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An Aztec Calendar of 20,176 Non-Repeating Years in *Codex Borbonicus*, pp. 21–22

A partir de 1880 se han hecho numerosos esfuerzos infructuosos por explicar la relación de una aparente rueda calendárica marcada por 52 días portadores del año en secuencia regular, con una secuencia enigmática de los nueve Señores de la Noche. La conexión pretendida por el escriba precolombino, sin embargo, era simple. Se explica perfectamente al comprobar que la intrincada secuencia de los nueve Señores de la Noche se convierte en una serie repetida de 20.176 vagos años solares de 365 días, luego de completar dos expansiones periódicas de la aparente rueda calendárica. Estas expansiones constan de $(7 \times 52) + 1 = 365$, y $(8 \times 52) + 1 = 417$, como se muestra en el cuadro 4. Todas las condiciones de la computación calendárica mesoamericana son satisfechas con la solución de presumir una sola continuidad (comprobada en 1929 por J.E.S. Thompson para la serie maya de los nueve Señores de la Noche). La solución propuesta aquí para estas dos páginas del Códice Borbónico, ni origina problemas intrínsecos a la rueda calendárica ampliada conectada con los nueve Señores de la Noche, ni es refutada por ninguna otra fuente primaria conocida.

Codex Borbonicus is a screenfolded or pleated manuscript painted on panels of *ficus*-bark paper (each 28 × 28 cm). It is named after its present location in the library of the Palais Bourbon, which houses the Chamber of Deputies in Paris. The aftermath of the Napoleonic wars in

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Spain probably brought the manuscript from the Escorial to France before 1826. Being of pre-Conquest style for the most part, it refers entirely to calendrical and ritual matters in the Mexican (or Aztec) tradition, as of about A.D. 1500.

The left scene on p. 21 shows the invention of the calendar by an aged mythological couple, Oxomoco (left) and Cipactonal (right). The right scene on p. 22 portrays two major deities Quetzalcóatl (left) and Tezcalipoca (right) who appear as "regents" of divisons of the 52-part calendar. The glosses in Spanish refer to the "months" ("meses") and to birth-deities ("dioses de las parteras"), but they betray no awareness of the larger calendrical meaning of the two pages.

These pages occupy the center of the manuscript. Before it came other pages, each showing one of twenty "weeks" of thirteen days in the 260-day *ritual* calendar. After the center are pages showing the rituals of the nineteen "months" of the *365-day year*. Pages 21 – 22 therefore literally bind together the ritual calendar of 260 days and the vague solar-year calendar of 365 days, in the 52-year cycle of 18,980 days.

Inconsistent theories about the pre-Columbian Aztec calendar have long been based on pp. 21 – 22 of *Codex Borbonicus*. In 1899, J. T. E. Hamy interpreted the joining of nine Night-Lord names with fifty-two year-bearer day signs as a "double table, calculated for future use, to find instantly in the *tonalamatl* (ritual calendar of 260 days) the first day of any solar year of 365 days" (Codex Borbonicus 1899: 14 f.; author's translation).[1] Hamy also assumed without proof that such Night Lord *cum* year-bearer days were spaced 105 days apart, and that they complemented one another functionally, without interruption or cessation. Actually Hamy was right only in assuming the unbroken, perpetual continuity of the Night-Lord cycle, but he was wrong in thinking that the year-bearer days were spaced 105 days apart. Table 1 shows that the 105-day interval in a sequence of 365-day years will produce a repeating sequence coinciding only with three Night Lords (4, 1, 7, ...) instead of the non-repeating sequence geared with all nine, shown in Codex Borbonicus, as diagrammed in Table 2.

C. P. Bowditch, on the other hand, correctly noted in 1900[2] that the Night Lords were "repeated with irregular intervals ... regulated by the number of Tonalamatls (of 260 days) ending in each solar year. Apparently, therefore, the Tonalamatls succeeded each other, continuously lapping over from one year to the other, while the Lords of the Night

1 Only D. Robertson (1959: 90) has suggested that it is of early colonial date, between 1522 and 1540. Caso (1967: 105) believed it to be prior to the Spanish Conquest.

2 Bowditch (1900: 152), preceded by Paso y Troncoso (1898: 94).

accompanied the Tonalamatls." Bowditch then wrongly supposed that the Night Lords "lost one of their number with the ending of each Tonalamatl."

Recent variations of Bowditch's view appear in studies by C. Lizardi Ramos (1953: 101), L. Satterthwaite (1947: 14), K. A. Nowotny (1961: 241), and A. Caso (1967: 128). These scholars all believe that the Night Lords were a discontinuous count, either by dropping one every 365 days, or by having every 260th day be accompanied by two Night Lords as shown for example in the Aubin Tonalamatl (Seler 1900/01: 20). By these modern assumptions the presence of two Night Lords on 13 xochitl was read as marking a "carryover" to the first day of the next 260-day cycle (Fig.). Only one 260-day period is presented. The next one would have begun again with 1 cipactli accompanied by Night Lord 1 (Xiuhtecutli).

UNBROKEN GEARING OF THE NIGHT LORDS WITH THE DAY COUNT

In view of the proofs by J. E. S. Thompson (1929) that the Maya Night Lord count was continuously geared to other cycles,[3] it is reasonable to make the same assumption for the Night-Lord cycle on the Mexican plateau in the Aztec period of Codex Borbonicus. The results are plausible, and they satisfy the mind better than Bowditch's unsupported hypothesis of uncounted Night Lords, or Hamy's 105-day intervals, regularly repeating as 4, 1, 7, ... *ad infinitum*.

The usually accepted numerical coefficients and generic meanings that have been supplied in recent literature for the Night Lords are as follows (Caso 1967: 116 f.):

1. Xiuhtecutli (fire)
2. Itztli (obsidian)
3. Piltzintecutli (nobles)
4. Cinteotl (maize)
5. Mictlantecutli (death)
6. Chalchiutlicue (water)
7. Tlazolteotl (love)
8. Tepeyollotl (earth)
9. Tlaloc (rain)

On pp. 21 – 22 of Codex Borbonicus, the fifty-two year-bearer day signs, beginning with 1 tochtli and continuing in sequence through 13 calli, are accompanied by the Night Lords in a seemingly irregular order

3 No deity names are known for the forms of Glyph G.

by numerical coefficient as shown on Table 2, where the order of reading begins at the lower left-hand corner of p. 21, continuing counterclockwise around the oblong, and passing to the lower left-hand corner of p. 22, again reading counterclockwise. This sequence reveals a peculiar shift of Night Lord coefficient from year bearer to year bearer. Instead of advancing regularly by five place (1, 6, 2, 7, 3, 8, 4, 9, 5, 1, ...), as it would if year bearers were separated by intervals of 365 days, the shift is alternately by intervals of seven and six places, and also by paired intervals of six. These shifts were required, as shown by C. P. Bowditch (1900: 153) and O. Apenes (1953: 102) by the occurrences of two or three distinct 260-day counts within the 365-day year (Table 3). Thus in a year 2 tecpatl, the first 260-day count must end on a day 13 xochitl and the second must begin the following day on 1 cipactli. But the next year, or 3 calli, contains three counts of 260 days. The first ends on 13 xochitl at day 97; the second begins on 1 cipactli on day 98; and the third begins on day 358.

THE INVIOLABLE ENNEAD OF THE NIGHT LORDS

The traditional solution since F. del Paso y Troncoso's (1898: 77 – 96), and including its adaptation by A. Caso (1967: 120 f.) has been, as mentioned earlier, to interpret too literally the doubled Night Lord attached to the terminal day, only when the count does not exceed 260 days (see also Lizardi Ramos 1969). In the Aubin (Seler 1900/01), Bologna (1898), and Telleriano Codices (1899), the last day (260), which is always 13 xochitl, has as companion both Night Lords 8 and 9 (Fig.). Paso y Troncoso, who quotes A. Chavero (1901: 7), assumed without explanation that this doubling of the Night Lords every 260th day removed the insoluble irregularity in Codex Borbonicus.

Thus the hope of all modern commentators has been to reduce the cycle on Borbonicus 21 – 22 to a short repeating cycle of only fifty-two years, by wrongly cancelling the one-to-one correspondence between each of the nine Night Lords and each day position without exception in the eternal sequence of 260-day counts.

Yet there is better reason to accept the scribes' intention in all cases as being to indicate only that the 261st day would not break or interrupt the inviolable ennead of the Night Lords.

We already know that the 260-day count in these pages is uninterrupted and unbroken. If we now assume that the nine Night Lord sequence is likewise uninterrupted and continuous, as in the Maya count, then

these apparently irregular intervals will eventually appear as a series repeating *ad infinitum*.

THE LONG PERPETUAL CALENDAR SOLUTION

The difference between the long perpetual calendar proposed here and other solutions is that this one expands the fifty-two year-bearer day signs from the canonical number as 4 × 13 × 365, or fifty-two vague solar years, totalling 18,980 days, to the number of 388 × 52, or 20,176 years, or 7,364,240 days. This is the smallest number after which the given series of the Night Lords are stated in Borbonicus (and only there) will repeat forever their seemingly irregular sequence.

Aevum is a scholastic term of the thirteenth century for such a duration, having a beginning but no end. It seems appropriately used, for a perpetual calendar of which both we and the Aztecs have occupied only the initial aeon, as one of an infinite number in the *aevum*.

MAYA AND AZTEC CALENDARS

The resemblance of this long perpetual calendar to that of the Maya Initial Series day count, as geared to the nine forms of the Maya Glyph G (see Thompson 1929), is more structural than functional. The function differs in central Mexico. The Maya day count of the classic period (A.D. 300 – 900) was calculated by periods of 360 days (the *tun*). But the peoples of central Mexico preferred to count by years of 365 days. These were designated by eponymous day names occurring only on the 360th day of each vague solar year, before the ill-omened five final days (or *nemontemi*).

Table 4 places the fifty-two year-bearer days in a row across the top. The numbered 52-year cycles called calendar Rounds that are required to fit the Night Lords to the year-bearer days appear in the column at the extreme left, 388 in number. In calendar Round 1, which is 52 × 365 or 18,980 days, the year-bearer days are always 365 days apart, and the year-bearer day itself always occupies the 360th day in each year, as shown in Table 1.

If the fifty-two year-bearer days (across the top of Table 4) correspond in Borbonicus 21 – 22 to years in sequence, then the accompanying Night Lords must repeat their sequence after every nine positions: 5, 1, 6, 2, 7, 3, 8, 4, 9, ... as shown in the first eight calendar Rounds on Table 5. Only the expansion of the calendar Rounds by multiples of 7 and 8, or

$(7 \times 52) + 1 = 365$ and $(8 \times 52) + 1 = 417$ can bring the Night Lords into conjunction with year-bearer days, as indicated on the rest of Table 4. The diagonal marks the only way the Borbonicus sequence can occur. Here only the stated conjunctions are shown at the required intervals of 7 and 8 calendar Rounds (shown at left), in a series that repeats itself only after 388×52 or 20,176 years, thereafter cycling through ever-identical concatenations of fifty-two year-bearer days with nine Night Lords.

The year-bearer days across the top were but four in number, corresponding to days 3, 8, 13 and 18 in a day list of twenty names permutating with 365 positions in the solar calendar. The four year-days also filled cycling positions in the ritual calendar of twenty weeks of thirteen numbered day names. These seem to be their position on pp. 21 – 22 of Codex Borbonicus, but there they are not in ordinal sequence as we learn from the seriation of the nine Night Lords. Instead, they can be spaced only by intervals of either 365 years $(7 \times 52) + 1$, or 417 years $(8 \times 52) + 1$. These intervals approximate seven and eight cycles of fifty-two years each, as laid out at the left on Table 4.

THE SCRIBE'S INTENTION

The question now arises, as to how the scribe meant us to understand the chronological position in eternity of his calendar as given in Codex Borbonicus. If he meant to record the first use of the calendar by its inventors, who are portrayed as the old couple of deities on p. 21, we may begin by supposing that the stated aeon of 20,176 years had reached 13 calli in the recent past at A.D. 1505. This would place the "invention" in 18,671 B.C.

But it would be more "historical" to suppose for the invention a date like the Maya zero (or beginning) date for the day count late in the fourth millenium B.C. In this case, the year A.D. 1505 would correspond to about 4500 elapsed years since the invention of the calendar. This assumption places the completion of the first age (or quarter-aeon) of 5044 years in the future during the twenty-first century after Christ, and the fulfillment of the full aeon 17,000 years in the future.

Historically speaking, we may suppose that A.D. 1505 was the date when the Night-Lord count was adapted to the 365-day year. This was done in order to achieve a perpetual calendar that would indefinitely repeat the same intervals as on pp. 21 – 22 of Codex Borbonicus. In this case we might consider 1 tochtli (A.D. 1506) as the starting date of a new age, and as an anniversary of the original invention.

In addition, these two pages may record an effort in Aztec historiography to devise (ca. A.D. 1500) an adequate manner of recording and remembering events in extended time. If so, the Mexicans seem to have reverted with improvements to the interlocking cycles of classic Maya Initial Series records. The new system, however, could not revise the clumsy *baktun* of 400 Maya years of 360 days without adopting the Maya periodic structure. Yet it does introduce periods of 365 and 417 years, which are labelled unequivocally as in the Maya Initial Series inscriptions, by the nine Night Lords in immutable and perpetual sequence with the year-bearer days through 388 calendar Rounds.

AZTEC COSMOGONIC THEORY

The long periods suggested by this arithmetic (Table 4) may relate to the sixteenth-century history of the universe outlined in "Historia de los Mexicanos por sus pinturas" (1891: 228).[4] There, from Creation to the Spanish Conquest, 3,145 years are given as elapsed. Oxomoco and Cipactonal invented the calendar 600 years after Creation. Then, for the periods of 676 years each ($13 \times 52 = (6 + 7) \times 52$), Quetzalcoatl and Tezcatlipoca, as well as Tlaloc and Chalchiutlicue, functioned for 2704 years as suns. This text lends support to an interpretation of Codex Borbonicus, as presenting a perpetual calendar that was still approaching only the end of the first age of 5,044 years. This was but the first quarter of an aeon recorded by the meshing of the nine Night Lords with the fifty-two year-bearer days, in a cycle repeating itself indefinitely after the first 20,176 years.

Figure: After Seler (1900/01: pl. 20). In these colonial versions, where only one "model" 260-day count appears with Night-Lord companions, the last day, which is always 13 Xochitl, will usually be accompanied by the eighth and ninth Night Lords. Most modern scholars believe that this "doubling" of Night Lords on the 260th day could resolve the difficulties presented by Borbonicus 21 – 22, but the "doubling" occurs only where a single and initial model is set forth, in colonial and modern writings, as the paradigm for all successive ones.

4 This text is dated not later than 1533 – 1534 (García Icazbalceta 1947, II: 138).

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EXPLANATIONS ON THE FOLLOWING TABLES

Table 1: Two successive 365-day years are each divided by eighteen columns of twenty-day months plus a nineteenth month of five days. The far left column gives the twenty-day names, which continue in nineteen adjoining columns as numbered positions in repeating counts of twenty weeks of thirteen days each.

Accompanying these day positions without break is another cycle of nine Night Lords. Each round of nine is marked on the table by bold numbers, to signify that the ninth Night Lord, Tlaloc, is the companion here.

The 360th day give the year its day-name bearer, of which the sequence of companions follows the order given in Table. 4.

Also marked are the 105-day intervals, as proposed in 1899 by Hamy, that can occur only with Night Lords 4, 1, and 7 in a repeating series. The Night Lords are entered on the table diagonally below the day numbers of the year bearers as assumed by Hamy. He supposed without proof that the 105-day periods were separated by intervals of 260 days.

Table 2: Pages 21 – 22 of *Borbonicus* show the fifty-two year-bearer day names with the nine Night Lord cycle, beginning at the lower left corner and moving counterclockwise in eight frames of seven and six. Each page displays twenty-six day names, and both pages taken together enumerate fifty-two day-name and Night-Lord positions. These were not meant by the scribe to be read as a single cycle of fifty-two years, but as positions spaced at intervals of 365 and 417 years, as shown in Table 4, during a period of 20,176 years, after which the cycle will repeat perpetually.

Table 3: Two 365-day years are diagrammed in sequence. In 2 tecpatl only two counts of 260 days appear, dividing the year in two parts (202 + 163). In 3 calli, three counts are present, dividing the year in three parts (97 + 260 + 8). Each 260-day count ends on 13 xochitl, and its successor is always 1 cipactli. In years like 2 tecpatl with two counts, these days appear only once; in years like 3 calli with three counts they appear twice.

Table 4: The fifty-two year-bearer day names appear across the top as listed in the Codex. The extreme left column enumerates the "Calendar Rounds", of cycles of fifty-two years each, since the mythological invention of the calendar. The first eight Calendar Round correspondences are given in full; thereafter only the correspondences in the Codex are tabled. The first eight Calendar Rounds state the number of the Night Lord accompanying each year-bearer day name, in a repeating series of nine positions as 5 – 1 – 6 – 2 – 7 – 3 – 8 – 4 – 9, each separated by five places in a cycle of nine. Thereafter the conjunctions of Night Lords with year-bearer days appear as in the Codex, appearing at intervals of $(7 \times 52) + 1 = 365$ years, and $(8 \times 52) + 1 = 417$ years. None will recur until 388×52, or 20,176 years have elapsed.

Day names	Month names	Year 2 tecpatl																	
		Izcalli	Atlcahualo	Tlacaxipehualiztli	Tozoztontli	Hueytozoztli	Toxcatl	Etzalcualiztli	Tecuilhuitontli	Hueytecuilhuitl	Tlaxochimaco	Xocotlhuetzi	Ochpaniztli	Teotleco	Tepeilhuitl	Quecholli	Panquetzaliztli	Atemoztli	Tititl	Nemontemi
Quiahuitl		6[7]	1	8	2	9	3	**10**	4	11	5	12	6	13	7	1	8	2	9	3
Xochitl		8	**2**	9	3	10	4	11	5	12	6	**13**	7	1	8	2	9	3	10	4
Cipactli		9	3	10	4	11	**5**	12	6	13	7	1	8	2	9	**3**	10	4	11	5
Ehecatl		**10**	4	11	5	12	6	13	7	1	**8**	2	9	3	10	4	11	5	12	**6**
Calli		11	5	12	6	**13**	7	1	8	2	9	3	10	7[4]	**11**	5	12	6	13	7
Cuetzpallin		12	6	13	7	1	8	2	9	**3**	10	4	11	5	12	6	13	7	**1**	
Coatl		13	7	1	**8**	2	9	3	10	4	11	5	12	**6**	13	7	1	8	2	
Miquiztli		1	8	2	9	3	10	**4**	**11**	5	12	6	13	7	1	8	2	**9**	3	
Mazatl		2	9	**3**	10	**4**	11	5	12	6	13	7	**1**	8	2	9	3	10	**4**	
Tochtli		3	10	4	11	5	12	**6**	13	7	1	8	2	9	3	10	**4**	11	4[5]	
Atl		4	**11**	5	12	6	13	7	1	8	2	**9**	3	10	4	11	5	12	6	
Itzquintli		5	12	6	13	7	**1**	8	2	9	3	10	4	11	5	**12**	6	13	7	
Ozomatli		**6**	13	7	1	8	2	9	3	10	**4**	11	5	12	6	13	7	1	8	
Malinalli		7	1	8	2	**9**	3	10	4	11	5	12	6	13	7	1	8	2	9	
Acatl		8	4[2]	9	3	10	4	11	5	**12**	6	13	7	1	8	2	9	3	**10**	
Ocelotl		9	3	10	**4**	11	5	12	6	13	7	1	8	**2**	9	3	10	4	11	
Cuauhtli		10	4	11	5	12	6	13	**7**	1	8	2	9	3	10	4	11	**5**	12	
Cozcacuauhtli		11	5	**12**	6	13	7	1	8	2	9	3	**10**	4	11	5	12	6	13	
Ollin		12	6	13	7	1	8	**2**	9	3	10	4	11	5	12	6	**13**	7	1	
Tecpatl		13	7	1	8	2	9	1[3]	10	4	11	**5**	12	6	13	7	1	8	5[2]	

Year 3 calli																			
Izcalli	Atlcahualo	Tlacaxipehualiztli	Tozoztontli	Hueytozoztli	Toxcatl	Etzalcualiztli	Tecuilhuitontli	Hueytecuilhuitl	Tlaxochimaco	Xocotlhuetzi	Ochpaniztli	Teotleco	Tepeilhuitl	Quecholli	Panquetzaliztli	Atemoztli	Tititl	Nemontemi	
8	2	9	3	10	4	11	5	**12**	6	13	7	1	8	2	9	3	**10**	4	
9	3	10	**4**	11	5	12	6	13	7	1	8	**2**	9	3	10	4	11	5	
10	4	11	5	12	6	13	7	1	8	2	9	3	10	4	11	**5**	12	6	
11	5	12	6	13	7	1	8	2	9	3	**10**	4	11	5	12	6	13	7	
12	6	13	7	1	8	**2**	9	3	10	4	11	5	12	6	**13**	7	1	8	
13	**7**	1	8	2	9	3	10	**4**	11	**5**	12	6	13	7	1	8	2	9	
1	8	2	9	3	**10**	4	11	5	12	6	13	7	1	**8**	2	9	3	10	
2	9	3	10	4	11	5	12	6	**13**	7	1	8	2	9	3	10	4		
3	10	4	11	**5**	12	6	13	7	1	8	2	9	**3**	10	4	11	5		
4	11	5	12	1[6]	13	7	1	**8**	2	9	3	10	4	11	5	12	**6**		
5	12	6	**13**	7	1	8	2	9	**3**	10	4	**11**	5	12	6	13	7		
6	13	7	1	8	2	9	**3**	10	4	11	**5**	12	6	13	7	**1**	8		
7	1	**8**	2	9	3	10	4	11	**5**	12	6	13	7	1	**8**	2	9		
8	2	9	3	10	4	**11**	5	12	6	13	7	1	8	2	9	**3**	10		
9	**3**	10	4	11	5	12	6	13	7[7]	**1**	8	2	9	3	10	4	11		
10	4	11	5	12	**6**	13	7	1	8	2	9	3	10	**4**	11	5	12		
11	5	12	6	13	7	1	8	2	**9**	3	10	4	11	5	**12**	6	13		
12	6	13	7	**1**	8	2	9	3	10	4	11	5	**12**	6	13	7	1		
13	7	1	8	2	9	3	10	**4**	11	5	12	6	13	7	1	8	**2**		
1	8	2	**9**	3	10	4	11	5	12	6	13	7	1	1[8]	2	9	1[3]		

Table 1: Two 365-day years marking, every ninth day (bold) and 105-day intervals. The year name is taken from day 360 (Caso).

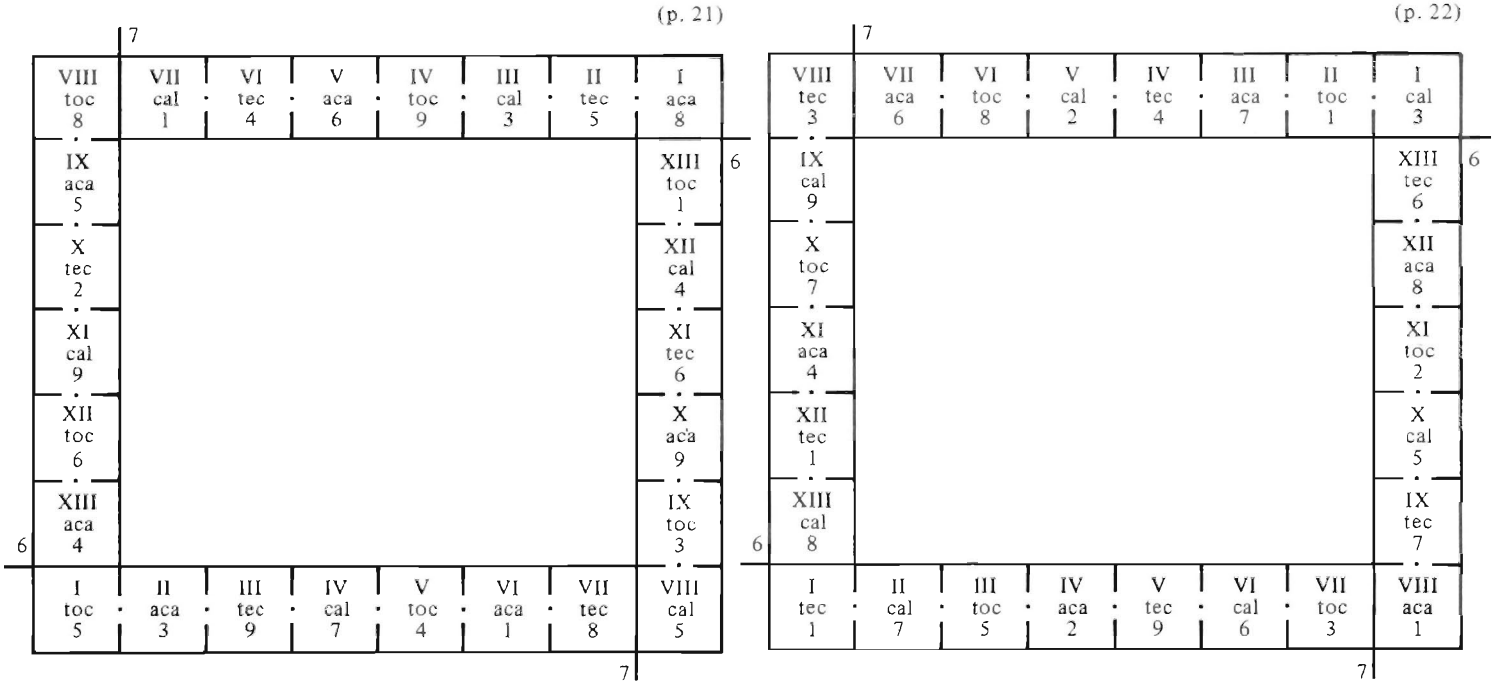

Table 2: Diagram of *Borbonicus* 21 – 22 by year-bearer day names and Night Lord companions.

Day names	Month names: Year 2 tecpatl																		
	Izcalli	Atlcahualo	Tlacaxipehualiztli	Tozoztontli	Hueytozoztli	Toxcatl	Etzalcualiztli	Tecuilhuitontli	Hueytecuilhuitl	Tlaxochimaco	Xocotlhuetzi	Ochpaniztli	Teotleco	Tepeilhuitl	Quecholli	Panquetzaliztli	Atemoztli	Tititl	Nemontemi
Quiahuitl	7	1	8	2	9	3	**10**	4	11	5	12	6	13	7	1	**8**	2	9	3
Xochitl	8	**2**	9	3	10	4	11	5	12	6	**13**	7	1	8	2	9	3	10	4
Cipactli	9	3	10	4	11	**5**	12	6	13	7	**1**	8	2	9	**3**	10	4	11	5
Ehecatl	**10**	4	11	5	12	6	13	7	1	**8**	2	9	3	10	4	11	5	12	**6**
Calli	11	5	12	6	**13**	7	1	8	2	9	3	10	4	**11**	5	12	6	13	7
Cuetzpallin	12	6	13	7	1	8	2	9	**3**	10	4	11	5	12	6	13	7	**1**	8
Coatl	13	7	1	**8**	2	9	3	10	4	11	5	12	**6**	13	7	1	8	2	9
Miquiztli	1	8	2	9	3	10	4	**11**	5	12	6	13	7	1	8	2	**9**	3	10
Mazatl	2	9	**3**	10	4	11	5	12	6	13	7	**1**	8	2	9	3	10	4	11
Tochtli	3	10	4	11	5	12	**6**	13	7	1	8	2	9	3	10	**4**	11	5	12
Atl	4	**11**	5	12	6	13	7	1	8	2	**9**	3	10	4	11	5	12	6	13
Itzquintli	5	12	6	13	7	**1**	8	2	9	3	10	**4**	11	5	**12**	6	13	7	1
Ozomatli	**6**	13	7	1	8	2	9	3	10	**4**	11	5	12	6	13	7	1	8	2
Malinalli	7	1	8	2	9	3	10	4	11	5	12	6	13	7	1	8	2	9	3
Acatl	8	2	9	3	10	4	11	5	**12**	6	13	7	1	8	2	9	3	**10**	4
Ocelotl	9	3	10	**4**	11	5	12	6	13	7	1	8	**2**	9	3	10	4	11	5
Cuauhtli	10	4	11	5	12	6	13	**7**	1	8	2	9	3	10	4	11	**5**	12	6
Cozcacuauhtli	11	5	**12**	6	13	7	1	8	2	9	**3**	**10**	4	11	5	12	6	13	7
Ollin	12	6	13	7	1	8	**2**	9	3	10	4	11	5	12	6	**13**	7	1	8
Tecpatl	13	**7**	1	8	2	9	3	10	4	11	**5**	12	6	13	7	1	8	2	9

	Year 3 calli																		
	Izcalli	Atlcahualo	Tlacaxipehualiztli	Tozoztontli	Hueytozoztli	Toxcatl	Etzalcualiztli	Tecuilhuitontli	Hueytecuilhuitl	Tlaxochimaco	Xocotlhuetzi	Ochpaniztli	Teotleco	Tepeilhuitl	Quecholli	Panquetzaliztli	Atemoztli	Tititl	Nemontemi
	8	2	9	3	10	4	11	5	**12**	6	13	7	1	8	2	9	3	**10**	4
	9	3	10	**4**	11	5	12	6	13	7	1	8	**2**	9	3	10	4	11	5
	10	**4**	11	5	12	6	13	**7**	1	8	2	9	3	10	4	11	**5**	12	6
	11	5	**12**	6	13	7	1	8	2	9	**3**	**10**	4	11	5	12	6	13	7
	12	6	13	7	1	8	**2**	9	3	10	4	11	5	12	6	13	7	1	8
	13	**7**	1	8	2	9	3	10	4	11	**5**	12	6	13	7	1	8	2	9
	1	8	2	9	3	**10**	4	11	5	12	6	13	7	1	8	2	9	3	10
	2	9	3	10	4	11	5	12	6	**13**	7	1	8	2	9	3	10	4	11
	3	10	4	11	**5**	12	6	13	7	1	8	2	9	**3**	10	4	11	5	12
	4	11	5	12	6	13	7	1	**8**	2	9	3	10	4	11	**5**	12	6	13
	5	12	6	13	7	1	8	2	9	**3**	10	4	11	5	12	6	13	7	1
	6	13	7	1	8	2	9	3	10	4	11	5	12	6	**13**	7	1	8	2
	7	1	8	2	9	3	10	4	11	5	12	6	13	7	1	8	2	9	3
	8	2	9	3	10	4	11	5	12	6	13	7	1	8	2	9	3	10	**4**
	9	3	10	4	11	5	12	6	13	7	1	8	2	9	3	10	4	11	5
	10	4	11	5	12	6	13	7	1	8	2	9	3	10	4	11	5	12	6
	11	5	12	6	13	7	1	8	2	9	3	10	4	11	5	12	6	13	7
	12	6	13	7	**1**	8	2	9	3	10	4	11	5	**12**	6	13	7	**1**	8
	13	7	1	8	2	9	3	10	4	11	5	12	6	13	7	1	8	2	9
	1	8	2	**9**	3	10	4	11	5	12	6	13	7	1	8	2	9	3	

Quiahuitl	10	4	11	5	12	**6**	13	7	1	8	2	9	3	10	**4**	11	5	12	
Xochitl	**11**	5	12	6	**13**	7	1	8	2	**9**	3	10	4	11	5	12	6	**13**	
Cipactli	12	6	13	7	**1**	8	2	9	3	10	4	11	5	**12**	6	13	7	**1**	
Ehecatl	13	7	1	8	2	9	3	10	**4**	11	5	12	6	13	7	1	8	2	
Calli	1	8	2	**9**	3	10	4	11	5	12	6	13	7	1	8	2	9	3	

Table 3: Two 365-day years in succession, in relation to the 260-day count.

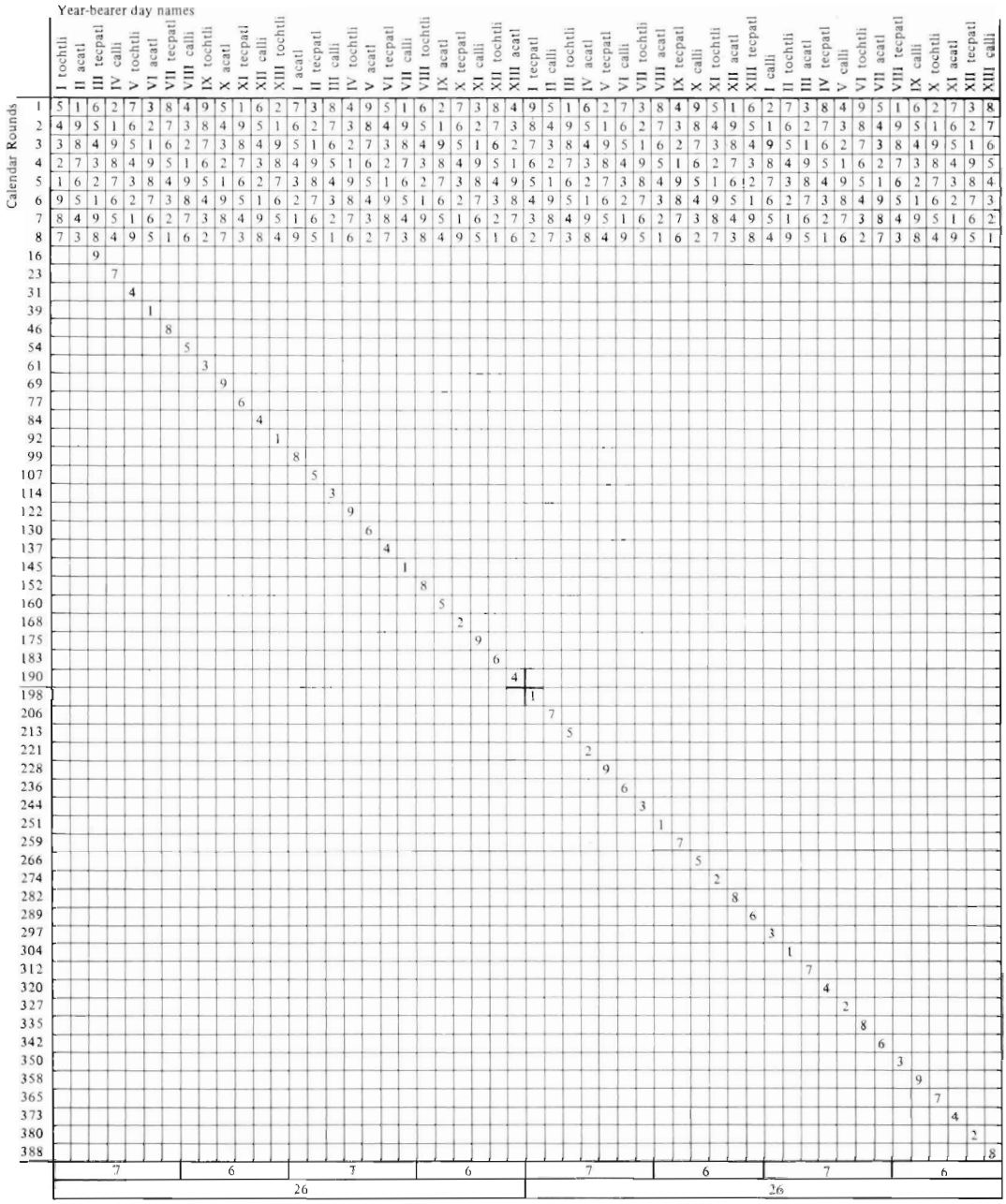

Table 4: Year-bearers and Night Lords of *Borbonicus* 21 – 22, showing occurrence during 388 cycles of 52 years, or 20,176 years.