in the middle section; in the second rearrangement he occupies the bottom section the year before his appearance in the middle section.

It is hard to judge between these reconstructions and as it may be that the apparent errors are the fault, not of the Maya scribe, but of the modern investigator, I shall not attempt any correction, but discuss the pages as they now are. All are quite similar in their general layout, although varying in detail.

The top third of each page, aside from the area with glyphic text, illustrates the induction of the patron of the incoming year. He is perched rather precariously on the conventionalized representation of a carrier frame on the bearer's back, the tumpline passing across the bearer's chest, not across the forehead, the usual Maya method of supporting a pack.

The bearer is in each case disguised as an opossum, the prehensile tail and black eye markings being particularly distinctive. Without serious doubt these figures represent the Bacabs who were intimately associated with the incoming year, as Landa makes clear, and who were also known as the ixtol och, opossum actors. One of them, Ah Can Tzicnal,[159] mentioned by Landa as omen of the year associated with the east, also figures in the list of tun or year prophecies in Chilam Balam of Tizimin (Roys, 1949: p. 172). There he is called the masked Bacab and is said to play the part of ixtol och, the opossum. Moreover, the Motul dictionary defines bacab as representante, actor or comedian.[160] Elsewhere (Thompson, 1970) I have detailed the evidence for identifying these persons in opossum guise as the Bacabs.

Each Bacab holds a peculiar staff which terminates in a human hand and carries a fan. This staff terminating in a hand has a sporadic distribution in the art of Middle America, but its significance is unknown.

The final pair of Bacabs walk with their burdens across the symbol which denotes a hollow in the ground, frequently - when the interior is painted green - a cenote. Here the color is omitted. These two last Bacab also carry what seems to be a pouch, in the hand which grasps the staff. In parts of Mexico this is the symbol of a priest, but it is not clear that that value applies among the Maya. ....

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[159] The lines which mention Ah Can Tzic Nal are as follows:

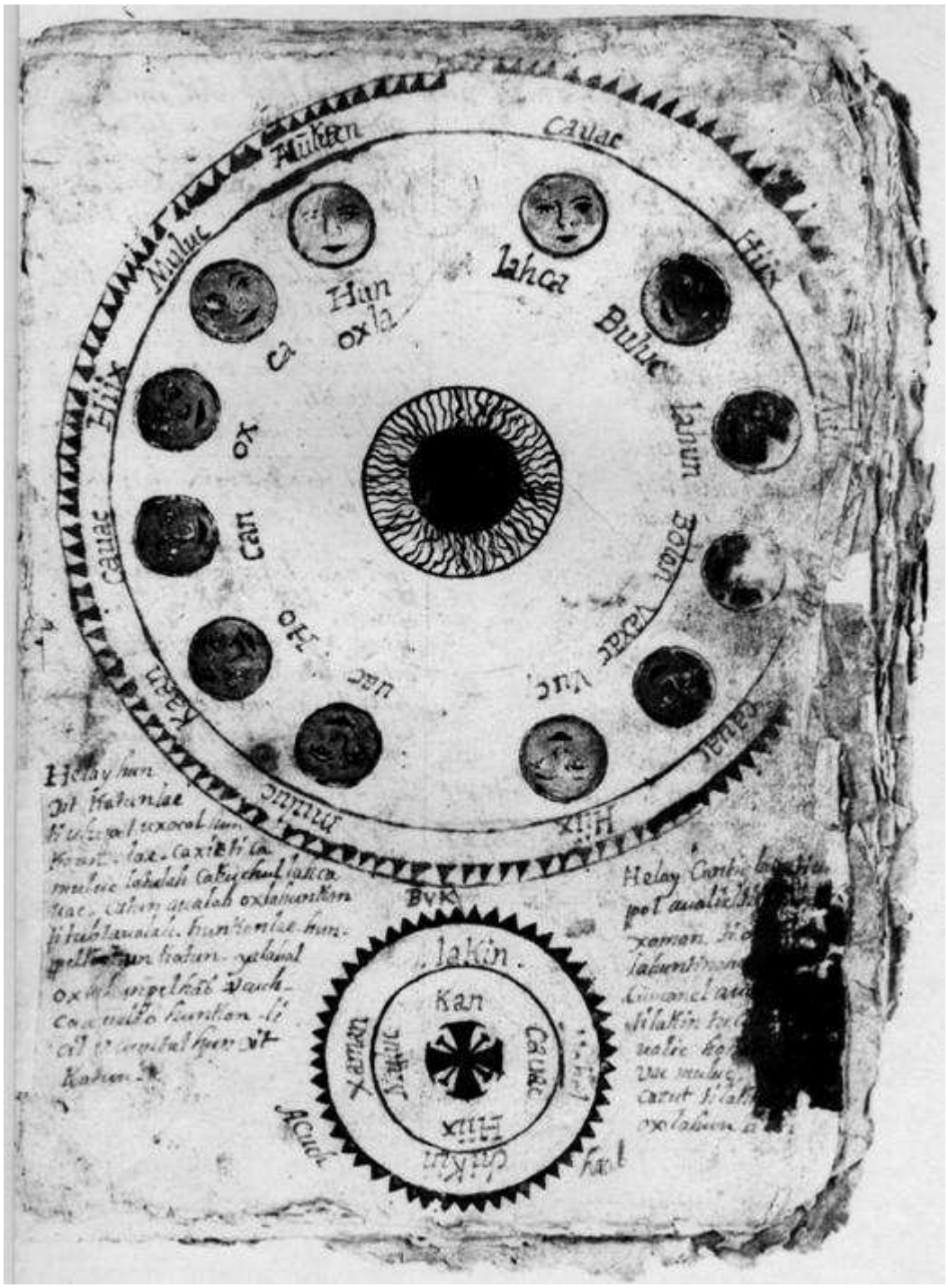
11 Cauac
c261 uatal u caah ah koh bacab, ah can tzic nal
ti cultal ti tun ual tu bulucpiz tun katune
c263 hokaan ah can tzic nal, hokaan ah can ek, ah zac dziu
tu kinil, tu katunil u ch̓aic u bel ah can tzic nal
c265 tu kinil u ch̓aic u bel ix tolil och
tu kin u dzamic u ci katun tu bulucte xul uale

2 Cauac
c387 ca colab u canhel ah can tzic nal bacab

There are a couple of things of note here. First, it is clear from the text that Ah Can Tzic Nal is one of the Bacabs, verifying the thought as shown on pages 2-3 that Landa has misspelled the name of Ah Can Tzic Nal, and by extension the names of two of the other three Bacabs. Second, these mentions of Ah Can Tzic Nal happen in the Cauac years. As shown on pages 2-3, Landa relates Ah Can Tzic Nal to the Muluc years, but that appears to be in error and Ah Can Tzic Nal should be placed in the Kan years. Here though one might think that Ah Can Tzic Nal actually represents the Cauac years. However, as shown on line C263, two of the other three Bacabs are also mentioned in this Cauac year, Ah Can Ek and Ah Zac Dziu, making it uncertain who amongst these Bacabs really represents the Cauac years. It should be noted that neither of these last two Bacabs are mentioned anywhere else in the Colonial texts, and that the fourth Bacab, Hobnil, is never mentioned.

[160] See CMM: Bacab: representante, jugl[ar]. "Representante" can mean "performer, player, commedian" and "juglar" can mean "juggler, buffoon, mimic". It is interesting to note that Mary H. Eastman, in her books about the Dakota, calls the medicine man "doctor, priest and juggler".

Page 19r of the Chilam Balam of Ixil is interesting on two fronts: 1) it shows the spelling convention for the year bearer Hiix, and 2) the upper figure shows a portion of the 52 year cycle and the lower figure shows the standard world directions for the year bearers.



1) As mentioned in the introduction, the spelling of Mayan words in the works by the Spanish friars was frequently incorrect. In these works, the day name Hiix is frequently spelled Ix. On this page one can see the correct spelling by the Maya.

2) About the figures on this page: A copy of this page is to be found in the Codex Pérez, on pages 172-174. It appears however that Pérez did not understand the function of the upper figure. He drew its outer border as a complete circle, whereas he should have indicated that the outer line with the series of small triangles is the inner part of a spiral.

What is being shown in the upper figure are the first 13 years of the 52 year cycle called **U Bubukil Haaboob**, or "Count of the Years". The count goes counterclockwise, beginning with 1 Kan. The scribe made a mistake and originally wrote Muluc over the first sign to the left of top dead center, and then overwrote **HũKan** (1 Kan) on top of the word Muluc. However, he should have actually written only the day name Kan without a coefficient in keeping with the other day signs. The signs then progress with the year bearer names being above the signs and the coefficients being below them to 12 Cauac. It is evident that the scribe originally wanted to place a thirteenth sign at top dead center but apparently decided that in fact the number 13, which he wrote only as **oxla** for **oxlahun**, should go with Kan and thus mistakenly placed it under the day sign of Kan. In fact, as indicated by the break in the outside circle, the series of day signs should step up one level and the first day sign of this second level should be Kan above the coefficient 13. The next year bearer would then of course be Muluc above the coefficient 1, and the cycle would continue from there through the full 52 year cycle, stepping up one level every time the cycle reached the coefficient 1, i.e. at 1 Hiix and finally at 1 Cauac.

In his copy of this page Pérez shows only twelve day signs and ignores the sketched-in sign at top dead center. As for the item at the center of the upper figure he shows it as having a face, not unlike the twelve signs around the edge of the figure. Because of the rays emanating from this central item it is assumed that it represents the sun, as is true of the Tovar and Durán depictions of the 52 year calendar wheel which shows the sun at the center of the calendar wheel. (See these two pages in Appendix I.) Concerning the thirteen signs around the edge: a logical assumption is that originally these thirteen signs around the edge were hieroglyphs of the four year bearers, but that by the time the scribe of the Ixil made his copy these signs became incomprehensible.

There is another copy of this page, but without the text, which is shown in Thomas (1884, p. 60), a copy of which is given at the end of the text of this appendix. This copy was given to him by Brinton. Unfortunately it is not stated how Brinton came across this copy. An additional feature not shown in the Pérez copy but shown in this copy is that there was a sign of the cross on the forehead of the central item. Again, this copy is inaccurate in that it shows the outer ring of the upper figure as being a complete circle instead of being the beginning of a spiral.

The concept of representing calendrical information as a spiral is not unique in Meso-America. The Tovar and Durán 52 year calendar wheels, which are divided into four quadrants, begin with the year 1 Acatl and spiral outwards in the counterclockwise direction, stepping out one level at every year Acatl.

In the book *Descripción de la ciudad y provincia de Tlaxcala*, written by Diego Muñoz Camargo in 1584, when talking about his depiction of the 52 year cycle

and the 260 tonalpohualli he uses the term "rueda y caracol" (wheel and spiral). In this depiction the 52 years are shown on the outer edge of the wheel, with the year bearers going clockwise. This is the wheel part. Inside the wheel there are thirteen levels of numbers divided into twenty quadrants. At the base of each quadrant is a day of the tonalpohualli. The number sequence begins at 1 Cipactli and goes in a clockwise direction. The number sequence steps out one level every time it reaches the day Cipactli until it reaches 13 Xochitl 260 days later, at which point the sequence begins again at 1 Cipactli in the inner-most ring. This is the spiral part. (In contrast to the Muñoz Camargo calendar wheel, the Veytia calendar wheel, which is similar in concept and execution, goes in a counterclockwise direction. See these two pages in Appendix I which show the Muñoz Camargo and Veytia calendar wheels.)

In the Fejérváry-Mayer Codex shown in Appendix F there is also a spiral of days, in this case showing those days which have the coefficient 1 which begin each *trecena*. This spiral goes counterclockwise and works outwards. See the last paragraph of the comments on the Fejérváry-Mayer Codex for a brief discussion of this spiral. For a fuller discussion see Seler, 1901-1902, p. 21.

The lower figure on page 19r of the Ixil simply shows the world directions of the four year bearers. Around this figure are the words **Bvk ACuch haab**, which edited into standard spelling practice should read **U Buk Ah Cuch Haaboob**, the "The Count of the Year Bearers".[161]

An edited version of the text at the lower left reads:

> He lay hun dzit katun lae. Ti u hoppol u xocol hun kan lae. Ca xic ti ca muluc latulah ca kuchul lahca [ca]uac. Ca tun a ualab oxlahun kan ti tub ta ualah hun kan lae. Hunppel katun yalabal. Oxlahunppel haab u cuch. Ca a ualab hun kan licil u cumtal hundzit katun.

And text at the lower right, based in part on Pérez's transcription which shows information not visible in the photocopy, reads:

> He lay can titz lae. Ti u hoppol a ualic ti lakin, ti xaman ti chikin, oxlahun ti nohol caan. Cu manel a uoc tu hoppol ti lakin tu caten. Ti lic a ualic ho kan. Ca kuchul uac muluc. Ca chucic tu ca zut ti lakin. Ca ualic oxlahun ti lae.

Translation:

> Here thus is one katun. It begins the count with 1 Kan thus. Then it goes to 2 Muluc and so on until it arrives at 12 Cauac. Then you say 13 Kan where you said 1 Kan. This is called one katun. Its burden is thirteen years. Then when you say 1 Kan that is when one katun is seated.
>
> Here thus are the four corners. It begins when you say to the east, to the north, to the west, thirteen (?) to the south. When your foot is moved then it begins to the east again. Then you say 5 Kan. Then arrives 6 Muluc. Then it reaches the second round to the east. You say this thirteen times thus.

The first paragraph of this explanation is rather murky. Apparently both the cycle of years of the thirteen numbered year bearers and the complete cycle of 52 years are called katuns. Elsewhere in the Books of Chilam Balam it becomes evident that at

[161] See CMM: Buk: cuenta para contar años. ¶ hun buk, ca buk:

times various cycles of years are called **katun**, which makes the term **katun** quite ambiguous.

The Codex Pérez, pp. 122-124 and again p. 138, and the Tizimin, p. 20r, express the ideas given in the first paragraph through the use of tables. Pérez p. 130 and Tizimin p. 20r clearly show the year bearers placed in four groups of thirteen year bearers each. It should be noted that even here these four groups are given world directions, with the group beginning with 1 Kan being to the East, the group beginning with 1 Muluc being to the North, the group beginning with 1 Hiix being to the West, and the group beginning with 1 Cauac being to the South.[162]

With the exception of the word **oxlahun** / thirteen which has my question mark behind it, the second paragraph is more straight forward, and refers to the lower figure. It simply says that you start with the year bearer Kan and go counterclockwise thirteen times, which, while not so stated, goes through the 52 years of the **U Bubukil Haaboob**.

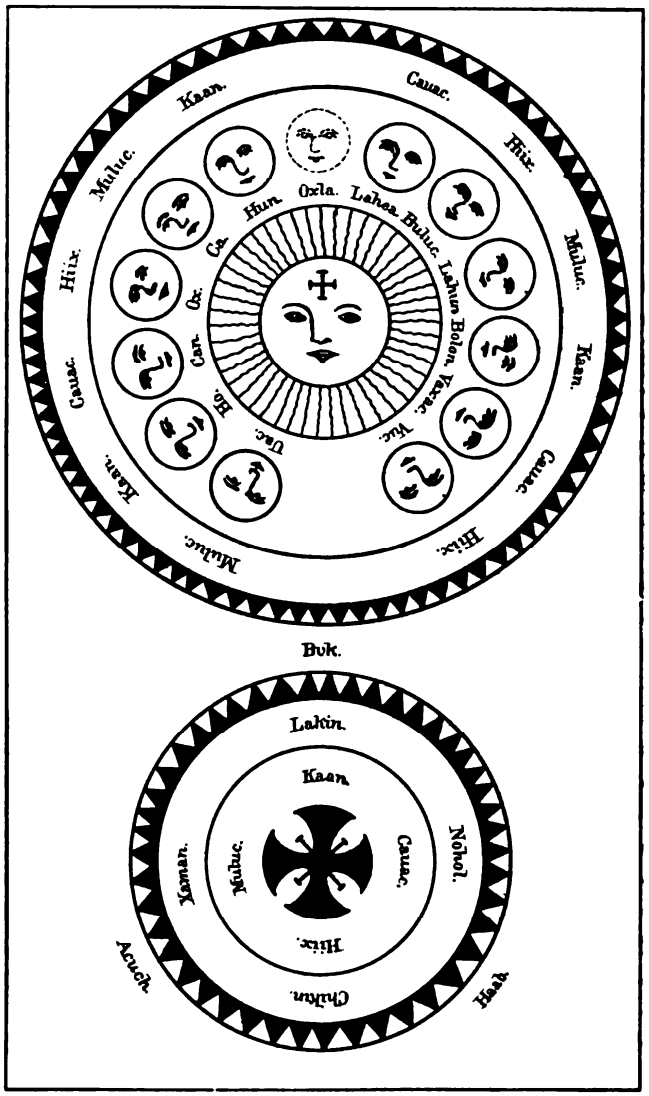
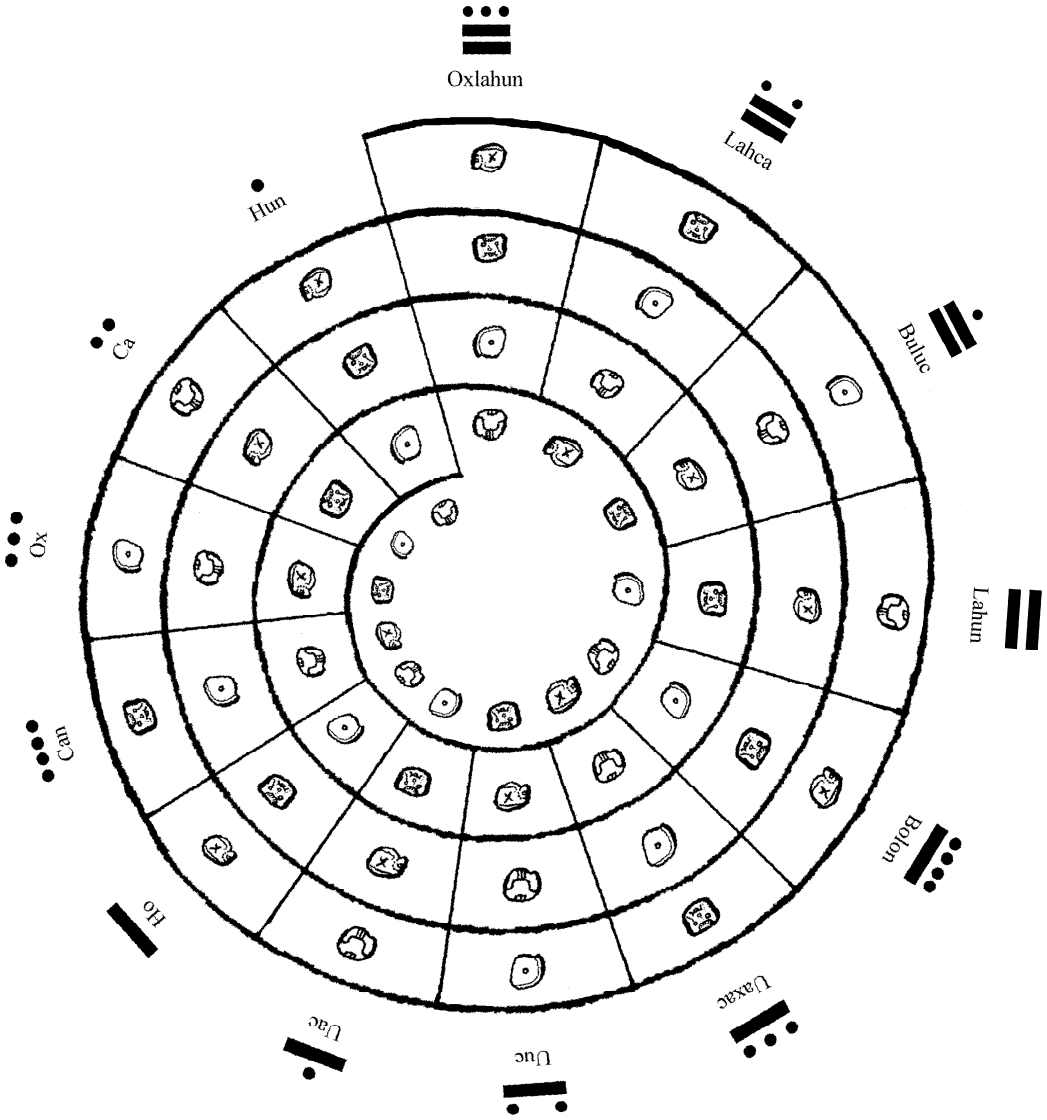


Figure 9, Thomas, 1884, p. 60

[162] See pages 122-123 of this publication for the edited version of **U Bubukil Haaboob**.

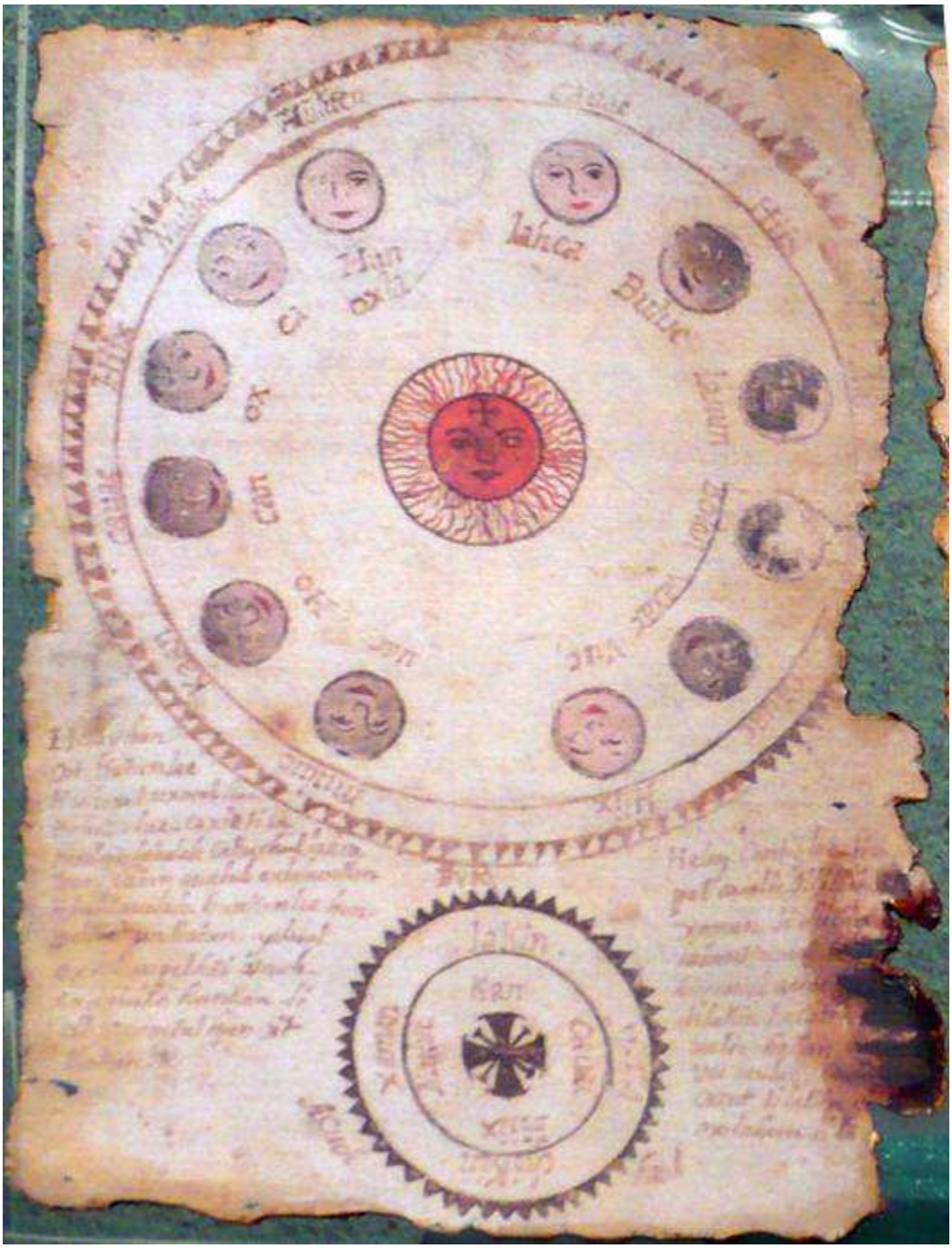


He lay hun dzit katun lae. Ti u hoppol u xocol hun kan lae. Ca xic ti ca muluc latulah ca kuchul lahca [ca]uac. Ca tun a ualab oxlahun kan ti tub ta ualah hun kan lae. Hunppel katun yalabal. Oxlahunppel haab u cuch. Ca a ualab hun kan licil u cumtal hundzit katun.

He lay can titz lae. Ti u hoppol a ualic ti lakin, ti xaman, ti chikin, ti nohol caan. Cu manel a uoc tu hoppol ti lakin tu caten. Ti lic a ualic ho kan. Ca kuchul uac muluc. Ca chucic tu ca zut ti lakin. Ca ualic oxlahun ti lae.

Idealized Reconstruction of page 19r from the Ixil.

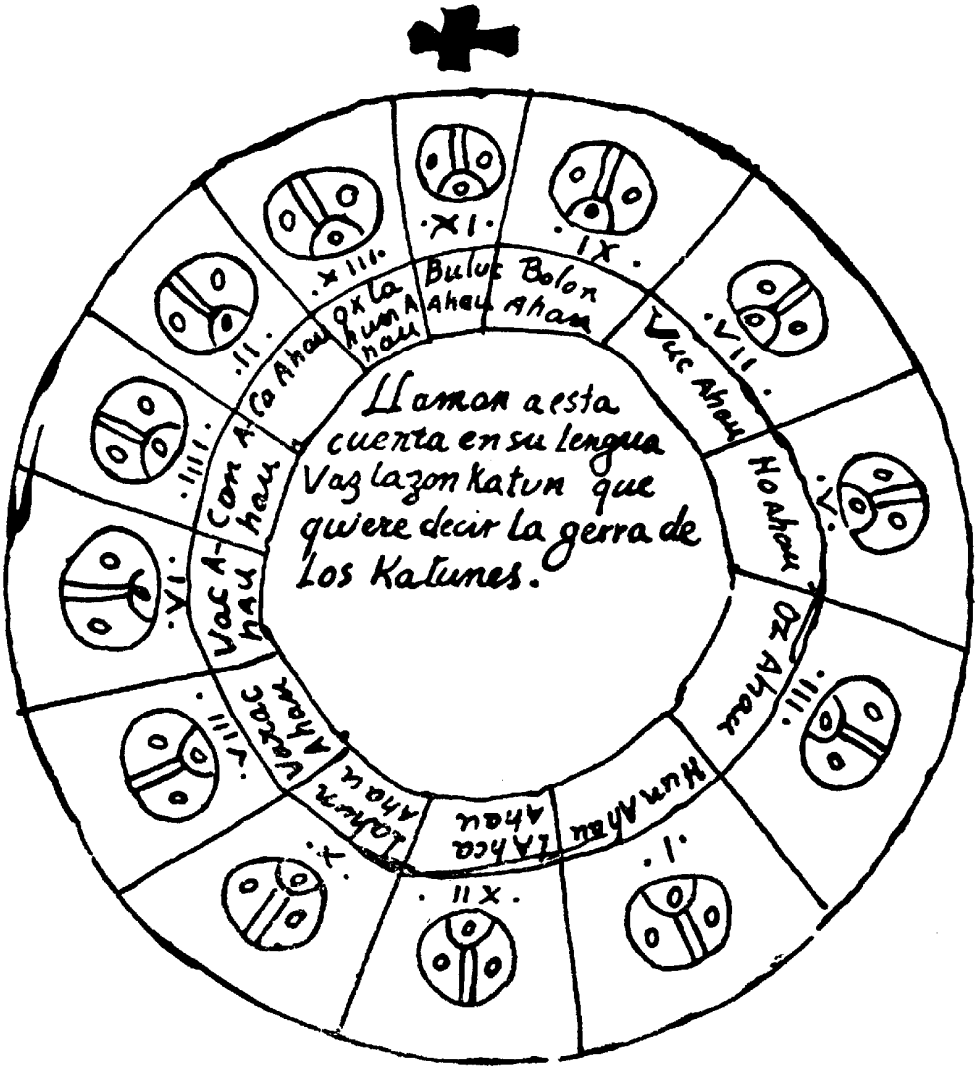
Page 19r from the Ixil
in its present condition at the
Museo Nacional de Antropologia, Mexico, D.F.



World Directions
As Applied to the Katun Wheels

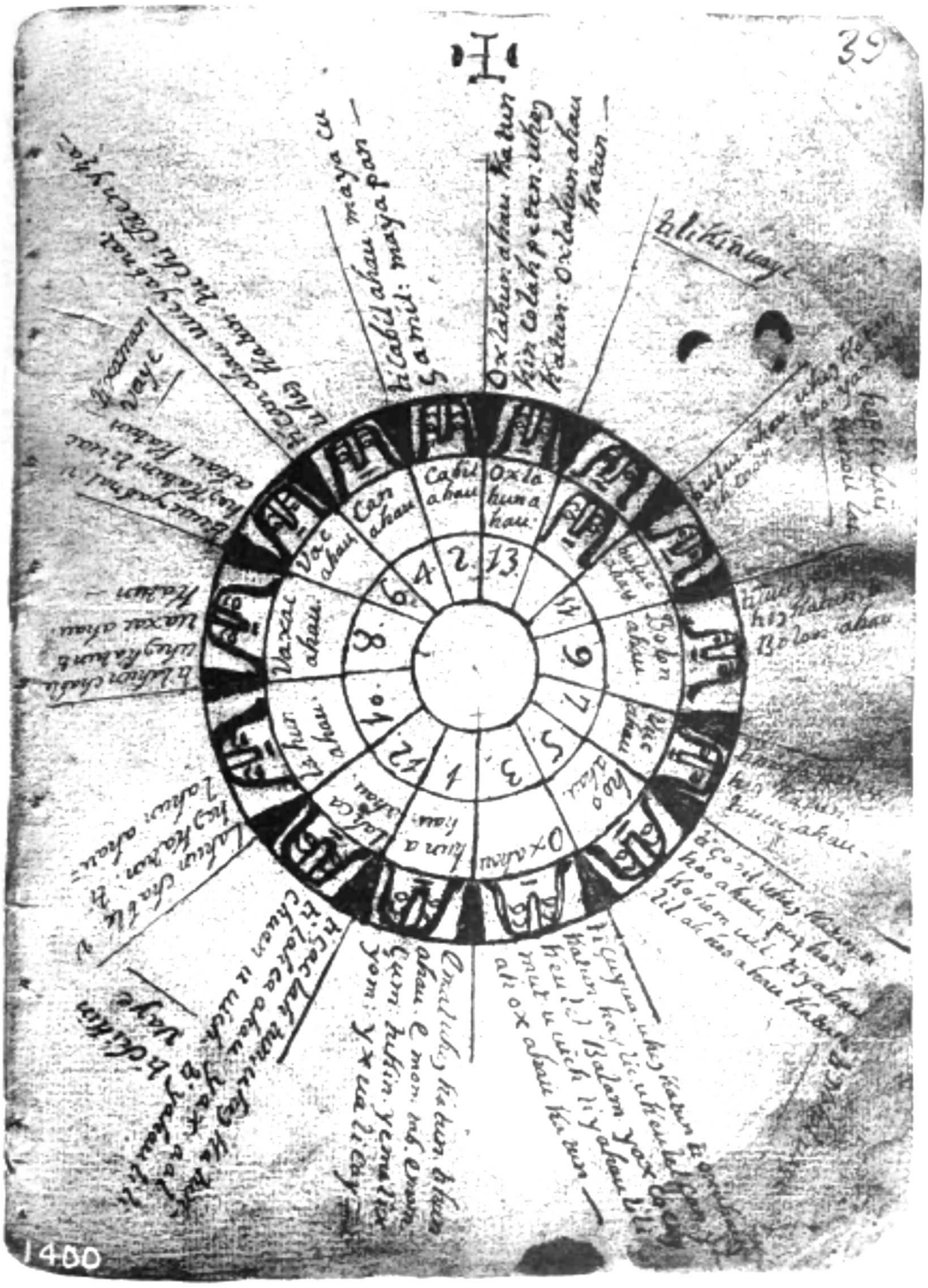
There are four Katun wheels depicted in the source material. In order of dates drawn they are: Landa's Relación (1570's?), Chilam Balam of Chumayel (1782), Chilam Balam of Kaua (1789) and Códice Pérez (1837). While all show similar features, each is different in its own particular way. In their basic format, each wheel, with the exception of the Chumayel, is segmented into 13 sectors, each containing a representation of a king, which in the Landa and Pérez wheels is done with the hieroglyph for Ahau. (The Chumayel is inexplicably divided into 14 sectors, with one sector left unnumbered.)

One of the most significant feature of these wheels is that the 13 Ahaus which reside in these 13 sectors are presented in a clockwise direction, with the numbers following the usual order of a katun count. As was shown in the article, both the days and the years are given in a counterclockwise direction. This clockwise presentation of the katun count may well have something to do with keeping the world directions in their proper positions.



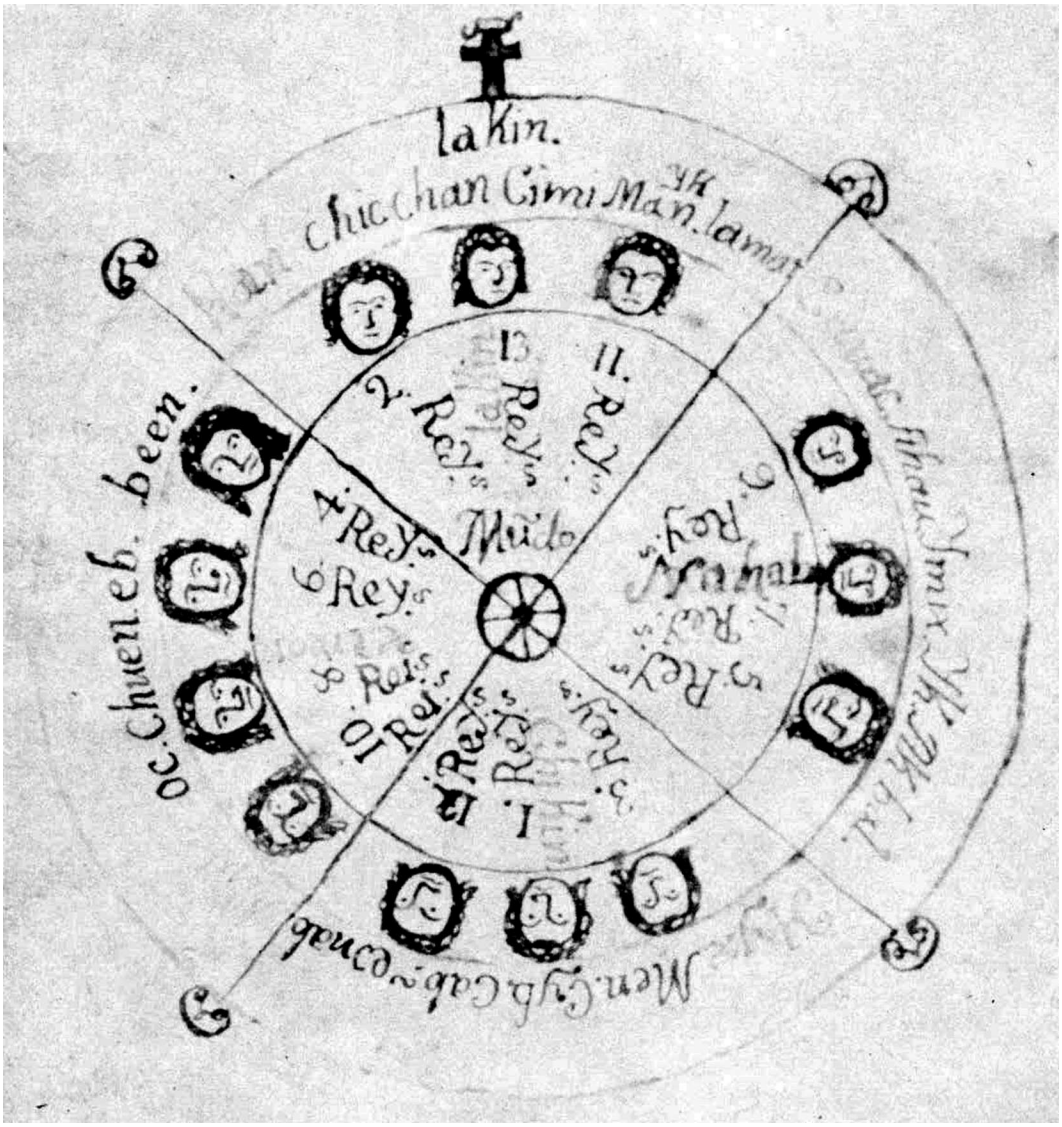
From Landa's *Relación de las Cosas de Yucatán*

From the Mayan literature it is evident that 11Ahau is the first katun of the series. In Landa this is reflected by the fact that 11 Ahau has a cross placed over it and further by the fact that it is placed at the top of the wheel. Of the other three wheels only the one in the Pérez is so explicit, although in the Chumayel one could deduce this from the space left between 13 Ahau and 11 Ahau.



Chumayel, p. 39r (Gordon p. 72)

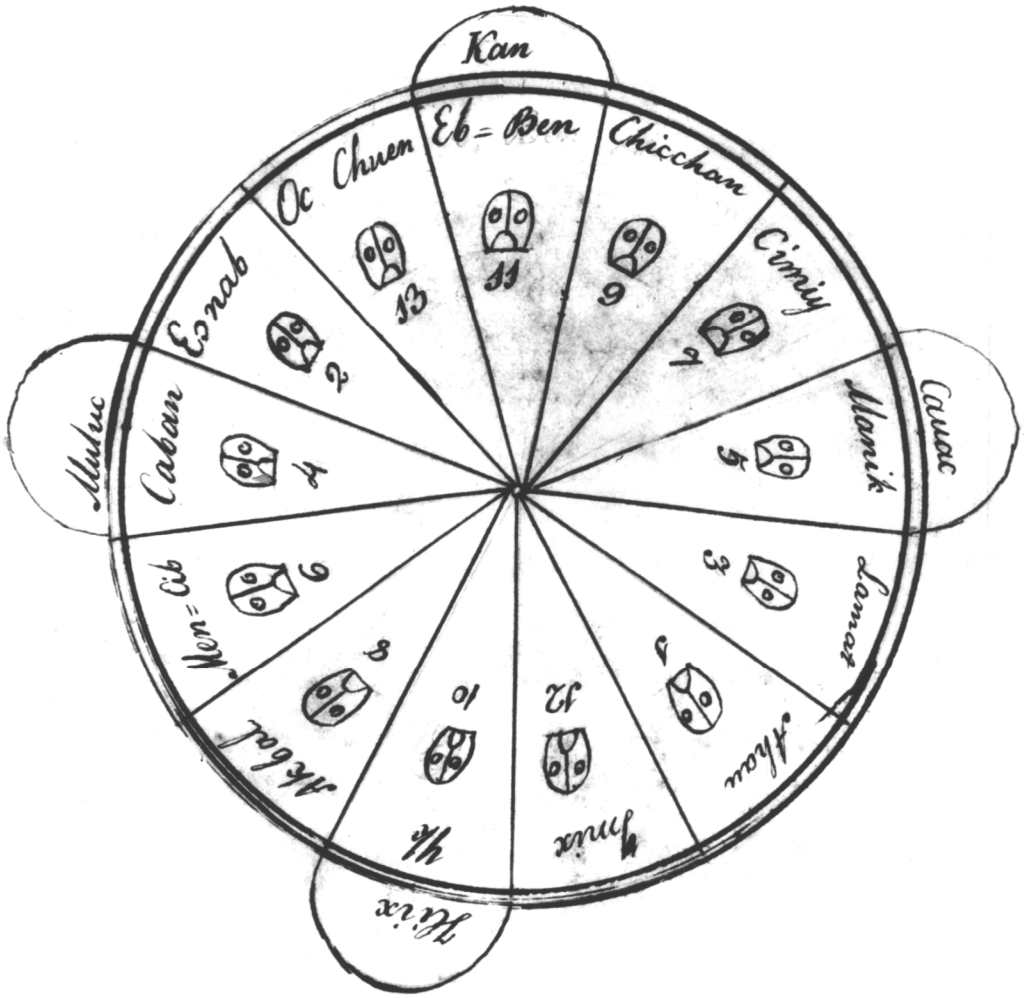
From the Mayan literature the world directions are given as follows: 11 Ahau to the east, 5 Ahau to the south, 12 Ahau to the west and 6 Ahau to the north. Unfortunately, there is no such clarity or uniformity of the relation between world directions and the Ahaus in these katun wheels. Landa shows no world directions at all, unless the presence of the cross could be considered a sign for the east. The Chumayel does have notations, with the notation for the east being before 11 Ahau and within the radial lines for the unnumbered sector. The other notations are placed after their respective Ahaus of 5 Ahau, 12 Ahau and 6 Ahau within the radial lines for each of these sectors. The Kaua groups the Ahaus in quadrants, with 2 Ahau, 13 Ahau and 11 Ahau being to the east, 9 Ahau, 7 Ahau and 5 Ahau being to the south, 3 Ahau, 1 Ahau and 12 Ahau being to the west, and 10 Ahau, 8 Ahau, 6 Ahau and 4 Ahau being to the north. Also in each of these quadrants their are the days of the uinal, with Kan, Chic Chan, Cimi, Man ik and Lamat being in the eastern quadrant, Cauac, Ahau, Imix, Ik and Akbal being in the southern quadrant, Hiix, Men, Cib, Caban, Edznab being in the western quadrant and Muluc, Oc, Chuen, Eb and Ben being in the northern quadrant.



Note that for the Kaua, in order for these days to be read sequentially the names of the days within each quadrant should be given in a counterclockwise direction rather than being given in the clockwise direction as shown.

The Pérez only shows only each member of the year bearer set above their respective Ahau sector, but since each of these year bearers are tied to a world direction as noted throughout the article then by inference the world direction is known for each sector so designated. Thus, Kan = east for 11 Ahau, Cauac = south for 5 Ahau, Hiix = west for 10 Ahau and Muluc = north for 4 Ahau. Note that the Pérez shows 10 Ahau and 4 Ahau rather than the expected 12 Ahau and 6 Ahau.

In summary, it is clear that specific Ahau Katuns have associated world directions. What is not clear is whether this is true for only these specific Ahau Katuns, or whether these world directions apply to quadrants as shown in the Kaua.



Pérez, p. 99

Appendix I
The Nahuatl Calendars
and Associated World Directions and their Colors

This appendix will look at the works of five writers who wrote about the Nahuatl life and culture, and in passing about the calendar of this culture. They were active in the latter part of the 1500's: 1) Bernardino de Sahagún (1499 – 1590), 2) Diego Muñoz Camargo (c. 1529 – 1599), 3) Diego Durán (c. 1537–1588), 4) Juan de Tovar (1543 - 1623) and 5) Antonio de Herrera y Tordesillas (1559 – 1625).

1) Sahagún: In discussing the provenance of the Toltecs in Book 10 the Florentine Codex has the following comment about the interior color of rooms in two temples which faced the four world directions at Tula:

Book 10, page 166 (1961 edition):

> Wherefore was it called a Tolteca house? It was built with consummate care, majestically designed; it was the place of worship of their priest, whose name was Quetzalcoatl; it was quite marvelous. It consisted of four [abodes]. One was facing east; this was the house of gold. For this reason was it called house of gold: that which served as the stucco was gold plate applied, joined to it. One was facing west, toward the setting sun; this was the house of green stone, the house of fine turquoise. For this reason was it called the house of green stone, the house of fine turquoise: what served as the stucco within the house was an inlay of green stones, of fine turquoise. One was facing south, toward the irrigated lands; this [was] the house of shells or of silver. That which served as the stucco, the interior of the walls, seemed as if made of these shells inlaid. One was facing north, toward the plains, toward the spear house; this [was] the red [house], red because red shells were inlaid in the interior walls, or those [stones] which were precious stones, were red.
>
> And there was the house of feathers. That which served as the stucco within the house was a covering of feathers. It also consisted of four [abodes. One] was facing east. Within the house, applied to the wall surface, was a covering of yellow feathers, such as parrot feathers; and all was yellow, of very yellow feathers. And [one] was facing west, toward what is called the sun's setting-place; it was called the house of precious feathers. For this reason was it called the house of quetzal feathers, the house of blue cotinga feathers: they placed - they pasted - the quetzal feathers, the blue cotinga feathers, to capes or nets [and] then hung them on the wall. Hence was it called house of quetzal feathers. And the house of white plumes was facing south, toward the irrigated lands, and it was called the white house. For this reason was it called the white house: of white feathers was the covering of the house walls, and that which was white was feathers, such as eagle feathers. And [one] was facing north, toward the plains, toward the spear house. Also red was the covering of feathers, such as the red spoonbill, the red arara, etc.

Before discussing the world directions and their associated colors mentioned in this passage, note that the world directions are given in the following order: East, West, South, North. Given, as will be seen below in the discussion about Sahagún's depiction and description of the Calendar wheel which is in Book 7,

that it appears standard to begin with the Acatl years to the East and go counterclockwise to the Tecpatl years to the North, the Calli years to the West, and the Tochtli years to the South, it is not clear why in the above passage the standard enumeration of the world directions is not followed.

In any case, from the above passage it appears that the world direction colors, at least for the Toltecs, were East: gold / yellow, North: red, West: blue / green, and South: silver / white. Note that here the order in which these colors are presented are gold / yellow, blue / green, silver / white, red. This is in contrast to the first paragraph under the passage about Tzonmolco which will be looked at next in which the colors are given in the order of blue / green, yellow, white, red. From this it is not clear if the colors given in the first paragraph under Tzonmolco are presented in ramdom order or whether there is some significance in the order in which these colors are presented. In the discussion later in this appendix about the Durán and Tovar depictions of the 52 year calendar wheel and the Herrera description of it there is yet a different order in which these colors are presented.

As mentioned above, there are other references in Florentine Codex to deities and places such as temples which seem to indicate that the colors given to them are related to the world directions. Example:

Book 2, 1981: pp. 190-191:

> TZONMOLCO
>
> Tzonmolco: there died the four [impersonators] named Xiuhtecutli. The first was named Blue Xiuhtecutli; the second, Yellow; the third, White Xiuhtecutli; the fourth, Red Xiuhtecutli. And there were still others named Iuipapaneca temilolca. And also [the woman] whose name was Ciuatontli [and] also [the woman] named Nancotlaceuhqui died, their breasts slashed open. ...
>
> (In the Nahuatl text these Xiuhtecutli are given as Xoxouhquj Xiuhtecutli, Coçauhquj Xiuhtecutli, Iztac Xiuhtecutli and Tlatlauhquj Xiuhtecutli.)[163]
>
> XOCHICALCO
>
> Xochicalco: there died [the impersonators of] White Cinteotl and Red Cinteotl, and also that one [impersonating the goddess] Atlatonan. ... (In the Nahuatl text: Jztac Cinteutl, Tlatlauhquj Cinteutl)

In the first paragraph under Tzonmolco the colors blue / green, yellow, white and red are given in that order, but there is no indication as to what world direction these colors represent.

In Book 7 of the Florentine Codex there is a reference relating a world direction color to a world direction. In this text the reference is to Red Tezcatlipoca to the East, which is in line with the generally agreed upon world direction color for the East. (See Book 7, p.7, 1953 edition):

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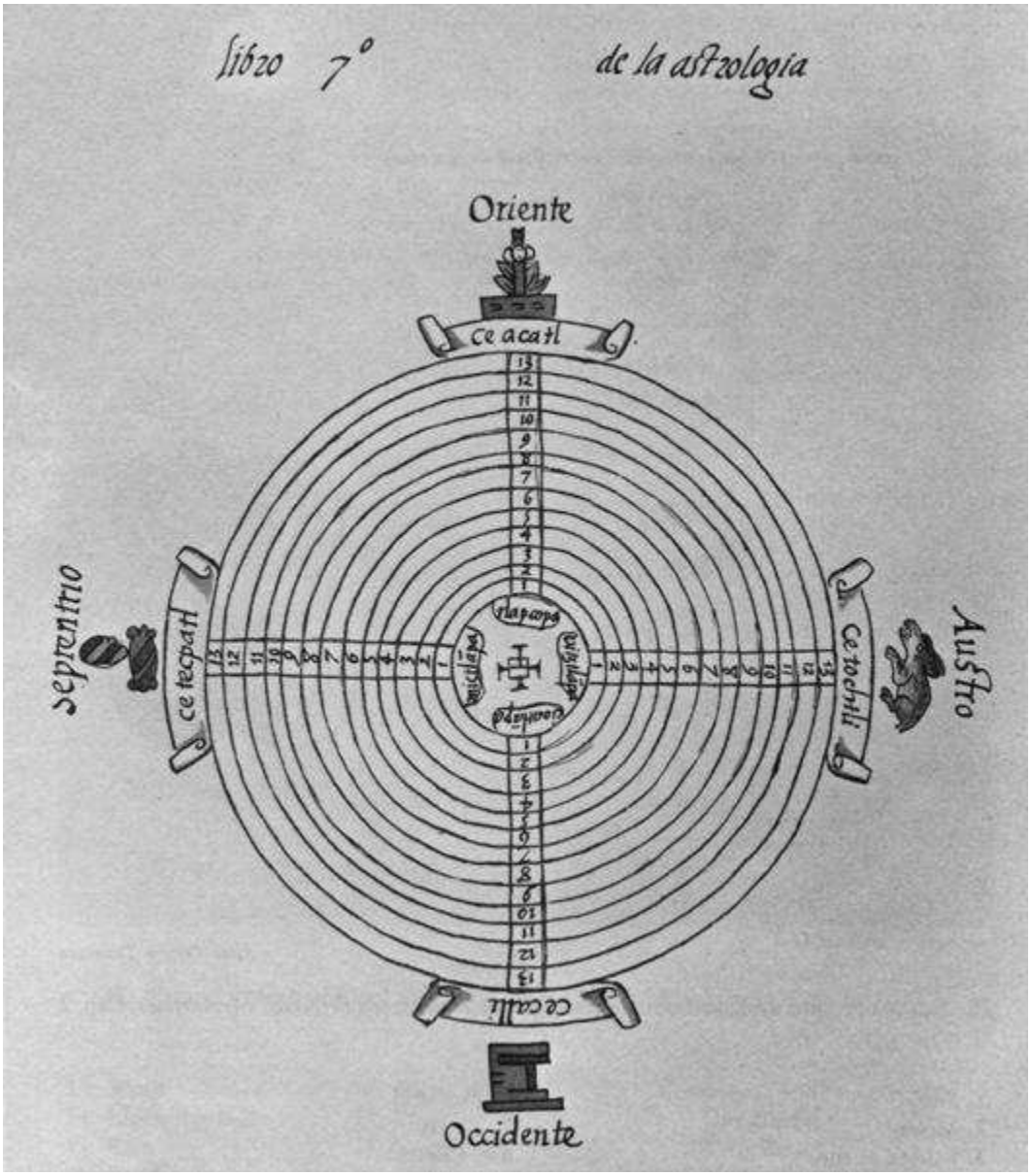
[163] There is some question as to what the true value of the color **xoxouhqui** is. As pointed out in footnote 146, in both the Mayan language and in Nahuatl certain words for color designate both green and blue. In Nahuatl the ambivalent words are **matlalin / matlalli** and **xoxouhqui**.

> And some placed themselves so that they could watch there to the east. They said: "For there, in that place, the sun already will come to arise." True indeed were the words of those who looked there and pointed with their fingers in that direction. Thus they say, [that] those who looked there [to the east were] Quetzalcoatl; the name of the second was Ecatl; and Totec, or Anauatl itecu; and the red Tezcatlipoca. Also [there were] those who were called the Mimixcoa, who were without number; and four women—Tiacapan, Teicu, Tlacoyehua, and Xocoyotl.
>
> (In the Nahuatl text Red Tezcatlipoca is given as Tlatlauic Tezcatlipuca.)

This passage would seem to confirm that red is the color of the East, which is in contrast to what was seen above in the description of the temple rooms at Tula.

Also in Florentine Codex's Book 7 there is a depiction of the Calendar wheel. The depiction given here is from the Paso y Troncoso edition.



The text which accompanies this depiction, as given in Anderson and Dibble, (Book 7, p.6 of Illustrations, 1953 edition) reads:

> Esta table, arriba puesta: es la cuenta de los años, y es cosa antiquissima. Dizen, que el inuentor della, fue Quetzalcoatl: procede desta manera: que comiençan del Oriente, que es donde estã las cañas: y segun otros, del medio dia, donde esta el conejo, y dizen ce acatl: y de alli van al Norte, donde esta el pedernal, y dizen vme tecpatl: luego van al occidente, donde esta la Casa, y alli dizen iey calli: y luego van al abrego,[164] que es donde esta el conejo, y dizen naui tochtli: y luego tornan al oriente, y dizen macuilli acatl. Y ansi van dando quatro bueltas, hasta que llegan a treze, que se acaban a donde començo: y luego bueluen a vno, diziendo ce tecpatl. I desta manera, dando bueltas: dan treze años, a cada vno de los caracteres, o a cada vna, de las quatro partes, del mundo. I entõce, se cumplen. 52. años, que es vna gauilla de años: donde se celebra, el Iubileo, y se saca lumbre nueua, en la forma arriba puesta: luego bueluen a contar como de principio. Es de notar, que discrepan mucho, en diuersos lugares del principio del año: en vnas partes me dixeron, que començaua a tantos de Enero: en otras, que a primero de hebrero: en otras, que a tantos de Março: En el tlatilulco, junte muchos viejos: los mas diestros, que yo pude auer, y juntamente, con los mas habiles de los colegiales, se alterco esta materia por muchos dias: y todos ellos concluyeron, que començaua el año, segũdo dia de Hebrero.

Note that in this diagram the year bearers are placed in the generally accepted world directions, with Acatl shown to be to the East, Tecpatl to the North, Calli to the West, and Tochtli to the South. However, neither here, nor apparently elsewhere in the work of Sahagún, is there a recognition of the important place colors played concerning world directions and their relationship to the year bearers.

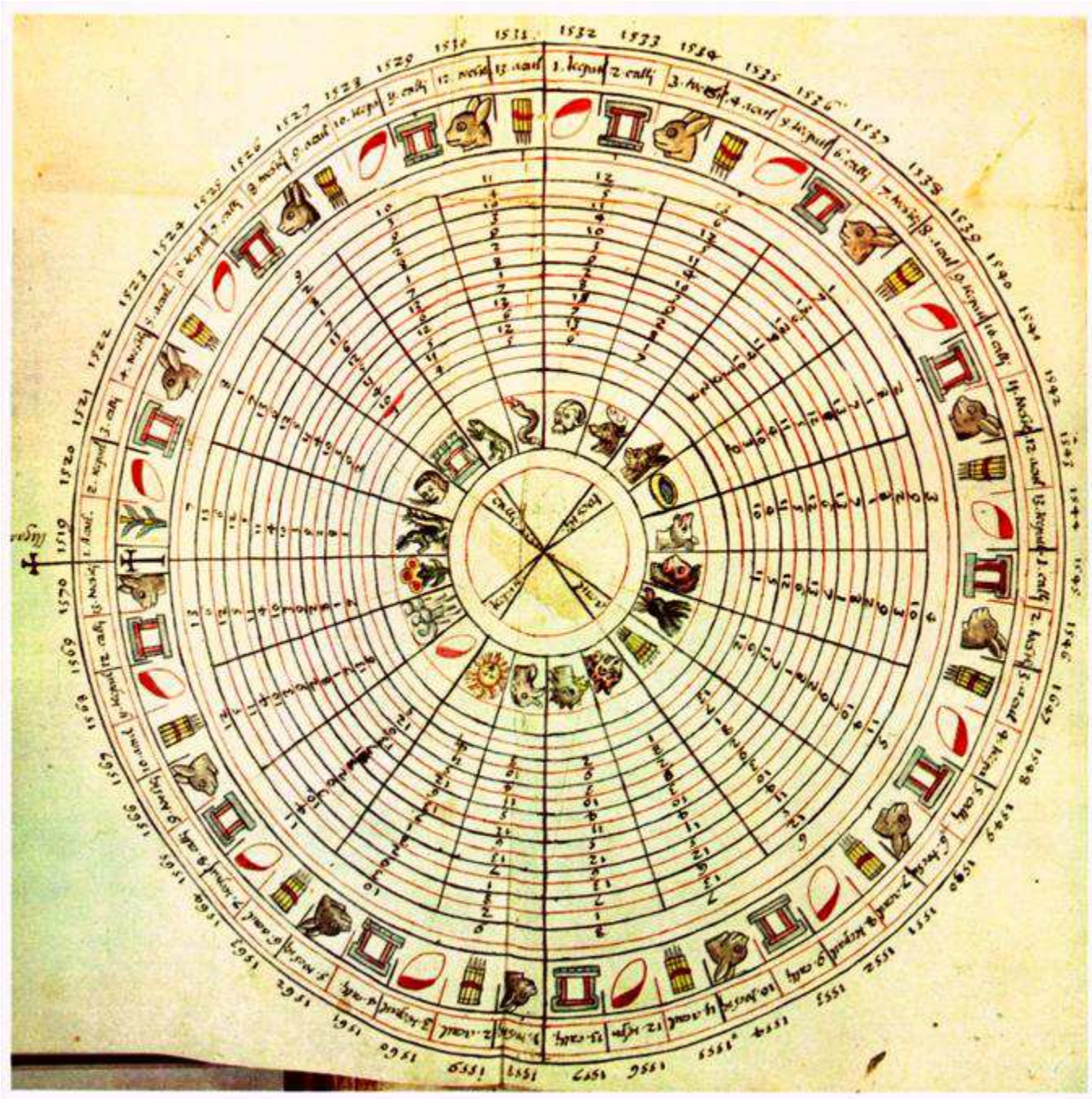
2) Muñoz Camargo: His *Descripción de la Ciudad y Provincia de Tlaxcala de las Indias y del Mar Océano*, probably composed between 1580 and 1585, has an extensive section dealing with the Tlaxcalan calendar, beginning on page 162v and continuing through 177r, including a diagram of the calendar which he calls "Rueda y Caracol" (Wheel and Spiral) which is shown on the following page. Despite the extensive text on the calendar there is no mention of either world directions or world direction colors in the text. Note that both the Wheel part of the diagram, that is the outside ring, depicting the 52 year cycle, and the inner Spiral part of the diagram, depicting the 260 Calendar round, go in a clockwise direction. This is in contrast to Veytia's "Calendario en Caracol"[165] (Calendar in a Spiral) in which the 52 year cycle is shown going in a clockwise direction but the 260 Calendar round is shown going in a counterclockwise direction. This latter feature is more in keeping with

[164] Incidentally, for the line which includes the word "abrego" Anderson and Dibble translate this as "And then they go to the north, which is where the rabbit is, and they say Four Rabbit." Translating "abrego" as "north" may be an honest mistake in the sense that they were thinking one thing and wrote the other, but if not then one has to wonder how many other mistakes there are in their translation effort.

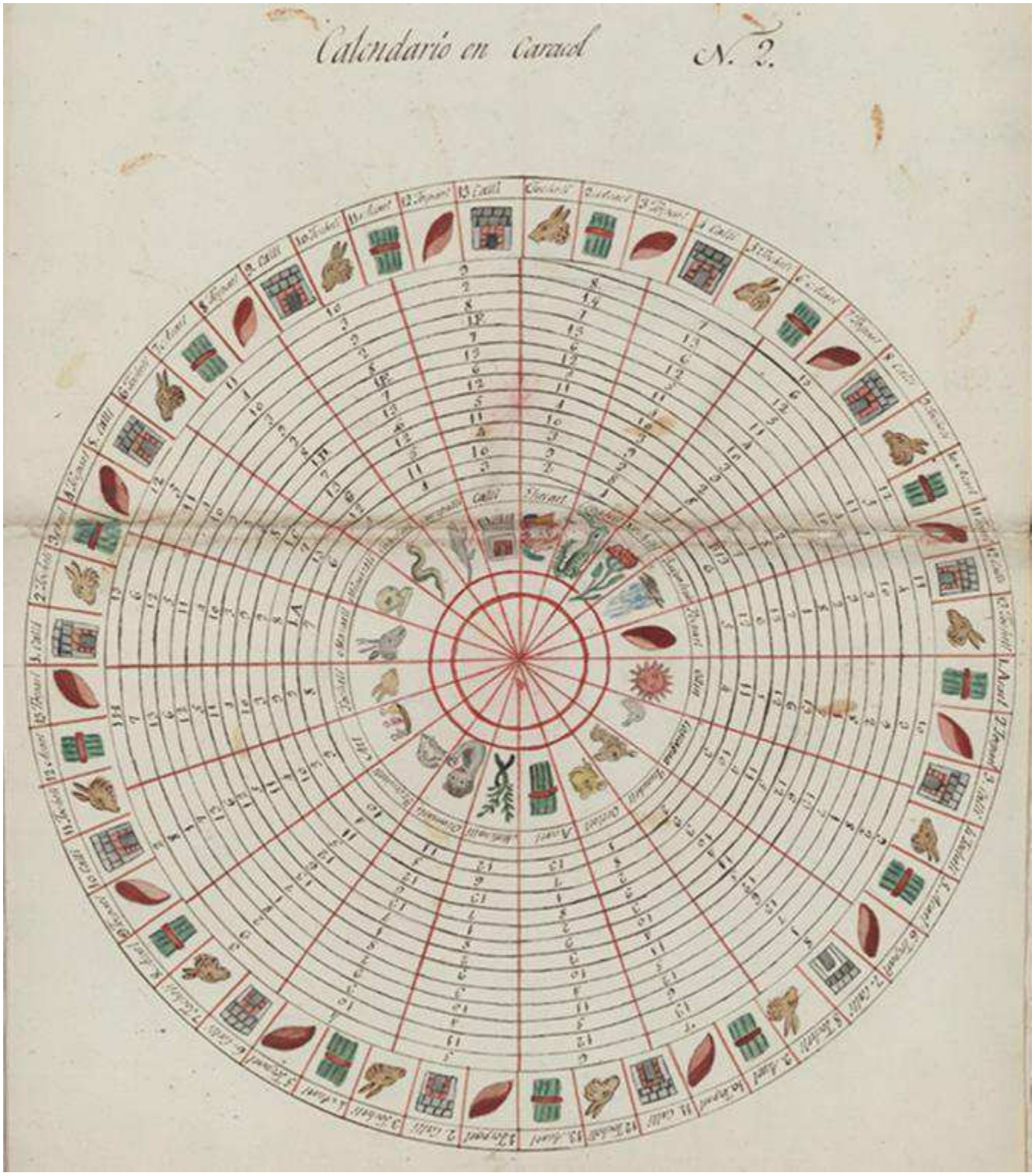
[165] The Veytia Calendar Wheel shown below Muñoz Camargo "Rueda y Caracol" is from the 1836 edition.

what one would expect given the direction of rotation of calendrical material such as that depicted on pages 75-76 of the Madrid Codex, page 1 from the Fejérváry-Mayer Codex and the calendar wheel figure from Book 7 of the Florentine Codex as shown above, which are all counterclockwise in their presentation of calendrical material.

Muñoz Camargo: Rueda y Caracol

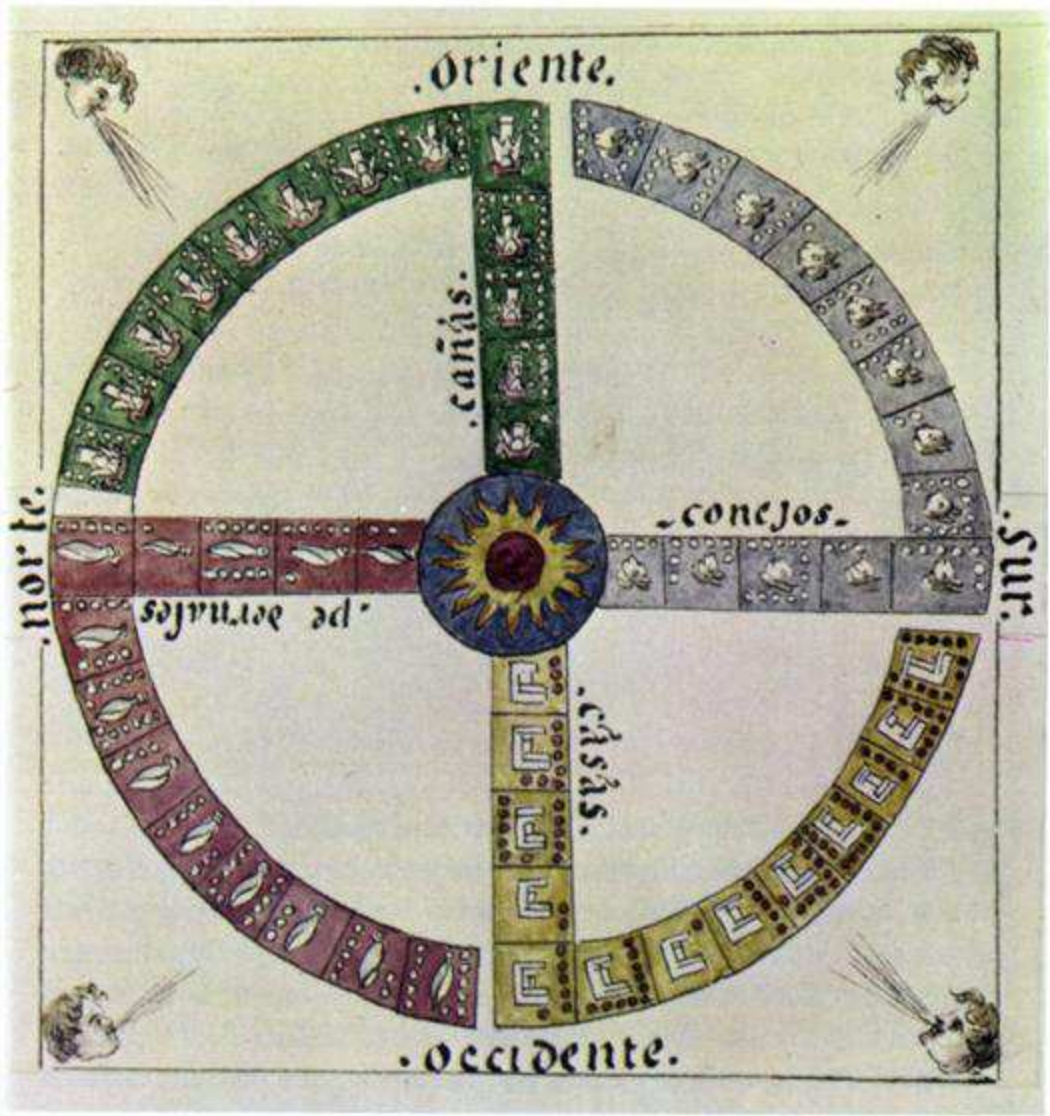


Muñoz Camargo, 1981, between folios 177 and 178

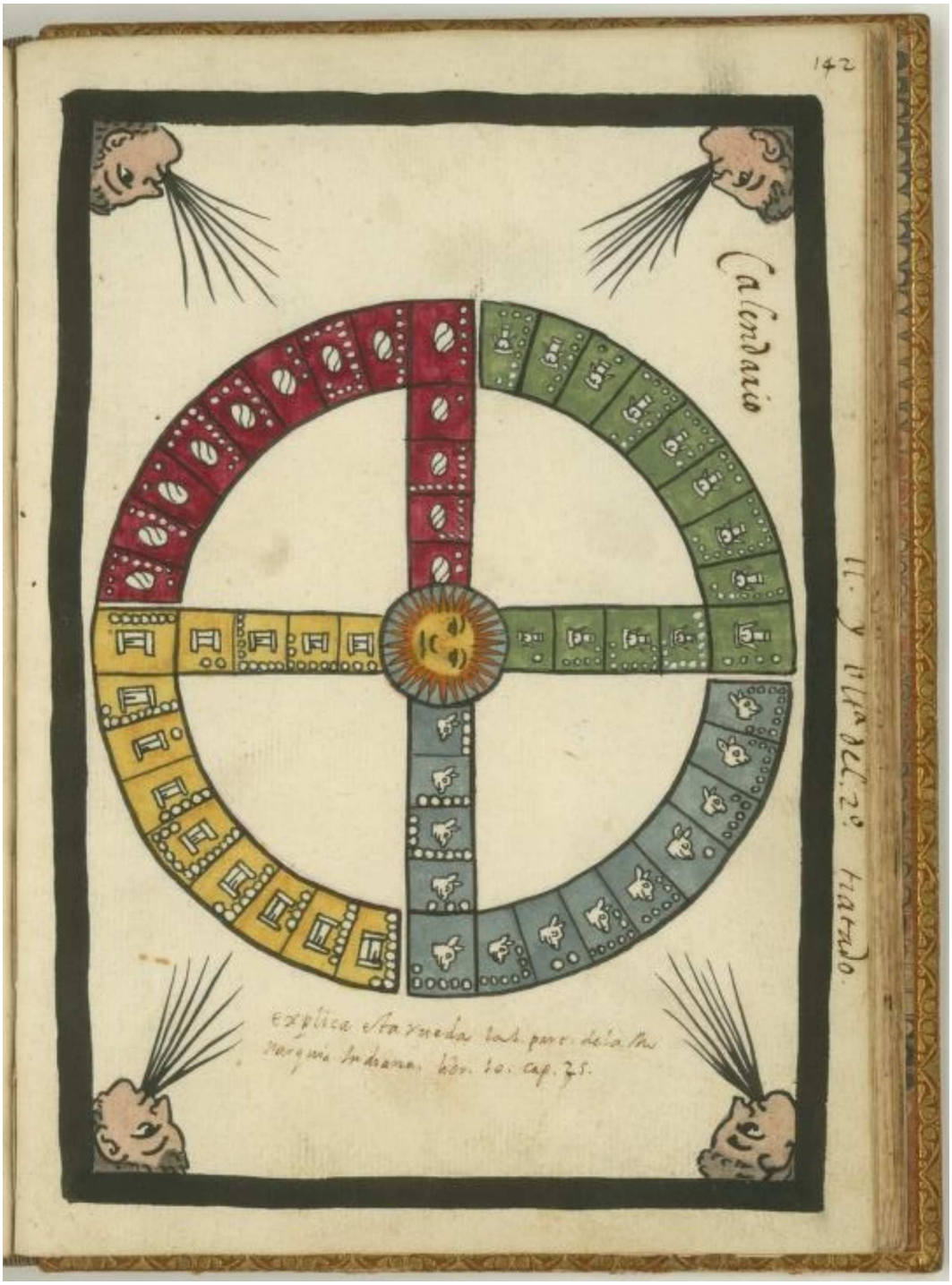


Veytia, 1836, Plate No. 2

3, 4, 5) Durán, Tovar, Herrera: There are two depictions of the Mexican calendar, one by Diego Durán and a close copy by Juan de Tovar, done in about 1580. Antonio de Herrera y Tordesillas, in his *Historia general de los hechos de los castellanos en las Islas y Tierra Firme del mar Océano que llaman Indias Occidentales*, originally published in about 1600, thus less than a quarter century after these depictions were made, gave a verbal description of a 52 year calendar wheel which is similar to these two depictions. However, as will be seen in Herrera's text given after these two depictions, Herrera's description differs from the Durán and Tovar depictions by inferring that the color of Acatl (cane) is red, Tecpatl (flint) is yellow, Calli (house) is green, and Tochtli (rabbit) is blue. As can be seen below, Durán and Tovar differ from Herrera about the placement and order of colors with the exception of Tochtli to the south which is shown to be blue in the Tovar depiction. Given that it is generally thought that Acatl to the east is red, as noted in the discussion above, it would appear that Durán and Tovar are in error and the Herrera is correct in his placement of world direction colors.



Durán, 1971, Plate 35



Tovar Ms. See Tovar, 1951, Plate IV

The full text from Herrera which talks about the Mexican 52 year calendar wheel follows. Note that while he does not directly relate the world direction colors with the year bearers nor does he indicate which world directions are related to which year bearers, he is consistent in starting with Casa (Calli / house) and goes counterclockwise in the two enumerations of the year bearers, and in between these enumerations places the succession of world direction colors which match the colors as posited in this appendix.

Historia general de los hechos de los castellanos en las Islas y Tierra Firme del mar Océano que llaman Indias Occidentales

Antonio de Herrera y Tordesillas

Second edition: 1726, Decada III, Libro II, pp. 74-75:

Aviendose dado noticia de la Religion de los Mexicanos, se dirá aora de sus Leies, Costumbres, i Policia: i començando por la cuenta de los tiempos, que es gran muestra de su ingenio, dividian el Año en diez i ocho Meses, i daban veinte Dias cada Mes, con que hacian trecientos i sesenta Dias, i los cinco restantes, no los daban Mes ninguna, sino que los llamaban, Dias Valdios, los quales ocupaban en visitar vnos a otros, i los Sacerdotes cesaban de Sacrificar: i acabados estos Dias, bolvian la cuenta del Año, cuio principio, i primer Mes era Março, aunque tomaban tres Dias de Hebrero, porque su primer dia del Año era veinte i tres de Hebrero: i nuestro Calendario está con grande ingenio, incorporado con el de los Indios antiguos, que conocieron los primeros Castellanos, de donde se conoce su mucho ingenio. Cada Mes trae su nombre, i su Pintura propria, i en su Calendario tenian señaladas las Fiestas: Las Semana contaban de trece en trece Dias, i cada Dia señalaban con vn cero multiplicando los Ceros hasta trece, i luego bolvian á contar. Ponian los Años de quatro en quatro Signos, que eran quatro Figuras, la vna de Casa, la otra de Conexo, la tercera de Caña, la quarta de Pedernal, i por ellas nombraban el Año, que corria diciendo, á tantas Casas, ó tantos Pedernales de tal Rueda, sucedió tal cosas porque su vida, que era como Siglo, contenia quatro Semanas de Años, siendo cada vna de trece, de suerte que eran por todos cinquenta i dos Años. Pintaban en medio vn Sol, i luego salian de el, en Cruz, quatro braços, ó lineas hasta la circunferencia de la Rueda, i daban buelta, de modo que se dividian en quatro partes i la circunferencia, i cada vna de ellas, iba con su braço, de la misma color, que eran quatro diferentes, de Verde, de Açul, Colorado, i de Amarillo: i cada parte de ellas tenia sus trece apartamientos, con Signo de Casa, Conexo, Caña, ó Pedernal, significando en cada vno su Año, i hallado, ponian en cada vno, lo sucedido en aquel Año, i el Año, que entraron los Castellanos en Mexico, señalaron con vna Pintura de Hombre, vestido á nuestro talle, de colorado, porque asi fue el primer Castellano, que embió Hernando Cortés á Mexico, i al cabo de los cinquenta i dos años, que se cerraba la Rueda, vsaban quebrar la primera noche quantas Vasijas tenian, i apagaban las Lumbres, diciendo, que en vna de las Ruedas avia de fenecer el mundo, i que podria ser aquella, en que se hallaban, i que se avia. de acabar el mundo, no avian de guisar de comer, y asi se estaban diciendo; que quiza no amaneceria mas, i velaban, para ver si amanecia, i en llegando el dia, tocaban a Tambores, Bocinas, i otras cosas; con grande alegria, diciendo, que Dios les havia hecho merced de alargarles otros cinquenta i dos Años, començaban otra Rueda. Sacaban Lumbre, i la iban á tomar, a donde la sacab el Sumo Sacerdote, procediendo vna Solemne Procesion, en hacimiento de gracias. Compraban Vasijas nuevas para guisar la comida, i nunca hacian la cuenta con las Lunas, ni conforme á ellas la distribucion de los Meses: i ninguna de estas Naciones Indias vsó de Letras, ni Escritura, sino de Imagenes, ó Figuras.[166]

[166] Acosta, in his *Historia natural y moral de las Indias* (Book VI, Chapter 2; pp. 397-399 of the 1608 edition), has a similar description of the 52 year calendar wheel.

While Herrera and Acosta do not make a direct one-to-one correspondence between the year bearers and world direction colors, and further do not mention the relationship between the year bearers and world directions, two later chroniclers do make such connections. These two writers were Giovanni Francesco Gemelli Careri (1651–1725) and Pedro Alonso O'Crouley (1740-1817).

The 1704 English edition of Gemelli has the following information:

A Snake turn'd itself round into a Circle, and in the Body of the Serpent, there were four Divisions. The first denoted the South, in that Language, call'd V[i]tztlampa, whose Hieroglyphick, was a Rabbet in a blew Field, which they call'd tochtli. Lower was the part that signify'd the East, call'd Tlacopa, or Tlahiuhcopa, denoted by a Cane in a red Field, call'd Acatl. The Hieroglyphick of the North, or Mictlampa, was a Sword pointed with Flint, call'd Tecpatl, in a yellow Field. That of the West, or Sihuatlampa, was a House in a green Field, and call'd Cagli.[167]

O'Crouley, in 1774, wrote:

The body of the serpent contained the four divisions. The first represented the south, called uitztlampa, in hieroglyphics a rabbit on a blue background, called tochtli. The second signified the east. It was called tlathuilcopa, in hieroglyphics a reed on a red field, called acatl. The third was the north and was called mictlampa; it was denoted by a flint-pointed weapon on a yellow background, called tecpatl. The fourth was the west and was called cihuatlampa; it was represented by a house on a green background, with the name of cagli.

Succession of Calendar Wheel Depictions

This is a list of authors who made depictions of the 52 year Calendar Wheels enclosed by a snake as shown at the end of this appendix.

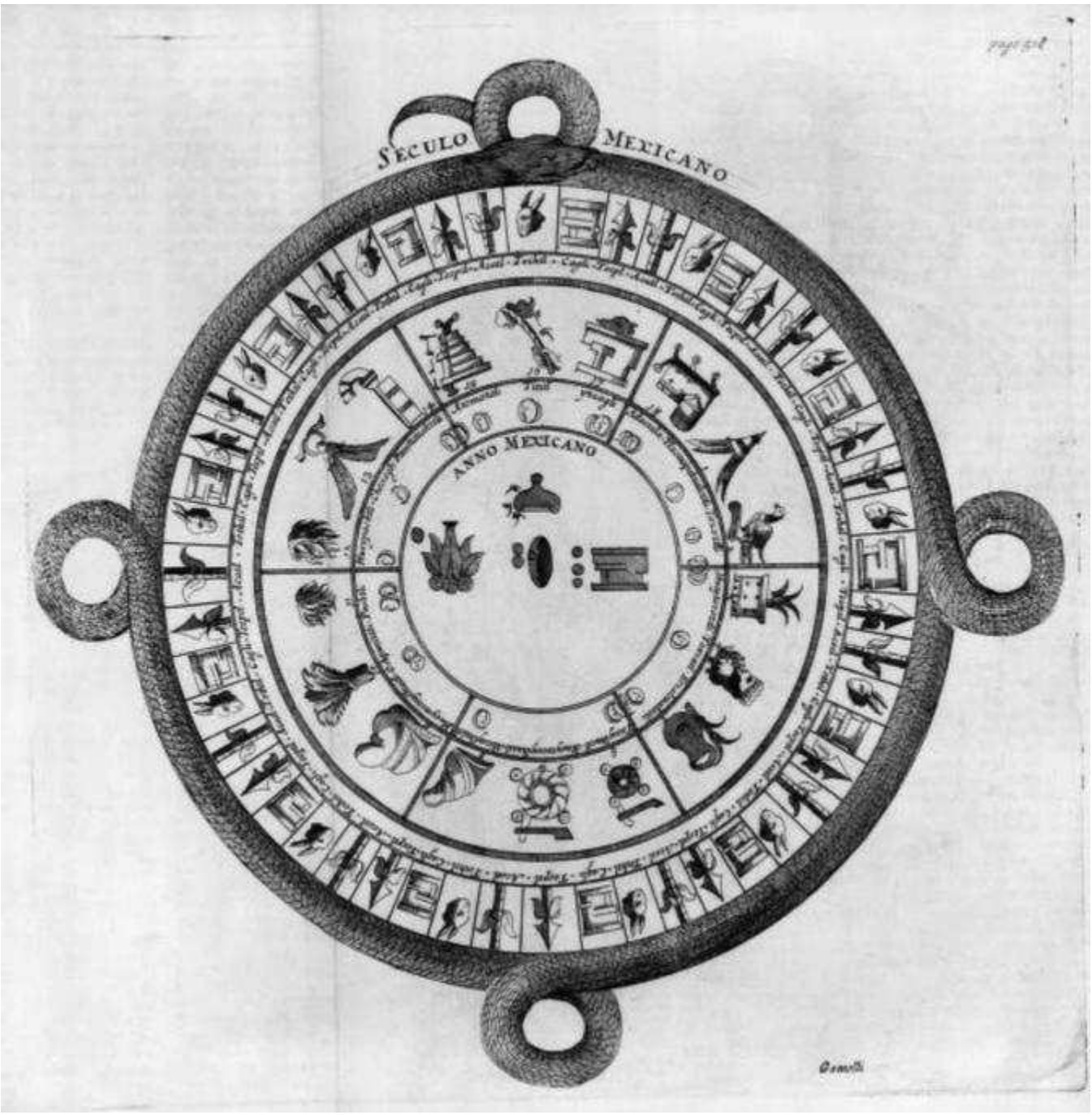
Giovanni Francesco Gemelli Careri (1651–1725)
- 1700: Italian edition
- 1704: English edition

Lorenzo Boturini Benaduci (1702-1753)
- Supplier of information to Veytia

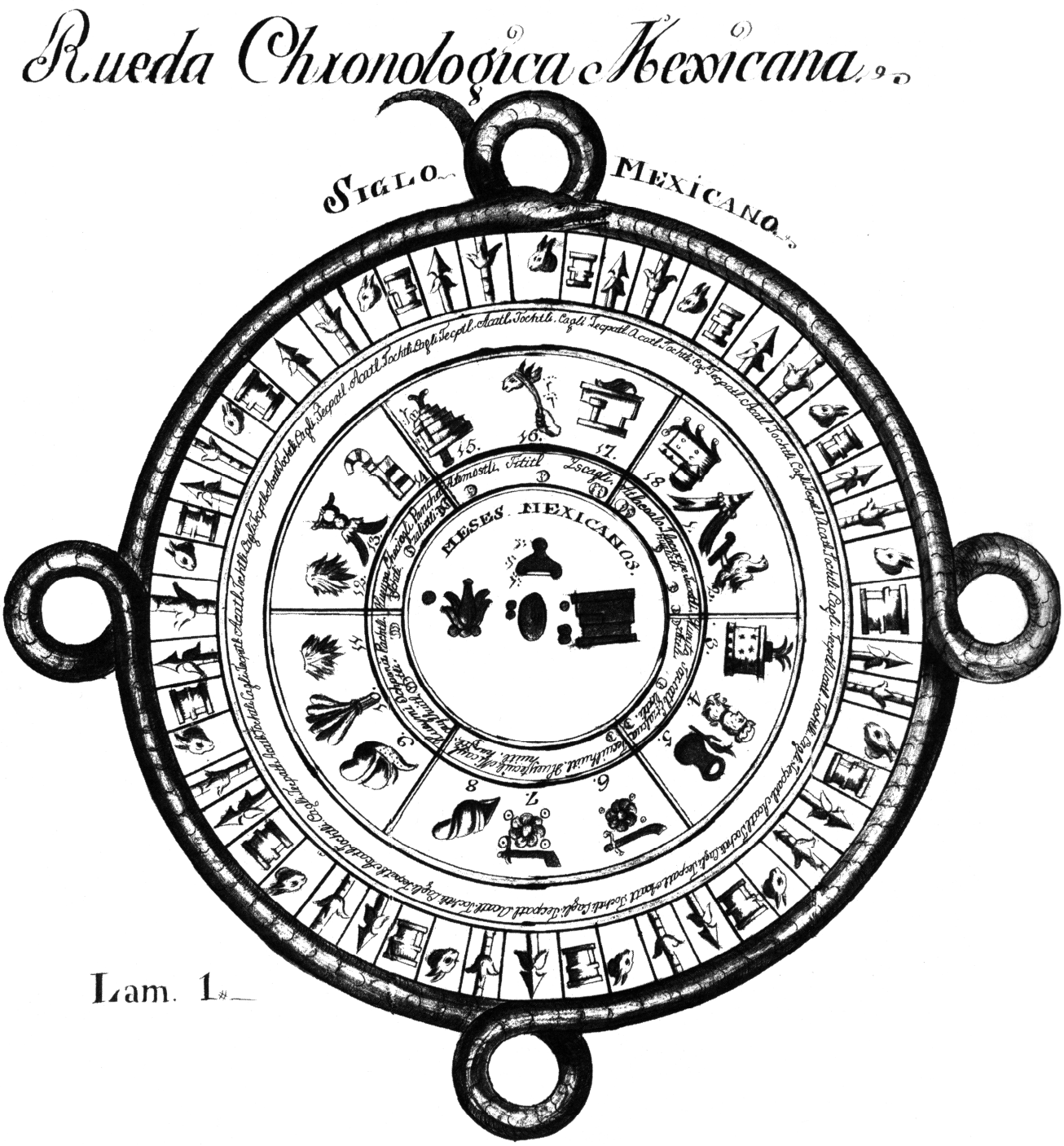
Mariano Fernández de Echeverría y Veytia (1718-1780)
- 1782: first edition
- 1836: second, truncated edition
- 1907: third edition

Pedro Alonso O'Crouley (1740-1817)
- 1774: date written
- 1972: English edition

[167] Thompson, 1934: "So far as I know, there is no case where colors are definitely associated with directions, except the reference from Gemelli, shortly to be quoted. In this connection one must remember that Gemelli's veracity has been very seriously questioned, for it has even been charged that Gemelli's tour round the world was conducted without stepping out of his library chair."



Gemelli, 1704, cut, page 518



O'Crouley, 1972, Plate 1

Appendix J

A Commentary on
World Direction Colors in Mesoamerica

In this appendix an attempt will be made to make sense of the relationship between the world directions and their corresponding colors.

Throughout the paper proper we have seen that for the Maya of the Yucatecan-speaking area there is no question about the relationship between the world directions and their corresponding colors: East – red; North – white; West – black; South – yellow; Center – blue / green. In Appendix I we have seen that for the Mexicans there is no such clarity. One suggestion has been that various ethnic groups, cultural groups or political entities had different color relationships. Another possibility which I would like to suggest is that just as in the instance of Landa equating the wrong year bearers with the world directions, perhaps because of the question of the dual meaning of the word **Kan**, which is both a color designation, i.e. "yellow", and also a year bearer, but the meaning of which is "jade bead", so too there might be something of this, at least for Durán and Tovar in their depictions of the 52 year calendar round. Perhaps they decided that the year bearer Acatl, "Reed", should be green because reeds are green and that the year bearer Tecpatl, "Flint", should be colored red based on the idea that this is the color of blood, leaving only Tochtli, "Rabbit", with the color originally associated with that year and world direction. Certainly, there is general agreement about which world direction goes with which year bearer: Acatl – East; Tecpatl – North; Calli – West; Tochtli – South. Given this uniformity of the relationship between the world directions and the year bearers one would think that there would be a similar uniformity in the relationship between the world directions and associated world direction colors.

There are two different passages in the Popol Vuh which involve world direction colors and roads. Speaking of Hun Hun Ah Pu (the father of Hun Ah Pu and X-Balan Qué) and Vuc Hun Ah Pu, there is the following:

Recinos/114 (compare with Edmonson lines 1999-2016):

> Then they came to the bank of a river of blood and crossed it without drinking its waters; they only went to the river bank and so they were not overcome. They went on until they came to where four roads joined, and there at the crossroads they were overcome.
>
> One of the four roads was red, another black, another white, and another yellow. And the black road said to them: "I am the one you must take because I am the way of the Lord." So said the road.
>
> And from here on they were already overcome. They were taken over the road to Xibalba and when they arrived at the council room of the Lords of Xibalba, they had already lost the match.

Then, speaking of Hun Ah Pu and X-Balan Qué, there is the following:

Recinos/139-140 (compare with Edmonson lines 3455-3484):

> Then they went, each one carrying his blowgun, and went down in the direction of Xibalba. They descended the <140> steps quickly and passed

between several streams and ravines. They passed among some birds and these birds were called Molay.

They also passed over a river of corruption, and over a river of blood, where they would be destroyed, so the people of Xibalba thought; but they did not touch it with their feet, instead they crossed it on their blowguns.

They went on from there, and came to a crossway of four roads. They knew very well which were the roads to Xibalba; the black road, the white road, the red road, and the green road. So, then, they sent an animal called Xan.[168] It was to go to gather information which they wanted. "Sting them one by one; first sting the one seated in the first place, and then sting all of them, since this is the part you must play: suck their blood of the men on the roads," they said to the mosquito.

For the first passage the Edmonson translation agrees with the Recinos translation. Edmonson has this note about the world direction colors:

Line 2008. In Yucatan the directional associations are: red (east), black (west), white (north) and yellow (south) (Tozzer, 1941, p. 137). In Quiche black is probably north, the direction of Hell, and white seems principally associated with the east. From one couplet in the Chol Poval, Ahilabal Q'ih which appears to juxtapose *left* (north, black) with (right, south) *red*, I would guess that to be the color of the south, thus leaving yellow for the west. (See note to line 928.) In line 3474 yellow is replaced by blue-green...

Note that Edmonson uses the words "guess", "probably" and "seems" in this footnote, and does not use definite words.

For the second passage there are some differences of opinion between Edmonson and Recinos about the meaning of individual words, but on the whole the over-all meaning of the passage is the same. While in the note for line 2008 given above Edmonson notes the substitution of green for yellow in line 3474, in the actual passage of the colors on lines 3470-3474 Edmonson makes no comment.

In an article in *Ichan tecolotl*[169] there is the following note about the opening of the Equipo Gestor del Programa Emblemático de las Mujeres Indígenas, del Fondo Indígena (EG):

Las reuniones del EG en la ciudad de México, comenzaron con un ritual de bienvenida en el que Otilia Lux[170] encendió cuatro velas alumbrando hacia los puntos cardinales. Dentro de un circulo con granos de frijol de cuatro colores (blanco, rojo, amarillo y morado) que representaron un saludo a los elementos de la naturaleza "que nos da vida, sustento y la energía que nos rige cosmogónicamente para iluminar y ayudar a tener creatividad, reflexión, a abrir rutas y a enfocar mejor las decisiones".

El frijol rojo fue un "saludo al abuelo Sol"; el blanco, al agua, fuente de

[168] Mosquito.

[169] Año 23, núm. 271 - Marzo de 2013, ISSN 1405-1931, p. 6

[170] Otilia Lux de Coti, a Quiche Maya woman involved in various political and cultural organizations.

> vida; el amarillo, al viento; el negro, para despedir la luz del día al terminar cada jornada de trabajo. Estos cuatro elementos y colores se complementan con el azul "para saludar al corazón del cielo, y con el verde, para la veneración de la *Pachamama*, la Tierra".

Note that this note is inconsistent in the order in which the colors involved are presented. Fortunately there is a color photograph which accompanies the note which shows exactly in what order the colors are laid out on the table. This is the same order as the colors talked about at the beginning of this article, i.e. red for east, white for north, black for west and yellow for south, with blue and green for the center representing the sky and the earth respectively. It would seem from this that Edmonson's confusion stems from a similar source in which the colors are presented in an indiscriminate order.

In the Oklahoma edition of Durán (1971:243) the editors have the following footnote:

> In Aztec cosmogony each cardinal direction was connected with a god, a color, a bird, a heavenly body, a year sign, and an associated idea, such as heat, cold, fertility, or war. (Soustelle, 86-87). The corn used in these rites to Xochiquetzal was no doubt symbolic of the cardinal points, probably invoking the protection of the god represented by each color in his respective direction.
>
> White was the west, represented by Quetzalcoatl and by earthly goddesses, associated with femininity (and, according to Durán, with cultivated fields). Black was the north, represented by Tezcatlipoca and by Mixcoatl, the Hunting God, associated with the night and darkness and war (according to Durán, with woods and hills). Yellow (in this case interchangeable with red) was the east, represented by Quetzalcoatl (as Tlahuizcalpantecuhtli, Morning Star), by Tlaloc, and by Xipe Totec, associated with fertility (and, according to Durán, with the lake). Blue (interchangeable with green, but purple in this case) was the south, represented by Huitzilopochtli (by Macuilxochitl in the Borgia Codex [Seler, 1963]), associated by fire and heat (and with the *amilpan* or *chinampas*-the floating gardens of Xochimilco-according to Durán, "watery fields"). The colors assigned to the directions varied with the culture. For example, among the Mayas black was west, white was north, red was east, and yellow was south (Thompson, 211).

As mentioned above, there is a plate in Durán illustrating the 52 year calendar round (1971, Plate 35) and a similar depiction in the Tovar Codex. In this, the color green is associated with the east, red with the north, yellow with the west, and washed-out grey, perhaps indicating silver with the south. The Tovar Codex has the same color associations, except that the south color is appears to be blue.[171] It should be noted that the colors given in these two calendar wheels are one quadrant off for the colors red and yellow from the colors shown in the Fejérváry-Mayer Codex and noted by Gemelli and O'Crouley, in which whereas north is shown as being red in the Durán / Tovar calendar wheels, east is shown as being red by Fejérváry-Mayer

[171] For color images of these two calendars see the two pages in the middle of Appendix I.

and said to be red by Gemelli / O'Crouley. Also note that the sequence for blue and green is reversed, with the Tovar showing blue as south and east as green, while the Fejérváry-Mayer / Gemelli / O'Crouley order is green for the west and blue for the south. Given that most sources place red in the east, perhaps there is an error in the Durán / Tovar depiction.

Alfonso Caso in his book *The Aztecs* (Oklahoma Press, 1958), says the following:

> The divine pair represented the central direction, or up and down, that is, the heaven and the earth, while their four sons were assigned to the four directions, or the four cardinal points of the compass. For that reason, three of them were characterized by different color: red, black, and blue, corresponding to the East, the North, and the South, respectively, <11> while Quetzalcóatl occupied the place that a white Tezcatlipoca, corresponding to the West, must have held in the primitive myth.

Thus, we have the following confusion in the description of the Aztec world color system from Caso, the Durán note, the Durán / Tovar calendar wheels, the system shown in the Fejérváry-Mayer Codex which is corroborated by Herrera, Gemelli Careri and O'Crouley[172] and the Quiche and Yucatecan systems:[173]

Caso	red	east
	black	north
	white	west
	blue	south
Durán, note:	yellow / red	east
	black	north
	white	west
	blue	south
Sahagún /	gold / yellow	east
Florentine Codex /	red	north
Book 10:	blue / green	west
	silver / white	south
Durán, plate 35 /	green	east
Tovar:	red	north
	yellow	west
	white / blue	south
Fejérváry-Mayer /	red	east
Gemelli Careri /	yellow	north
O'Crouley:	green	west
	blue	south

[172] See Appendix F, the section on the Fejérváry-Mayer Codex, for the information on both the Fejérváry-Mayer Codex and the Herrera, Gemelli Careri and O'Crouley color system. From the wording, it appears that the O'Crouley text is based on the work of Gemelli Careri.

[173] For an early attempt to look at the question of world direction colors see *Notes On Certain Maya And Mexican Manuscripts* by Prof. Cyrus Thomas, published by Smithsonian Institution - Bureau Of Ethnology in 1884. In particular see pp. 44-50 where color associations from various codices are given in tables.

Edmonson:	white	east
	black	north
	yellow	west
	red	south
Yucatecan and	red	east
Highland Maya:	white	north
	black	west
	yellow	south
	green / blue	center

It is apparent that the editors of Durán, namely Fernando Horcasitas and Doris Heyden, are in agreement with Caso, and this appears to be the generally accepted color association according to highland scholars. However, the color plates by Durán and Tovar do not agree with these scholars. The Fejérváry-Mayer color associations are from the 260 Tonalpohualli shown on page 1 of the codex. These color associations are corroborated by Gemelli and O'Crouley. The color associations as given by Edmonson are based on speculation if one looks at the verbs and adjectives he uses in his statement on the subject. Since it is the correct sequence but off by one quadrant perhaps Edmonson keyed the wrong color to the wrong world direction. And finally, as Thompson points out, the Yucatecan color association is well documented in the colonial literature (The Books of Chilam Balam and the Bacabs) and historical works (Landa in particular) and goes back to the hieroglyphic codices (see in particular the Dresden Codex, Pages 29c - 31c).

It should be noted that in Muñoz Camargo (1981, f. 160r) there is a passage which would seem to indicate that black is the color of west:

> 7) El septimo prodigio fue que los laguneros de la laguna Mexicana nautas, o piratas, o canoystas caçadores caçaron vna aue parda a man[er]a de grulla la qual en continete lleuaron a Motecuchçoma para que la viesse, el qual estava en los palacios de la sala negra auiendo ya declinado el sol hazia el poniente que aun era de dia,....

Concerning the Yucatecan world direction colors, Thompson in his *Maya Hieroglyphic Writing* for the most part sticks with the standard Yucatecan colors as given in the Books of Chilam Balam, the Bacabs, and the pre-Columbian codices. For example, on page 10:

Thompson, 1960, p. 10:

> The sky was sustained by four gods, the Bacabs, who were placed one at each side of the world. An association of supreme importance in Maya religion is that of colors with directions. Red is the color of the east, white of the north, black of the west, and yellow of the south; there may have been a fifth color, green, for the center. Almost every element in Maya religion and not a few parts of the Maya calendar are connected with one world direction and its corresponding color. Thus the red Bacab stood at the east, the white Bacab at the north, the black Bacab at the west, and the yellow Bacab at the south.

However, on page 112 he gives the following information:

Thompson, 1960, p. 112:

The four cauac months, therefore, have the following associations:

Ch'en	-black (west)	-moon goddess
Yax	-green (south?)	-Venus monster
Zac	-white (north)	-frog constellation (?)
Ceh	-red (east)	-god of the (eastern) sky (?)

In all four cases the patron would appear to be a celestial being; the colors suggest associations with world directions. West in the Mexican highland cosmology is the region of the goddesses and women who, by succumbing in childbirth, had qualified for divine rank. The west, therefore, is the natural home of the moon goddess both because she was a woman, and because she was the patroness of childbirth. In view of the very close connection between Maya and Mexican mythology, the same assignment of the moon to the west presumably was made by the Maya.

Yax, as noted, means green,[174] but that color is not associated with the world directions unless there was a fifth (center) direction assigned to that color. On the other hand, the central element of the glyph for south, as shown in the codices (fig. 41,*23-27*),[175] is the same as the codical form of the yax prefix, although the identity does not hold good for the corresponding glyphs on stelae of the Initial Series Period. The color assigned to the south in sixteenth-century Yucatan was yellow.

Nevertheless, it is not improbable that the yax prefix represented the south. One would expect Venus to be placed to the west or the east, but in Dresden all four directions are assigned the planet. South is the direction of death and calamity, commodities which that planet freely distributed (p. 217). It is not impossible that there has been a change in world direction colors, that at the time the glyphs were invented green was the color of the south, but later yellow replaced it; but the yax element in the codical form of south preserves this ancient form.

As the presumed constellation of the frog has not been identified, it is impossible to seek any connection with the north.

Chac and Khek Sihom,[176] the Chol and Kanhobal equivalents of Ceh, have already been explained as signifying red, the color of the superfix.

---

[174] This is not strictly true. As noted throughout discussions about the Mayan and Nahuatl words for the color "green", these words also mean "blue". See footnotes 146 and 150 for fuller information about this subject. However, more often than not the word **yax** is applied to what in our perception would be considered to be the color "green".

[175] Phonetically the reading of the hieroglyph for "south" would be "ma yax", or "not green". For agricultural people "not green" would be a synonym for "yellow", and this is a description of the region south of the Yucatecan peninsula in the valley of Rio Motagua just north of Chiquimula.

[176] **Zihom** has two meanings, soapberry and the seeds from the soapberry which are fashioned into beads for rosaries, necklaces, etc. See BMTV: Árbol jabonero, cuya fruta sirbe de jabón para labar la ropa: çihom. / Bellota de oro o cuenta: çihom takin.

> Red is the color of the east, so if the symbol of the patron deity represents not only the sky in general but by extension the eastern sky, the association would be complete.

Rearranging the order of the four months presented above by the standard world direction presentation we have:

Ceh	-red (east)	-god of the (eastern) sky (?)
Zac	-white (north)	-frog constellation (?)
Ch'en	-black (west)	-moon goddess
Yax	-green (south?)	-Venus monster

Note that these colors are in agreement with the Yucatecan color scheme with the exception of green – South. As pointed out by Thompson, green is generally considered to be the color associated with the center of the world.

Finally, Thompson has this comment about the two passages in the Popol Vuh which involve the world direction colors:

Thompson, 1960, p. 252:

> In the Popol Vuh (1927, pp. 219, 259) the four colors of Yucatan and the codices are given in one passage, but in another, green is substituted for yellow. In neither case are the associated directions given, but the fact that both passages treat of the four roads makes it evident that these sets of colors were assigned to world directions. It is possible that either green or yellow may have been once assigned to the center, a region almost ignored in Yucatecan sources of the sixteenth and later centuries.

Concerning the statement that "there may have been a fifth color, green, for the center," perhaps at the time he wrote this statement Thompson did not know that **yax** is mentioned in the colonial manuscripts as being the center of the world. For example, the Chumayel, Tizimin, and Pérez mss. all have the following passage in which **yax** is equated with **tu chumuc peten** ("in the middle of the region / province", i.e. in the middle of the world):

ca ualhi chac imix che tu lakin peten
lay u yocmal caan
lay u chicul haycabil
lay u coycinah u che Bacab
f175 culic chac tan pixoy, chac xib yuy, chac oyal mut

ca ualhi zac imix che tu xaman peten
lay u yocmal caan; lay ualic zac chic
lay u chicul haycabil
lay zac imix che; ualic cu chic
f180 culic zac tan pixoy, zac xib yuy, zac oyal mut

ca ualhi ek imix che tu chikin peten
lay u yocmal caan
lay u chicul haycabil
culic ek tan pixoy, ek xib yuy, ek oyal mut

f185 ca ualhi kan imix che tu nohol peten
lay u yocmal caan
lay u chicul haycabil
culic kan tan pixoy, kan xib yuy, kan oyal mut

ca ualhi yax imix che tu chumuc peten
f190 lay u yocmal caan
lay u chicul haycabil
culic yax tan pixoy, yax xib yuy, yax oyal mut[177]

It is interesting to note that, as Thompson points out on page 252, the world direction colors are not only given in the colonial manuscripts, but the same are also given in the codices. It would thus seem that the world direction colors and their related directions and year bearers are of long standing and were pervasive throughout the Mayan world. While I have not made a thorough search through Thompson, I have not found anything which would contradict this color association in any of the Mayan languages which he worked on. He did have ample room to give contradictory world direction colors along with his calendrical discussions where he was comparing the various day names (page 68) and month names (page 106) in the various Mayan language, the later being a good place to discuss such a discrepancy.

In conclusion, in the Books of Chilam Balam and the Bacabs the world direction colors are generally presented in the order of **chac** (red-east), **zac** (white-north), **ek** (black-west), **kan** (yellow-south), **yax**, when included (blue / green-center of the world). Furthermore, these texts almost always lead off with **chac**. I have yet to find an occurrence when this counterclockwise presentation of the world direction colors is given in a different order. For the moment no such blanket statement can be made for the world direction colors in the Mexican highlands.

[177] See pages 8-9 of this paper for a translation of this text. See also pages 100-101 of Roys' Chumayel for translation and commentary.

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THE MEANING OF KINICH
AS IT RELATES TO GODS D AND G

by David Bolles

It has long been assumed that the meaning of **kinich** is "sun-eyed" or some variant thereof, where **kin** is thought to equal "sun" and **ich** is thought to equal "eye". While, when taken out of context it would seem that these are the correct equivalents, there is reason to believe that the word **kinich** actually has a totally different meaning.

When one goes through the various Franciscan vocabularies and modern-day word lists of the Yucatecan Mayan language it becomes apparent that there are various adjectives which have the suffix -V**ch**. Some of these can appear without the suffix and others can not:

---	**bekech**	thin
---	**cilich**	holy
hah	**halach**	real, true
noh	**nohoch**	big
nuc	**nucuch**	big, old
---	**ppelech**	exactly, just right
yaab	**yaabach**	much, many
---	**zacach**	much, many, a lot

Examples:

Zen bekech le zumo. "That rope is very thin."
Hach yaabach dios botic tech. "Thank you very much."
(Literally: "God pays you very much."
Teche chen zacach than ca betic. "All you do is talk a lot."

While working on the Bocabulario de Maya Than de Viena (BMTV) with René Acuña we became aware of these suffixes, so when we came to the words **kinich**[1] and **kinch**[2] we began to suspect that the **ich** is actually not the word for "eye / face" but rather was part of the adjectival suffix complex -V**ch**.

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[1]BMTV: Fuego de el çielo, como el que des[c]endió sobre Sodoma y Go[m]orra: kinich kak ek. ¶ Quemóse en el fuego de las mugeres el q[ue] no se q[ue]mó con el fuego de el cielo con q[ue] se auía q[ue]mado el pueblo: eli tu kakil cʰuplalob maili tu kakil kinich kak ek elçi cah cuchie.

Note that in this instance it would make little sense to translate **kinich** as "sun-eye", but perfect sense to translate it as "powerful".

[2]BMTV: Ydolo de las crueldades, a quien los de Campeche sacrificaban sangre humana: Kinch Ah Aban [.l.] Kinch Ahau Haban.

BMTV: Ydolo, otro q[ue] adoraron, que fue hombre, por aber allado el arte de las letras desta tie[rr]a: Ytzam Na, Kinch Ahau

From the second of these two entries from the BMTV it appears that **Kinich Ahau** and **Itzam Na** are alternative names for the same deity. As confirmation of this, see Beltrán's *Arte*, p. 50: el primero que hallò las letras de la lengua Maya, è hizo el computo de los años, meses, y edades, y lo enseño todo à los Indios de esta Provincia, fue un Indio llamado **Kinchahau**, y por otro nombre **Tzamna.**

In part, one of the reasons why we came to this conclusion is that some of these -V**ch** words contract as follows:

cilich	**cich**
halach	**hach**
kinich	**kinch**

Examples:

cichcelem, **cichpam**	beautiful (male / female)
ix cich ahau	holy queen (a reference to the virgin Mary)
hach nohoch	very big
kinch ahau	powerful lord

Kinich Ahau

(**kin**: T544, **ben-ich**: T168, **ahau**: T130)

There is another group of words, often derived from verb roots, which form adjectives by appending the suffix -**ben**:

coch (to widen)	**cochbaben** (wide)
kux (to chew)	**kuxben** (chewy)
mach (to grab)	**machben** (grabable)
ppiz (to measure)	**ppizben** (measurable)
tumul (new)	**tumben**, **tumulben** (new)
tzic (to respect)	**tzicben** (respected, venerated)
uch (long ago)	**uchben** (old, ancient)

Example of usage:

cochbaben be "wide road"

Tin kamah a tzicben huun fecha 27 ti le mez dzocilo. "I received your venerated letter dated 27 of last month."

Tene cin betic in col yokol le uchben muulobo. "I make my garden on the ancient mounds."

There may be some relationship between the adjectives ending in -V**ch** and those ending in -**ben**, based on a commonly occurring pair of hieroglyphs referred to as the **ben-ich** affix, Thompson 168.[3] It should be noted that while the -**ben** and -V**ch** suffixes appear to function in a similar manner, in the Yucatecan Mayan language there seems to be no instance where a root word which takes one of these two suffixes can take the other.

ben-ich

[3] The more recent thinking on T168 is that it is to be read **ahau** or **ah po**.

Given that there is a closely allied word **kinam**,[4] meaning "power" or "respect", the conclusion is that the correct meaning of **kinich / kinch** is "powerful, respected".

Concering God G, whose Yucatecan Mayan name is thought to be **Kinch Ahau / Kinich Ahau**, as noted above the various parts of his hieroglyph are T544, T168, and T130. T544 has long been considered to be **kin**, and T168 until recently was called the **ben-ich** glyph because of its two parts as noted above. (See footnote 3 on page 100 for the recent readings for T168.) That leaves T130.

T130 has had various readings attributed to it.[5] However, it is interesting to note that T130 is very similar to representation of seated lords in Aztec codices:

T130

Boturini, p. 20

Becker, p. 2-03

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[4]BMTV: Respeto o temor reuerençial que a uno se tiene: kinam [.l.] tibib.

CMM: Kinam: el temor y respecto que vno causa. ¶ binan v kinam dios yetel yalmah thanil Dios teex: ya no teneis temor de dios ni de sus mandamientos. ¶ manaan v kinam batab teex: no teneis temor del caçique.

CMM: Kinam: cosa venerable y respectable. ¶ kinam in yum ich cah: venerable es mi padre en el pueblo. ¶ kinam v pacat, kinam v uich: tiene vista y rostro venerable que le respectan.

CMM: Kinam: fuerça, reziura, rigor, y fortaleza. ¶ v kinam kak, kin, chacauil: la fuerça y fortaleza del fuego, del sol, de la calentura. ¶ v kinam vino: la fuerça y forteleza del vino. ¶ De aqui: ya v kinam: cosa muy fuerte. ¶ ya v kinam yuxul ppizte: fuerte y rezio es el agi ppizte; sientese mucho quando le cogen.

As a side note, another word which appears to be related to **kinich / kinch** is the word **kinchil**, often glossed as "innumerable".

[5]*The Decipherment of Ancient Maya Writing*, p.499: Based on numerous meaningful readings by most researchers, T130 is accepted as wa (first by Lounsbury 1973: 138); in addition, several authors have also proposed secondary sound values (Justeson 1984: 326 Vb; Fox and Lounsbury [in Justeson 1984: 326]; "final w as reflex of earlier b"; Dütring 1985: 106f. aan). MacLeod, in her investigations of the verb morphology in the hieroglyphic script, cites instances from Chorti for the formation of a passive tense ending in -wa (1984: 79):

a	-	pa'an	-	wa	it is dug
3.Sg.E	-	DIG(inc)		pas.	

Examples of this construction of the passive form are nevertheless very rare. Compared to the frequency of suffixation of hieroglyphic verbs, which are apparently not positional (MacLeod 1984: 246), with T130, we should ask the question, if Tl30 next to wa cannot also represent a morpheme, that is, a suffix of a verb with a transitive root. In Yucatecan of the Colonial Period the subjunctive ending of verbs with transitive roots (Vb(tr)3; cf. Smailus 1989:51) was V'b. In certain contexts the subjunctive aspect can indicate a very distant past.

In particular, notice the seated position of the lords and how their capes, called **zuyem** in the Mayan language of Yucatan, are draped over the knees, and the similarity of these capes to lower portion of T130 in form.

Given the discussion in footnote 5 on page 101, it seems possible to make the case that in certain instances the reading of the hieroglyphic particle T130 is **au** = "lord"[6] and that in this instance, when combined with T544 and T168, the reading would be **ahau**. Thus, as mentioned above, the reading for 168:544.130, is **Kinich Ahau**, which is a reading which has a long history of acceptance in Yucatan, and this reading is phonetically substantiated by the hieroglyph of God G.

God G: Kinich Ahau
Dresden, p. 11b

God D: Itzam Na
Dresden, p. 10c

(See footnote 2 on page 99 for commentaries about the equivalence of these two gods.)

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[6] From the various Mayan languages it appears that the root word for "lord, ruler" is **au**. In Yucatecan Mayan the word for "male ruler / lord" is **ahau** , which can be view as **ah** = "male" and **au** = "ruler", and the female counterpart is **ix ahau**., in which the prefix **ix** = "female". However, as noted by Thompson (1960, p.87), in other Mayan language such as Chaneabal / Tojolabal, Mam, Aguacatec and Jacaltec the word for "moon", and by extension, "moon goddess / lady", is **ixau**, from **ix** = "female" and **au** = "ruler". **Ixau** would be a more exact counterpart to **ahau**, giving reason to think that the root word for ruler is indeed **au**.

Concerning the **u / v – b** shift: in the Colonial manuscripts produced in Yucatan, both Spanish and Mayan: the symbols **u**, **v** and **b** were used interchangeably in Colonial manuscripts. This was particularly true of **u** and **v**, both as the vowel "u" and the consonant "w". For the **u – b** shift, a good example of **u** being used in place of **b** is in the Crónica de Oxkutzcab, where the word for "year", **haab**, is spelled **hau**. Furthermore, in modern Yucatecan Spanish and their loan-word counterparts in Mayan, Spanish words written with the consonant **v** are pronounced as though they were written with **b**. So, for example: **vidrio** is pronounced **bidrio**. Thus, while in footnote 5 it is stated that T130 is the "final w as reflex of earlier b", this would not be out of keeping with consonant shifts in the Yucatecan languages, Spanish and Mayan.

Comparison of the various aspects of the Supreme God

It is apparent from the above discussion that according to the Colonial sources god D, Itzam Na, and god G, Kinich Ahau, are two manifestations of the same deity. As shown in footnote 2 on page 99, Itzam Na and Kinich Ahau are alternative names for the personage who brought language, writing and the calendar to the Maya. Cogolludo adds to this list of knowledge brought to the Maya by the Itzam Na aspect of this deity by stating that he gave names to all of the place names in Yucatan.[7]

It is interesting to note that in Landa's *Relación*, which gives the names of the patron gods for the year bearers, that the two deities given above are included as patron gods:

Kan[8]	Kinich Ahau
Muluc	Itzam Na[9]
Hiix	Chacmitan Ahau[10]
Cauac	Bolon Dzacab[11]

Kan	Muluc	Hiix	Cauac
God G: Kinich Ahau	God D: Itzam Na	God A: Cizin	God K: Bolon Dzacab
Dresden p. 11b	Dresden p. 10c	Dresden p. 11a	Dresden p. 12c

[7] Cogolludo, I:232: Con las del occidente vino uno, que era como sacerdote suyo, llamado *Zamná* (**Itzam Na**), que dicen fué el que puso nombres, con que hoy se llaman en su lengua todos los puertos de mar, puntas de tierra, esteros, costas, y todos los parages, sitios, montes y lugares de toda esta tierra, que cierto es cosa de admiracion, si así fué, tal division como hizo de todo, para que fuese conocido por su nombre, porque apenas hay palmo de tierra, que no le tenga en su lengua.

[8] As mentioned in footnote 11 on page 2, Landa was off by one quadrant in the presentation of the year bearers. This has been corrected here.

[9] "Lizard House", from **itzam** = "lizard" and **na** = "house". For further discussion see footnote 72 on pages 19-20.

[10] "Great Lord", from **chacmitan** = "great, robust, strong" and **ahau** = "ruler, lord". It is assumed that this is one of the alternative names of **Cizin**, the lord of the underworld. Landa spells this name as **Uac Mitun Ahau**, but as Thompson points out (1970: 302, 321), this is probably a scribal error. Given that the spelling of Mayan words by Landa, as well as by the other Spanish chroniclers of the Colonial period, is often off the mark, and at times hopelessly so, this is not an unreasonable assumption.

[11] "Nine Generations", from **bolon** = "nine" and **dzacab** = "generations, descendents, particularly of the mother's line." or alternatively "Eternal". See CMM: Bolon dzacab: cosa perpetua

With the exception of Chacmitan Ahau, the Dresden Codex, pp. 25b-28b, confirms that these four gods were year bearers.

The name of the god mentioned by Landa, Chacmitan Ahau / Uac Mitun Ahau, is problematic. Not only is it given as Uac Mitun Ahau in Landa, which, as shown in footnote 10 on page 105 appears to be in error, but also there is no mention of him using either name in the Colonial texts such as the Books of Chilam Balam. There is, however, mention of a deity which appears to be related to the underworld named Ah Chacmitan Cħooc.[12] It is interesting to note that **cħooc** is a variety of salamander, which might indicate some relationship to **itzam** = "lizard" in the name of Itzam Na.

There are two references to Ah Chacmitan Cħooc in the Books of Chilam Balam which are of some help in identifying who this personage is. The first one is in the prognostication for the year 6 Cauac:

Ti ual tu kinil, tu haabil uale maya cimlal, yetel u hach pictamba Ah Uucte Cuy yetel Ah Chacmitan Cħooc.[13]

> (Then perhaps is the time, the year of pestilence,[14] and Ah Uucte Cuy[15] and Ah Chacmitan Cħooc are much to be found everywhere.)

The second is in the prognostication for the day 1 Ahau: [16]

Hunil Ahau: lob. U hokol Chacmitan Cħooc tal metnal ti kin, ti akab. U nupp tun Cizin.[17] Chetun maya cimil yani.[18]

> (1 Ahau: bad. Chacmitan Cħooc comes out of the underworld by day and by night. Cizin knocks rocks together. There is sudden pestilence.)

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[12] The two parts of this name are given in the BMTV: **Chacmitan**: Grande cosa, como hambre, sed y trabajo: chacmitan vijh, vkah .l. numya. ¶ Grandes y recios son los tormentos del Infierno: chacmitan v numyail Mitnal. / **Cħooc**: Salamanquesa que, con grasa que tiene, enponçoña: cħooc .l. cħooc can.

[13] *Post Conquest Mayan Literature* (PCML): lines c483-484. Note that Ah Chacmitan Cħooc appears in a Cauac year which is in agreement with the information provided by Landa.

[14] **Maya cimlal** = "Mayan death", a way of saying "pestilence, plague". See BMTV: Pestilencia: ban cimil, banban cimil .l. maya cimilal.

[15] **Ah Uucte Cuy** = "7 Owl", who along with 1 Owl is thought to be a messenger for the lords of Xibalba, the underworld. See CMM: Ah cuy: especie de lechuças.

[16] The day 1 Ahau, as noted by Thompson (1970: 302-303), could be associated with the god 1 Ahau, which is given by Landa as "the prince of all the devils, whom all obeyed" (Tozzer, 1941: 132), from the Spanish original: "príncipe de todos los demonios, al cual obedecían todos."

[17] Variants of the phrase **u nupp tun cizin** appear four times in the Colonial texts. See BMTV: Encontrarse y herirse unas piedras con otras, como suçedió en la Passión de Christo: cohlom tanba .l. nupp tanba. Concerning the name Cizin: it is interesting to note that the BMTV shows Xibalba to be an alternative name: Encantador que habla con el Demonio: ah vay Xibalba .l. ah cunil Cizin. / Diablo: xabalba, xibalba .l. cizin.

[18] PCML: lines b312-313.

It is interesting to note that three of the four gods shown above have a signature feature in how their eyes and brows are depicted. A standardize version of this depiction is shown here. Note that the eye pupil is somewhat reptilian in its depiction. Another feature is the scroll with the two dots under the eye which also appears in the hieroglyph for Itzam Na, T1009c.

The gods which have this eye and brow feature are Bolon Dzacab, Kinich Ahau and Itzam Na. It should be noted that another god which has the same eye and brow feature along with many other similar features such as clothing and accessories is god B, Chac, shown at the right.

Dresden. p. 10b

Another interesting item of note is that there is an infix in two of the hieroglyphic representations of names of these gods, those of Itzam Na and Cizin, and this same infix is shown on the back and the leg of Bolon Dzacab.

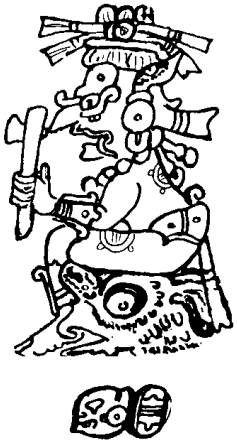
Itzam Na
T1009c

Cizin[19]
T1047a

Bolon Dzacab

In the Dresden some of the depictions of god B, Chac, particularly later in the codex, show the same or similar body markings.

The conclusion which can be drawn from these various points about similarities of specific features is that it would seem that the four deities named as the patron gods for the year bearers and Chac are all aspects of the supreme or creator god.[20]



Dresden, 38c

[19] The name **Cizin** = "devil" seems to be verified on page 87c of the Madrid where the hieroglyphs T146.102:116 are given three times along with a depiction of the deity. See Taube (1992, p. 14).

[20] Thompson (1972, p. 31) makes a similar observation: "Confusion arises from the fact that all – or almost all – Maya deities had several names, some depending on their particular aspects." He then references his 1970 publication where there is a fuller discussion of the gods. See in particular Chapter 7.

The Appearance of Bolon Dzacab, Kinich Ahau, Itzam Na and God A (Cizin / Ah Chacmitan Cħooc / Ah Chacmitan Ahau / Hun Ahau) In the Colonial Texts

God K: Bolon Dzacab

The four mentions of Bolon Dzacab as a deity are as follows:

f153 U teppah u yinah Yax Bolon Dzacab.
(The seed of Green Bolon Dzacab bursts forth.)[21]

f295 U kinil u yemel u than Ah Bolon Dzacab Miatz.[22]
(At this time the word of the Bolon Dzacab the wiseman descends.)

f318 Ma ix kuchi cħabnaci ku metnali, Bolon Dzacab.
(It did not get to the point where Bolon Dzacab, the god of the underworld, was created.)

rb207 Ix Bolon Dzacab in uayazba, cen ti ualhen, cen a na.[23]
(Ix Bolon Dzacab is my symbol, I who stand before (you), I who am your mother.)

It is interesting to note that in the Bacabs, page 207, Bolon Dzacab is given the feminine prefix **Ix**.

God G: Kinch Ahau / Kinich Ahau

Both curiously and interestingly enough, for all of the mentions of Kinch Ahau / Kinich Ahau in the early historical commentaries by Landa, Lizana and Cogolludo, and in the vocabularies of Vienna and San Buenaventura as mentioned by Beltrán, there is not one reference to him in the Books of Chilam Balam. However, in the Ritual of the Bacabs there are various references to Kin Chac Ahau, who, since the name is given along with the

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[21] Roys translated this as follows: "He wrapped up the seeds <composing> this first Bolon Dzacab,..." For possible meanings of **teppah**, **inah** and **yax** see the following: CMM: Teppel: acento en la primera; ser embuelto y ser amortajado. ¶ Item: rebentar la trox o carga o cosas liadas. ¶ Item: hendirse algun madero o pared. / JPP: Teppah: v.a. reventar, hacer explosion, dividirse en pedazos sogas, hilos, cuerdas ó cosas semejantes. / BMTV: Semilla o simiente para sembrar, y la de la generación: inah .l. hinah./ DMM: Siminete del varon: yinah xiblal; v koy v kaçal; mehen çim. / CMM: Yax: en composicion de nombre; cosa primera. / DMM: Verde cosa: yax; yayaax.

[22] There is disagreement between the texts how the final word should be read. While the Pérez and Tizimin have **miatz** as shown, page 45 of the Chumayel reads "tij Ca emi v than: Bolon dzacab v ni yak =" which Roys translates as "to the tip of his tongue". See BMTV: Pico de lengua: nij; v nij ak.

[23] For a couple of possible meanings of **cen** in this context see CMM: Cen: yo que soy. / Cen /o/ hi cen /o/ vah cen: lo que. The word **uayazba** also has various meanings. For an assortment of examples see BMTV: Adiuinar por sueños o signos: vayazba. / Figura o ymagen: vayazba... / Señal, por conjetura de lo que a de benir: vayazba. CMM: Vayazba: figura o parabola. / Vayazba: la figura, opinion, o calidad en que vno se tiene. Thus, a possible alternative translation could be "I prophesy Ix Bolon Dzacab in my dreams who stands before me, I who am your mother."

name Itzam Na on page 86, it can be assumed that for some reason the writer of the Bacabs used Kin Chac Ahau in place of Kinch Ahau / Kinich Ahau. The name Kin Chac Ahau is also given as an alternative name for the paired deity Colop u Uich Kin, Colop u Uich Akab. Given that Kin Chac Ahau is paired both with Itzam Na and Colop u Uich Kin, Colop u Uich Akab, it is not inconceivable that Colop u Uich Kin, Colop u Uich Akab is an alternative name for Itzam Na. These references are numerous in the Bacabs, so only a couple of example are given here:

rb045 U ch̓abech Kin Chac Ahau, Colop u Uich Kin, Colop u Uich Akab
(You are created by Kin Chac Ahau, Colop u Uich Kin, Colop u Uich Akab.)[24]

rb084 Ti tu ch̓aah yicnal u yum Kin Chac Ahau, Itzam Na
(There he took it next to his father Kin Chac Ahau, Itzam Na.)

God D: Itzam Na

Once again, the importance imparted to this deity in the colonial historical writings is not born out by the Books of Chilam Balam, there being only two references to him there:

d528 Itzam Na, Itzam Tzab, Chac Zabin u uich ti yahaulil.
(Itzam Na, Itzam Tzab,[25] Chac Zabin[26] is the face which rules.)

j371 Ahom Itzam Na Kauil.
(Itzam Na Kauil[27] shall awaken.)

There are however seven references to him, often in conjunction with Ix Chel, in the Ritual of the Bacabs. A couple of examples are given here. Note that the world direction colors are associated with Itzam Na and Ix Chel:

rb065 can kin ix bin cu lothic u uich Chacal Itzam Na
(Four days they say it shrivels the face of Red Itzam Na.)

rb076 can kin ix bin cu lothic u uich Zacal Ix Chel
can kin ix bin cu lothic u uich Zacal Itzam Na
(Four days they say it shrivels the face of White Ix Chel.
Four days they say it shrivels the face of White Itzam Na.)

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[24] **Colop u Uich Kin, Colop u uich Akab**: BMTV: Idolo maior que tenían estos indios de esta tierra, del qual decían proceder todas las cosas y ser él incorpóreo, y por esto no le hacían ymagen: Colop v vich Kin.

Roys/Bac/145: Colop-u-uich-kin ("snatcher-of-the-eye-of-the-sun" or "-day"). "The principal idol [god], which the Indians of this land had, and from whom they said all things proceeded, and who was incorporeal, hence they made no image of him" (BMTV, f. 129r.). Cited in incantations for various seizures, kanpedzkin at the head of a man (kanpedzkin tu pol uinic), and a worm in the tooth (nok ti co) (MS pp. 34, 35, 45, 52, 108, 134, 172). Apparently a solar-eclipse god.

[25] **Itzam Tzab**: "Lizard Rattle"

[26] **Chac Zabin**: "Red / Great Weasel"

[27] **Itzam Na Kauil**: "Lizard House Sustenance". See footnote 103 on page 28 for more on **Kauil** and his relationship with **Itzam Na**.

As already noted above, god A puts in an appearance in the colonial texts under various names, in particular Cizin and Ah Chacmitan Cħooc. There are other names as well such as Xabalba, Hun Ahau and Ah Uuc Zatay. A couple of examples of the appearance of aspects of god A were given above in the discussion about this deity. Some further sample sentences are given here:

b248 Uaxacil Lamat: lob; u nicħ co Hun Ahau, coil u uich
(8 Lamat: bad; Hun Ahau bites his teeth, his eyes are demented.)

b364 Hunil Cimi: lob; u lob kin ti xabalbaob, Cizinoob,
(1 Cimi: bad; a bad day for those of the underworld, the Cizins,)

e078 He katunil tu culhi lae; u katunil numya, u katunil u tza Cizin
(This is the katun which is seated; a katun of misery, a katun of Cizin's strife)

j441 Ci bin u than Cizin tiob tumenel Ah Uuc Zatay, u kaba Cizin,
lay cahaan Chun Caan, Ich Caan Ziho.
Ti bin cu cħaal thanoob te Chun Caane; ti cahaan Ah Uuc Zatay.
Ya tu yol u talel dzuloob tumen bin hauac u tepal Cizin.
j445 Ca ix tun hopp u xocicoob tu huunil ichil ah ual kin.
Licil yilabal u talel koch cuchi yoklal tu yol,
yan Hun Ahau caanal, Hun Ahau ti cab tu thanoob cuchie.

(So says Cizin to them because of Ah Uuc Zatay,[28] the name of the Cizin, / the one who lives at the pyramid Chun Caan,[29] in Ich Caan Ziho.[30] / There they say the prophecy is taken at Chun Caan, where Ah Uuc Zatay dwells. / There is sadness at the coming of the Spanish because the reign of Cizin was ended. / Then they read it in the book which is in the book of prophecies.[31] / It was seen that the obligation came because of their spirit, / Hun Ahau in the heaven, Hun Ahau on the land they used to say.)

.

[28] "7 mortal one", from **uuc** = 7 and **zatay** = "mortal, finite". See for example BMTV: Mortal cosa, que muere o a de morir: ah cimil, çabyom, çaatay .l. hauay. / CMM: Çaatay: perecedera que se ha de perder y acabar.

[29] Note that in lines j441 and j443 **Ah Uuc Zatay** is also called a **cizin**, and is said to reside in the pyramid Ah Chun Caan ("the base of the heaven"), which was located just east of the market place in Mérida, in the area now occupied by La Casa del Pueblo.

[30] **Ich Caan Ziho**: "In Heaven Born", the Mayan name for Mérida, today called simply **Ho.**

[31] **Ah ual kin**: perhaps meaning literally "leaves of the days", from **ual** = "broad leaf". See CMM: Ual: hoja de libro o de papel, de tauaco, platano, y de cosas assi.

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The Appearance of the God Lahun Chan in the Yucatecan Colonial Mayan Texts, the Dresden Codex, and the Tro-Cortesianus Codex

by David Bolles

This paper will look at the known appearances of **Lahun Chan** in the Colonial Mayan texts and the Dresden Codex, and postulate his appearance in the Tro-Cortesianus Codex.

The Dresden Codex

The name **Lahun Chan** can mean either 10 Sky or 10 Snake, from **lahun** = 10 and **chaan/caan** = sky or **chan/can** = snake. On page 47b of the Dresden Codex there is a picture of a deity which is generally considered to be that of **Lahun Chan** along with his name in a hieroglyphic representation (fig. 1). The hieroglyphic representation for this deity as given in the Dresden is made up of the number **lahun** = 10 and the sky glyph = **caan / chaan**.

Figure 1

This hieroglyphic representation is also given previously in the Dresden on page 24, column C (cartouche C6) (fig. 2). There is also another hieroglyphic representation of the name **Lahun Chan** to be found on a capstone from a tomb at Chi Cheen Itza. (Thompson, fig. 14,4) (See figure 3 for Thompson's rendering of these items.) As is noted by both Roys[1] and Thompson[2], **Lahun Chan** seems to be a patron god of the planet Venus since he appears in that section of the Dresden which deals with the planet Venus, called **Lamat** in Mayan.

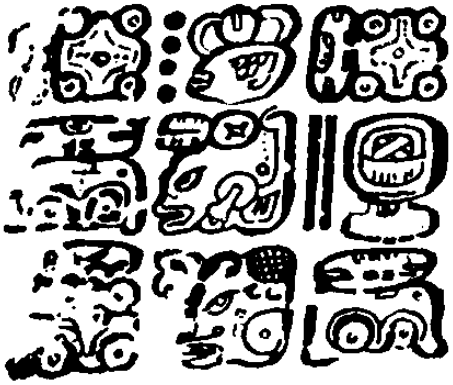

Figure 2

[1] See End Note 1.

[2] See End Note 2.

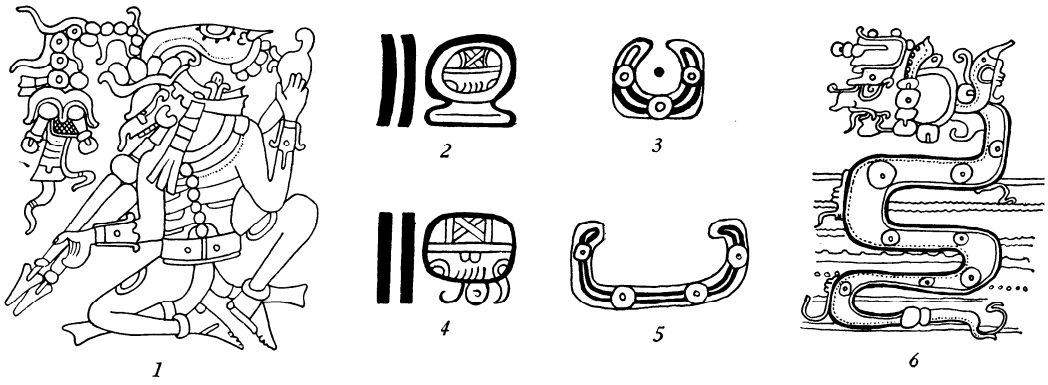

Figure 3: various Lamat-related items in Thompson's Figure 14.

1. Lahun-Chan Venus God. Dresden 47b.
2. Glyph of Lahun-Chan. Dresden 47b.
3. Glyph for water. Paris 16.
4. Glyph of Lahun-Chan. Chichen 34.
5. Picture of water decorated with jade disks. Dresden 36c.
6. Serpent with jade disks on body and head of God B. Dresden 35b.

It is worth noting that in item 6 there is a representation of a serpent with the head of God B, **Chac**. This may be of some significance when we look at the depictions of serpents in the Tro-Cortesianus below. Especially significant is the head shown in item 6 in comparison to the head shown on the serpent in Tro-Cortesianus 10b.

The Yucatecan Mayan Texts

In the Yucatecan Colonial Mayan texts there are the following entries which give the name **Lahun Chan**:[3]

d314 Lahun Chan u uich ti yahaulil.
f029 Cħabon u numteil cabi, u tzucteil cabi tumenel Lahun Chan.
f199 Cumtal u caah Lahun Chan, (Ek Piltec, tu chikin cab).
f339 Chac u co ol yan ti Lahun Chan u uich.

Line d314 gives **Lahun Chan** as the aspect or guardian deity of 10 Ahau Katun. The phrase "God X **u uich ti yahaulil**" (God X is the face which rules) is a phrase which is common to most of the Series I Katun prophecies. The translation of line d314 is:

d314 "**Lahun Chan** is the face which rules."

It should be noted that one of the principal features of 10 Ahau Katun is that it is a katun of hunger.

Line f029 has been translated by Barrera Vasquez as: "Entonces vendrá la castidad y la abstinencia para los grandes meleros lascivos y libidinosos de Lahun Chaan, Diez-Poderoso." (*Libro de*..., p. 93) However I feel that Barrera has misinterpreted the phrases "**u numteil cab**" and "**u tzucteil cab**" as well as the verb "**cħabon**". Roys has translated the phrase "**u numteil cab**" as "the entire world" (Chumayel, p. 102). So far neither the phrase "**u numteil cab**" nor the phrase "**u tzucteil cab**" have

[3] The line numbers are those from *Post Conquest Mayan Literature*.

turned up in any of the Yucatecan Mayan vocabularies. However, there is the word "**tzucub**"[4] which is always written as "**tzucubte**" in the Colonial texts. If Roys is correct in his interpretation of "**u numteil cab**" as being "the entire world", then "**u tzucteil cab**" could well be "the provinces of the world".[5] If this is true, then the sentence is "(Verb) the entire world, the provinces of the world because of/by **Lahun Chan**.

Unfortunately there are three candidates for the translation of the word "**cħabon**", the verb given in the Tizimin, or alternatively "**cħaan**", the verb given in the Códice Pérez.[6] They are "shall be taken",[7] "shall be taken from this life",[8] "shall create".[9] There is also the verb in the Calepino Maya de Motul (CMM): "Cħab.tah.ba: abstenerse de deleitos carnales, ser casto y hazer penitancia." This is the verb used by Barrera above, but notice that it is a reflexive verb, and the reflexive particle "**ba**" is missing from the above sentence. Furthermore, both of the verbs with the verb root "**cħab**" have to be discounted if the Códice Pérez is correct in giving "**cħaan**".

Based on the fact that this sentence is given in a text in which dire events are happening both before and after this sentence my conclusion is that "**cħabon**" = "shall be taken from this life" is what is meant here. Thus the translation would be:

> f029 "The entire world, the provinces of the world shall be taken from this life by **Lahun Chan**."

Line f199: This sentence is part of a ritual involving the four world directions. For all the other world directions a four-in-one deity, **Ah Piltec**,[10] is named, namely **Chac Piltec**, **Zac Piltec**, and **Kan Piltec**. The name **Lahun Chan** is given in place of **Ek Ppiltec**, and thus perhaps **Lahun Chan** is the specific name of **Ek Piltec**. Also in this sentence the world direction is omitted, but Roys surmises, and correctly so I think, that the world direction should have been included in the sentence. Thus the reconstructed sentence would be translated as:

> f199 "**Lahun Chan**, **Ek Piltec**, is seated in the western part of the world."

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[4] Calepino Maya de Motul (CMM): Tzucub: provinçia.

[5] See also CMM: Tzuc: cuenta para pueblos, para partes,...

[6] Quite frequently the Códice Pérez will give the third form of a verb while the Tizimin will give the prophetic future form.

[7] CMM: Cħa, cħaah, cħaab: tomar, llevar, o traer.

[8] CMM: Cħa, cħaah, cħaab: llevar desta vida o matar, propia de las enfermedades.

[9] CMM: Cħab.tah.t.: criar algo de nada, que es propia de dios.

[10] The name **Piltec** is probably derived from the Nahautl word / name **piltecutli** = "nobleman", from from **pilli** = "child" and **tecutli** = "nobleman, gentleman". **Piltecutli** is also a family name found in the early records from Tlaxcala. For one of the meanings of **piltec** see the Bocabulario de Maya Than de Viena (BMTV): Ambición y brío de mandar: piltec.

Line f339 appears in the middle of an isolated prophecy for 11 Ahau Katun. If this sentence was written "**Chac u co ol yan tu uich Lahun Chan**." then the translation would be straight forward:

f339 "Great is the madness which is in the eyes/face of **Lahun Chan**."

The placement of the clause "**u uich**" after **Lahun Chan** clouds this translation, because such a placement, i.e. "**Lahun Chan u uich**", should yield the translation "**Lahun Chan** is his face". While I am not happy with this grammatical construction I can not seem to get any other meaningful sentence out of the Mayan text. Roys incidentally translates this sentence as "Mighty are his teeth; his face is that of **Lahun Chan**.", but he notes the alternative translation for "**Chac u co ol**" as "Great is his madness". It should be noted that there is no indication in the colonial dictionaries or texts that **co ol/cool** should be translated as "teeth" and thus I think Roys' translation "Mighty are his teeth" should be discounted.

Notice that in these four sentences from the colonial texts there is no indication of whether the name **Lahun Chan** means "10 Sky" or "10 Snake", nor does the context in which these sentences are to be found give any indication. Furthermore, it seems to me that it would be difficult to infer from these passages that **Lahun Chan** has any special relationship with the planet Venus, this in contrast to the Dresden where the relationship seems very apparent.

The Tro-Cortesianus Codex

In the Tro-Cortesianus there are various examples of a sky snake labeled with the markings **lahun** = 10 and the Chichan infix **chan** = snake. (Pages 3a, 5a, 10b, 12b, 13b-18b, 19a, 20a, 30a, 66b - 67b. See figures 4 through 12.) On almost all of these snakes there is a one-to-one correspondence between the **lahun** markings and the **chan** markings. All of these snakes except for those on pages 66b and 67b are depicted with rain. The snake depicted on page 66b has an unidentified god issuing from his mouth holding the glyphs **yax kin**, perhaps in this case the symbol for drought.[11] The snake depicted on page 67b has a symbol issuing from its mouth which perhaps can be read "**nocaan u uich caan, nocaan u uich kin**".[12] The snake is seated on a thigh bone and **Cizin**, the god of death, is in the background. Perhaps this is carrying on the theme of 66b, indicating that while there are clouds there is little or no rain resulting in famine.

It should be noted that there are also snakes in the Tro-Cortesianus which have the **chan** markings or markings similar to the **chan** markings but which do not have the **lahun** markings, so certainly the **lahun** marking is not an integral counterpart of the **chan** marking. (Pages 4b, 9, 31b, 34, 35, 36, 52c. For examples see figures 13-14.)

[11] CMM: Yax kin: el estio y otoño desta tierra en que no llueve y se secan y agostan los campos tiempo de seca.

[12] BMTV: Añublado el çielo: nocaan u uich caan, nocaan u uich kin.

An Inconclusive Conclusion

The question is whether this snake which is labeled with the **lahun** and **chan** markings is to be read as **Lahun Chan**. Unfortunately, there are no textual hieroglyphs accompanying these snakes which confirm the reading of **Lahun Chan**. Further, the colonial texts are of little help in giving us a firm idea of who **Lahun Chan** is, although lines d314, f029, and f339 (or the context in which these lines appear) do seem to indicate that there is an evil side of **Lahun Chan**, a factor which may be reflected in pages 66b and 67b of the Tro-Cortesianus. To make matters even more difficult, the snakes which carry these markings seem to be in no way related to the god **Lahun Chan** of the Dresden Codex. The only possible exceptions to this are to be found on Dresden pp. 35b and 36a. (See figure 15 for page 35b and figure 16 for 36a.) In these instances, as pointed out by Thompson, the bodies of the serpents carry jade markings which are related to the water glyph which in turn are related to **Lamat** and **Lahun Chan**.

End Notes

1) Roys, The Book of Chilam Balan of Chumayel
Page 101, Note 2 (f199)

Lahun Chaan is doubtless the same as the "Lakunchan" described by Cogolludo as an idol with very ugly teeth. Lahun means ten in both Maya and Chol, and chan means sky, heaven and serpent in Chol. The Maya word for sky is caan. It seems likely that Lahun Chaan is a borrowed foreign word and means the god of the tenth heaven. On page 47 of the Dresden Codex we find a picture (fig. 24) accompanied by a glyph composed of the number ten and an element which is generally accepted as the symbol of sky or heavens. The picture is that of a deity whose face resembles that of the God B, or rain-god; but it lacks the curved ornament over the nose, and instead of the protruding tooth at the side of the mouth there is a fleshless lower jaw. Also skeleton-like ribs are painted on the front of the torso. We recall that a fleshless jawbone is one of the symbols of the number ten on the monuments; but the figure appears to be the regent of the second Venus period in the Dresden Codex, and regent of the first of these periods in the Mexican Codex Bologna also has a fleshless lower jaw. Since the above passage in the Chumayel implies that Lahun Chaan was set in the west, the translator is inclined to believe that this god was closely connected with the appearance of Venus as an evening star. Cogolludo's mention of the "ugly teeth" may be a reference to the fleshless lower jaw in the picture (Cf. Cogolludo Bk. 4, Chap. 8).

2) Thompson, Mayan Hieroglyphic Writing
Pages 218-219

Let us first recall the augury in the first Kaua list the day Lamat, for that was the day of Venus. It reads: "Drunkard, deformed dog is his prognostic. The head of a jaguar; the rear of a dog. A meddler, a prattler, dishonest in his speech, an experimenter in mutual hatred, a sower of discord." That description exactly fits Lahun-Chan. Roys (1933, p. 101) notes that this name would mean "10 Sky" in Tzeltal, Chontal, and those other languages which often substitute **ch** for the Yucatec **c** (caan is "sky" in Yucatec). He points out that the glyph "10 Sky" accompanies the picture of a deity, previously identified by Seler as the Venus god, on Dresden 47, one of the pages dealing with the Venus cycle (fig. 14,1,2).

Lahun-Chan has a part in the story of the creation, as narrated in Chumayel (p. 46). We are told that he was envious, ribald, and insolent in his speech, and that sin was in his face and talk. He was forgetful of his father and mother; he walked abroad like one drunk, one without understanding, and there was no virtue in him. Mighty were his teeth (alternative translation, "Great is his madness"); his hands were claws (Roys, 1933, p. 105). Lopez de Cogolludo writes that he had ugly teeth (the spelling Lakunchan in the second and third editions is a misprint). The allusions to his mighty teeth and his claws suggest the jaguar, since the large canine is one of the identifying attributes of the jaguar in Maya art; the other details conform to the prognostication for the day Lamat. Let us see whether we can find any further reference to this unpleasant god.

The katun of the creation in which Lahun-Chan makes his disagreeable appearance is Katun 11 Ahau. Since deities recur at each return of the same katun, one would expect to encounter Lahun-Chan in other references to a Katun 11 Ahau. In a prophecy, which according to Chumayel (p. 64) is for the tenth katun but which Tizimin and Mani assign to the first katun, that is Katun 11 Ahau, there is indirect mention of this god. His head is said to be that of a jaguar, his body that of a dog; his tooth is long, his body is withered (like that of a rabbit in the Mani version). He is called Ah Chich, "the forceful one," in Mani; "9 Mountains" and Yuma-Une-Tziuit in Chumayel. Roys, who sees references to Quetzalcoatl in this passage from Chumayel, has interesting footnotes to his translation.

In Chumayel, page 87, there is another prophecy for Katun 11 Ahau. This has generally been taken as alluding to the second coming of Quetzalcoatl, but two mentions of a white (or artificial) circle in the sky suggests a reference to Quetzalcoatl as the Venus god. In one case the word for circle is replaced by a large O. The two conflicting sets of ideas can be reconciled: Lahun-Chan, if my thesis is correct, was the original Maya god of Venus; Quetzalcoatl, a later importation perhaps grudgingly accepted by the Maya, was also a deity of the planet. In time, we may suppose, the two were partly fused with resulting allusions to both in the prophecies for Katun 11 Ahau. References were made to Quetzalcoatl in the prophecies because those were partly directed to the new ruling caste with its Mexican affiliations; in Dresden, which was a new edition of a pre-Mexican book, Lahun-Chan seemingly is pictured, and so, too, is Quetzalcoatl.

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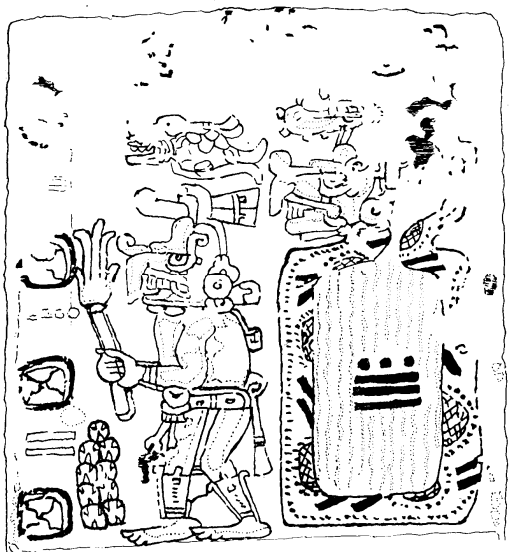

Figure 4: p. 3a

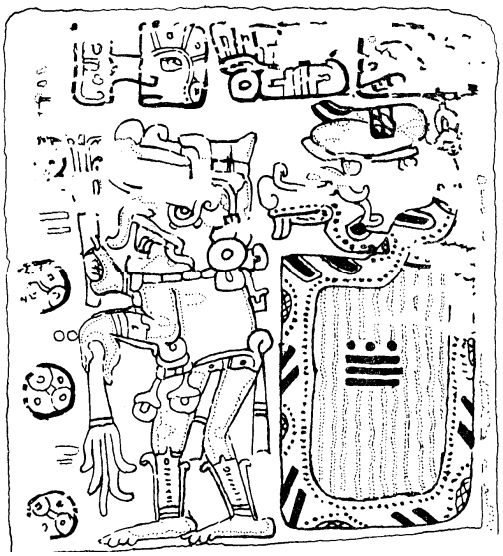

Figure 5: p. 5a

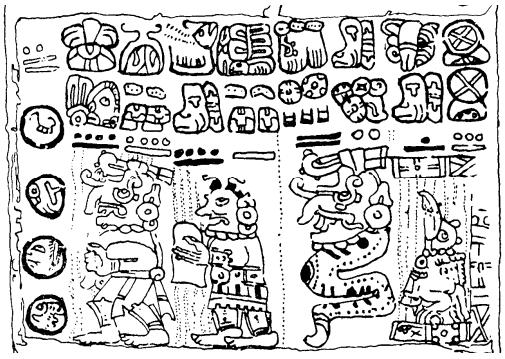

Figure 6: p. 10b

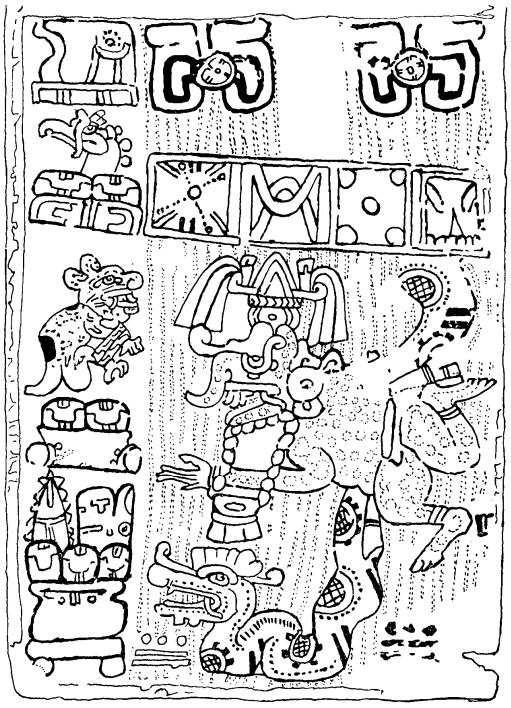

Figure 7: p. 12b

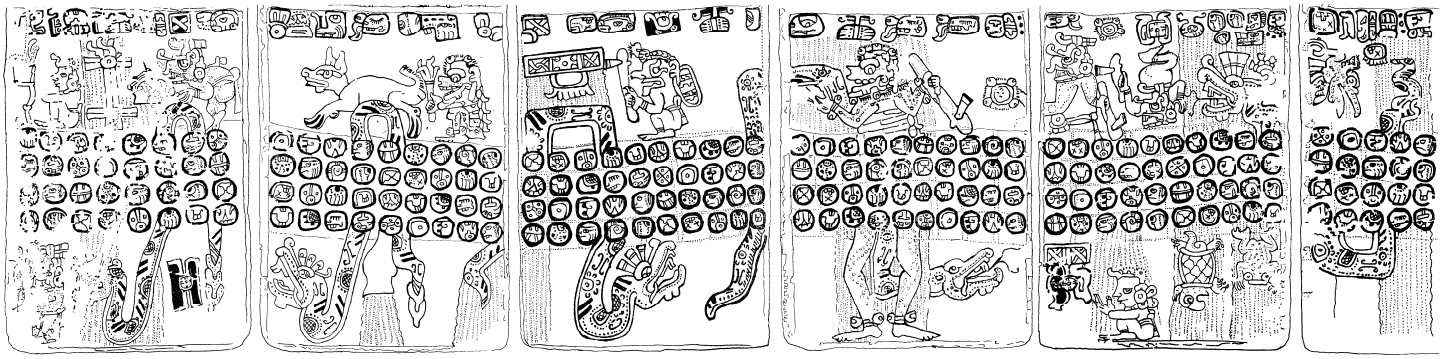

Figure 8: pp. 13b-18b

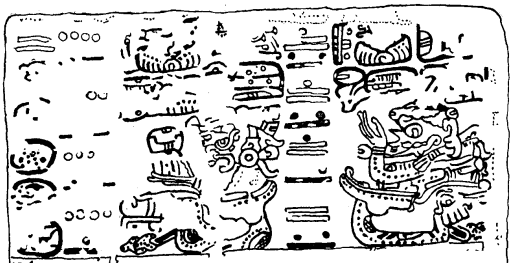

Figure 9: p. 19a

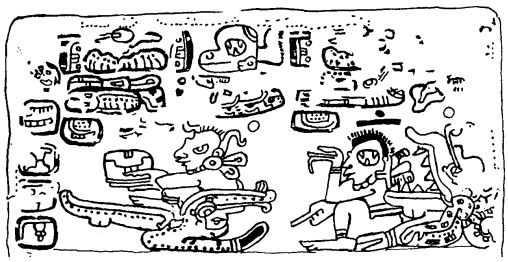

Figure 10: p. 20a

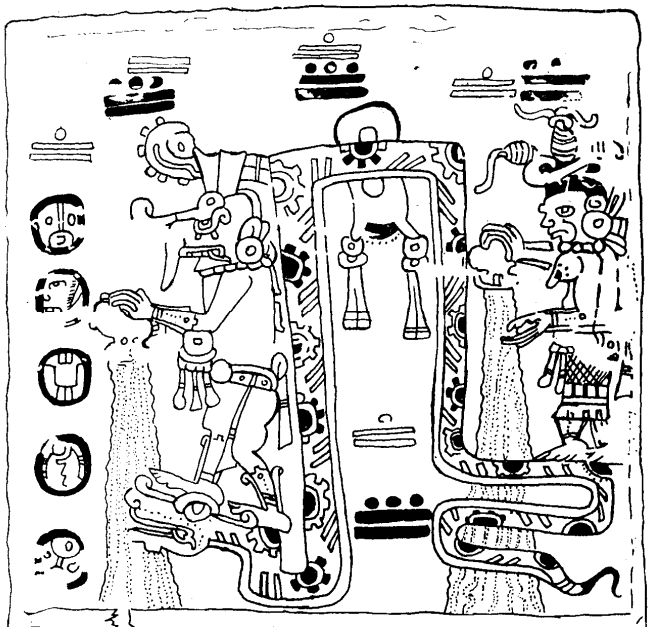

Figure 11: p. 30a

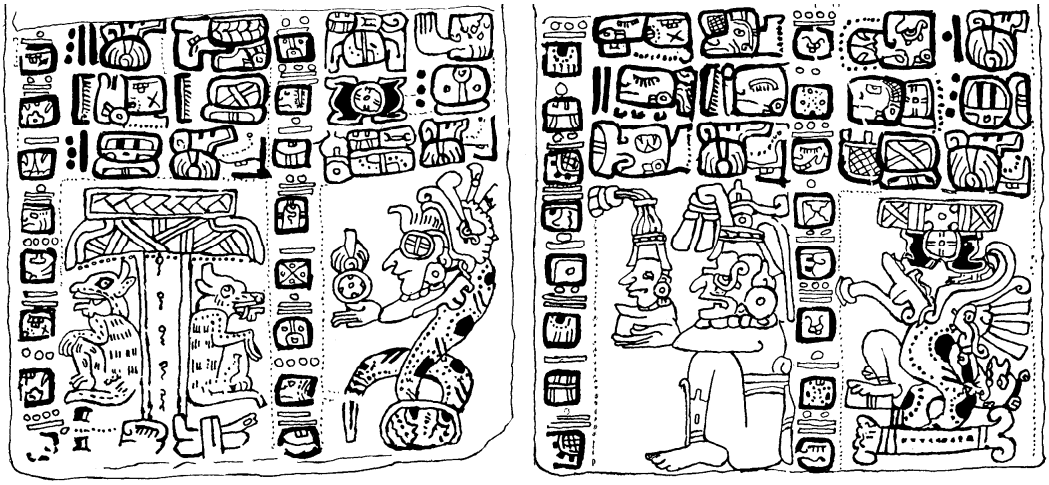

Figure 12: pp. 66b-67b

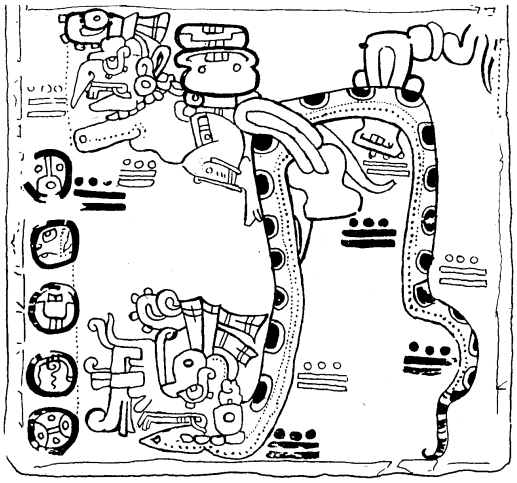

Figure 13, p. 31b

Figure 14, p. 36

Figure 15: Dresden, pp. 32b-35b

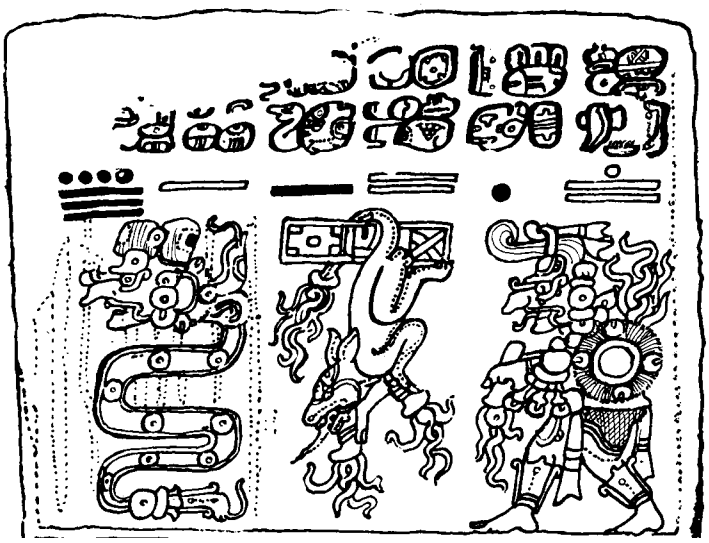

Figure 16: Dresden: p. 36a

The Mayan Calendar, The Solar - Agricultural Year, and Correlation Questions

By David Bolles
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It is generally accepted by Mayanists today that the Mayan calendar was a "floating" calendar, in which no attention was given to keeping the calendar in sync with the solar - agricultural year. As Michael Coe in his book *The Maya* puts it, the Maya had "a 'Vague Year' of 365 days, so called because the actual length of the solar year is about a quarter-day more, a circumstance that leads us to intercalate one day every four years to keep our calendar in march with the sun, but which was ignored by the Maya."[1] Earlier Thompson wrote that "The Maya made no attempt to intercalate days in the count of the years to bring the year of 365 days into conformity with the solar year. Such a correction would have played havoc with the whole orderly plan of the calendar and would have disorganized the elaborate system of lowest multiples of different time cycles, which were of the highest importance for divinatory and ritualistic purposes."[2]

However, while working with the Yucatecan Mayan Colonial literature such as the Books of Chilam Balam one gets the distinct impression that the Mayan scribes who originally wrote this material were well aware of how their calendar worked. Among the various points about their calendar there are two assertions in particular which stand out:

1) that the first day of **Poop** fell on July 16th of the Julian calendar (= July 26th of the Gregorian calendar in the 1500's and 1600's), and

2) that the katun which they were using, often called an **Ahau Katun**, was composed of 24 years.

It is the purpose of this paper to look at these two assertions with the hope that other people thinking about the calendar question will have this additional material to work with.[3]

From various indirect references throughout the Books of Chilam Balam it seems that much of the original material incorporated in the various Books of Chilam Balam was first written between 1593 and 1629. Furthermore, the

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[1]Coe, 1980, page 44.

[2]Thompson, 1960, page 121.

[3]Throughout this discussion references are made to line numbers. These lines numbers are from the book *Post Conquest Mayan Literature* in which parallel texts from the various Books of Chilam Balam are transcribed in parallel so that they could be more easily compared in preparation for an effort to get back to an original reading of the texts. By consulting these line numbers in this book the various source texts can be located, and if need be the exact location of the original text from which these lines came can be found and compared with what is given here.

scribes would from time to time note that the material they were writing down in Latin script was transcribed by them from hieroglyphs. In reading through the various Books of Chilam Balam one finds such phrases as **lay bin u hokzah tu uooh anahte bin** (thus it was said that he took it (that is, the passage in which this line appears) out of the hieroglyphs of the book[4]), **tin hokzah ti uooh** (I took this out of the hieroglyphs[5]), and **ca ix u xocahoob tu uoohil** (and thus they read it in the hieroglyphs[6]). It would thus seem to be a reasonable assumption that the person or persons who originally wrote the Yucatecan Mayan Colonial texts from which the various Books of Chilam Balam were formed were able to read hieroglyphs and in fact were often transcribing hieroglyphic texts when writing down the material in Latin script. From these statements a conjecture can be made that while these scribes were active a half century or more after the conquest, the fact that they could still work with hieroglyphs would indicate that they still retained enough of their Mayan culture to also be knowledgeable of how their calendar worked.

A look at two particular texts from this Yucatecan Mayan Colonial literature would help to illustrate the point of view of these Mayan scribes concerning how they thought their calendar worked. The first text, **U Kinil Uinaloob** (the days of the uinals), illustrates assertion 1, and the second text, **U Buk Xoc Ahau Katun**, (the count of the **Ahau Katun**) illustrates assertion 2.

Assertion 1

Assertion 1: that **1 Poop** fell on the 16th of July, Julian calendar.

The text called **U Kinil Uinaloob**[7] is a list of the uinals or 20-day months in the year. There are six sources from which the composite edited version given below is derived: the Códice Pérez, Na, and Kaua sources, which in almost all essentials are the same, and the Tizimin, the Ixil, and the Chumayel sources. While these last three sources are each distinct in their presentations of this material from the first three, all with the exception of the Ixil, which gives no christian dates at all, agree with each other and with Landa on when each of the uinals should begin according to the Julian calendar.

[4]Line C435.

[5]Line C560.

[6]Line J431.

[7]Lines A030-054.

U Kinil Uinaloob

U yax chun licil u naatabal u kinil uinaloob
cu cultal ichil u xoc kinoob ichil u tuliz haab.
Hun hunkal kin u cuch hunppel :U:.
He u tzolaanoob cabal lae:[8]

Poop	16 julio	oc nal kin[9]
Uoo	5 agosto	oc nal kin
Zip	25 agosto	yoc buul[10]
Zodz	14 septiembre	
Zec	4 octubre	
Xul	24 octubre	licil u yalancal cayi[11]
Dze Yax Kin	13 nobiembre	ti cu uadzal nali[12]
Mol	3 diziembre	
Cħeen	23 diziembre	
Yax	12 enero	u kin hoch utz[13]
Zac	1 febrero	licil u lolancal zacoob[14]
Ceh	21 febrero	
Mac	13 marzo	licil u yalancal aci[15]
Kan Kin	2 abril	
Muan	22 abril	licil u mumtal u nak u caanil kini[16]
Paax	12 mayo	oc nal kin
Kayab	1 junio	oc nal kin, yoc chicam[17]
Cum Ku	21 junio	
U Uayab Haab	11 julio	ca tun culac hoppel cħic haban kin, ixma kaba kin, u tich kin[18]

[8]Translation: To start with it is to be understood on which days the uinals / are seated in the count of the days during the whole year. / One twenty day period is the burden of one month. / They are given here below:

[9]**Oc nal kin** = corn planting time, from **oc** = to plant, **nal** = corn, and **kin** = time. This is not to be confused with **ocnal kin**. (Motul Mayan-Spanish dictionary, page 342v: Ocnal kin: a puestas del sol.)

[10]**Yoc buul** = plant beans.

[11]**Licil u yalancal cayi** = fish spawn.

[12]**Ti cu uadzal nali** = corn plants are bent over.

[13]**U kin hoch utz** = good time to harvest.

[14]**Licil u lolancal zacoob** = white (plumeria flowers) blossom.

[15]**Licil u yalancal aci** = turtles lay eggs.

[16]**Licil u mumtal u nak u caanil kini** = there is a halo around the noonday sun. As pointed out the in Motul Mayan-Spanish dictionary, p. 313r, this is a sign of approaching rain.

[17]**Yoc chicam** = plant jicama.

[18]**Ca tun culac hoppel cħic haban kin, ixma kaba kin, u tich kin** = "Then are seated five **cħic haban kin**, nameless days, the extra days." The meaning of **cħic haban kin** is unclear. If this name is related to the fiesta **Chic Kaban** which Landa placed in the last five days of **Xul**, then either Landa has misplaced this fiesta or the scribes who placed **cħic haban kin** with **ixma kaba kin / u uayab haab** are mistaken. There is a medicinal plant named **cħic**

There are three points which emerge from this list which concern the Colonial Yucatecan Mayan view of how the Mayan calendar worked: 1) that **1 Poop** falls on July 16th, 2) that several month names are descriptive of the uinal which they name, and 3) that certain agricultural and natural events occur in specific uinals. These points are supported throughout the colonial literature. The implication of these points is that the Maya had some method of intercalating for the solar year. Unfortunately, in all the material presented in the Books of Chilam Balam and in all the other source material for Yucatecan Mayan Colonial literature there is not one clear reference to a leap year system, although such terms as **ixma kaba kin**, **lamay tun**, and **mol box katun** are imperfectly understood and may hold the key to how and when leap years were accomplished, if in fact they were. In particular, in the calendar discussions given in **U Uichoob u Uoohil u Zanzamal Kin Xocoob**[19] and **Zac Patay Haabil**[20] there are discussions of how the calendar worked, but no definite discussion of a leap year system is to be found.[21]

Before considering how and when the intercalating day was added, let us consider why such an event must have occurred based on the evidence given by these three points.

The first point is that **1 Poop** falls on the 16th of July in the Julian calendar. Rarely is a date given throughout the Yucatecan Mayan literature in which this point is not substantiated, even in texts in which the primary purpose is not related to working with calendrical material. For example, at the end of the text called the **Cuceb**[22] there is the statement **lay tun u kinil tu bulucte Chuen, tu holahunpiz kin febrero 1544 haab** (thus then on the day 11 Chuen, on the 15th day of February in the year 1544). Two lines above the day is given in relationship to the uinal date: **tu uaxaclahunte Zac ti bulucte Chuen** (on the 18th of Zac on 11 Chuen). Given the intercalating mechanism alluded to by Solís Alcalá on pages 365-366 of his edition of the Códice Pérez, and which will be discussed below,[23] this would be the correct correlation of the Christian and Mayan dates.

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aban / chic haban. (literally, "flea bush") said to be a scorzonera. (***Scorzonera*** is a genus of the sunflower family (Asteraceae)), but it is difficult to see the connection between this plant name and the calendrical notation. Perhaps **u chic haban kin**, from which Roys gets a meaning "Festival of the Pisote and branches." (Tozzer, 1978, p. 157, note 802) or **u chicahaan kin**, which would be "impaled days", is meant.

[19]Lines A320-428.

[20]Lines A600-650. See Endnote 3 for a transcript and translation of lines A600-614 of this text.

[21]Roys in his "The Ethno-Botany of the Maya", page 348, makes a similar observation: "Some note must also have been taken of intercalary days, although these do not ostensibly figure in the Maya calendar; otherwise hardly a generation would pass before a calculation based on the year-bearer would begin to be out of accord with the seasons."

[22]Line C568.

[23]See below in the discussion entitled "An Apparent Contradiction: July 16th Julian does not always fall on a recognized **Ah Cuch Haab**."

The second point is that certain uinal names are related to the solar - agricultural year. Thompson in *Maya Hieroglyphic Writing*[24] gives an extensive review of the names of the uinals in the various Mayan languages and their meanings. Concerning the Yucatecan names and their relation to the calendar let me review the ones which are pertinent to the question of whether or not the Mayan calendar and the solar - agricultural year were interrelated.

Uoo means "frog", and from evidence of usage today in particular means bull frog. The Motul Mayan-Spanish dictionary is not very precise in this case: "Uo: unas ranas de mucho unto y manteca, buenas de comer." Today the animal is called **uoo much** or **becerro much**, and it becomes common and vocally active in the henequen fields during the month of August.

Xul means "end"; the end of the rainy season is in October.

Dze Yax Kin, or at times **Yax Kin**: **yax kin** is the term used today for "dry season". **Dzedz** means "little". When a noun is commonly combined with **dzedz** the second **dz** is frequently dropped.[25] **Dze Yax Kin** literally translated would be "little dry season". November is the beginning of the dry season. Incidentally, the hieroglyphic representation of this month has always been **yax**-**kin** or in some instances **yax**-**kin**-**il**, without an indication that there should be the syllable **dze**. In any case, at the time the Motul Mayan-Spanish dictionary was written, that is about 1580-1620, the term **yax kin** had much the same meaning as it does today: "Yax kin: el estio y otoño desta tierra en que no llueve y se secan y agostan los campos; tiempo de seca." It seems reasonable to assume that the term **yax kin** = "dry season" is of long standing and extends back into the pre-Columbian era. Furthermore, the uinal **Yax Kin**, or variants thereof, and the meaning of **yax kin** = "dry season" is to be found in several other Mayan languages.[26] This wide acceptance of the term **yax kin** in the month of November fits the weather for that month throughout the Mayan area.

Mol means "gather", and December is the time when the corn harvest gets underway.

Ceh means "deer". Because of a lull in the slash and burn process, namely during the time that the newly cut forest is drying out so that it burns well, there is time for alternative activities. Today during the month of March one of the various alternative activities is deer hunting. Aside from the increased amount of time which can be allotted to this alternative activity, it should be noted that deer hunting is made easier at this time of the year because most

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[24]Thompson, 1960, pages 107-119.

[25]Some examples: **dze na** gives "little mother", meaning "aunt", and **dze yum** gives "little father", meaning "uncle". See Thompson, 1960, p. 110 for a similar observation on the meaning of **dze**.

[26]Thompson, 1960, pp. 106, 110.

of the deciduous trees have lost their leaves, thus giving the hunters a better view of what is in the forest.

Kan Kin means "yellow day" or "yellow sun". April is the time for burning the slash in the gardens plots in preparation for the new planting season. During April the sky turns orange from the smoke and everything one looks at has an orangish tinge. Some examples of the hieroglyph for this month are significant in this case. These show what looks like a leafless tree, sometimes with the sun in the branches. The trees at this time of year are in fact generally leafless because of the drought. The sun which is represented in the hieroglyph is cross-hatched, and conveys the feeling one gets about the sun at this time of the year, since it is somewhat obscured by the smoke. Incidentally, the implication of this hieroglyphic representation is of course that even during the classic period the Yucatecan Mayan calendar was tied to the solar - agricultural year.

Muan, often spelled **Moan**, is by all accounts a bird which announces the beginning of the rainy season. There is some confusion as to what this bird actually is. Thompson (1960, 1972) and Barrera (1980) list the bird as being an owl, in particular the Yucatecan screech owl (Otus choliba thompsoni). Some people though have considered that some of the hieroglyphic representations of **Muan** is not owl-like, and that the bird being represented is of the macaw or parrot family. The word **moo** is the Mayan word for "macaw", and there may be a relationship between the words **moo** and **Muan / Moan**. In Quintana Roo, where there are a considerable number of parrots, when a rain shower begins these birds do make a lot of noise. In any case, whether the **Muan** is in fact an owl or a parrot, it seems that the function of the bird in part is to announce rain. In this context, since late April or early May is when the rainy season begins, the uinal **Muan** is properly placed as the uinal which announces the coming of rain.

Cum Ku, or occasionally **Hum Ku**: the derivation of this name is unclear, although in this context **Ku** means "god". However, **Cum Ku / Hum Ku** could be parallel to the name of the lord of the underworld, **Hum Ahau / Cum Ahau**, in which **hum / cum** means a loud noise and **Ahau** means lord, ruler. **U hum chac**, literally "the noise of the rain god Chac", means thunder. If **Cum Ku / Hum Ku** is parallel in meaning to **Hum Ahau / Cum Ahau** and **u hum chac**, then **Cum Ku / Hum Ku** would also mean "the noise of god", and by extension thunder. June and July are the months when thunder is most frequent.

Aside from the meaning of specific uinal names cited above, in the Motul Mayan-Spanish dictionary there are two entries which specify the time in which a milpa is planted. These entries are **Macil te** and **Poopil te**. In both instances, the time is specified by giving the uinal name in which the planting occurs.

Macil te: On page 283r of the Motul Mayan-Spanish dictionary there is this entry: "Macil te: milpa temprana, que siembran en el mes de março llamado Mac." The fact that the early planting of a milpa is tied by name to the month in which it is planted would seem to indicate that this month comes at a specific time of the year, and is not a movable event. Note that the dictionary specifies that **Mac** is in the month of March, which is in line with the colonial calendar.

Poopil te: On page 381r of the Motul Mayan-Spanish dictionary there is this entry: "Poopil te: milpa tardia que se siembra despues de sanct Juan en el mes llamado Poop. ¶ In poopil te lo: esta milpa mia es tardia." As noted above for **Macil te**, the fact that the late planting of a milpa is tied by name to the month in which it is planted would seem to indicate that this month comes at a specific time of the year, and is not a movable event. Note that the dictionary specifies that **Poop** comes after the feast day of Saint John (June 24), which is in line with the colonial calendar.

Because the above uinal names, or in these last two instances activities which carry the names of these uinals, are linked to the solar - agricultural year, it would seem difficult to imagine that the uinals wandered throughout the solar year for lack of some intercalary system to keep them synchronized with the seasons and seasonal activities which are related to their names. Further, it would seem quite coincidental that the European calendar should be introduced into Yucatan and fix the Mayan calendar at a time when the uinals happened to be in the position to correspond with their namesakes. From the foregoing it would seem that contrary to the common belief of Mayan scholars, based on the meanings of the uinal names the uinals should be tied to the solar - agricultural year.

The third point raised in **U Kinil Uinaloob** is that certain corn planting dates and other corn farming activities, and also certain natural events are linked with certain uinals. Corn planting dates (**oc nal kin**) among some of the present day Maya vary widely and depend in part upon the variety of corn being planted. The length of growing season for different varieties of corn varies considerably. Some varieties require one and a half months to reach maturity (**nal thel**), others two months (**x-mehen nal**), and still others as long as four to five months (**x-nuc nal**). The Mayan farmers with whom I have talked on the subject of variety selection say that ideally the corn should be fully developed when the rainy season stops. Earlier ripening in constant rain results in moldy corn, and ripening after the rain has stopped yields drought stricken corn. The good farmer, they say, will recognize the type of weather the growing season will bring through the use of a **U Xoc Kin**.[27] He will plant the appropriate varieties to take advantage of the

[27]"Count of the days", a tabulation of cloud formations during the month of January with the first 12 days being the months counted forwards, the second 12 days being the months counted backwards, the next 6 days being the months counted forwards every half day, and the last day of January being the months counted forwards for each hour from 6 a.m. through 6 p.m. This **U Xoc Kin** is not to be confused with the pre-Columbian **U Xoc Kin** or

predicted weather. The planting dates in **U Kinil Uinaloob**, while not specific about the varieties of corn to be planted, do fall when the planting is being done. These planting notes are supplied by three of the six sources: Códice Pérez, Kaua, and Na. The Chumayel, which is different from the other sources in its presentation of the material on the uinals, has among other notes these two notes: "dzeyaxkin = 13 Nobe = ti cu uadzal nali" (Dze Yax Kin, 13th of November, this is when the corn is bent) and "yaax = 12:hemero u kin hoch utz" (Yax, 12th of January, a good time for harvest). The bending of the corn stalks is still an important part of corn growing in Yucatan, and takes place as the corn dries, usually in October or November. The harvest begins any time after the corn dries, which may be any time after November. However, recently a friend of ours in Piste mentioned that he usually starts to harvest in earnest on January 12th, which matches the note in Chumayel. How it is that he chooses this date is something which we have not been able to determine.

Again, just as above where a floating calendar would render the uinal names useless, so too would a floating calendar render these agricultural notes useless. The implication again is that the Maya had some way of intercalating.

As was noted in the opening paragraph of this paper, it is generally assumed by Mayanists that there was no system for intercalating days. However, in the colonial sources written by Spanish friars, one from Yucatan and the others from the Mexican highlands, it is stated that a leap year system did exist. Relating to the Yucatecan Mayan calendar, Landa, not necessarily an impeccable source,[28] states that the Maya added a day every four years, although he does not write exactly how this was done: "Otra manera de meses tenían de a 20 días, a los cuales llaman *Uinal Hunekeh;*[29] de éstos tenía el año entero 18, más los cinco días y seis horas. De estas seis horas se hacía cada cuatro años un día, y así tenían de cuatro en cuatro años el año de 366 días."[30]

Both Sahagún and Durán, in writing about the Aztec calendar, a system which while not exactly the same as the Mayan calendar is parallel in most aspects, corroborate Landa's statement. Sahagún has this to say about the extra days at the end of the year following the 360 days of the regular year (i.e. 18 months of 20 days each): "The five remaining days of the year, which are the four last of January and the first of February, they named Nemontemi, which meaneth barren days. And they regarded them as unlucky and of evil fortune. There is conjecture that when they pierced the boys' and girls' ears, which was every four years, they set aside six days of

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calendar round of 260 days, often called by Mayanist **U Tzol Kin**.

[28]Coe, 1980, page 21, not withstanding.

[29]Probably **U Kinil Uinaloob** is meant here. Landa is not very precise about the spelling of Mayan words and in fact is frequently quite far off the mark.

[30]Landa, 1966, page 61.

Nemontemi, and it is the same as the bissextile which we observe every four years."[31] Durán agrees that a day was added every four years, and gives the following rather vague description of the leap year mechanism: "These people observed the leap year much as we do. If we look closely at the illustration (for the month Izcalli), we shall see that the dominical symbol is on top of a small hill, thus beginning the new month. Even though the last day fell under the sign of Flower, this other sign was added in order to pass from Flower to Head of Serpent. It is similar to the way in which we change the a to g in our leap year."[32]

Diego Muñoz Camargo, who wrote a description of Tlaxcala in the 1580's, gives a similar explanation of the leap year system.[33]

In a more recent description of the Mayan calendar as used by the Tzeltals during the 1930's and 1940's, Villa Rojas has this to say about the leap year: "Por lo que respecta al día que se intercala en los años bisiestos, es cosa que ninguno de mis informantes ya citados pudo explicar; parece probable que no existan años bisiestos en este calendario y que el día que corresponde a ellos se pase sin contar, logrando así que no se altere la equivalencia con ciertas fechas católicas en las que se efectúan las fiestas de los santos patronos de cada municipio."[34]

Possible Methods of Intercalating Leap Year Days

If indeed the Maya had a true solar year as the above information would indicate, then of course there must have been a method in intercalating leap year days. Landa gives us one option which would require an interruption of the **U Xoc Kin** (the 260 day sacred round) once every four years. A more specific description of the mechanism of intercalating has been suggested by Ermilo Solís Alcalá in his book on the Códice Pérez. He suggests that there

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[31]Anderson and Dibble, 1981, Book 2, page 35. See also Book 4, page 144: They observed another feast every four years, in honor of the fire [god], during which they pierced the ears of all the boys and girls; and they called it Pillauanaliztli. And during this feast it is likely, and there are conjectures, that they held their leap year, reckoning six [days] of Nemontemi.

[32]Durán, 1971, page 471-472.

[33]Muñoz Camargo, pp. 170v-171r: Del Bisiesto. Para que este calendario no caresca de bisiesto, como no es razón, ase de notar que siempre será bisiesto en el año Tecpatl Xihuitl, de quatro en quatro años, y no en otra de las quatro figuras, pues los años de Tecpatl Xihuitl, son bisiestos en esta man[er]a: El año de 1552 fue Ocho Tecpatl Xihuitl, y fue bisiesto el primer dia de aquel año, y fue Tecpatl Xihuitl, que fue a 24 de Feb[e]ro que es ansi mismo çinquenta y çinco <171r> dias del año que fue á 15 de su terçero mes sobre la figura Malinalli, y ansi siempre sera en este dia de Malinalli bisiesto. Exempli gratia: el año de 1552 fue su año de Ocho Tecpatl Xihuitl, fue bisiesto aquel año á los 15 dias del terçero mes sobre la figura Diez Malinalli que cayo á 24 de Febr[er]o, y sobre esta figura se haran dos Dies diziendo oy Diez Malinalli, mañana Diez Malinalli, y luego proceder el dia sig[uent]e Onze Malinalli. El año de 1560 fue el primer dia del año Doze Tecpatl Xihuitl, fue el bisiesto a los 15 dias de su terçero mes, y ansi de todos los otros años sobre la misma figura Malinalli, Çe Malinalli, que es el quinzentro dia del terçero mes, y ansi de todo los otros años de bisiesto yran por esta forma regulado...

[34]Villa Rojas, 1990, 756.

were in fact two alternative methods of intercalating. For the official count, such as that found on monuments, he states that a day was added in every **Cauac** year, which clarifies Landa's statement somewhat. For the short count however he states that the intercalating days were allowed to accumulate during the 52 year cycle called **U Bubukil Haaboob** in the colonial texts,[35] and then at the end of the year **13 Cauac** thirteen nameless days (**ixma kaba kin**) are counted before the seating of **1 Kan** on **1 Poop**. Solís contends that the first method is called **U Box Katun** and the second method is called **U Mol Box Katun**.[36] In fact, in the colonial literature the term **U Mol Box Katun** is applied to two of the **Ahau Katunoob** in which the year **13 Cauac** appears: **2 Ahau Katun**[37] and **11 Ahau Katun**.[38] This would lend support to Solís' statement.

An Apparent Contradiction: July 16th Julian does not always fall on a recognized **Ah Cuch Haab**.

Despite the insistence that **1 Poop** falls on July 16th Julian, this fact is not always born out by the various texts in the Books of Chilam Balam. A very good example of this is that the various copies of **U Xoc Kin** given in the Books of Chilam Balam[39] all show that July 16 = **1 Poop** which falls on **11 Cimi**. The fact that all the sources show the same set of dates means of course that they are all derived from the same original source, written in a particular year within the **U Bubukil Haaboob**. If we make the assumption that the **Kan**, **Muluc**, **Hiix**, and **Cauac** years were still in fact the year bearers or **Ah Cuch Haaboob** when this **U Xoc Kin** was written, since from various footnotes in the Tizimin it is clear that this **U Xoc Kin** had to be written in or before 1627, then it seems that the **Ah Cuch Haab** was **9 Kan**, which is two days before **11 Cimi**, and the year **9 Kan** fell in 1589.[40] [41] [42]

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[35]Endnote 2, lines A440-A480.

[36]Solís, 1949, pages 365-366. See below in the discussion entitled "An Apparent Contradiction: July 16th Julian does not always fall on a recognized **Ah Cuch Haab**."

[37]Tizimin, pp. 19r-19v.

[38]Line D509.

[39]Pérez pp. 2-24, Pérez pp. 51-64, Pérez pp. 140-150, Ixil pp. 36v-40v, Tizimin pp. 22r-27v, Kaua pp. 54-71, and Na/Tekax.

[40]The previous year **9 Kan** was 1537 and the next one was 1641, neither of which are possible for various reasons: 1537 being too early because it was before the final conquest, and 1641 being later than the footnotes given in the Tizimin. See Endnotes 4 and 5 for further information.

[41]There is however an alternative choice, but not a likely one. It has to be asked is how quickly did the people of New Spain adopt the Gregorian calendar. The people of northern Europe were rather slow in adopting it, with the English, for example, waiting until 1751, and of course the Russians until 1917. Did the adoption of the Gregorian calendar by Spain in 1582 immediately carry weight in New Spain, or was there some delay of its adoption in Mexico? If New Spain adopted the Gregorian calendar quickly, could it thus be possible that the christian calendar part of the **U Xoc Kin** given in the Books of Chilam Balam be based on the Gregorian calendar while the notations about the Mayan calendar be hold-

In the **Cuceb** we can see a similar discrepancy between the idea that the **Ah Cuch Haab** ideally falls on July 16th, Julian, and the date that it really falls on. As was noted above, in the final lines of the **Cuceb**[43] Ah Kauil Cħel writes that he wrote the **Cuceb** with Ah Na Puc Tun in the Mayan date of **18 Zac 11 Chuen**, which he equates with the Julian date of February 15, 1544. This Mayan date of **18 Zac 11 Chuen** happens only in the year **2 Hiix** when the year bearer set is **Kan**, **Muluc**, **Hiix**, **Cauac**. Now the year **2 Hiix** fell in the years 1543-1544, but it also fell in the years 1595-1596 which is the year in which the material given in the Códice Pérez, pp. 100-101 was written.[44]

If we take **1 Poop** = July 16 as being an absolute, then as Tozzer points out,[45] February 15th is in error, and this should read February 18th. However, if Ah Kauil Cħel is in fact correct, then the year **2 Hiix** began on July 13th.

In fact, there is the following table from Solís Alcalá, pp 365-366, which gives the day of the Julian calendar on which **1 Poop** would fall, depending on the **Ah Cuch Haab**: [46]

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overs from a Julian calendar correlation? If that is the case, perhaps the year in question is **Uacil Hiix** = July 24. **Uacil Hiix** happened to fall in the years 1547 and 1599.

[42]To illustrate the kind of problems we would get ourselves into if we are to take the colonial literature literally all the time, if we were to take the **U Xoc Kin** at its face value then we would have to accept that at the time it was written the **Ah Cuch Haaboob** were **Cimi**, **Chuen**, **Cib**, and **Imix**. Since there is no other indication in the Books of Chilam Balam that the **Ah Cuch Haaboob** during the colonial period were anything but **Kan**, **Muluc**, **Hiix**, and **Cauac**, then taking the **U Xoc Kin** as it is would be difficult to do. For other information about **U Xoc Kin** see Endnote 4.

[43]Lines C566-568.

[44]There is a calendar commentary which is to be found in the Códice Pérez (pp. 100-101) and Kaua (pp. 275-276), which reads in part:

Hase de notar que en acabándose los diez y ocho meses y uinales después del postrero día de Cum Ku se han de contar los cinco días de una Yail Haab por su nombre, y al sexto numero cae el Cuch Haab que entran y succeden como fue este año de 1595,[1] que fue Ah Cuch Haab Ca Hiix.[2] Que el primer dia de Cum Ku del año de 1596 será Can Hiix que cae el 21 de ju[n]io[3] del d[ic]ho año. Del postrero dia de Poop[4] será Oxil Cauac para del dicho año de 1596 y parte del año de 1597, al cual le succedera Canil Kan, succediendo por su orden los Ah Cuch Haabes sin interpolacion de Buk Xoc como parece, de manera que aunque los d[ic]hos cinco dias se dicen mal dias ó Ixma Kaba no se entiende en acabando al nombrarlos por sus nombres sino en cuanto que no entran por algun Uinal ó mes.

1) The Kaua gives 1796, 1797, and 1798 respectively for this and the following years.
2) The Kaua gives **2 Kan**, **3 Muluc**, and **4 Hiix**, respectively.
3) The ms. read "21 de julio". Kaua reads "12 de Julio".
4) The text possibly should read "El primer dia de Poop", or alternatively "Del postrero dia de Yail Haab".

[45]See Tozzer, 1978, p. 151, footnote 748.

[46]For introductory comments on this table Solís Alcalá has the following on page 365:
Breves explicaciones de algunos puntos históricos y cronológicos del "Códice Pérez", hechas por el traductor.

El año maya romano descrito en las varias copies sacadas del archivo de la iglesia de Mani, decimos que es el 1589, porque en el 14 de julio anota el día maya 9 Kan. Cuando Montejo llegó a Thóo a fines del año 1541 se contaba el año maya 13 Kan. Retrocediendo cuatro años encontramos un año 9 Kan, en 1537. Los años mayas se repiten cada 52 años,

	1 Kan,	2 Muluc,	3 Hiix,	16 de julio.
4 Cauac,	5 Kan,	6 Muluc,	7 Hiix,	15 de julio.
8 Cauac,	9 Kan,	10 Muluc,	11 Hiix,	14 de julio.
12 Cauac,	13 Kan,	1 Muluc,	2 Hiix,	13 de julio.
3 Cauac,	4 Kan,	5 Muluc,	6 Hiix,	12 de julio.
7 Cauac,	8 Kan,	9 Muluc,	10 Hiix,	11 de julio.
11 Cauac,	12 Kan,	13 Muluc,	1 Hiix,	10 de julio.
2 Cauac,	3 Kan,	4 Muluc,	5 Hiix,	9 de julio.
6 Cauac,	7 Kan,	8 Muluc,	9 Hiix,	8 de julio.
10 Cauac,	11 Kan,	12 Muluc,	13 Hiix,	7 de julio.
1 Cauac,	2 Kan,	3 Muluc,	4 Hiix,	6 de julio.
5 Cauac,	6 Kan,	7 Muluc,	8 Hiix,	5 de julio.
9 Cauac,	10 Kan,	11 Muluc,	12 Hiix,	4 de julio.
13 Cauac,				3 de julio.

Terminado el 13 Cauac dejaban pasar, pues no los incluían en sus cuentas, trece *días sin nombre* que correspondían con los días 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14 y 15 de julio. Al día siguiente, 16 de julio, comenzaba otro Katún de 52 años con el 1 Kan.[47]

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por lo cual, otros años 9 Kan cayeron en 1589, 1641, 1693 y 1745.

No puede ser el 1537 porque es anterior a la conquista, y estos papeles fueron escritos después. De los otros cuatro solamente pudo ser el 1589, porque es el único de ellos que comenzó en domingo, como lo indica la letra dominical puesta en la copia que aparece en el folio 87 del manuscrito de Tizimin.

Los mayas tenían dos maneras de contar sus años bisiestos: agregando un día en cada uno de los años Cauac de los Ahau Katunes; y dejando pasar 13 días al fin de cada Katun de 52 años. En la cuenta general que anotaban en sus monumentos usaban del primer modo; y en su cuenta pequeña, la del uso común, empleaban el segundo. Esto último es la causa de la variación de la fecha del calendario romano para el principio de los años mayas. Aunque el P. Landa asegura que empezaban el 16 de julio, en realidad no era así, pues solamente los años 1 Kan, 2 Muluc y 3 Hiix comenzaban en 16 de julio. Con motivo de nuestros bisiestos, cada cuatro años adelantaba un día la fecha, como se verá en el siguiente cuadro que hemos venido formando en el que están anotados los 52 años del Katun.

[47] O'Crouley, 1972:6, apparently based on comments by Gemelli Careri, has a similar observation about a leap year system for the Mexican calendar: "They had knowledge and rules for leap year, and hence the three first years of their cycle began on the 10th of April, but the fourth (because it was leap year) began on the 9th; the eighth year on the 8th, the twelfth on the 7th, the sixteenth on the 6th, and so on until the end of the cycle, which was on the 28th of March. On this day the festivities began, which lasted the thirteen days of leap year until the 10th of April." Compare with Gemelli Careri, 1700: pp.73-74:

"Regolavano il bisestile in questa forma. Cominciava il primo anno del secolo a' 10. di Aprile, e'l 2. e 3. medesimamente; peró il 4. Bisestile a' 9., l'ottavo agli 8., il duodecimo a' 7., il decimosesto a' 6. sino al termine del secolo, ch'era a' 28. di Marzo ; nel quale si consumavano in seste i 13. di di bisestile, sino a' 10. di Aprile.

"Prima di cominciare il nuovo secolo, ro[m]pevano i vasi, e imorzavano il fuoco; stimando che avendo da finire il Monde in una fine di secolo; forse farebbe stato quello. Venendo il primo giorno, faccvano gran festa con tamburi, ed altri loro strumenti; ringraziando Iddio d'aver loro fatto dono d'un'altro secolo: compravano nuovi vasi, e ricevevano il nuovo fuoco dal Sommo Sacerdote, con solenne Processione."

Note that, whether coincidentally or not, the two problems we have been looking at above, that of why **1 Poop** does not fall on a recognized **Ah Cuch Haab** in **U Xoc Kin**, and that of why **18 Zac 11 Chuen** is equated with the Julian date of February 15, 1544, are resolved of by this table. In the first instance it is clear that, using the above table, the **U Xoc Kin** should have read July 14 = **9 Kan**, **1 Poop**, and that all other Mayan month notations in the **U Xoc Kin** should be advanced two days. In the second instance it is clear that Ah Kauil Cħel is correct in giving **18 Zac 11 Chuen** = February 15. If this table is in fact correct, then Landa may be in error by showing **12 Kan** = July 16, when in fact he should have shown **12 Kan** = July 10, 1553.[48] However, Solís Alcalá has an explanation for this discrepancy.[49] [50]

Assertion 2

Assertion 2: that the **Ahau Katun** consists of a cycle of 24 years, and thus that the complete cycle of 13 **Ahau Katunoob** is 312 years.

The Yucatecan Mayan scribes are very insistent that the major calendrical cycle which they used, the **U Uudz Katunoob**, is composed of 13 **Ahau Katunoob** of 24 years each, making a complete cycle of 312 years. As the calendrical discussion given in the **Zac Patay Haabil** notes, **Hun hunkal haab u cuchoob hun huntul Ahau Katun, he tun canppel ixma kaba haaboob**. ("Twenty years is the burden of one **Ahau Katun**, but then (there are) four nameless years.")[51] Notice that the scribe is talking about a **haab** which is the 365 day year versus **tun** which is at times, but certainly by no means always, taken to mean a period of 360 days. Given that the scribes of the colonial texts used the term **katun** rather indiscriminately to talk about any cycle,[52] as for example the 52 year cycle called **U Bubukil Haaboob**,[53] it is entirely possible that the **Ahau Katun** of 24 years talked about by the Mayan scribes of the colonial period is quite distinct from the **katun** of 20 tuns (i.e. 360 days times 20) which pertains to the long count.

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[48]During the time that Landa was in Yucatan the year **12 Kan** would have been 1553. The previous year **12 Kan** was in 1501 and the next year **12 Kan** was in 1605.

[49]See the remarks given on page 365 of his Códice Pérez, shown in note 46 above.

[50]What is obvious, no matter what else one can conclude from the **U Xoc Kin** and the above discussion, is that we have eight available copies of the **U Xoc Kin**, and not one of the scribes thought to set the record straight and make changes to it according to when he was making his copy. For example, while it is clear that the dates correlating the Mayan calendar to the Christian calendar are from the Julian correlation, all of the copies we have of the **U Xoc Kin** are from the Gregorian era. Thus, if the scribes had considered this factor, we should have seen July 26th rather than July 16th being equated to 1 Poop. See Endnote 6.

[51]Lines A607-608. See Endnote 3 for lines A601-A614 in which this statement is incorporated.

[52]There are two meanings for the word **katun**, "war" and "twenty tuns". A conjecture has been made that **katun** meaning "twenty years" is actually derived from **kal** meaning "20", "closure", and **tun** meaning "360 day cycle". It appears that at some point the word **katun** lost its precise meaning of "20 tuns" and began to be applied to cycles of years (**haab**) and to cycles of the period of 360 days (**tun**) without distinction.

[53]Endnote 2, lines A440-A480. See in particular line A480.

The following table[54] is the basis for how the colonial scribes correlated Mayan and Christian dates:

U Buk Xoc Ahau Katun

tu haabil 1392 ca culhi 8 Ahau -- 7 Cauac
tu haabil 1416 ca culhi 6 Ahau -- 5 Cauac
tu haabil 1440 ca culhi 4 Ahau -- 3 Cauac
tu haabil 1464 ca culhi 2 Ahau -- 1 Cauac
tu haabil 1488 ca culhi 13 Ahau -- 12 Cauac
tu haabil 1512 ca culhi 11 Ahau -- 10 Cauac
tu haabil 1536 ca culhi 9 Ahau -- 8 Cauac
tu haabil 1560 ca culhi 7 Ahau -- 6 Cauac
tu haabil 1584 ca culhi 5 Ahau -- 4 Cauac
tu haabil 1608 ca culhi 3 Ahau -- 2 Cauac
tu haabil 1632 ca culhi 1 Ahau -- 13 Cauac
tu haabil 1656 ca culhi 12 Ahau -- 11 Cauac
tu haabil 1680 ca culhi 10 Ahau -- 9 Cauac
tu haabil 1704 ca culhi 8 Ahau -- 7 Cauac
tu haabil 1728 ca culhi 6 Ahau -- 5 Cauac
tu haabil 1752 ca culhi 4 Ahau -- 3 Cauac
tu haabil 1776 ca culhi 2 Ahau -- 1 Cauac
tu haabil 1800 ca culhi 13 Ahau -- 12 Cauac

The colonial scribes were very consistent in using this scheme of correlation, even in instances where the Christian and Mayan dating systems are given in an off-handed way in relationship to one another. An example of this is from the section named **Zuyua Than yetel Naat**, called "The Interrogation of the Chiefs" by Roys in his translation of the Chumayel.[55] According to the Tuz Ik version of this text, this interrogation occurred on September 4, 1628,[56] which according to both the Tuz Ik and Chumayel texts is three years before the end of **3 Ahau Katun**.[57] This correlation between the Mayan and Christian calendars is in keeping with the calendar correlations generally presented throughout the Yucatecan Mayan Colonial manuscripts. Another example of this cross-correlation is given in the Chumayel in reference to the landing of Cortés at Cozumel: **tu uucpis tun Buluc ahau u katunil tiix hoppi xpnoil lae, tu habil quinientos dies y nuebe años Do 1519 as.**:[58] "It was in the seventh tun of Katun 11 Ahau that Christianity then began; it was in the year A. D. 1519."[59]

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[54]Lines A730-A755.

[55]Roys, 1967, page 88.

[56]Line I002. See Endnote 1 for the complete introductory text in which these statements are made.

[57]Lines I020-I023.

[58]Lines G292-G293.

[59]Roys, 1967, page 143.

Conclusion

As a result of examining the above facts, and the consistency with which they are presented throughout the colonial literature, there seems to be little doubt that the Colonial Yucatecan Maya viewed their calendar as being a fixed solar year calendar, and that their major calendar cycle was a 24 year **Ahau Katun** cycle. Scholars vary in their interpretation of how this came about. Most claim that the Colonial Yucatecan Maya were mistaken about their calendar, and of this group some have gone so far as to say that some Mayan writer of the 17th, 18th, or even possibly the 19th century reorganized the calendar system to keep it in tune with the European calendar so that **1 Poop** would fall on the 16th of July of the Julian calendar. As can be seen by a thorough review of the Books of Chilam Balam, this latter possibility seems quite remote, as this writer would have had to have been extremely thorough in finding all the various references to dates found throughout the material presented in these books and then would have had to have changed these dates to conform with his new calendar. In as much as not one of the source books for the material of the Books of Chilam Balam is a complete collection of dated literature, it seems hard to imagine, especially at a later date, how this writer would have had such a pervasive influence over the dating system in the colonial manuscripts.

Other scholars claim that the Yucatecan Maya were in fact either in the process of a calendar reform as the Spanish arrived, or had gone through such a reform shortly before their arrival, but that in any case the Mayan calendar had become a fixed solar year calendar and that the 24 year **Ahau Katunoob** resulting in a 312 year katun cycle had been established by the time that the Mayans had been conquered. There is no evidence which I have seen in the colonial literature which would either confirm or deny this claim.

Finally, it must be said that almost no one makes a claim that the Mayan calendar with a fixed solar year and with 24 year **Ahau Katunoob** is of long standing.

My own view is that the Mayan calendar as presented by colonial sources was firmly established by the end of the 16th century and that there is evidence that it was already in use when the Spanish were making their first landfalls on the coast of Yucatan. Furthermore, based on the names and in a couple of instances the hieroglyphic representations of certain uinals it would seem that a fixed solar year calendar was already operating during the classic Maya period. Beyond that I can make no judgments at this time.

Endnote 1: Lines I001-I032 from Zuyua Than yetel Naat.

i001 Zuyua Than yetel Naat utial c' yum gobernador mariscal.
Helelae tu canppel kin yuil Septiembre, tu haabil 1628,
lic yutzcintah u yanal maya than
lay chicbezahaanil caanal
yoheltoob uinicoob himac yan u uilal
i005 ti u huunil dzibaanil u Zuyua Than yetel Naat.
Bin u naatabal tumen u batabil cahoob yetel halach uinicoob
manahantacoob ti alcaldesil yetel regidoresil.
Lay uchic u cahtal ti Tzuc Uaxim lae tu lakin Ichcaanziho.
Ti yan u luum uchic u yantal u pakali yetel u solar,
i010 uchic u cahtal lae.
Bin ix kuchuc tu kin u holol u bel xan.
Talel u than u halach uinicil, chac u than.
Ca bin uluc chac ix u buc xan.
Helelac tu Zuyua Than.
Lay bin u than,
i015 lay bin u kat u halach uinicil cah lae.
Ca bin u kuchuc tu kin u dzocol u than ah Ox Ahau Katun lae.
Ca bin culac u yanal katun, Hun Ahau Katun.
Lay tun bin yanac ichil u yanal katun lae.
Bay alanil lae.
i020 He ix katun helelae, Ox Ahau Katun.
Oxppel haab u binel ca lukuc tu tepal.
Dzoc ix u kuchul u kinil u dzocol yahaulil yetel u tepal.
Halilibe; manahan ix u yanal katun, Hun ahau Katun lae,
culaan ichil yotoch ah Ox Ahau Katun lae.
i025 Yulate, tan u dzabal u chaan tumenel ah Ox Ahau Katun lae.
Zubultzil bin bin baloob tu cahaloob.
Kat naat cu talel ichil u katunil licil u dzocol helelae.
Ti kuchul tu kinil u katabal u naatoob u batabil cahoob ua yoheloob
uchic u taleloob u uiniciloob yahauliloob,
i030 lacaloob camac u than tulacal u cẖibaloob talicoob
ua tzolaan u talel u batabiloob, u halach uiniciloob
ua cẖibaloob ahau ua cẖibaloob batab;
ti u hah canticoob.

Translation:

The language and understanding of Zuyua[60]
for our lord the military governor.
Here on the fourth day of the month of September in the year 1628,
the unusual Mayan language was composed
so that it appeared written in the heaven
known to the men whoever will see it in the written book
of the Language and Understanding of Zuyua.
It will be understood by the chiefs of the towns and the head chiefs,
passed on to the mayors and aldermen.
Thus it happened that he came to live in Tzuc Uaxim
which is to the east of Merida.
There is the land where his orchard and private land
was built, where he came to live.
The day will come he shall finish also.
The word of the head chief comes, his word is vigorous.
Then will arrive his great cape also.
Here is the Language of Zuyua.
Thus will be the word, thus
will be the interrogation of the head chiefs of the towns.
Then will arrive the day of the end of the rule of Three Ahau Katun.
Then will be seated the other katun, One Ahau Katun.
Thus therefore will happen in the other katun.
Thus it is said.
He is the katun today, Three Ahau Katun.
There are three years to go so that his reign will be taken away.
The time has arrived for the end of its rule and its reign.
Anyway; it happens that the other katun, One Ahau Katun,
is seated in the house of Three Ahau Katun.
Alleluia, it is being given a feast by Three Ahau Katun.
Shame they say will be hidden in the town.
The examination which comes in the katun ends today.
The time has arrived for the chiefs of the towns
to be asked about their knowledge,
if they know how the ruling men came,
whether or not it is true that all come from lineages,
whether they come from chiefs, from head chiefs
whether they are from lineages of kings or lineages of captain;
to this they speak the truth.

[60]It is not clear where the site of Zuyua was located. However, there was a port named Holtun Zuyua (Port Zuyua) which appears to have been on the island of Ciudad del Carmen on the coast in southern Campeche. As is common along the Yucatecan coast where towns some 20 km or more from the coast have a port on the coast with the same name, there probably was a site Zuyua somewhere inland from Holtun Zuyua.

Endnote 2: U Bubukil Haaboob.

U Xocaan u Bubukil Haaboob

a440 U tzolaan u xocol haab
u lubul tu can titzil caan:
Kan ti lakin,
Muluc ti xaman,
Hiix ti chikin,
Cauac ti nohol.
a445 Bay bin u ximbal lae.

	hunil Kan	hunil Hiix
	cabil Muluc	cabil Cauac
	oxil Hiix	oxil Kan
a450	canil Cauac	canil Muluc
	hoil Kan	hoil Hiix
	uacil Muluc	uacil Cauac
	uucil Hiix	uucil Kan
	uaxac Cauac	uaxac Muluc
a455	bolon Kan	bolon Hiix
	lahun Muluc	lahun Cauac
	buluc Hiix	buluc Kan
	lahca Cauac	lahca Muluc
	oxlahun Kan	oxlahun Hiix
a460		
	hunil Muluc	hunil Cauac
	cabil Hiix	cabil Kan
	oxil Cauac	oxil Muluc
	canil Kan	canil Hiix
a465	hoil Muluc	hoil Cauac
	uacil Hiix	uacil Kan
	uucil Cauac	uucil Muluc
	uaxac Kan	uaxac Hiix
	bolon Muluc	bolon Cauac
a470	lahun Hiix	lahun Kan
	buluc Cauac	buluc Muluc
	lahca Kan	lahca Hiix
	oxlahun Muluc	oxlahun Cauac

a475 Lay u xocaan u bubukil haaboob tin ualahe:
hun hunppel haab u cuch, lay tzolaantacoob lae.
Lay tu pak u dzocol u xocol lay oxlahun Cauac lae,
ca tun hoppoc u xocic hunil Kan tu caten.
Layli cu zute bay dzaanil caanal lae.
Hun dzit katun u yalabal tu canppelil; lay hah lae.

The Count of the Years.

The account of the Count of the Years

This is the story of the account of the years
which falls to the four corners of the sky:
Kan to the east,
Muluc to the north,
Hiix to the west,
Cauac to the south.
That they say is how it goes.

1 Kan	1 Hiix
2 Muluc	2 Cauac
3 Hiix	3 Kan
4 Cauac	4 Muluc
5 Kan	5 Hiix
6 Muluc	6 Cauac
7 Hiix	7 Kan
8 Cauac	8 Muluc
9 Kan	9 Hiix
10 Muluc	10 Cauac
11 Hiix	11 Kan
12 Cauac	12 Muluc
13 Kan	13 Hiix

1 Muluc	1 Cauac
2 Hiix	2 Kan
3 Cauac	3 Muluc
4 Kan	4 Hiix
5 Muluc	5 Cauac
6 Hiix	6 Kan
7 Cauac	7 Muluc
8 Kan	8 Hiix
9 Muluc	9 Cauac
10 Hiix	10 Kan
11 Cauac	11 Muluc
12 Kan	12 Hiix
13 Muluc	13 Cauac

This is the story of the account of the years as I said:
each year has it burden, thus they are accounted for.
Thus right after the end of counting 13 Cauac,
then begins to count 1 Kan again.
Thus it returns as given above.
The four groups are called one katun, that is the truth.

Endnote 3: The complete text on lines A601-A614:

a600 Zac Patay Haabil
He ix Ahau bin tac te lae tu uudz katun lae.
Lay licil u naatabal u cumtal katun lae;
Cauac tu hunte Poop u ah cuch haab
yahal cab tu caten u kinil haab lae.
a605 U cultal Ahau Katun lae
tu pach u kinil Cauac tu kaba ix cu cultal.
Ma tuzbili.
Hun hunkal haab u cuchoob hun huntul Ahau Katun,
he tun canppel ixma kaba haaboob.
Licil u baxal hoppel haabi yetel Cauace,
a610 bacac ix ti lic u cultal katunie tu kin Kan.
Licil u yalic u kaba yetel u than tulacal.
Bay hoppel kin ixma kabae amal haabe.
Bay ix amal u hidzil katunoob lae
hoppel haab u baxal u mol box katun lae.

Translation:

a600 Zac Patay Haabil[61]
Here is Ahau which will come at the fold of the katun.
Thus is to be understood the seating of the katun;
Cauac on 1 Poop is the Ah Cuch Haab
which dawns again as the day of the year.
a605 The Ahau Katun is seated
(the day) after the day which is called Cauac is seated.
This is not a lie.
Twenty years is the burden of one Ahau Katun,
but then (there are) four nameless years.
The fifth year comes into play with (the year) Cauac,
a610 even though the katun is seated on the day Kan.[62]
Its name and all its power is called upon.
Thus there are five nameless days every year.
Thus every time there is the end of the katuns
five years come into play with the U Mol Box Katun.

[61]The meaning of this phrase is unclear. **Zac** means "white" but can also mean "false" or "imperfect". **Patay** is unregistered, but **pat** can mean "to declare", "to even accounts", and "to invent", among other meanings. **Haabil** means "year". There are four examples of this phrase in the Books of Chilam Balam. Barrera translates **Zac Patay Haabil** as "años esteriles". I am inclined to think that at least here in this context **Zac Patay Haabil** means "false / imperfect year reckoning".

[62]There is no justification for this statement given the rest of the information provided here. Perhaps reference is being made to **U Bubukil Haaboob**, which does begin with the year **1 Kan**.

Endnote 4: The Two Parts of **U Xoc Kin**:

An interesting facet of the **U Xoc Kin** is that it is clear that it is composed of two separate parts. One part is the actual **U Xoc Kin**, more commonly called **U Tzol Kin** by Mayanists, which is clearly copied from a 260 day almanac. The other part is the correlation of a bare bones Christian calendar with the Mayan calendar. Thus, the first part is:

Lahun Oc	utz	u hoppol kak ah toc
Buluc Chuen	utz	
Lahca Eb	utz	
Oxlahun Ben	utz	
Hun Hiix	lob	licil cimil uinicob, u xul ti

etc...

After 260 days the day **10 Oc** appears again on September 18th, and the cycle of good and bad days and also of day prognostications, with some minor variations, begins again for the remaining 105 days, showing that the basis for this material is a 260 almanac.

The second part is:

Enero 31
1
2
3
4
5
6
7
8
9
10
11
12 licil u cultal Yax
13
etc...

It should be noted that the original writer of this combined calendar set **10 Oc** equal to January 1, 1589, whereas Landa set **12 Ben** equal to January 1, 1554. There are other significant differences between the Landa calendar and the combined calender from the Books of Chilam Balam. The combined calendar is sequential through the Mayan new year, with the days **10 Oc** through **11 Akbal** belonging to the previous year of **8 Cauac** (1588-1589) and the days **9 Kan** through **10 Hiix** belonging to the year **9 Kan** (1589-1590) whereas the Landa year is continuous from **12 Kan** (1553-1554) through the christian new year on to **12 Lamat** which would lead into **13 Muluc**, the following year. It is thus clear that the original writer of this material was not working from the Landa calendar.

Endnote 5: The Relationship between the **Ah Cuch Haaboob** and the Christian Year

While the Books of Chilam Balam show some confusion concerning the relationship between the **Ah Cuch Haaboob** and the Christian year, when all the various pieces of data are taken together it is clear, and has been clear for some time, that the **Ah Cuch Haaboob** as given above in the table **U Buk Xoc Ahau Katun** are the correct ones. Thus, for example, according to the table the **Ah Cuch Haab** 6 Cauac fell in 1560. It follows from the 52 year cycle, **U Bubukil Haaboob**, that the next year, 7 Kan, fell in 1561, that the year after, 8 Muluc, fell in 1562, etc. through 52 years, at which point the **Ah Cuch Haab** 6 Cauac would come again in the year 1612. Of course, this information is only good to place **U Bubukil Haaboob**, and thus the **Ah Cuch Haaboob**, within the context of the Christian calendar, but does nothing to fix such things as the katuns to the Christian calendar.

Endnote 6: Julian versus Gregorian Calendars and the Correlation Question

There is the correlation question as it relates to the question of Julian versus Gregorian calendars. In 1582 the Catholic church, under the guidance of Pope Gregory, updated the intercalary system of the calendar in order to keep the Christian calendar in sync with the solar year. It was determined that there was a ten day difference between what the Julian calendar showed and what it should show. Not only was the intercalary system reformed, but the calendar was also readjusted to realign the solstices and equinoxes of Christian calendar with what were considered to be the correct dates and 10 days were added to the Julian date to arrive at the new Gregorian date. Thus, for example, the day July 16th in the Julian calendar became July 26th in the Gregorian calendar.

The fact that the Books of Chilam Balam equate July 16th with **1 Poop** would show that the origin of this idea is pre-Gregorian, since this correlation agrees with Landa. However, as one works with the various works which have survived from the colonial era, it is very apparent that scribes generally put very little thought into what it is that they are transcribing, and thus if they were working on a text which equated July 16th Julian with **1 Poop** even though they are working in the Gregorian era, it apparently did not have occurred to them to make the proper adjustment and rewrite the text to show July 26th = **1 Poop**.

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SKY BEARERS, COLORS AND DIRECTIONS IN MAYA AND MEXICAN RELIGION

By J. ERIC THOMPSON

Five plates

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SKY BEARERS, COLORS AND DIRECTIONS IN MAYA AND MEXICAN RELIGION

MAYA SKY BEARERS, COLORS AND DIRECTIONS

Gods who bore the weight of the heavens and were at the same time associated with world directions and, by extension, with their respective colors, are known to have played an important role in Maya and Mexican religious belief and ceremony. Bishop Landa, that Cadmus of Yucatan, supplies us with an insight into such beliefs among the Maya, writing:

"Among the multitude of gods which this people worshiped, they adored four, each one of which was called Bacab. They said that these were four brothers whom God placed at the four quarters of the world when He created it, supporting the sky so that it should not fall. They said also of these Bacabs that they escaped when the world was destroyed by flood. They give each of them other names, and with these indicate to what quarter of the world God has placed him, holding up the sky, and they appropriate one of the four year bearers to him and the quarter in which he is."[2]

Landa proceeds to give further information as to the association of the Bacabs with directions and colors, as well as their supplementary names. This information can be summarized in the following table:

Name	Supplementary Names	Color	Direction
Kanal Bacab	Kan Pauah Tun, Kan Xib Chac, Hobnil	Yellow	S
Chacal Bacab	Chac Pauah Tun, Chac Xib Chac, Canzienal	Red	E
Zacal Bacab	Zac Pauah Tun, Zac Xib Chac, Zaczini	White	N
Ekel Bacab	Ek Pauah Tun, Ek Xib Chac, Hozanek	Black	W

A later writer, Lopez de Cogolludo, who copied much of his material from Gaspar Antonio Xiu, tells us that the Maya believed in certain gods who supported the sky and were also wind gods. Their names were Zacal Bacab, Kanal Bacab, Chacal Bacab and Ekel Bacab.[3] The prefixes mean, respectively, white, yellow, red and black, agreeing with those given by Landa.

Actually the four Pauahtuns and the four Chacs would not appear to be quite the same as the Bacabs, although in functions and directions they seem to merge into one another. The Chacs were rain gods, while the Pauahtuns, also, it would seem, known as Pauahs, were wind gods.[4]

The associations of colors with directions as given by Landa are amply confirmed from other sources, some of which are more reliable even than Landa. This association of red with east, white with north, black with west, and, lastly, yellow with south are shown on pages 30 and 31 of the Dresden Codex as well as on pages 29 and 30 of the same original source. Other scattered references in the Dresden Codex confirm these associations. They are found in exactly the same relations in the Ritual of the Bacabs, probably our earliest Maya manuscript,[5] and also in the

[2] Landa, Section 34.

[3] Cogolludo, Bk. IV, chapter 8.

[4] It is possible, although not very probable, that Pauah is a corruption of Pahaa. According to Granados (Brinton, 1881, p. 631) this was a Mexican term for the abode of the Tlalocs, possibly connected with Pahatl, meaning flower water.

[5] Gates quotation, 1931, p. 105.

Chilam Balam of Chumayel.[6] That the association of these colors with their respective world directions was very strong, is shown by their survival into the Nineteenth Century, when they were recorded by Baeza, who wrote an account of native survivals in Yucatan,[7] and much of whose material was subsequently used by Mendez.

It is clear, then, that Landa was correct in his associations of colors with directions. However, when one tries to obtain unanimous evidence on the associations of these colors and directions with year bearers, adjustments must be made. The various wheels, such as those given in the Chilam Balams of Tizimin, Kaua and lxil are in agreement in assigning directions, when these are given or indicated, as Kan to the east, Muluc to the north, Ix to the west and Cauac to the south. Cogolludo gives the same associations, except that he omits the year-bearer Kan, speaking, instead, of Cuch-haab.[8] The association of Kan, the first of the year bearers, with the east, the direction of the rising sun, would appear a natural one. Landa, however, in one passage, associates Kan with the south, Muluc with the east, Ix with the north and Cauac with the west. Subsequently he describes the new year ceremonies in some detail. He writes:

"The year, whose year bearer was Kan, was under the tutelage of Hobnil, and, according to what they said, both of these ruled in the south. This year, then, they made an image or hollow pottery figure of the demon whom they called Kan-u-Uayeyab [Yellow Uayeyab], and they carried it to the piles of mortarless stones which they had [standing] prepared at the south [of the town]."

After a feast had been held and a newly made statue of Bolon Zacab had been placed in the house of the patron of the feast, the worshipers went again to the south side of the town. After certain ceremonies there, the statue of Kan-u-Uayeyab, with a sting-ray fish (?) on its back, was brought back to the town and placed in the house of the patron of the feast, where the statue of Bolon Zacab already reposed. Here certain ceremonies were held. Landa's description continues:

"When these nameless days were passed, they carried the statue of the demon Bolon Zacab to the temple and the image of the Yellow Uayeyab to the east of the town so that they could go and fetch it another year, and they threw it down there, and went away to their houses to make their preparations, each one to take his part in the celebration of the new year."

The ceremonies of the following years are of the same nature so far as the Uayeyab ceremonies are concerned. In the festivities that ushered in the Muluc years, an image of a red Uayeyab was made and carried to the east, and then at the close of the nameless days it was dumped at the north side of the town. From this description it is clear that the yellow Uayeyab only ruled in the five nameless days preceding the beginning of a Kan year, and that he ruled over the south, but at the end of his rule was unceremoniously deposited at the east quarter, presumably to wait there until his successor, the red Uayeyab, was carried there to start his reign in the following five nameless days. However, the five nameless days at the eve of a Kan year start with the day Cauac and are attached to a 360-day year which has the day Cauac as its year bearer. In other words Landa is describing ceremonies that usher in a Kan year, but actually are under the influence of Cauac. For this reason the color is yellow and the direction south, and the whole is in agreement with the other evidence associating Cauac-south yellow. Similarly the ceremonies ushering in a Muluc year will fall under the influence of the day Kan and will be associated with the east and red. Naturally once the new year of Kan had been inaugurated, the color switched to

[6] Martínez, 1911; Roys, 1933.
[7] Baeza. Fide Brinton, 1890, p. 166.
[8] Cogolludo, Book IV, chapter 5.

red and the direction to east. Similarly the opening of a Muluc year was accompanied by a change from the red and east of the nameless days to north and white.[9]

Landa rightly associated yellow and south with the festivals at the eve of the Kan year, since the whole account was probably dictated by one of his informers. He even showed that the direction shifted to the east at the new year, as Thomas has pointed out,[10] but he appears to have deduced from these eve-of-the-feast associations that the new Kan year was similarly associated with the south and yellow, thereby wrongly assigning the Xib Chacs and Pauahtuns, who did not take office until the new year had been ushered in and the count, under the influence of the new-born Kan, had switched to east and red.[11]

As first pointed out by Cyrus Thomas, pages 25 to 28 of the Dresden Codex deal with ceremonies ushering in the new year. The years, however, instead of Kan, Muluc, Ix and Cauac, have as their year bearers Akbal, Lamat, Ben and Eznab. This, naturally, throws all directions and colors back a point. Whereas Kan is associated with east and red, Akbal, which falls in the same group as Cauac, Manik, Chuen and Men, is associated with the south and yellow. Similarly Lamat, which falls in the same group as Kan, is associated with the east and red, while Ben and Eznab are associated with north and white, and west and black, respectively.

The Dresden pages in question, like the ceremonies discussed by Landa, start in the days Uayeb and are, accordingly, one direction and one color earlier in the round than the year they are about to usher in. Consequently Eb falls in the Uayeb days of a year Lamat and is associated with the east and red. Caban falls in the Uayeb days of a year Ben and is associated with the north and white. Ik falls in the Uayeb days of a year Eznab and is associated with the west and black, while Manik falls in the Uayeb days of a year Akbal and is associated with the south and yellow.

Seler has already pointed out that the signs for north and south are transposed on these pages.[12] I would suggest that the associated colors on these two pages are similarly transposed. Colors and directions are so closely connected that a mistake in one would almost automatically cause a mistake in the other. That this transposition is not unjustified, is shown by the arrangement of associated deities, which clearly is not in sequence. The true sequence can be restored, since the deity that is shown one year as being in the open in the bottom section is shown the following year in the temple in the middle section. Similarly, the pagination, on the strength of the deities should run: 25, 28, 27, 26. That is: Agricultural god-sun, sun-Itzamna, Itzamna-death, death-agriculture (p. 226).

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[9] Thomas, 1882, p. 69, was the first to point out that the ceremonies described by Landa were eve of the new year celebrations, but he failed clearly to realize that the nameless days were not governed by the patrons of the old year, but by their own patrons, who were associated with the same direction and color as the dead year, because they had the same governing sign as the year-bearer. This necessarily followed since the haab is divisible by twenty without remainder.

[10] Thomas, 1882, pp. 69-70.

[11] It is possible that originally the direction gods were not associated with the cardinal points, but with the angles between (i.e. northwest, southeast, northeast, and southwest). This doubt is based on information supplied me by Mr. Alfonso Villa. He tells me that although the majority of modern Maya h-menob associate direction gods with cardinal points, yet one old h-men, the last Batab of Chemax, very definitely associates the gods with the angles. Here, then, we have a statement from a conservative source in a conservative town on the very edge of the area strongly influenced by European ideas. One might also call attention to the fact that the Chac priests in the casting out of evil, described by Landa, sat in seats at the angles of the square.

[12] Seler, 1904, p. 33. Strangely Seler, 1902-1922, V, associates east and yellow; north and red, etc.

Making the suggested transpositions, we obtain the following:

Page	Day Signs		Direction (Uayeb)	Direction (New Year)	Color
25	Eb	Ben	East	(North)[13]	
26	Caban	Eznab	North[14]	(West)	Black
27	Ik	Akbal	West	(South)	
28	Manik	Lamat	South[13]	(East)	Red

The colors on the two pages, where they are visible, appear to refer to the new years which are about to come into existence - in the one case the year Eznab, and in the second case the year Lamat.

It is now clear why there is a real agreement between these pages and the other sources of information on year bearers, directions and colors. Had the year bearers originally been Ik, Manik, Eb and Caban, their respective colors and directions would have been Ik-west-black, Manik-yellow-south, Eb-red-east, Caban-white-north.

Similarly, as Thomas pointed out over fifty years ago, pages 20 to 23 of the Codex Troano depict the ceremonies that took place in the Uayeb days on the eve of the new years. The information can be arranged as follows:

Page	New year	Uayeb bearer	Direction	Color	Remarks
23	Cauac	(Ix)	West	(Black)	Black Uayeyab or Ix-Uayeyab?
22	Kan	(Cauac)	South	(Yellow)	
21	Muluc	(Kan)	East	Red	
20	Ix	(Muluc)	North	(White)	

The data in the Codex Troano are, therefore, in accord with the rest of the data. The change at the start of a new year might be compared to the inauguration at the White House of a President of different political affiliations from the outgoing incumbent. The change in President brings a change all along the line, from Secretary of the Interior down to the humblest postmaster. In the same way the change in the Maya year brought a similar change in year bearer, color, direction and patron deities.

So far as the Kan-Muluc-Ix-Cauac years are concerned, the whole evidence is in complete agreement and can be expressed as follows:

Year-bearer	Color	Direction	Deities
Kan	Red	East	Chacal Bacab, Chac Xib Chac, Chac Pauahtun
Muluc	White	North	Zacal Bacab, Zac Xib Chac, Zac Pauahtun
Ix	Black	West	Ekel Bacab, Ek Xib Chac, Ek Pauahtun
Cauac	Yellow	South	Kanal Bacab Kan Xib Chac Kan Pauahtun

Landa also tells us a special feast of the bee keepers, held in the month Tzec to assure a bountiful supply of honey, was under the patronage of the Bacabs, and particularly of that Bacab known as Hobnil.[15] Roys has pointed out that Hobnil refers to something hollow, and was a term applied to

[13] Parentheses indicate data not recorded.

[14] Transposed.

[15] Landa, p. 296.

the hollow log bee-hives of the Maya.[16] It is possible that this festival was not connected with the Uinal Tzec, but was held on the day 1 Kan, which in Landa's type year happened to fall at the start of Tzec. The day, 1 Kan, is of course, the day on which the year-bearer sequence starts, when it coincided with 1 Pop. From the ritual of the Jacaltecas, we know what importance was attached to the chance occurrences of year-bearer days.[17] There would, therefore, be good reason for holding the Bacab feast on the anniversary of the first day of the fifty-two year cycle, over which they presided. It is true that Hobnil, according to Landa, was associated with Cauac years, but he is doubtless only given prominence because of his very direct association with apiculture.

In the Chumayel we also hear of the Muzencabs, bee gods, associated with the world directions and world colors.[18] Roys identifies the well-known diving god of Tulum, Coba and other localities with them.[19]

It is difficult to say whether the Muzencabs represent one aspect of the Bacabs or whether the two groups of deities are distinct. If not identical, they are at least so closely identified as to render their distinct identities doubtful. Both groups are associated with world directions and world colors, both groups are patrons of apiculture, both groups figure in the creation legend and, as I hope to establish, both groups were shown diving headlong downward.

It is possible that the various groups of Maya direction gods, such as Bacabs, Chacs and Pauahtuns, were considered to be on different celestial or terrestrial planes, In any case, there is considerable confusion as to their identities and functions, as Landa's account shows.

Martinez, in an editorial note in the Motul Dictionary under the heading Baac, derives the name Bacab from baac, a Maya word meaning pouring out from ajar. This, he believes, indicates that the Bacabs were rain deities, pouring out the rains from jars in the same way as is related of the Tlalocs in the *Historia de los mexicanos por sus pinturas*. Landa, we have seen, considers them deities of apiculture, while Cogolludo writes that they were wind gods. For bacab, the Motul Dictionary gives a translation of actor or buffoon, which would scarcely fit in. This may, however, be an entirely distinct word or a secondary derivation. It is possible, although definite proof is lacking, that the sky-bearer name may have been ba'cab, in which case it might have been a contraction of bak and cab, signifying "around the earth," as given in the Perez Dictionary. Such a term would well describe the Bacabs placed at the four compass points.[20]

I am inclined to think that whatever may have been the original functions of the sky bearers, Maya popular opinion considered them to be also patrons of the bees and associated with the winds and rains. The latter aspect is, possibly supported by the fact, reported by Landa, that the fortune of the year was largely dependent on the ruling Bacab. Naturally the aspect of the year depended very largely on the quantity of rain brought by the winds at the right moment and the

[16] Roys, p. 171.

[17] La Farge and Byers, pp. 174-175.

[18] Roys, 1933, p. 63.

[19] Roys, loc. cit.

[20] Dr. Andrade, to whom I submitted this hypothesis, is of the opinion that this derivation is a possibility that is as likely to be correct as not, since he has found that a glottalized k becomes in modern Maya a glottal stop before another consonant. Since glottal stops are not indicated in early dictionaries, ba'cab and bacab would both be written as bacab.

absence of rain when the milpas had to be burned.[21]

In the Maya codices there are no actual scenes depicting groups of four deities supporting the burden of the heavens, but there are many representations in stone, to which reference will subsequently be made.

In brief, the Maya literary sources tell us that there were four upholders of the heavens, who were also wind and apiculture gods. They survived the flood at the time before the sun was created. They were linked with colors and directions as shown in the table given above (p. 215).

MEXICAN SKY BEARERS, COLORS AN DIRECTIONS

Turning now to Mexican sources, we find a full account of the early activities of the sky bearers.[22] In the *Historia de los mexicanos por sus pinturas*, we read:

"And when the four gods had seen that the heaven had fallen on the earth [after the flood] ... they ordained that all four should make through the centre of the earth four roads by which to enter it in order to raise the heavens, to assist in which task they created four men. One they called Cotemuc, another Izcoaclt, another Yzmali, and the fourth Tenesuchi. These four men having been created, the two gods, Tezcatlipuca and Quizalcoatl, then formed themselves into enormous trees, Tezcatlipuca becoming the one known as Tazcaquavilt, meaning the tree of the mirror [Tezcaquahuitl, the tree of the warrior] and Quizalcoatl the Quezalhuesuch [Quetzalueixochitl], and gods and men and trees together raised on high the heavens and the stars, just as they are today, and as a recompense for having raised them, Tonacatecli [Tonacatecutli], the father, made them lords of the heavens and the stars and, when the heaven was raised, Tezcatlipuca and Quizalcoatl walked through it, and made the road which we now see there and met in it, and remained there in it, and held their abode there.

"After that the heaven was lifted up, the gods renewed life to the earth which had expired when the heaven fell upon it, and in the second year after the deluge which was Acati, Tezcatlipuca altered his name and changed himself into Mixcoatl." [Abandoned his name and changed it to Mixcoatl.][23]

Two Mexican codices, Borgia and Vatican 3773 throw much light on sky bearers. The Codex Borgia depicts on pages 49 to 52 four deities, whose upturned palms support the conventional representations of the night sky (Plates 1 to 4).

These deities, which follow in sequence from right to left, have been identified by Seler as Tlauizcalpantecutli, Huitzilopochtli as a fire god, Quetzalcoatl-Eecatl and Mictlantecutli.[24] While there is no doubt that Seler is correct in three of his identifications, it would appear that his identification of the second deity as Huitzilopochtli is in all probability erroneous. This god

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[21] I believe that from the earliest times the Maya used the milpa system with perennial cultivation of kitchen gardens. This system, I believe, supported a population sufficiently large to have built, in the course of some 2,000 years, every mound and structure from Silan to the edge of the Guatemalan Highlands. The occasional terraced hillsides might well have served as orchards or kitchen, gardens.

[22] 'The term Mexican is used in this publication in a broad sense to include all Nahua cultures and those strongly under Nahua influence.

[23] English translation of Phillips. A briefer account of the same general legend is given on pages 1 and 26 of the *Histoyre du Mechique*.

[24] Seler, 1904-1909, vol. II, pp. 126-134.

(Plate 1b) bears no resemblance to Huitzilopochtli; although there are lines across the eye and on a line with the mouth, such as one sees on Xiuhtecutli, the fire god, this identification appears dubious since the black rubber coating on the chin, a sure means of identification of Xiuhtecutli and certain other deities, is not present. Furthermore, Xiuhtecutli's face is almost invariably shown as red, whereas that of the god in question is yellow.

The deity, however, bears a considerable resemblance to Otontecutli, a somewhat obscure deity of the Otomis, who in turn, I believe, can be considered as nothing more than a male variation of Itzpapalotl, the obsidian butterfly goddess, and possibly confused with Itztli and Mixcoatl.

Sahagun gives an illustration of Otontecutli. This shows the same horizontal bands across the face as are shown on the god in question on sheet 50 of the Borgia codex. Underneath is given Sahagun's description in Nahuatl. Seler's translation reads in English as follows:

"On his face he has different colored transversal stripes. He has a paper wig with obsidian butterflies stuck in it. He has a band of paper wound around his shoulders. He has an armband. He has a loin cloth of bark cloth. Little bells and shells are on his feet. He wears a white sandal. His shield is decorated with feather balls and through it is stuck a spear with a shaft of cactus. He carries in his hand an arrow with a shaft of cactus."[25]

Elsewhere Sahagun informs us that Otontecutli was, as his name would indicate, an important god of the Otomis, and one of those who fell from the sky; in other words a Tzitzimitl. From the description given above we see that he was associated with an obsidian butterfly and also with cactus. Itzpapalotl, on the other hand, was believed to have been a Chichimec deity, but early writers confuse Chichimecs and Otomis, so there is reason to believe that Otontecutli was merely a male variant of Itzpapalotl, the obsidian butterfly, and closely identified with Mixcoatl, the chief hunting god.

On the same page of the Borgia codex as that on which our dubious deity upholds his share of the heavens, there is a conventionalized tree, one of five that represent the four quarters of the world and the center (Plate 1b). This tree is a cactus plant of the same species as that forming the shaft of Otontecutli's arrow and spear shafts. This cactus plant has been generally recognized to represent the north quarter.

This juxtaposition is strong evidence for recognizing the deity in question as Otontecutli-Itzpapalotl, the Chichimec-Otomi god, the god of the north, associated with cactus and recognizable by the two stripes across the face, level with eyes and lips, and by the absence of a black chin. At the same time we can surmise that he supports the north quarter of the heavens.

In Codex Vaticanus 3773, a similar series of four deities supporting the night sky is shown on pages 19 to 22. These, reading from left to right, have been identified by Seler as Tlauizcalpantecutli, Huitzilopochtli as a fire god, Quetzalcoatl and Mictlantecutli (Plates 3, 4). While agreeing with the other identifications, I again believe that the second of the series does not represent Huitzilopochtli. The deity in question bears practically no resemblance to a fire god and even less to Huitzilopochtli. His distinguishing feature is a mask over the upper part of the face which has the same plaid pattern as marks the cactus plant of the north (compare the tree of Plate 1b, with the mask of Plate 3b). This cactus mask suggests strongly that the deity in question is again Otontecutli-Itzpapalotl, and this identification is strengthened by the fact that the deity bears the same relation to the other three sky bearers as Otontecutli-Itzpapalotl bore to the

[25] Sahagun, 1927, vol. I, p. 37.

identical three gods in the Codex Borgia.

It has already been suggested that Otontecutli-Itzpapalotl should be assigned to the north. The tree of the south is easily recognizable by the macaw perched on it. Above it stands Mictlantecutli, the death god, supporting the night sky. He should, therefore, also be assigned to the south. To the east must be assigned Tlauizcalpantecutli, as lord of the morning star, leaving the west for Quetzalcoatl-Eecatl.

In the list given below, these deities are placed in their original order with the corresponding world directions already suggested. The third column gives the year-bearer days placed beneath the corresponding deity in Codex Borgia and to the left in Codex Vaticanus 3773. The fourth column gives the directions with which the corresponding world trees in Codex Borgia are associated according to Seler, each tree being correlated with the sky bearer on the same page of the manuscript.

Night sky bearer	Direction	Day	Tree direction
Tlauizcalpantecutli	E	Acatl	E
Otontecutli-Itzpapalotl	N	Tecpatl	N
Quetzalcoatl-Eecatl	W	Calli	W
Mictlantecutli	S	Tochtli	S

The deities at the bases of the direction trees in Codex Borgia are unsatisfactory, while those at the bases of the trees of Vaticanus 3773 are hard to identify. That of the north is clearly Mixcoatl, closely identified with Itzpapalotl, Itztli and certain aspects of Tezcatlipoca, while that of the south is perhaps some variant of Tezcatlipoca.

It should be noted that Seler gives the directions of the sky bearers as Tlauizcalpantecutli - west, Huitzilopochtli - south, Quetzalcoatl - Eecatl - east, and Mictlantecutli - north. However, in order to reach this conclusion, he was forced to ignore the day signs under the deities, for if they are invoked, he gets the associations Calli - east, Tochtli - north, Acatl - west, and Tecpatl - south.

However, early writers, including Sahagun and Duran, are unanimous in associating the year bearers with directions as given in the table above. Furthermore, Seler's association violates the arrangement of the pages of Codex Borgia in question, making the top part of a page deal with one direction and the lower part with an entirely different direction. Seler fell into error by being dominated by two assumptions, which I believe to have been fallacious. The first was that the deity here identified with the Otontecutli-Itzpapalotl-Itztli group was a representation of Huitzilopochtli and therefore associated with the south. The second was that the north was the realm of the dead and that Mictlantecutli was, therefore, ruler of the north. The reasons why I believe that Mictlantecutli had nothing to do with the north will be taken up after the problem of the Mexican direction colors has been discussed.

Here, we have little direct help from early sources. So far as I know, there is no case where colors are definitely associated with directions, except the reference from Gemelli, shortly to be quoted. In this connection one must remember that Gemelli's veracity has been very seriously questioned, for it has even been charged that Gemelli's tour round the world was conducted without stepping out of his library chair.

Literary sources throw little light on the subject. Acosta states that the direction colors were

green, blue, red and yellow, but he does not assign specific directions to these colors.[26] Acosta, however, although fully acquainted with Peru, is a poor informant so far as Mexico is concerned. Furthermore, it is extremely unlikely that both green and blue would figure in the list, since among most American Indians they were considered to be shades of the same color.[27] Gemelli gives a full association of colors, year bearers and directions, the associations being: south – Tochtli - blue; east – Acatl - red; north – Tecpatl - yellow; west – Calli - green.[28] However, one suspects that Gemelli, who wrote at the close of the Seventeenth Century, took Acosta's statements about the year bearers and the colors, and arranged them as given above.

Quiche world colors were the same as those of the Yucatecan Maya - red, white, black and yellow - according to one passage in the Popol Vuh, while another passage speaks of the four colors (actually roads) as red, white, black and green.[29] It is true that green figures in the Yucatecan list, but as the center color, as is clearly brought out in the account of the creation in the Chilam Balam of Chumayel. It may, therefore, be that in the first citation the four quarters are under discussion, while in the second citation three quarters and the center are the roads.

In the *Historia de Colhuacan y de Mexico* we read that the green, white, yellow and red Tlalcos stole the white, black, yellow and red maize, while elsewhere in the same source we read of the green, white, yellow, red and black tecpatl.[30] Perhaps it is worthy of remark that the maize colors are the same and in the same sequence as the Maya directions, and white appears to have been associated with the north, since we read of Iztac Mixcoatl while white was associated with Itzpapalotl. Both of these are deities of the north.

From the *Historia de los mexicanos por sus pinturas* we learn that the four hundred human beings created by Tezcatlipoca lived in the third heaven. Their colors were yellow, black, white, blue (green?) and red, and they were the guardians of heaven.[31] This statement would suggest the Centzon Mimixcoa. The colors, however, are the same as those of the Maya directions, and although these four hundred men - possibly those who were slain by Huitzilopochtli - were assigned to the north with their leader Mixcoatl, yet each direction may have been subdivided into north, west, south, east and middle.

Similarly we find on pages 47 and 48 of Codex Borgia five Huitznaua, associated with the south, similar in attributes except for coloration. The deities are painted black, olive, yellow, red and brown. On the same pages are shown five Ciuateteo, associated with the west, and similar except for the coloration. These colors are white (and striped red and white), olive, yellow, red and black. Five representations of Tlazolteotl (the fifth possibly Mayauel) are equally uncertain.[32]

In the *Anales de Quauhtitlan* we read that the men were sent forth to catch eagles colored blue

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[26] Acosta, Bk. VI, chapter 2.

[27] Cf. The Maya word Yax, which is used for both blue and green. The same view obtains at least as far as Colombia.

[28] Gemelli, according to Larousse, was considered by many to have obtained his material by compilation.

[29] Popol Vuh, pp. 229, 259.

[30] Lehmann, pp. 256 and 275.

[31] Icazbalceta version, p. 256.

[32] Lehmann, 1905, has a lucid discussion of this matter.

(green), yellow, white and red.[33] Elsewhere the musicians of the sun are said to have been white, red, yellow and green.[34]

Seler, after studying the question of colors in considerable detail, reaches the conclusion that the direction colors varied from tribe to tribe and even from section to section of the same manuscript.[35] Whatever they may have been, it is clear that direction colors played a smaller part in Mexican ritual than in Maya ceremonies. It is quite possible that many of the examples which Seler believed indicative of direction colors were not painted with this end in view. Direction colors might vary from tribe to tribe, but it is unlikely that they would vary in the same manuscript.

The general mass of evidence strongly suggests that the Mexican colors were the same as the Maya, namely red, white, black, yellow and green (or blue), but there is little evidence yet produced as to whether these colors were assigned to the same directions as were the Maya colors.

White, as already pointed out, was the color of the deities of the north according to the very important native *Historia de Colhuacan y de Mexico*. On the other hand, yellow is the color of death and of Mictlantecutli. This deity, we have twice seen to have been associated with the south, and further evidence yet to be presented will confirm this association.

The sun, elsewhere associated with the east, is frequently shown with hair strangely colored red, although his face is almost invariably shown as yellow. I would suggest that these flame-red locks indicate that red is associated with his direction, the east. This would leave black or green for the west. Since the suggested direction-color associations so far agree with those used by the Maya, one feels that there are grounds for associating black with the west and green with the center. This grouping of directions must be regarded as little more than tentative, and as a possible incentive to other workers to tackle the subject afresh. At least, it is in line with so much other ritualistic material, which Yucatecan Maya and Mexicans shared. For comparative purposes, the material from the two areas is here presented in tabular form:

Maya				Mexican		
Day	Direction	Color	Earlier year bearer	Day	Direction	Color
Kan	East	Red	Lamat	Acatl	East	Red?
Muluc	North	White	Ben	Tecpatl	North	White
Ix	West	Black	Eznab	Calli	West	Black?
Cauac	South	Yellow	Akbal	Tochtli	South	Yellow

It will be seen that the Maya days are one direction ahead of the equivalent Mexican days, reckoning counter-clockwise. Similarly, the colors, being tied to the directions, are also one place out of step. Can this small difference derive from the same cause that led to the Maya and Mexican days being one day out of alignment with each other in relation to the European calendar?

Although it might appear impious to challenge the conclusions of a Nestor in his native Pylos,

[33] Anales de Quauhtitlan.

[34] Histoyre du Mechique, p. 33.

[35] Seler, 1901-1903, p. 20. See Dixon for confusion between green, blue and black.

yet I venture to differ from Dr. Seler as to the connotations of the Mexican name for the region of the north. Sahagun, in his account of the migrations of the Nahua peoples, speaks of the land to the north as "Teotlalpan, Tlacochcalco and Mictlampa, which means great extensive plains."[36] Seler and all other writers, so far as I know, ignore Sahagun's translation of the last word as great extensive plains, and take the word to mean the place of the dead. From this, in turn, they assume that the north was the region of the dead and was ruled by Mictlantecutli, the death god. It would appear that the word is in all probability derived from the compound Miec-tlalli-campa. The dictionary gives for miec-campa in many parts, while tlalli means land. Thus the whole word could have meant "land in all directions," which is precisely the translation Sahagun gives. Whether the letter e in Miec was accidentally dropped by Sahagun or whether the three syllables would contract to form Mictlampa, I am not in a position to say, but Sahagun's own words show that the Aztecs considered their word for the north region to mean the wide open spaces, and not the land of the dead. That Sahagun's definition refers to the name he writes Mictlampa is shown by the structure of the sentence and also can be proved by eliminating the other two Nahua names. The first of these is clearly meant to be Teotlalpan, the special temple of Mixcoatl, while the second means "War Oratory," both appropriate names since the gods of the north - Mixcoatl, Camaxtli, Otontecutli - were hunting and war gods and were believed to have introduced war into the world. One might also call attention to the fact that Tecpatl, the sign of the north, was, according to Sahagun, the festival of the war deities, Camaxtli and Huitzilopochtli. Indeed, the emblem is a flint denoting war and hunting.

This erroneous belief that the name for the north meant the land of the dead led Seler to state that Mictlantecutli was the sky bearer of the north, despite the fact that he is forced to associate this same deity with the tree of the south on the very same page of the Borgia Codex, and to ignore the Tochtli glyph indicating south, immediately below. Furthermore, Tochtli years, as years of the south, were considered to be years of famine and pestilence - a natural assumption if Mictlantecutli was their ruler. The evidence as I see it is very much in favor of associating Mictlantecutli with the south, just as the Yucatecan death god was also associated with the south (p. 226).

It is true that Duran and other writers also associate the land of the dead with the north. It is probable that the Aztecs considered the abode of the dead to be in the north, but this may have been a later belief due to the fortuitous resemblance of the two words.

OTHER MEXICAN DIRECTION GODS

On pages 49 to 53 of Codex Borgia and on pages 19 to 22 of Codex Vaticanus 3773 are four other deities, each of which is placed beside a sky bearer. These are plainly directional gods, but I believe they should not be taken to represent the same directions as their associated sky bearers, since the day signs beneath each of these deities indicate other directions. With the exception of the last, each of these deities stands above three day signs. It would seem most probable that the middle day sign is that of the direction represented. In this way each of these deities, who by their rattles or, in one case, tree are clearly earth deities, represents the contrary direction to that of the juxtaposed sky-bearer. The earth deities and sky bearers with their respective signs may be tabulated as follows:

[36] Sahagun, Bk. IX, chapter 29, No. 14, Kingsborough version. The Simeon version gives Tlaotlalpan as the first name. As explained above this is clearly wrong. (DB: See A & D, 1961, Book 10, page 197.)

Borgia	Vat. 3773	Day sign	Direction	Associated deity	Remarks
p. 49	p. 19	Malinalli			In sky
		Acatl	E	Tlauizcalpantecutli	Sky-bearer
		Ocelotl			
		Quauhtli	W	Xipe Totec	Rattle-bearer
		Cozcaquauhtli			
p. 50	p. 20	Olin			In sky
		Tecpatl	N	Otontecutli-Itzpapalotl	Sky-bearer
		Quiauitl			
		Xochitl	S	Mictlantecutli	Rattle-bearer
		Cipactli			
p. 51	p. 21	Eecatl			In sky
		Calli	W	Quetzalcoatl-Eecatl	Sky-bearer
		Cuetzpalin			
		Coatl	E	Xochipilli-Piltzintecutli	Rattle-bearer
		Miquiztli			
p. 52	p. 22	Mazatl			In sky
		Tochtli	S	Mictlantecutli	Sky-bearer
		Atl			
		Itzcuintli	N	Centeotl	Rattle-bearer
p. 53	p. 23	Ozomatli	Center	Tzontemoc	

It will be noted that the last day, Ozomatli, is in both codices detached from the series to serve what is apparently the center direction. That Ozomatli was normally associated with the west is shown by its occurrence at the bottom of page 51 of Codex Borgia in association with Calli, Mazatl, Quauhtli and Quiauitl, the other day signs associated with the west.

Seler's identification of the rattle-bearer deities has been followed, except to change the god associated with the east from Xochipilli to Xochipilli-Piltzintecutli, the youthful sun god and hunter. One might also call attention to the fact that Xochipilli replaces Piltzintecutli as lord of the third night in the list of Lords of the Nights given by Cristoval de Castillo.

The connection between Xochipilli-Piltzintecutli and the young sun god has been pointed out elsewhere, and is best brought out by the Maya cycle of legends of the youthful sun god hunter, the husband of the moon goddess.[37] The youthful hunting aspect is indicated by the eagle feathers in the headdress. These denote the hunting gods of the north, Mixcoatl and his variants; furthermore the Vaticanus deity has on his face the circular spot of the sun god (cf. Tonatiuh on Borgia, p. 12, and naturalistic representations of the sun god as the day Ahau among the Maya).

Another group of direction gods is shown in front of temples. These gods are to be seen on sheets 49 to 52 of Codex Borgia (Plates 1, 2, lower halves), on sheets 12 and 13 of Codex Bologna and on sheets 33 and 34 of Codex Fejervary-Mayer, where they are in some way connected with the growth and vicissitudes of the maize crop. As these deities are only four in number, lacking a fifth to represent the center, we can infer that they are connected with the sky

[37] Thompson, 1930, pp. 119-140, and 1932.

or perhaps one should say with a region above ground. These deities may be tabulated as follows:

Direction	Borgia	Bologna	Fejervary-Mayer
East	Tonatiuh	Tonatiuh	Tonatiuh
North	Itztlacoliuhqui	Tezcatlipoca-Itztlacoliuhqui	Tezcatlipoca-Itztlacoliuhqui
West	Centeotl	Centeotl	Centeotl
South	Mictlantecutli	Mictlantecutli	Mictlantecutli

In the above identifications I have followed Seler. The western deity may not be Centeotl, but at least he is a maize deity. The deity associated with the north is very complex; in every case, features of Tezcatlipoca are present, and, as we shall see later (p. 230), he was identified with the Great Bear constellation, and for this reason is appropriately associated with the north. There is also an indefinable bond between him and Mixcoatl, the hunting god of the north. Obsidian is also associated with the north, supplying a bond between Itzpapalotl and Itzlacoliuhqui, god of cold and punishment. In two out of the three cases,the deity wears the Huaxtec nose ornament, as worn by the pulque gods and Tlazolteotl. This supplies an added perplexity. On the whole, we are probably safe in saying that the deity is some variant of Tezcatlipoca-Itzlacoliuhqui, who, according to Codex Telleriano-Remensis, was a star which was supposed to travel backward blindfolded and, like other gods of the north, was an omen of war.

Comparing the three groups of direction gods, we obtain the following correspondences:

Direction	Sky-bearer	Rattle-bearer	Temple deity
East	Tlauizcalpantecutli	Youthful sun	Sun god
North	Otontecutli-Itzpapalotl	Centeotl	Tezcatlipoca-Itzlacoliuhqui
West	Quetzalcoatl-Eecatl	Xipe Totec	Centeotl
South	Mictlantecutli	Mictlantecutli	Mictlantecutli

It will be noticed that in every case the deity associated with the south is Mictlantecutli; that is to say a total of seven representations, whereas in no case is the death god associated with the north. This is strong support for my thesis that the north has nothing to do with Mictlampa, save a fortuitous resemblance in name. Five of the cases associate the east with the sun, while, in the case of the two bearers of the eastern night sky, Tlauizcalpantecutli is the associated deity. This is not unreasonable, since the sun would normally have little to do with the night sky.

The night sky bearer of the west is Quetzalcoatl-Eecatl, whereas the western tree bearer is Xipe Totec in both codices. On the other hand the god of the western temple is Centeotl or a related maize deity. Here the correspondence is close, since Xipe Totec was primarily the god of ripe corn, as the flaying ceremony, with which he is associated, clearly symbolizes the husking of the maize.[38] Thus all the western deities, except the sky bearers, are associated with maize. Naturally one would not expect to find among the sky bearers deities so intimately associated with the earth as those of maize.

However, when we treat of the north direction gods there is some discrepancy. The night sky bearers and gods before temples fall into the Otontecutli-Itzpapalotl-Itzlacoliuhqui-Tezcatlipoca-Mixcoatl group. That is to say deities associated with hunting and obsidian, but the deity that

[38] Thompson, 1933, p. 145.

represents the north in the rattle-bearer groups is clearly Centeotl. It is clear that the rattle-bearer group represents earth deities of agriculture, for the rattle is one of the symbols of the earth fertility rites. This being the case, it would be impossible to include a deity of the hunting-obsidian-stellar group with the rattle bearers, for hunting with its attendant nomadism is the antithesis of sedentary agriculture. Hence the substitution of Centeotl, the young maize, for the hunter-obsidian-stellar deity.

On these same sheets, 49 to 52 of Codex Borgia, are shown four drillers of fire who likewise appear to be associated with the four world directions. They are, however, difficult of identification.

There remain for discussion the deities associated with directions on the famous direction chart of page 1 of Codex Fejervary-Mayer. Here Seler has happily identified the deities as the nine lords of the night assigned to directions.[39] However, the nine deities are not arranged in consecutive order, for the order is center, east, south, west, north; one would expect east, north, west, south, center. I would suggest that the order was neglected in order to conform as far as possible to the normal directions of the deities. For this reason the pair Piltzintecutli and Itztli were placed at the east, since Piltzintecutli, the young sun god, is the god of the east (p. 223). The fourth pair, Mictlantecutli and Centeotl, were similarly placed at the south, because the south is the direction associated with the god of death. Then Chalchihuitlicue and Tlazolteotl would be placed in the west, as Tlazolteotl, in one of her aspects, is an earth goddess and so directly connected with maize. Finally, the remaining pair would have to be placed at the north, the only remaining direction. It is true that neither Tlaloc nor Tepeyollotl have any connection with the north, or for that matter any other direction so far as we know, but Tepeyollotl is vaguely connected with Tezcatlipoca, and his temple, as depicted on page 4 of this same manuscript, has at its summit the Itzlacoliuhqui head-dress. This emblem we have already seen associated with the north (p. 229).

Thus it was possible for the scribe to bring one deity out of every pair into association with the direction in which he normally holds sway.

When one considers that the several manuscripts, from which comparisons have been made, probably originated in various parts of Central and South Mexico, the uniformity of direction deities is surprising. The almost total eclipse of Huitzilopochtli, the Aztec war god and tribal leader, serves to confirm the belief that none of the codices under discussion, with the possible exception of Vatican 3773, could have been of Aztec origin.

OTHER MAYA DIRECTION GODS

Direction gods, other than the Bacabs, are rarae aves among the Maya, so far as our present knowledge goes. According to Landa the gods associated with year bearers and world directions can be arranged as follows:

Deity	Year bearer	Direction
Bolon Tzacab (Agriculture)	Kan	East
Kinich Ahau (Sun god)	Muluc	North
Itzamna (Supreme god)	Ix	West
Uacmitun Ahau (Death god)	Cauac	South

[39] Seler, 1901-1902, p. 22.

This list, as given by Landa, is confirmed by pages 25 to 28 of the Dresden Codex. There, as pointed out previously (p. 213); we are dealing with the Uayeb festivals that precede the new year. At the center of each page a deity is shown in a temple, reminding us of Landa's statement that the presiding deity of the year was placed in a temple. The directions of the old years and their attendant deities are:

Page	Direction	Temple god	On dog's back	Below
25	East	God K (Bolon Tzacab)	God K	Kinich Ahau
26	North[40]	Kinich Ahau	Jaguar	God D[41]
27	West	God D (Itzamna)	Maize god (F)	God A (Death)
28	South[39]	God A (Death)	God A (Death)	God K[40]

The identity of Bolon Tzacab with God K was first advanced by Seler,[42] and has been accepted by other writers.[43] God D is generally recognized to represent Itzamna.

Accepting these identifications, the gods in their temples are the same deities and placed in the same sequence and in the same direction associations as those listed by Landa.

The deities in the bottom panels undoubtedly represent the patrons of the incoming years. For example God K on page 25 is the patron of the expiring year associated with the east (Lamat) and is seated in his temple. The new year will be under the patronage of Ben and the north. Accordingly, we see in the bottom panel the patron of the north, Kinich Ahau, or perhaps a priest representing him, making appropriate offerings prior to his elevation to rulership at the new year.

The deities carried in bundles on the backs of dog-like animals apparently refer to the dying years, since in two cases the deity is the same as that seated in the temple below. In one case a jaguar is shown. Why maize should be associated with the west is not apparent, but the association is clearly given on page 27, and is in agreement with Mexican material already discussed.

Landa's direction deities appear to correspond to the group of four Mexican deities before their temples - Sun god, Tezcatlipoca-Itzlacoliuhqui, Centeotl and Mictlantecutli (p. 224). Kinich Ahau can be equated with the youthful sun god of Mexico, while Bolon Tzacab and Uacmitun Ahau correspond functionally to Centeotl and Mictlantecutli, respectively. The correspondence between Itzamna and Tezcatlipoca-Itzlacoliuhqui is not very close, but one might note that both were supreme tribal deities and divine leaders of their peoples.

On the other hand, these sets of deities do not occupy the same directions in most cases. The Maya agree with the Mexicans in associating death with the south (Cauac and Tochtli years of ill-omen), but the Maya place their agricultural deity in the east, as compared with the western direction assigned by the Mexicans, and thereby dislodge the sun god and Itzamna one direction each. Nevertheless the correspondence in deities, apart from directions, is too close to be fortuitous.

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[40] These have been transposed, as explained on p. 214.

[41] These two deities are here transposed. They stand immediately below the direction glyphs, which have been transposed, and a mistake in the former would lead very easily to a mistake in the latter. The sequence is thereby restored as in the Temple gods sequence.

[42] Seler, 1902-1922, vol. III, pp. 670-674.

[43] Thompson, 1932, a, p. 415, and Roys, 1933, p. 99.

Direction gods in the Troano new year ceremonies are too indistinct in attributes to be of much help. The upper halves of the sheets appear to treat of ceremonies and, possibly, the four chacs, while the deities are shown on the lower halves. They are:

Page	New Year	Direction	Deities	
23	Cauac	South	Death (?)	Maize
22	Kan	East	Jaguar	Maize (?)
21	Muluc	North	Canine animal	??
20	Ix	West	Dead person	Itzamna (?)

It might be noted that, where recognizable, the deities associated with a year bearer are the patron of that year and the patron of the following year, respectively. Page 22, for example, shows an old personage, who is in all probability Itzamna, the patron of the Ix years treated on this page, while opposite him is an almost nude personage with the closed eye of death. Death is the regent of the following year.

In all probability the Tablets of the Cross and Foliated Cross at Palenque represent world direction trees, since on them are perched birds. However, it would be idle to attempt to assign them to directions until others are found. They serve, however, to indicate very strongly that the world direction tree concept was in use in the Maya cities of the south before 9.13.0.0.0 and, therefore, was presumably not of Mexican introduction, but possibly a heritage from a mutually ancestral culture.[44]

MEXICAN SKY BEARERS AS STELLAR AND ECLIPSE GODS

Seler, in his commentaries on various codices, notably the Borgia, was the first to link the sky bearers with the Tzitzimime. There are three passages in the "Chronicle" of Tezozomoc,[45] which he quotes in support of his thesis. These are englished as:

"As they were finishing a stone god, which they call Tzitzimime ylhuicatzitziquique, angels of the air, sustainers of the sky. Another name which they give to these idols is Petlacotzitzquique, sustainers of the cane mat."

"And then he [Tizoc] ordered that the great temple of the idol Huitzilopochtli should be given a coat of lime and he made the masons immediately finish sculpturing the figures of their saints, which they call Tzitzimime, who were, as they said, gods of the air who brought the rains and water, the thunder and lightning, and they had [to be placed] around Huitzilopochtli."

"He [Zihuacoatl] summoned the ambassadors in order that they should go to Acuihuacan and to Tlahuacpan, Tacuba and the other neighboring towns to [bid] the Indians come and raise the gods, signs and planets, which they call Tzitzimime, to the high temple, and they placed them around Huitzilopochtli."

The interpreter of the Codex Telleriano-Remensis remarks of Itzpapalotl, ruler of the fifteenth week:

"This Yzpapalotl is one of those who fell from the sky together with the others who fell from

[44] Perhaps a rash statement in view of the present flux in the theories of Maya archaeology. The present general attitude of doubt forms a strange contrast to the unanimous acceptance, prevalent a decade ago, of theoretical reconstructions of Maya history and ex-cathedra statements on Maya influences on Mexican cultures.

[45] Tezozomoc, F. de Alvarado, Cronica Meaicana (written 2598). In Kingsborough, vol. IX, chapters 38, and 66.

there. Those who fell from there are those who follow: Quetzalcoatle and Ochuluvuchete and Tezcatlipoca and Tonacatecotli and Yoalaotecotli and Tlavuizcanpantecotl. These are children of Citlalicue and Citlalatona."

In the same manuscript, in connection with the feast of Mixcoatl in the month Quecholli, the commentator writes:

"Mixcoatl or Camaxtli or cloud-snake. The feast of the descent of the Miquitlantecotli and of the Zontemoque and the others, and for this they paint him [Mixcoatl] with the accoutrements of war because he brought it [war] into the world. Really one should say the fall of the demons who they say were stars. And there are stars now in the sky which are called by the names they [the demons] had. These names are the ones which follow: Yyacatecoytli Tlahuizcalapantecoytli. Ceyacatl Quetzalcoatl. Achitumetl. Xacopancalqui Mixcohuatl Tezcatlipoca Tzontemoctli. Como Dios [?] They were called by this name [Tzontemoctli] before they fell from the sky and now they are called Tzi Tzin mitli just as one speaks of a monstrous or fearful thing."

Seler adds other references to the Tzitzimime (plural of Tzitzimitl). The first of these is taken from Sahagun (Book VIII, chapter 1), in which we find:

"And in his [Auitzotzin's] time there was a great eclipse of the sun at mid-day. It was very dark for five hours for the stars appeared and the people were very afraid, and they said that some monsters, which they call Tzitzimis had to descend from the sky and eat men and women."

The second reference, taken from the seventh Relación de Chimalpahin, can be englished as follows:

"And in that year 10 Tochtli, 1478, there was an eclipse of the sun. All the stars were visible and at the same time appeared the wild beasts the Tzitzimime."

Seler proceeds on this evidence to suggest that the Tzitzimime and sky bearers are the same thing, and that they are stars standing at the quarters of the sky, just as Lumholtz found among the Huichols.[46]

While agreeing with the thesis propounded by Seler, the writer is not in agreement with the list of deities he culls from his references. It will be noticed that the names in the second list are brought together in four groups according to the punctuation. These four groups are:

1. Yacatecutli	Tlauizcalpantecutli	
2. Ce Acatl	Quetzalcoatl	
3. Achitumeti		
4. Zacopancalqui	Mixcoatl	Tezcatlipoca.

The spelling has been corrected to that in general use. It will be noted that in the second group the name 1 Acatl is nothing more than the calendric name for the morning star, Quetzalcoatl, and can probably be used also for Tlauizcalpantecutli, by extension.

Mixcoatl, the hunting god of the north, is closely connected with Tlauizcalpantecutli. Both wear the black stellar mask, and the latter often wears the garb and stripes of the former. On the other hand, Mixcoatl is also closely connected with Otontecutli, the night sky bearer, since Mixcoatl is also an Otomi god and has as one of his attributes the cactus spear, while Sahagun's hymn of

[46] Lumholtz, 1900, pp. 57-58. See also Preuss, 1912, chapter VIII, for views of the modern Cora Indians on stellar deities and directions.

Otontecutli reveals that he also was considered to be one of those that fell down from the heavens.

Yacatecutli is probably written in the list by mistake. The first list gives instead Yoaltecutli, who according to Sahagun was a constellation, also known as Mamalhuaztli, the fire drill sticks, probably the same as our constellation Orion's belt. This god should obviously be in the list of stars and planets, whereas Yacatecutli, the god of merchants, has little connection with the sky.

Achitumetl is an unknown deity, but metl, the last syllable of his name, is the Nahua word for maguey. It is even possible that the word is a misspelt contraction of Achtliteometl, which would mean the seed of the divine maguey. The connection with maguey would suggest that this deity was one of the pulque gods, who, through their association with the rabbit, are, in turn, connected with the moon. Thus Achitumetl might well be a lunar god. Zacopancalqui is an unidentified deity.

Tezcatlipoca, according to the author of *La historia de los mexicanos por sus pinturas*, represented the great bear constellation, which in some mysterious way lowered itself to the water.[47] This probably refers to the legend recounted by Torquemada, who writes:

"Others said that Tezcatlipoca had descended from the sky, lowering himself by a rope, which he had made from spider's web, and that wandering over the world he banished Quetzalcohuatl, who for many years was ruler of Tula."[48]

The last name on the list is Tzontemoctli, a general name which, as we have already seen, was given to the Tzitzimime before the completion of their descent, but a name apparently reserved particularly for Mictlantecutli, the death god, as the commentator of Codex Vaticanus 3738 gives the following information with reference to Plates 3 and 4:

"In this region of hell they supposed that there existed four gods or principal demons, one of whom was superior, whom they called Zitzimitl, who is the same as Miquitlamtecotl [Mictlantecutli], the great god of hell ... [the seventh] is Zontemoque, he who descends head foremost from the sky. The signification of the name is ... falling downward, for they say that he descends for souls as the spider lowers itself with its head downward from the web."[49]

For this reason the mantle of Mictlantecutli (Magliabecchi, p. 3) prominently displays a spider. Mictlantecutli was also called Tzitzimime (Tzitzimitl?).[50]

The same author writes in reference to plate 70:

"The festival of Quecholi [fourteenth month] was dedicated to the four gods of hell who are represented at the commencement of this book, who they say fell from heaven, and accordingly they celebrated their festival in these twenty signs."

Most authorities are agreed that the month Quecholli was dedicated, as we have seen above, to Mixcoatl and, secondarily, Itzpapalotl. Mixcoatl, however, was one of the deities associated with fire-making and the sticks used for the drilling. The fire drill, we have noted, is the sign of a

[47] Phillips, chapter 4.

[48] Torquemada, Bk. VI, chapter 5.

[49] Kingsborough, vol. VI, pp. 164, 165 and 170. See also Torquemada, Bk. XIII, chap. 48 and Sahagun, App. Bk. III.

[50] *Histoyre du Mechique*, p. 25.

constellation, possibly that of Orion's belt, and was known to the Aztecs as Mamalhuaztli.

Everyone of the deities given in the list with the exception of the unknown Xacopancalqui can thus be brought into association with the denizens of the night sky, either directly or indirectly. Included in the list are the four upholders of the flight sky of the Borgia and Vaticanus A codices, while two constellations and one planet are also recognizable.

The deities of the list may really be nothing more than variants of the original four upholders of the night sky, arranged as below:

Direction	Patron	Variant Deities or Names
E	Tlauizcalpantecutli	Ce Acatl
N	Itzpapalotl-Otontecutli	Mixcoatl, Yoallitecutli, Tezcatlipoca, Achitumetl
W	Quetzalcoatl (Eecatl)	
S	Mictlantecutli	Tzontemoctli

Our information and conclusions on the Tzitzimime may be summarized at this point for the sake of clarity. The Tzitzimime were stars, constellations or planets in the heavens, who were considered under certain circumstances to be baneful. During eclipses of the sun, they were believed to descend headlong to earth to devour human beings; in other words they became visible through the darkening of the heavens. Their symbol was the spider who descends from his web head downward, and some of them were said to descend headlong from the sky by means of ropes of spider's web. Included in their number were Tlauizcalpantecutli, Itzpapalotl-Otontecutli, Quetzalcoatl and Mictlantecutli, who were the upholders of the night heavens at their four quarters. It is possible that there were only four Tzitzimime, which were those mentioned above, the rest being merely variants.

The Codex Bologna is recognized to be an incomplete work, since pages on both sides have been left blank. On the back (sheets 21 to 31) are depicted eleven deities with accompanying day signs, groups of numerals and columns of signs which include representations of spiders, bees, deer, scorpions, snakes emerging from shells, resembling conches, but probably of the genus Helix, a fresh-water shell, turtles and representations of fresh-water shells of the genus Planorbis. Many of these are attached to conventionalized representations of the human heart (Plate 5).

Seler, on the basis of the repeated representation of the spider, has already suggested that these signs all represent the Tzitzimime.[51] To clinch this argument, it would be necessary to show some connection between these figures and an eclipse. The associated deities are of a somewhat obscure nature. Seler, in the passage quoted, has tried to associate them with the nine lords of the nights, but his arguments are not very convincing.

Aside from the evidence of the spider, the heart symbols so prominently associated with other symbols on these pages of Codex Bologna should also be noted.

In this connection attention should be drawn to the large representation of a Tzitzimitl given on page 64 of Codex Magliabecchi. The text states:

"They paint it [the Tzitzimitl] as a dead man, fleshless and with only the bones whole, and covered with hearts and hands around the neck and head." The illustration clearly shows a necklace and head-band of alternating hands and conventionalized heart symbols of the usual

[51] Seler, 1901-1902, pp. 55-57.

type.

From Mexican literary sources, then, we have evidence for the association of both the spider and the heart symbols with the Tzitzimime, while from Mexican-Maya sources, to be discussed later, shells, turtles, spiders and, possibly, the bee are also associated with sky bearers.

Seler also calls attention to the representations of spiders on certain pages of Codex Borbonicus, noting that the associated deities are Tzitzimime.[52] The pages on which these spiders occur and the associated deities are given below:

Sheet 3 Tepeyollotli or Tlazolteotl
8 Mayauel
9 Tlauizcalpantecutli
10 Mictlantecutli
13 Tlazolteotl
15 Itzpapalotl
19 Xochiquetzal or Coyotl

It will be noticed that three out of the seven sheets show sky bearers, to wit: Tlauizcalpantecutli, Mictlantecutli and Itzpapalotl. Tlazolteotl, shown on two other pages, is the moon-earth goddess, wife of Piltzintecutli, the young sun god.[53] Xochiquetzal also was originally a moon goddess. There only remains Mayauel, who as a goddess of pulque, was also associated with Tlazolteotl, in her guise of moon goddess, just as were all the pulque-rabbit deities. All the deities are, therefore, sky bearers or have lunar connection.

An examination of the numbers on those sheets of the Codex Bologna suggests that they may mark distances between new or full moons on which solar or lunar eclipses might fall. It is certain, however, that each individual page can not represent such intervals, for spans of 105 days for example can not possibly indicate the time between two eclipses.

In the table below are listed the totals on each sheet, together with possible groupings of consecutive pages and, for comparative purposes, the number of days reached by complete moons near the totals reached by the groups.

Sheet	Number	Group total	Days in moon group	Error
21	385			
22	429			
23	277	(1)1091	1092	1
24	277	(2) 277	266	11
25	136			
26	102			
27	234	(3) 472	472	0
28	153			
29	209			
30	153			
31	105	(4) 620	60	0

[52] Seler, 1901-1902, p. 55.

[53] Thompson, 1932a, p. 416.

It will be noted that the total of Group 1 amounts to 1091 days. This is just one day short of 37 moons. Group 2 is eleven days more than nine moons, suggesting either an error in the calculation or some object not at present recognizable. Group 3 reaches a total of 472 days, equivalent to sixteen moons, while Group 4 has 620 days, equaling twenty-one moons exactly. It will be noticed that Groups 3 and , if added together, reach the same number of moons as Group 1. It is possible that the groups lead from unknown new moons to new moons on which fall solar eclipses. The evidence, clearly, is not sufficient to prove that these groups of numbers represent lunar tables, but at least it is suggestive, especially when taken in conjunction with the presence of possible representations of the Tzitzimime. It should, however, be noted that the groupings given above are not indicated in the codex, but are purposely chosen to fit the lunar count as well as possible.

In the codex Fejervary-Mayer sheets to 26 and sheet 43 of the Loubat edition show blocks of numerals on each page. The series opens on page 5. Immediately above the numerals is a row of small glyphs closely resembling those of the Codex Bologna, already discussed. These consist of a locust, a scorpion, a second locust or, possibly, a spider, a snake, two unidentified plants and a jaguar descending headlong from a symbol which may represent the moon. The numbers on the various pages are expressed by means of bars and dots. The totals are given below in the second column. The third column gives the totals of each selected group of two or three pages, while the fourth column gives the interval in days between the number of moons nearest this total.

Sheet	Number	Group total	Days in moon group		Error
5	341				
6	396	(1) 737	738	New moon	1
7	341				
8	300	(2) 641	620		21
9	286				
10	216	(3) 502	502	New moon	0
11	363				
12	363				
13	189	(4) 915	915	New moon	0
14	189				
15	1175				
16	683				
17a	181	(5) 2228	2229	Full moon	1
17b	208				
18a	116	(6) 324	324.8	New moon	0
18b	210				
19	456				
20a	440	(7) 1106	1106	Full moon	0
20b	60				
21	121				
22	92				
43	231	(8) 504	502	New moon	2

Group 1 is one day short of twenty-five moons. Group 2 is badly off. Group 3 reaches exactly seventeen moons, an eclipse period in the Dresden Codex. Group 4 totals 915 days, exactly

thirty-one moons. Group 5 reaches a possible full moon, and hence a possible date for a lunar eclipse. Group 6 is the equivalent of eleven moons, and a possible eclipse interval according to the Dresden Codex. Group 7 totals 1106, making thirty-seven moons and fourteen days, thereby reaching full moon and a possible lunar eclipse date. Group 8 totals 504 days, which is two days over the eclipse period of 502 days of Group 3. There may be some significance in the fact that the sum of Groups 3 and 4 equals the sum of Groups 6 and. less the distance from new to full moon, while the total of Group less the distance from new moon equals the total of Groups 2, 3 and 7 less distances from their respective new moons.

Again the evidence is not sufficient to prove that lunar tables are involved, but it certainly strengthens Seler's original theory that the spider and other creatures involved represent the Tzitzimime, who were especially connected with eclipses.

MAYA SKY BEARERS AS POSSIBLE STELLAR AND ECLIPSE GODS

Having wandered along the paths of Mexican theology with more deviation than is permitted to the stars we are pursuing, let us return once more to the Maya of Yucatan, or rather to a feature of that hybrid culture evolved from the contact of the Yucatecan Maya with Mexico.

In the Temples of the Chac Mool and the Warriors at Chichen Itzá there are a number of columns divided into one large central panel and two small panels, one at the top and one at the bottom. In most cases the small panels at the top carry representations of a deity falling from a sun of a typically Mexican design, while the bottom panel usually shows a feathered serpent monster, in whose open jaws is placed a human head.

In some cases these representations are replaced by small figures, who, with upstretched hands, support the weight above them. Jean Charlot, in a discussion of these Atlantean figures, which must surely be the Bacabs, indicates three types recognizable by their insignia. These are, according to him, a shell, a spider's web and a turtle shell.[54] However, a close examination of the drawings reveals that there are more than three types. Frans Blom in the course of a conversation pointed out to me that there are two separate types of shells. These, so far as one can judge from the drawings, can be classified as a fresh-water shell probably belonging to the genus Planorbis, and another shell resembling somewhat a conch, but possibly belonging to the Helix genus of land snails. There are also certain ornaments which suggest that they might represent the bee.[55] Sometimes plant motifs are found in association with sky bearers in the Warriors Group, suggesting, perhaps, the vegetation side of the Bacabs, as patrons of the winds and rains.

The turtle-shell garb of some of the Atlantean figures may indicate representatives of that group of stars known to us as Orion. This constellation was known to the Maya as the turtle. Its importance in Maya eyes may be indicated by the fact that it is one of the very few constellations still known to the Maya by its native name. Also the Bacab of the west has the name Hozanek, which, according to the Charency dictionary, means the evening star.

The spider's web, the shells of the two varieties, the turtles, and, possibly, bees link these sky bearers closely with sheets 21 to 31 of Codex Bologna and, to a lesser degree, with sheets 5 to 26 and 43 of the Codex Fejervary-Mayer, while at the same time their direct association with the

[54] Morris, Charlot, Morris, p. 238.

[55] Morris, Charlot, Morris, plates 37, S; 37, N. The first of these has body markings like those of the bees in Tro-Cortesiano. The second appears to be equipped with bee wings. Similar Atlantean figures are illustrated in Seler 1902-1922, Vol. V. Figure 162 might represent a bee costume.

Yucatecan sky bearers serves to strengthen considerably the hypothesis that these codex sheets deal with the Tzitzimime sky bearers.

The individual sky bearers of the Warriors group are not associated with any particular direction so far as the shell and other attributes indicate. These attributes were probably used collectively to indicate sky bearers, and were not, it would appear, apportioned individually to each particular direction. The marked similarity in the features of the sky bearers would suggest that at that period the idea may. have been prevalent at Chichen Itzá of four color variants of a single deity being associated with the four directions. Such an arrangement has many parallels in Maya mythology.

The wizened sky bearers with their out-jutting imperial beards, as portrayed in the structures of the Warriors group, must surely be the Bacabs discussed on page 211. They bear a considerable resemblance to Quetzalcoatl divorced of his Eecatl features, although by their out-thrust chins they portray a contemptuous hostility, little in keeping with the character of the Quetzalcoatl of history, whose moral fiber was but slightly tougher than that of Etheired, the unready.

Quetzalcoatl was a sky bearer and wind god. Cogolludo tells us that the Bacabs were sky bearers and wind gods, while the second passage quoted from the Chronicle of Tezozomoc speaks of the Tzitzimime as "gods of the air who brought the rains and water . . ." (p. 228). Furthermore, the sky bearers of Chichen Itzá and the Tzitzimime had as one of their symbols the same shell that Quetzalcoatl wears as his distinguishing adornment. Although there is little or no direct evidence, perhaps there would be some justification for believing that the Maya Bacabs also represented star groups and were believed to dive earthward during eclipses. The most we can say is that diving deities are frequent in Maya art and, therefore, must have played a part in Maya religion. The elements of Mexican and Maya mythology can not be fitted together like the pieces of a jigsaw puzzle, but they can be integrated into flocculent masses incapable of clean-cut division.

THE MAYA SKY MONSTER

Attention should, perhaps, be called to the animal figures on sheets and 10 of the Perez Codex, although it would not appear very probable that they are directly connected with our subject. The figures of the upper row appear to support in their open mouths sun glyphs on black and white emblems, which hang from a sky band of the typical Maya snake-monster pattern, starting, in this case, with the monster's open jaws and legs, from the former of which a human head appears to look forth. The lower row of animal figures also seems to support, with their open mouths, similar sun glyphs, which are here shown as pendant from a plain snake band. There are probably thirteen of these figures.

The five rows of thirteen glyphs, each with coefficients increasing by twenty-eight points at a time, apparently indicate an attempt to bring the 260-day count into relation with the vague year in such manner as to preserve direction and color contacts and to reach a point of coincidence in the shortest possible period. This is achieved by using a year of 364 days. With one of 365 days, the contact would, of course, not occur for 52 years, while all direction and color contacts would be lost by a changed series of days in place of the five used here. The equation appears to be:

$$364(13 \times 28) \times 5 = 1820$$

$$260 \times 7 = 1820$$

After the table has been used through four times, there will be a loss of twenty days from the

365-day year. This is made up and a fresh start is made with the red numbers, which are precisely twenty days in advance of the black numbers in the same column.

Among the possible supporters of the sky may be recognized a turtle and scorpion, both of which have already been noted in connection with our discussion. Nevertheless, thirteen is a number not associated with the sky-bearer concept and the series would not appear to have any direct connection with the sky-bearer complex. It is quite possible that they represent, as has been suggested by other writers, a kind of Maya zodiac.

In connection with the discussion of sky bearers in the Warriors group, a small digression is necessary. The sky bearers are frequently replaced by a feathered monster, from whose gaping jaws peers forth a human head. Since the two motifs appear to be interchangeable, one would expect them to have much in common with regard to the ideas they represent. The Mexican sky bearers, as we have seen, support the night sky. Among the Maya the night sky or, perhaps the sky generally, was frequently represented by a two-headed monster, on whose outstretched body were painted hieroglyphs of the planets. This monster sprawls across many a monument of the Mayan cities of the south,[56] while sections of his body are to be seen with pendant sun and moon glyphs and a pendant Venus monster in the Dresden Codex, particularly on those sheets dealing with eclipses.[57] It is also found as a sky symbol in Troano-cortesiano and Codex Perez. The mask panels at Chichen Itzá show a grotesque face, a human head in the jaws, feathers and reptilian feet. All these are features found in the sky monster, and many of them are constant. I would suggest, then, that this frequent monster at Chichen Itzá represents the sky monster, who may have been considered merely to represent the night sky. The latter supposition is favored by the frequent presence of top panels showing sun symbols of markedly Mexican type,[58] from each of which a figure, armed with spears and spear-thrower, hangs or falls head downward. These I take to represent the day sky. It is possible that the feathered reptilian monster may represent the earth, although this does not appear probable, since the Mexican earth monster is not shown with feathers.

Our wanderings along this little-trodden labyrinth of Mexican and Maya mythologies indicate that there is a considerable amount of evidence for formulating an integrated concept of deities who upheld the sky and were associated with world directions and world colors. In Mexican belief, at least, they were considered to be stars, who made doleful descents upon mankind during the darknesses of solar eclipses, and who had as their symbols spiders, bees, scorpions, turtles and various types of shells. The association with stellar deities and eclipses is not supported by Maya documentary evidence, but the association with spiders, turtles, shells and, possibly, with bees is demonstrated by sculpture at Chichen Itzá.

There is little direct evidence that the sky-bearer complex was originally Maya, except that the two seated figures, supporting a bar on their shoulders on the Tablet of the Sun at Palenque, may represent Bacabs. The pectoral ornament they wear is reminiscent of those worn by the Atlantean figures of the Warriors group at Chichen Itzá. The sky-bearer concept has also been reported

[56] Good examples are to be seen on Stela 14, Piedras Negras, the panels of the Sun, the Foliated Cross and the Cross at Palenque. Examples where the hieroglyphs are missing are Altars G', O and D' at Copan and Altar M at Quirigua. Stela 1 Yaxchilan, also shows an excellent sky band.

[57] Dresden Codex, pages 1-58.

[58] Cf. sun symbol Codex Vaticanus 3773, p. 7.

from a section of the Maya area, whither, so far as we know, Mexican influences did not reach.[59] From the occurrence of direction trees at Palenque, probably at Yaxchilan,[60] and possibly on page 3 of the Dresden Codex, one might deduce the existence of the sky bearers since the two concepts appear to be closely associated. One might also call attention to the atlantean-like figure shown on one of the panels of Altar P at Quirigua. In his beard and general attitude he strongly resembles the atlantean figures at Chichen Itzá.

Should one assume that the whole complex was entirely Mexican, it would be difficult to believe that such an involved belief, embracing, as it does, colors, directions and peculiar associations with the animal kingdom, could have taken root in a soil totally unprepared for its reception. The heavy growth would rather indicate a Mexican grafting on to a Maya plant of the same genus. In connection with this statement the reader might reflect as to what part such alien ideas as the concepts of the Holy Ghost, the atonement, or the Trinity would be likely to play in Maya-Christian religion were all external Catholic influences to cease entirely. Would one not expect such concepts to disappear utterly within a reasonably short period? On the other hand, certain Christian ideas, such as the miraculous conception, baptismal ceremonies, and life after death, one would expect to survive since they are within the native Maya ambient.

In conclusion, one might call attention to the remarkable parallel between ancient Greek and Mexican ideas on the sky bearers.

The Greeks, it is true, believed in only one sky bearer, Atlas, but he, as in the case of the Mexican sky bearers, was associated with stars. Not directly, it is true, but he was the father of the Hyades and Pleiades, both stellar groups. Thus we have two peoples, separated by some five thousand miles of sea, both conceiving of the heavens as upheld by divine strength, and both secondarily associating the upholder or upholders of the sky with stellar groups. Since no one can seriously suggest a historical connection, the case presents an interesting example of convergence.

SUMMARY

1. The Maya believed in four sky bearers, who were associated with world directions, east, north, west and south, and the year bearers Kan, Muluc, Ix and Cauac, respectively. They were also associated with the colors red, white, black and white,[61] respectively. They were believed to have been created before the flood or the sun, to be wind gods and, possibly, rain deities, and were also patrons of apiculture.

2. The Mexicans also believed in four sky bearers, who were associated with the world directions, east, north, west and south, and the year bearers Acatl, Tecpatl, Calli and Tochtli. They were Tlauizcalpantecutli, Otontecutli in an obsidian aspect, Quetzalcoatl-Eecatl and Mictlantecutli associated with the respective directions and year bearers given above. The association with colors may have been the same as among the Maya.

3. Individual Mexican days are one direction anti-clockwise behind their corresponding days in the Maya count. For example, Calli is associated with the west, but Akbal, the corresponding Maya day, is associated with the south.

[59] Thompson, 1931, p. 65.

[60] Maudslay, II, plate 93.

[61] DB. Sic: should read “yellow”.

4. The Mexican sky bearers, as first shown by Seler, were stellar deities, who were believed to rush earthward during eclipses of the sun. In these aspects they were considered as monsters, baleful to mankind, and were symbolized by spiders, bees, turtles, shells and, in particular, by individuals falling head first.

5. Certain computations in two Mexican codices are found associated with these symbols. They may represent lunar computations, since some of the numerical groups closely approximate eclipse intervals, while others are equal to groups of lunations, or if added to new moons reach approximately full moons.

6. Other Mexican group direction gods may be brought into general conformity. These include deities before temples, rattle or tree bearers, and deities associated with direction trees.

7. Other Maya direction deities show close functional similarities with those of Mexico, although the associated directions are not uniformly similar.

8. Sky bearers in the Maya-Mexican Warriors group at Chichen Itzá show symbols such as shells, spiders, turtles and possibly bees. This would suggest that the Maya sky bearers were also connected with stars and eclipses.

9. The evidence presented helps further to strengthen the bonds known to link Mexican and Maya religion, ritual and mythology, as demonstrated in the attached table:

Maya:	Mexicans:
4 Sky Bearers	4 Sky Bearers
(1) Created before sun or flood.	(1) Created before sun, after flood.
(2) Associated with directions.	(2) Associated with directions.
(3) Associated with colors.	(3) Associated with colors.
(4) Associated with wind.	(4) Associated with wind.
(5) Associated with rain.	(5) Associated with rain.
(6) Patrons of apiculture.	(6) ???
(7) Associated with shells, turtles, spiders and, possibly, bees.	(7) Associated with shells, turtles, spiders and bees.
(8) Dive head downward (through bee aspect)?	(8) Dive head downward.
(9) ???	(9) Stellar deities.
Direction trees and birds.	Direction trees and birds.
Kan associated with east, etc.	Acatl associated with east, etc.
Red associated with east, etc.	Red associated with east, etc.?
Death associated with south.	Death associated with south.
MYTHOLOGY AND RITUAL NOT EMBRACED IN THIS PUBLICATION.	
Sacred almanac complex.	Sacred almanac complex.
Eighteen-month calendar and five unlucky days.	Eighteen-month calendar and five unlucky days.
Nine lords of nights.	Nine lords of nights.
Thirteen heavens.	Thirteen heavens.
Sun god-moon goddess myth.[62]	Sun god-moon goddess myth.[60]
Maize taken by ants from rock.[63]	Maize taken by ants from rock.[64]

[62] Thompson, 1932.

[63] Thompson, 1930, p. 132.

Maize associated with colors.[65]	Maize associated with colors.[66]
Maize crop fertilization.[67]	Maize crop fertilization.[68]
World direction-color flints.[69]	World direction-color flints.[70]
Chacs.	Tlalocs.
Kukulcan complex.	Quetzalcoatl complex.
Human sacrifice.	Human sacrifice.
Arrow sacrifice.	Arrow sacrifice.
Flaying.	Flaying.
Blood offerings.	Blood offerings.
Venus calendar and chastisement.	Venus calendar and chastisement.
Flower symbol of lasciviousness.[71]	Flower symbol of lasciviousness.[72]
Sacred almanac-European calendar.[73]	Tonalamatl-European calendar.[63]
Hunting god as morning star.[74]	Hunting god as morning star.
Witchcraft initiate swallowed by snake.[75]	Witchcraft initiate swallowed by snake.[76]

This by no means embraces all the elements held in common by the two groups of peoples, but is sufficient to indicate the very close ties that existed. In many, if not most cases, I believe the ideas were passed on to both Maya and Mexicans from a mutual cultural ancestor. In some cases Mexican ideas may have been taken over by the Maya as a result of Mexican influences. The Venus complex may have passed from the Maya to Mexico. On the other hand the Aztecs and Maya spoke of gold as the excrement of the god and sun god, respectively. As the Maya used gold only at a very late period they must have borrowed the idea from the Mexicans, or both groups took over the concept from neighbors who, presumably, lived closer to its South American channel of diffusion.

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[64] Lehmann, 1906, p. 254.
[65] Roys, 1933, p. 64.

[66] Lehmann, 1906, p. 256.

[67] Thompson, 1930, p. 49.

[68] Brinton, 1894, p. 55. This refers only to Oaxaca, but the custom was probably wide-spread.

[69] Roys, p. 64.

[70] Lehmann, 1906. p. 275.

[71] Roys, 1933, p. 104.

[72] Xochiquetzal and Xochipilli, whose names contain the element flower, are both deities of lasciviousness.

[73] Spinden, pp. 98-103, and Martinez, 1926.

[74] Thompson, 1930, p. 63.

[75] Thompson, 1930. p. 109.

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PLATE 1a

EASTERN SKY BEARER, CODEX BORGIA

a, Sheet 49. East direction with Tlauizcalpantecutli as sky bearer and sun god before temple above tree of east.

PLATE 1b

NORTHERN SKY BEARER, CODEX BORGIA

b, Sheet 50. North direction with Otontecutli-Itzpapalotl as sky bearer and Tezcatlipoca-Itzlacoliuhqui before temple above tree of north.

PLATE 2a

WESTERN SKY BEARER, CODEX BORGIA

a. Sheet 51. West direction with Eecatl as sky bearer and Centeotl before temple above tree of west.

PLATE 2b

SOUTHERN SKY BEARER, CODEX BORGIA

b, Sheet 52. South direction with Mictlantecutli as sky bearer and standing before temple above tree of south.

PLATE 3a

EASTERN DIRECTION DEITIES, CODEX VATICAN 3773

a. Sheet 19. East direction with Tlauizcalpantecutli as sky bearer and sun god before temple.

PLATE 3b

NORTHERN DIRECTION DEITIES, CODEX VATICAN 3773

b, Sheet 20. North direction with Otontecutli-Itzpapalotl as sky bearer and Tezcatlipoca-Itzlacoliuhqui before temple.

PLATE 4a

WESTERN DIRECTION DEITIES, CODEX VATICAN 3773

a. Sheet 21. West direction with Quetzalcoatl- Eecatl as sky bearer and Centeotl before temple.

PLATE 4b

SOUTHERN DIRECTION DEITIES, CODEX VATICAN 3773

b, Sheet 22. South direction with Mictlantecutli as sky bearer and before temple.

PLATE 5a

TWO SHEETS FROM CODEX BOLOGNA
(Also known as Codex Cospi)

a

Numerical groups are shown as well as a Planorbis shell, a turtle, two bees and heart symbols.

(Cospi, p. 24)

PLATE 5b

FROM CODEX BOLOGNA
(Also known as Codex Cospi)

b

(Cospi, p. 17)