

Los Codices Mayas

Madrid Codex, Page 34, detail.
From photograph of the original
by Otis Imboden and Victor Boswell
(Courtesy of the National
Geographic Society).



LOS CODICES MAYAS, Introduccion y Bibliografia by Thomas A. Lee, Jr. Fundacion Arqueologica Nuevo Mundo, A. C., San Cristobal de las Casas, Chiapas, y Brigham Young University, Provo, Utah. EDICION CONMEMORATIVA / X ANIVERSARIO / (device) / UNIVERSIDAD AUTONOMA DE CHIAPAS, 1985. (Quarto edition of 2,500 in cloth with dj, 500 in leather; 215 pages + colophon; includes 112 color plates; \$100 in the U.S. (18,000 pesos in Mexico) clothbound.)

Review by George E. Stuart

By definition, the ideal codex facsimile should substitute for the unique original in all aspects of surface appearance. However, matters of technology and cost preclude the mass production of such a facsimile, and so none has ever replicated perfectly the combination of continuous tones, true colors, and linear integrity of the original. Probably none ever will. The rarity of any published facsimile or reproduction is also a crucial limiting factor in the business of research use, for it directly

affects the all-important factors of availability and price to the scholarly consumer.

The present work, *Los Códices Mayas*, appears to have been thought out with a blend of care and compromise related to such considerations. Before dealing with details of the book, it seems appropriate to summarize the rather complex state of affairs regarding existing facsimiles and reproductions of the four Maya books now known: the Dresden (Codex Dresdensis), Madrid (Codex Tro-Cortesianus), Paris (Codex Peresianus), and Grolier Codices.

For one reason or another, many of the editions have fallen far short of even minimum adequacy for scholarly research. The hand-colored reproduction of the Dresden Codex published by Lord Kingsborough (1830-48,3) was based on the 1825 tracing by Augustine Aglio,

now in the British Museum. While the Kingsborough version, particularly in its rendering of the hieroglyphs, reflects the expected discrepancies of an era almost totally ignorant of Maya art and epigraphy, it is useful for details of color that are no longer apparent.

William Gates transformed the Paris (1909) and the Dresden (1932) pages into conventionalized scenes; accompanying texts were printed with a special font of hieroglyphs. His results failed to reflect, among similar glyphic combinations, those minor graphic variations of then-unknown significance that were necessary for proper analysis of the writing system.

Although the Willard edition of the Paris Codex (1933) is based on photographs, the images were "enhanced" without much care. This shortcoming is exaggerated by the extreme contrast in the black-and-white printing. Despite these faults, this version of the Paris Codex did provide access to the manuscript for those not possessing the Guatemala edition of Villacorta and Villacorta.

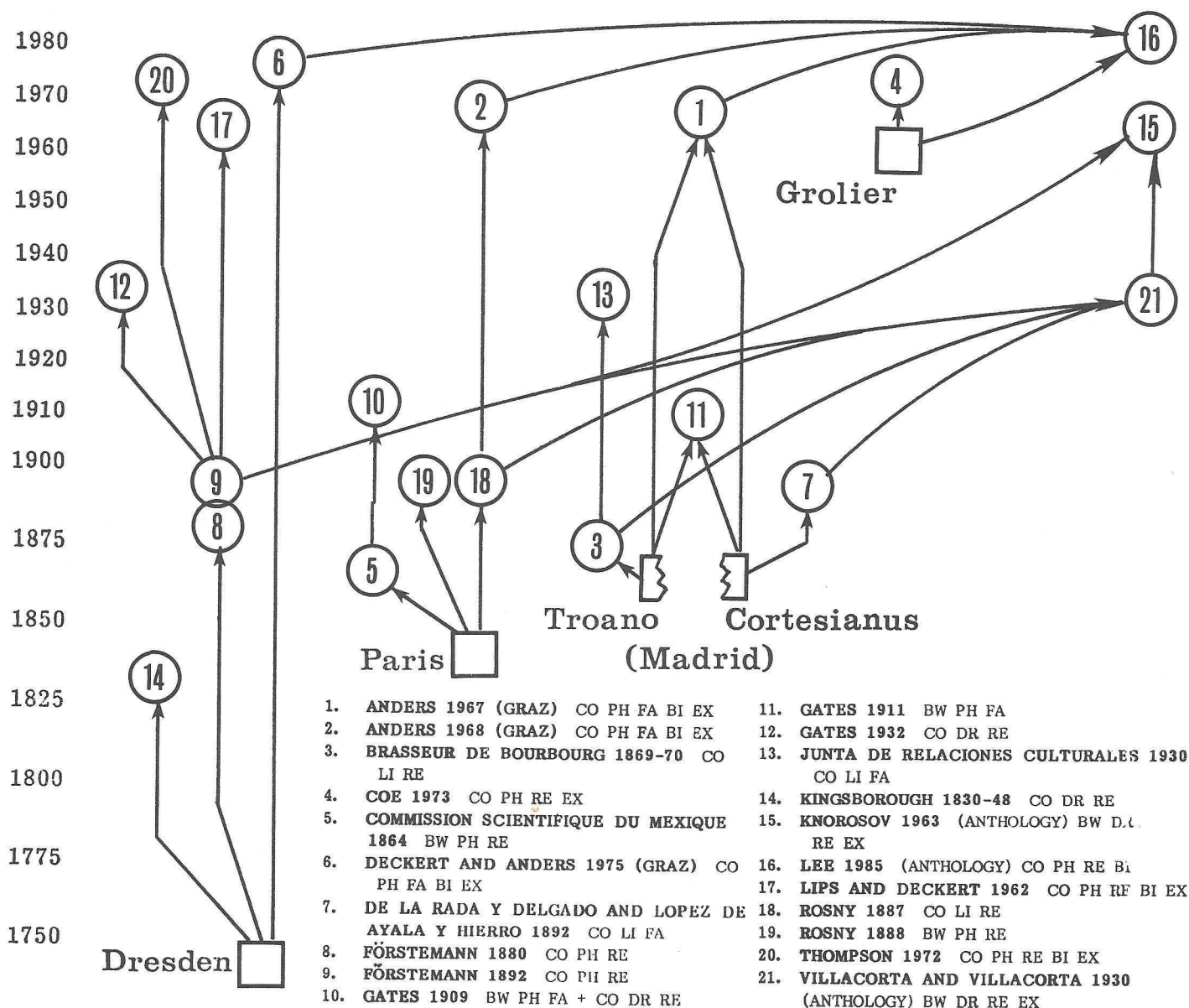
The Echániz versions of the Madrid (the Troano in 1939; the Cortesianus a decade later) and the Dresden (1947), hand-made and issued in extremely limited numbers (25 for the Dresden), are intriguing as bibliographical curiosities. The line-enhanced, reduced-scale black and white halftone version of the Dresden published by Ramírez Acevedo (1979) gives only a fair impression of the original. For reasons of cost, perhaps, it was printed on low-quality paper, and so poorly that many hieroglyphs were lost.

In contrast, other efforts to replicate the Maya manuscripts produced results of notably high quality. For the Dresden Codex, we have the now extremely rare chromolithographic editions of Förstemann (1880, 1892) which, despite fault in the task of matching precisely the blue areas of color (Thompson 1972:17), remained the standard reproduction until 1975. In the cases of those pages which suffered water damage during the Allied bombing of Dresden in February, 1945, the Förstemann images remain the only recourse. The 1892 Förstemann plates also served as the basis for the excellent reproduction by Lips and Deckert (1962) and for that of Thompson (1972). For his edition, Thompson first corrected the Förstemann pages with data gleaned from the Kingsborough version, but noted that the resulting edition suffered from a certain heavy-handedness in the overprinting of the red plate (Thompson, personal communi-

cation, 1972). For sheer quality of replication and for its discussion of the historical background of the Dresden manuscript, the edition of Deckert and Anders (1975), published by the Akademische Druck- u. Verlagsanstalt of Graz, Austria, is unsurpassed. It even includes reprints of the Förstemann images of the now water-damaged pages, along with a corrected copy of the well-known drawings of the manuscript published by Villacorta and Villacorta (1930). By its virtues, this Graz edition has replaced Förstemann as the standard facsimile of the Dresden Codex.

Although the acquisition of the Paris Codex by the Bibliothèque Impériale apparently took place in 1832, and the manuscript was drawn by Augustine Aglio soon afterward, its "discovery" in 1859 by Leon de Rosny is usually given as the beginning point of the history of the manuscript (Zimmerman 1954:62-64). Whatever the details of its early history, the black-and-white photographic version of the manuscript published in 1864 by the Commission Scientifique du Mexique, now superlatively rare, is usually recognized as the first edition (Glass 1975:180). These images were later reproduced by Gates (1909) and Anders (1968). In 1887 and 1888, respectively, Rosny published color and black-and-white versions of the codex. These remain the best editions for showing the enigmatic remnants of apparently European script on Pages 15, 16, and 19 of the manuscript. Rosny's color version served as the primary source for the Akademische Druck- u. Verlagsanstalt facsimile (Anders 1968), this since the original was deemed too fragile to remove from its box (Anders 1968:23). This Graz facsimile, moreover, was carefully color-matched with visible portions of the original painting before printing. As matters now stand, it remains the definitive edition of the Paris Codex until new photographs are made with a large-format camera for future issue.

For the Madrid, or Tro-Cortesianus Codex, the selection is slim save for the recently out-of-print Graz edition (Anders 1967), which superseded the Gates edition of 1911 (with small black-and-white photographs of the pages), and the now rare separate color versions of the Troano (Basseur de Bourbourg 1869-70; Junta de Relaciones Culturales 1936) and the Cortesianus (de la Rada y Delgado and López de Ayala y del Hierro 1892). A black-and-white version of the Cortesianus -- its first appearance in print -- was issued by Rosny in 1883.



The square symbols represent the originals of the four known Maya codices. Circled numbers stand for the principal publications of the manuscripts. All the symbols are placed in chronological order according to the time scale, left. Connecting vertical lines, which follow the year-scale direction from bottom to top show the derivation pattern of publications of individual codices; arcing lines ending at the far right trace the sources of publications 15, 16, and 21, works devoted to more than one manuscript. Individual works are matched to the list within the chart (Each is cited in complete form in the List of References). The two-letter abbreviations that follow each entry are designed to characterize the publication. They are: **CO** for color; **BW**, black and white; **PH**, photographs; **LI**, lithographs; **DR**, drawings; **FA**, facsimile with screen-fold format; and **RE**, reproduction with book-page format. **BI** indicates the presence of bibliographical data of unusual utility, and **EX** shows the presence of extra features--discussions, ancillary drawings, diagrams, etc.--that enhance the usefulness of the work. In the case of early reproductions using the process of chromolithography, either **PH** or **LI** is used, depending on the predominant character of the published images.

Fig. 1. MAJOR PUBLICATIONS OF THE FOUR MAYA CODICES AND THEIR SOURCES.

The Grolier fragment has appeared in publication only once before now (Coe 1973). A useful feature of that excellent version stemmed from the oblong format of the book, which allowed the entire codex (reproduced slightly larger than half-scale) to appear in its entirety on a two-page spread.

Among all the publications of the Maya codices, the first combined edition to appear in print with all the known manuscripts together was that of J. Antonio and Carlos A. Villacorta. Published first in installments in Volumes 6,7,8, and 9 of the Anales de la Sociedad de Geografía e Historia de Guatemala (1930-1933), then as a book, it featured the Dresden, Paris, and Madrid Codices in the form of actual-size line drawings of the pages (by Carlos Villacorta). Opposite each Maya page (which was printed to the left on its spread) appeared an interpretative diagram of the same page. Although the work suffered from slight inaccuracies, it stands out as a tour de force of draftsmanship, and one can only stand in awe of the effort. For this reason, and for its relatively low publication cost, the two issues of Villacorta and Villacorta (1930, 1976) have proven to be the most durable and accessible working versions of the Maya codices ever done.

The black and white reproductions published in the combined edition by Knorosov (1963) were, in the cases of the Madrid and Paris Codices, derived from the Villacorta and Villacorta illustrations. For the Dresden, Knorosov's version was based on black and white photographs of Förstemann's edition of 1892.

As for the present work, Los Códices Mayas, it consists of full-color, actual-size reproductions of all the pages that make up the Dresden, the Madrid, the Paris, and the Grolier Codices. Except for the reverse side of the Grolier, it includes all blank pages as well. The square format of the book permits a pair of Maya codex pages to appear on each of its own. The images are based on photographs, screened and printed by offset. The Dresden and Madrid Codices are taken from the Graz facsimiles of those manuscripts (Deckert and Anders 1975; Anders 1967), with their photographs by Anders. The reproduction of the Paris Codex in the present work derives from the Graz edition of 1968, which, as noted above, was based upon the 1887 color reproduction of the codex by Rosny, and not upon the manuscript. The photographs

of the Grolier Codex used in Los Códices Mayas are those of New York photographer Justin Kerr who, with Barbara Kerr, is well-known for the superb "roll-out" images of Maya vases which have appeared in various works (i.e., Coe 1978).

The quality of any reproduction of colored manuscript material is determined by three major factors, 1) the character of the original photographs, 2) the number of "generations" that lie between the original document and the publication in question, and 3) the methods and controls utilized in the final printing. With regard to the first factor, a careful personal inspection of the color photographs of the Dresden and Grolier Codices taken by Anders and Kerr allows me to vouch for their excellence. As for the derivation history of the generations of images that lie behind Los Códices Mayas, we have the following: Between it and the Dresden Codex lie three steps -- the Anders photography, the Graz printing, and the photography of the Graz edition. The case is identical for the Madrid Codex. As for the Paris, we have four generations of process -- the photography and lithography of the 1887 edition, the re-photography of that work for Graz, the printing that followed, and the subsequent photography of the Graz imprint. The present edition of the Grolier is based on halftone color separations made directly from the Kerr photographs of the original -- the ideal situation.

It is apparent that the greatest potential threat to the quality of the final printing of Los Códices Mayas lay in the transformation of the images in the Graz editions to its own pages. This is because that process involved the halftone screening of an image that had already been screened. (Simply stated, halftone screening is the conversion of a "continuous tone" image of a photograph to a line pattern of dots that allows the image to be mass-produced by a printing press.) The process is complicated, for great care must be taken to match the dot screens in order to avoid registration problems and the occurrence of "Moiré patterns" -- those ghostly images of regularity like those one sees when looking simultaneously through two window screens that are not precisely aligned.

In general, the printers of the present work did an excellent job. The quality is, in fact, astonishingly good. There are instances where the orientation angles of the red and

black color separation screens vary between the Graz images and the present ones. In the cases of the Dresden, Madrid, and Paris Codices, occasional Moiré patterns occur, mainly in darker areas of the manuscripts. This feature is most apparent on page 56 of the Madrid Codex, in which case the 1930 Villacorta line drawing is combined with the color image of the largely blank page as it appeared in the Graz facsimile. All in all, however, Moiré patterns do not appreciably affect the overall quality of the plates. As might be expected, the Maya pages in *Los Códices Mayas* are not as crisp as those appearing in the Graz versions, and the replication of the original scribal linework is therefore not as sharp. Based on the sampling of a few identical pages from each, the difference is roughly that between images produced with 133-line screens (the present work) on the one hand, and those produced with 150-line screens (the Graz imprints) on the other.

Moiré patterns do not appear in the present version of the Grolier Codex since the halftone screens used in *Los Códices Mayas* were made directly from the Kerr photographs of the manuscript. As for differences between the 1973 Coe edition of the Grolier and this one, the earlier version is sharper in all matters of detail and possesses more contrast, but has a generally darker, cooler, aspect by which reds tend toward brown tones. In *Los Códices Mayas*, the Grolier Codex is somewhat brighter and warmer. Based on photographs of the original which I have seen, the true aspect of the manuscript itself lies somewhere between its appearance in the 1973 edition and that of the present work. The pagination of the Grolier Codex in the present anthology follows that of Coe (1973) for the 11 pages or fragments bearing painting (the detached paper found with the manuscript is collectively designated as "12"), but notes the contention by Carlson (1982), with which I agree, that the fragments labeled as pages 10 and 11 are actually parts of a single page 10.

For virtually all practical purposes, then, *Los Códices Mayas* serves nearly as well as the Graz editions of three of the manuscripts, and the Coe edition of the fourth. As for expense, there is an appreciable difference. To assemble a set of the earlier editions noted above (which are increasingly difficult to obtain anyway) would cost an estimated minimum of some seven hundred dollars — a factor that should deepen our collective appreciation of the present work.

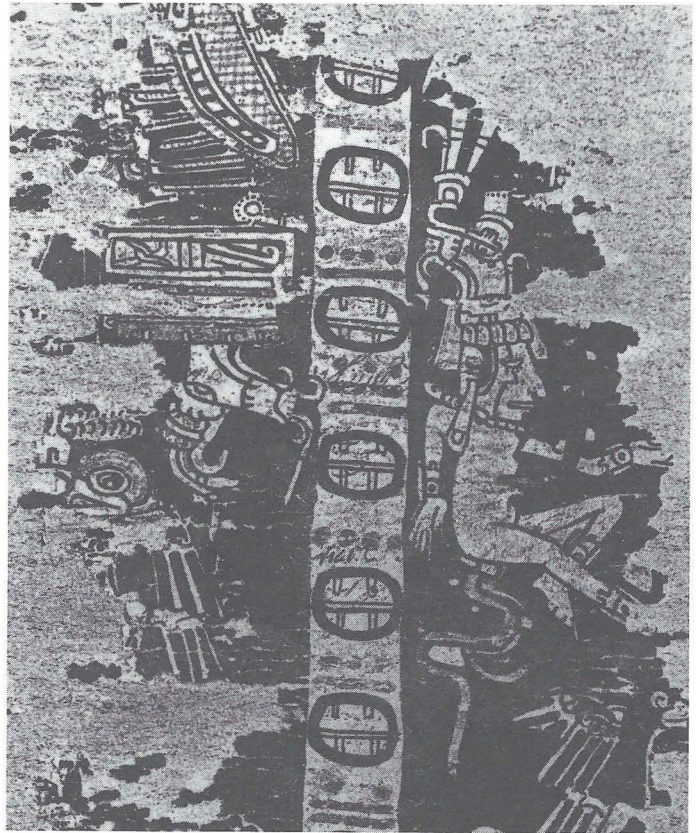


Fig. 2. P 19, Rosny 1888 (19)

BEGINNING WITH FIGURE 2, above, and continuing on the following pages, details of certain pages from reproductions of three Maya codices — the Paris (P), the Dresden (D), and the Madrid (M) — are shown in order to facilitate the comparison of their respective qualities of clarity and linear fidelity. The fourth codex, the Grolier, is not included since its relatively recent discovery has so far resulted in only one published reproduction other than that which appears in the volume under review here.

Those details are numbered as Figures 2 through 23. They include a portion of Page 19 of the Paris Codex (Figs. 2-6); part of Dresden Page 9 (Figs. 7-14); and two separate details of the Madrid, or Tro-Cortesianus, Codex — one from Page 27, the "Troano" portion of the manuscript (Figs. 15-19), and another from Page 11, the "Cortesianus" section (Figs. 20-23). This two-part treatment stems from the differing histories of reproduction between the two sections of the manuscript before 1911 (See Fig. 1).

All details which appear in Figures 2-23 are shown at the actual sizes of the manuscripts themselves which, in all cases, match the sizes of the respective reproductions derived from them. Each is captioned with information on author and date, followed by a key number by which it can be related to the chart which appears as Figure 1. In two instances (Figs. 12 & 15), the detail samples are derived from photographs of the original manuscript, and are so noted.

The major portion of the photography and processing were done at the Center for Maya Research, Washington, DC, using primary images in the library and photographic archive of the Center. In each instance contrast was manipulated for maximum clarity. Thus, except for the factors of color and the halftone screening done for this publication, the details appear just as they do in each specific edition or version.

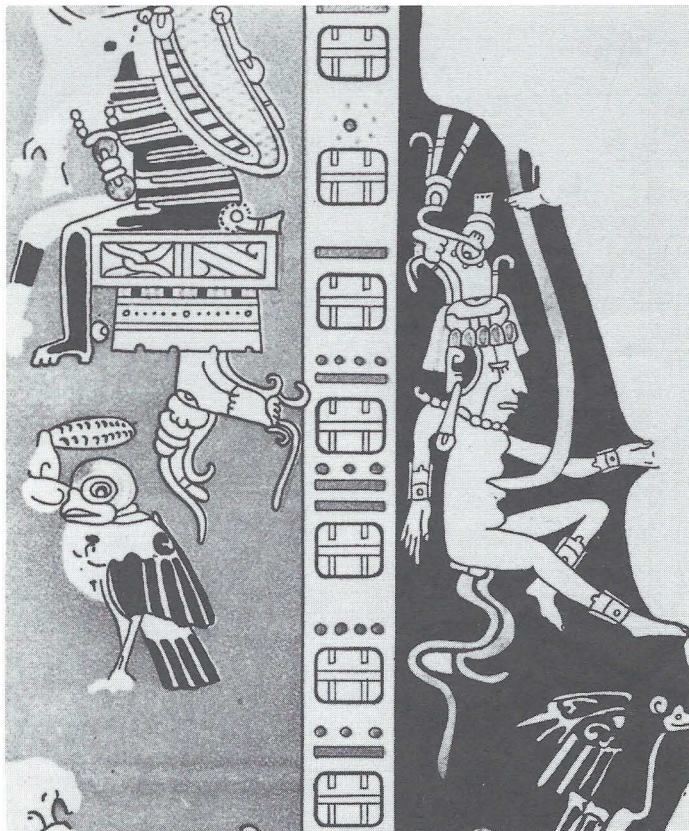


Fig. 3. P 19, Gates 1909 (10)



Fig. 4. P 19, Villacorta & Villacorta 1930 (21)

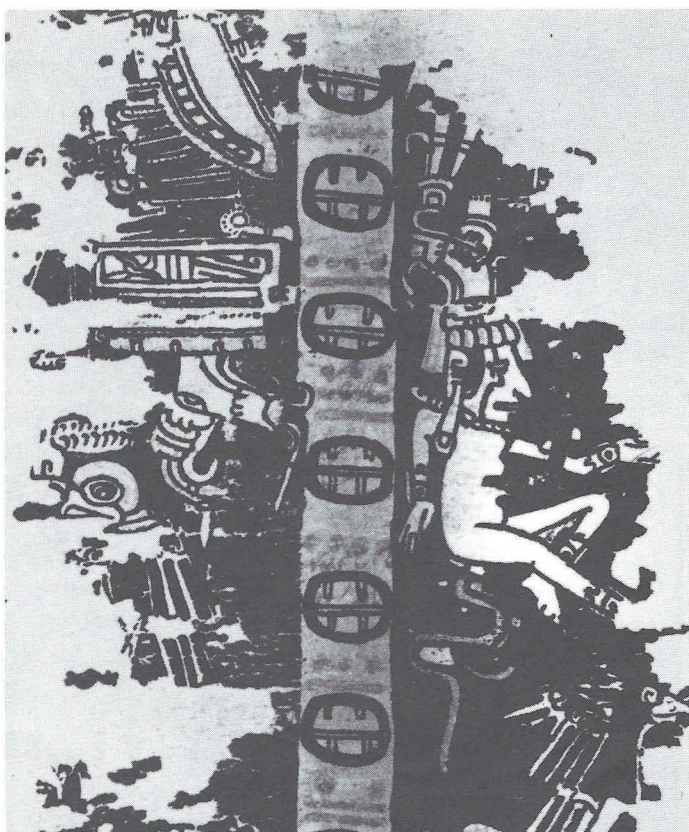


Fig. 5. P 19, Anders 1968 (2)



Fig. 6. P 19, Lee 1985 (16)

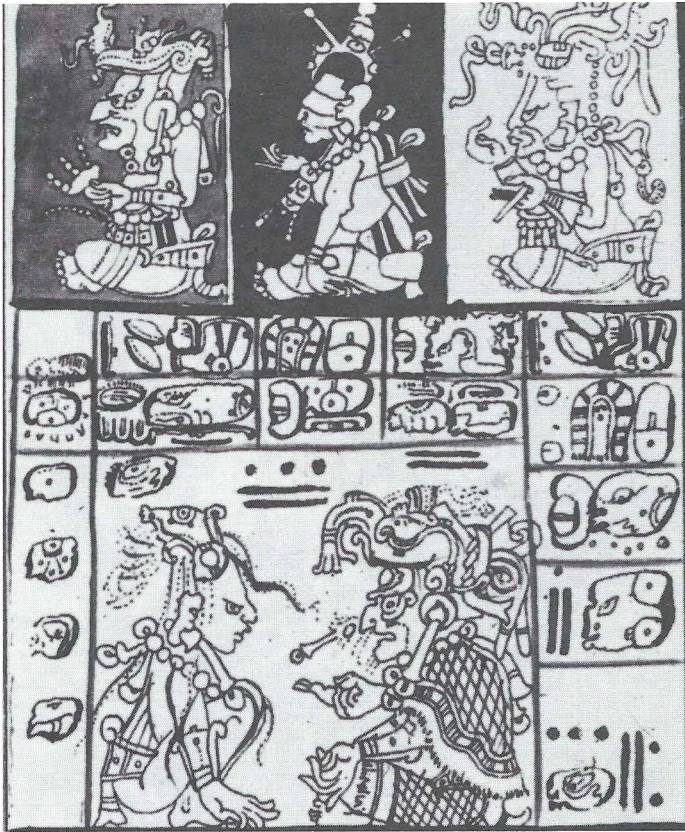


Fig. 7. D 9, Kingsborough 1830-48 (14)



Fig. 8. D 9, Förstemann 1892 (9)



Fig. 9. D 9, Villacorta & Villacorta 1930 (21)



Fig. 10. D 9, Anders' correction of Villacorta rendering in Deckert & Anders 1975 (6)

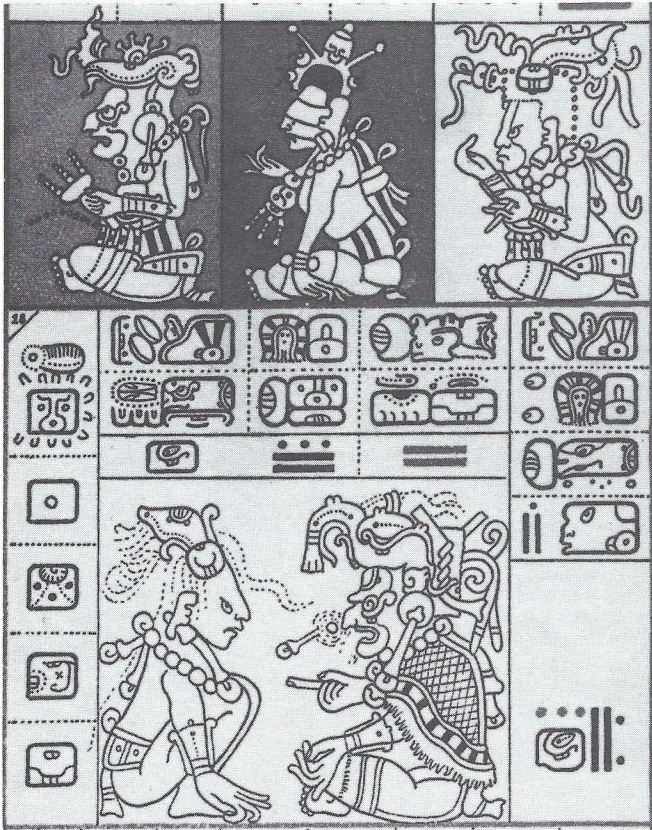


Fig. 11. D 9, Gates 1932 (12)



Fig. 12. D 9, Photograph of original (Anders)



Fig. 13. D 9, Deckert & Anders 1975 (6)



Fig. 14. D 9, Lee 1985 (16)

Thomas Lee's prologue to each of the four codex sections contains a formulation of succinct text blocks and listings giving pertinent and quickly retrievable information, not only on obvious points of the present location, form, and format of each codex, but also on content and critical bibliographical history. Each prologue ends with a tabular concordance of the pagination of the manuscript in question, which relates previously-used paginations to those appearing in Los Códices Mayas.

The accompanying bibliography is of supreme importance as an addition to the literature. It contains more than 800 entries related to the codices, their various reproductions, and works based upon their study. Each entry bears a number (1-803) which provides the basis for another extremely valuable feature of Lee's work -- an index to the bibliography, which allows the user to go immediately to entries related to any of three different categories of information, and to the four individual codices treated. The most outstanding works related to Maya epigraphy, calendrics, and astronomy are included as well in the listings. This bibliography could well stand on its own as a separate publication.

Whatever the reasons that guided the makers of the Chiapas volume to use the Graz publications of the Dresden, Madrid, and Paris Codices as their sources rather than original photographs, their judgement worked well. For the study -- or simply an appreciative browsing -- of all the Maya codices now known, they have produced a work of quite adequate quality at a welcome price. Los Códices Mayas should thus serve anyone using it for all but the most recondite details -- the fugitive fine-line browns visible in Aglio's 1825 tracing (Kingsborough 1830-48,3) or the pre-1945 state of certain pages, available only through the Förstemann images and their derivatives. As a result, the present work constitutes an important and timely contribution to the Mesoamerican field -- a scholar's sourcebook and a work of esthetic merit. The combination is much too seldom seen in the publication of data pertinent to the Maya field. The Autonomous University of Chiapas, the New World Archaeological Foundation, and Thomas A. Lee, Jr., should be praised for their highly productive collaboration. And anyone who wishes to have what by all expectations should have cost much, much more should order this book.

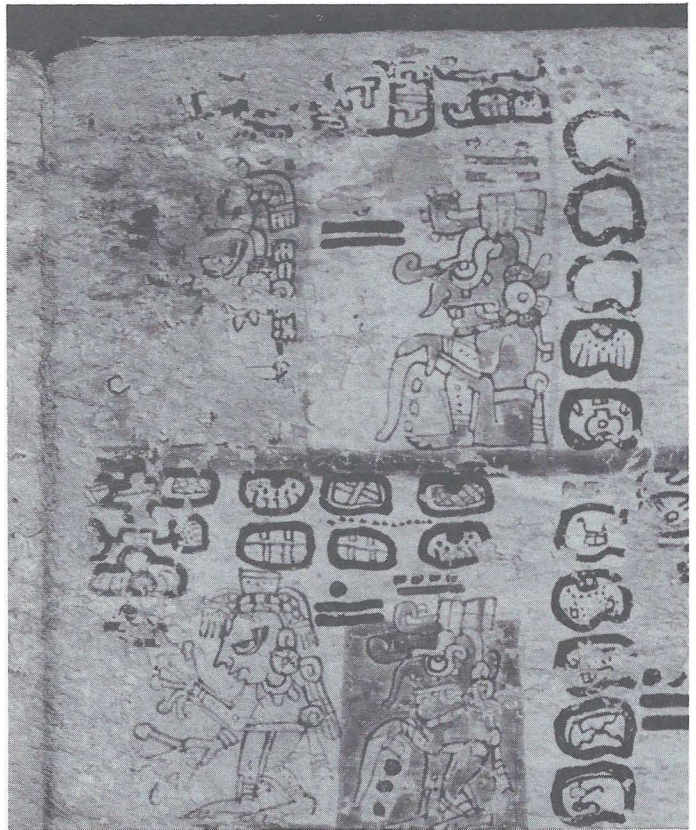


Fig. 15. M 27, (Tro) Photograph of original (NGS)

References

- Anders, Ferdinand
1967 *Codex Tro-Cortesianus (Codex Madrid)*. Museo de América, Madrid. Einleitung und Summary. *Codices Selecti*, vol. VIII. (Accompanies facsimile in two screenfold sections of 70 and 42 pages.) Akademische Druck- u. Verlagsanstalt, Graz, Austria.
- Anders, Ferdinand
1968 *Codex Peresianus (Codex Paris)*. Bibliothèque Nationale, Paris. Einleitung und Summary. *Codices Selecti*, vol. IX. (Accompanies facsimile screenfold of 22 pages.) Akademische Druck- u. Verlagsanstalt, Graz, Austria.
- Brasseur de Bourbourg, E. Charles
1869-
1870 *Manuscrit Troano. Études sur le système graphique et la langue des Mayas*. Mission Scientifique au Mexique et dans l'Amérique Centrale. Imprimerie Impériale, Paris. (Two volumes and supplement)
- Carlson, John B.
1982 "The Codex Grolier: New Light on the Authenticity of a Thirteenth-Century Maya Venus Calendar." Abstract (04.07) of a paper for presentation at the Third Annual Meeting of the Historical Astronomy Division (of the American Astronomical Society), Boston, January 9-11, 1983. In *Archaeoastronomy: The Bulletin of the Center for Archaeoastronomy*, vol. 5, no. 4, pp. 6-9. The University of Maryland, College Park.



Fig. 16. M 27, (Tro) Brasseur de Bourbourg 1869-70 (3)

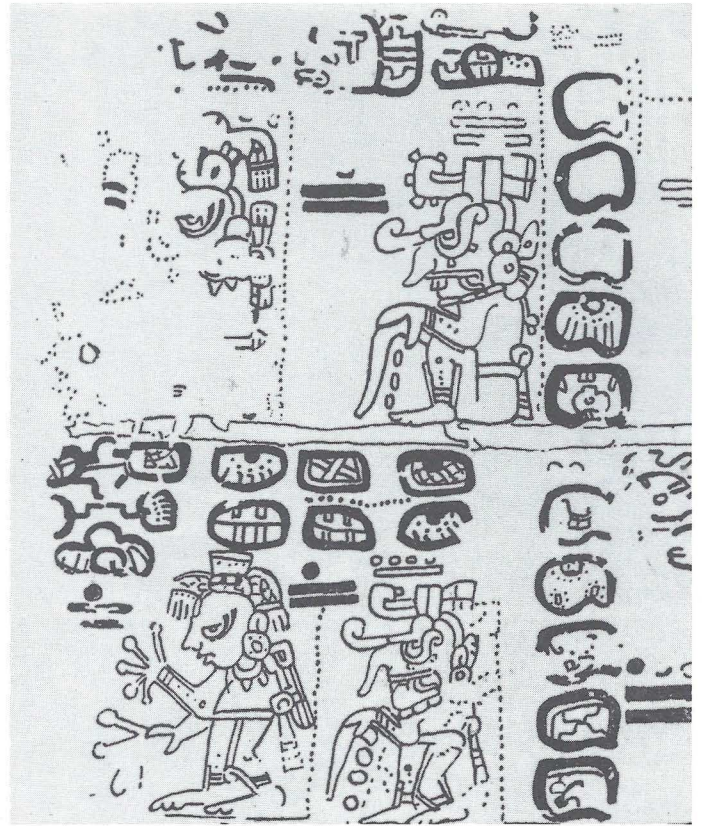


Fig. 17. M 27, (Tro) Villacorta & Villacorta 1930 (21)



Fig. 18. M 27, (Tro) Anders 1967 (1)

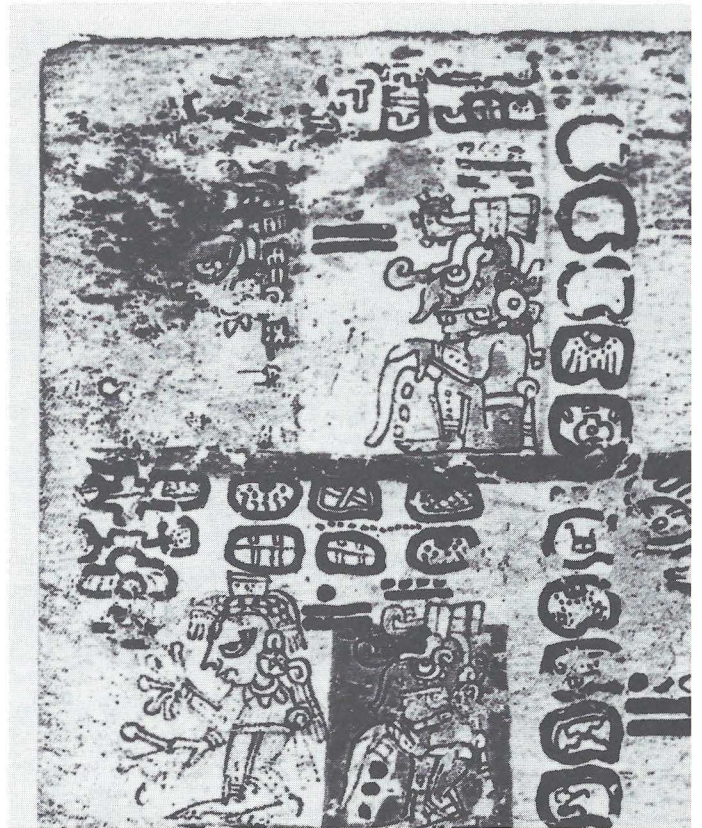


Fig. 19. M 27, (Tro) Lee 1985 (16)



Fig. 20. M 11, (Cortés) de la Rada & López 1892 (7)

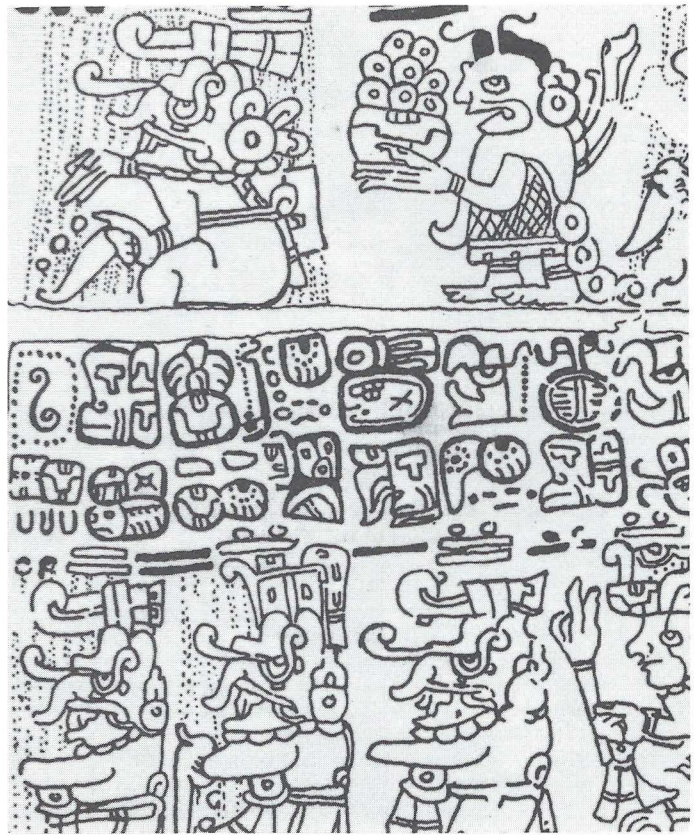


Fig. 21. M 11, (Cortés) Villacorta & Villacorta 1930 (21)



Fig. 22. M 11, (Cortés) Anders 1967 (1)



Fig. 23. M 11, (Cortés) Lee 1985 (16)

- Codex Dresdensis (Dresden Codex)
See: Deckert and Anders 1975; Echániz 1947; Förstemann 1880, 1892; Gates 1932; Kingsborough 1830-1848; Knorosov 1963; Lee 1985; Lips and Deckert 1962; Ramírez Acevedo 1979; Thompson 1972; and Villacorta and Villacorta 1930.
- Codex Grolier (Grolier Codex)
See: Coe 1973; and Lee 1985.
- Codex Peresianus (Paris Codex)
See: Anders 1968; Commission Scientifique du Mexique 1864; Gates 1909; Knorosov 1963; Lee 1985; Rosny 1887, 1888; Villacorta and Villacorta 1930; and Willard 1933.
- Codex Tro-Cortesiano (Madrid Codex)
See: Anders 1967; Brasseur de Bourbourg 1869-1870; de la Rada y Delgado and López de Ayala y del Hierro 1892; Echániz 1939 and 1949; Junta de Relaciones Culturales 1930; Knorosov 1963; Lee 1985; and Villacorta and Villacorta 1930.
- Coe, Michael D.
1973 The Maya Scribe and His World. The Grolier Club, New York.
- Coe, Michael D.
1978 Lords of the Underworld: Masterpieces of Classic Maya Ceramics. (Catalogue of exhibition held at the Art Museum, Princeton University, March 4 - June 18, 1978.) Princeton University Press, Princeton, New Jersey.
- Commission Scientifique du Mexique
1864 Manuscrit dit Mexicain, No. 2 de la bibliothèque Impériale. Photographié (sans réduction) par ordre de S.E.M. Duruy, Ministre de l'Instruction publique, présidente de la Commission scientifique du Mexique. Imprimerie Bonaventure et Ducessois, Imprimerie Photographique Benoist, Paris.
- Deckert, Helmut and Ferdinand Anders
1975 Codex Dresdensis. Sächsische Landesbibliothek Dresden (Mscr. Dres. R 310). Kommentar. (Accompanies screenfold facsimile in two sections of 30 and 48 pages). Akademische Druck- u. Verlagsanstalt, Graz, Austria.
- De La Rada y Delgado, Juan de Díos and D. Jerónimo López de Ayala y del Hierro
1892 Códice Maya denominado Cortesiano que se conserva en el Museo Arqueológico Nacional (Madrid). Reproducción fotocromolitográfica ordenada en la misma forma que el original. Madrid.
- Echániz, Guillermo M.
1939 Códice Troano: Ms. pictórico Maya actualmente en la Biblioteca Nacional de París SIC. Anticuaria Librería Guillermo M. Echániz, México.
- Echániz, Guillermo M.
1947 Códice de Dresden: Manuscrito pictórico conserva en la Biblioteca de Dresden, Alemania. Anticuaria Librería Guillermo M. Echániz, México. (25 copies)
- Echániz, Guillermo M.
1949 Códice Cortesiano: Manuscrito pictórico en el Museo Arqueológica de Madrid. Anticuaria Librería Guillermo M. Echániz, México.
- Förstemann, Ernst
1880 Die Mayahandschrift der Königlichen Öffentlichen Bibliothek zu Dresden. Hrsg. Mit 74 Tafeln in Chromo-Lichtdruck. A. Naumann, Leipzig.
- Förstemann, Ernst
1892 Die Maya-Handschrift der Königlichen Öffentlichen Bibliothek zu Dresden. Hrsg. 2. Aufl. Mit 74 Tafeln in Chromo-Lichtdruck. Richard Bertling, Dresden.
- Gates, William Edmund
1909 Codex Perez, Maya Tzental. Point Loma, CA.
- Gates, William Edmund
1911 The Madrid Maya Codex: Being the Combined Troano and Cortes, now first in a complete photographic edition. Point Loma, CA.
- Gates, William Edmund
1932 The Dresden Codex, reproduced from tracings of the original; colorings finished by hand. The Maya Society, Baltimore, Maryland. (Edition of 75).
- Glass, John B. (with Donald Robertson)
1975 "A Census of Native Middle American Pictorial Manuscripts." In: Handbook of Middle American Indians, Vol. 14 (Howard F. Cline, Vol. Ed.), pp. 81-252. The University of Texas Press, Austin.
- Junta de Relaciones Culturales
1930 Códice Troano. Edición facsimilar publicado por la Junta de Relaciones Culturales. Hecho por Mateu. Artes e Industrias Gráficas, Madrid.
- Kingsborough, Edward King, Viscount
1830-
1848 Antiquities of Mexico: Comprising Facsimiles, of Ancient Mexican Paintings and Hieroglyphics, Preserved in the Royal Libraries of Paris, Berlin, and Dresden; in the Imperial Library of Vienna; in the Vatican Library; in the Borgian Museum at Rome; in the Library of the Institute at Bologna; and in the Bodleian Library at Oxford. Together with the Monuments of New Spain, by M. Dupaix; with their Respective Scales of Measurement and Accompanying Descriptions. The Whole Illustrated by Many Valuable Inedited Manuscripts, by Augustine Aglio. James Moyes (Volumes 1-7) and Colnagi, Son and Co. (Volumes 8 and 9), London. (Nine volumes with various dates: Vols. 1 and 2, 1829, 1830, or 1831; Vols. 3-7, 1830 or 1831; and Vols. 8 and 9, 1848. The Dresden Codex appears in Volume 3).
- Knorosov, Yuri V.
1963 Pis'mennost' Indeitsev Maiia. Moscow.
- Lee, Thomas A., Jr.
1985 Los Códices Mayas. Introducción y Bibliografía. (Includes color reproductions of the Dresden, Madrid, Paris, and Grolier Codices), Universidad Autónoma de Chiapas, San Cristóbal de las Casas, Chiapas, Mexico.
- Lips, Eva and Helmut Deckert
1962 Maya Handschrift der Sächsischen Landesbibliothek Dresden, Codex Dresdensis. Geschichte und Bibliographie (Deckert), accompanies boxed facsimile with Introduction (Lips). Akademie Verlag, Berlin.
- Ramírez Acevedo, Gilberto
1979 Apuntes para la interpretación de los datos cronológicos expresados en los jeroglíficos mayas del códice de Dresden. (Includes black and white reproduction in back-cover envelope) Editorial Tradición, Mexico.
- Rosny, Léon de
1887 Códex Peresianus. Manuscrit hiératique des anciens Indiens de l'Amérique centrale, conservé a la Bibliothèque nationale de Paris. Publié en couleurs,

avec une introduction par Léon de Rosny. Bureau de la Société Américaine, Paris. (Some copies dated 1890).

Rosny, Léon de

1888 Códex Peresianus. Manuscrit hiératique des anciens Indiens de l'Amérique centrale, conservé a la Bibliothèque nationale de Paris. Seconde édition imprimée en noir. Bureau de la Société Américaine, Paris.

Thompson, J. Eric S.

1972 A Commentary on the Dresden Codex: A Maya Hieroglyphic Book. American Philosophical Society, Philadelphia.

Villacorta C., J. Antonio and Carlos A. Villacorta

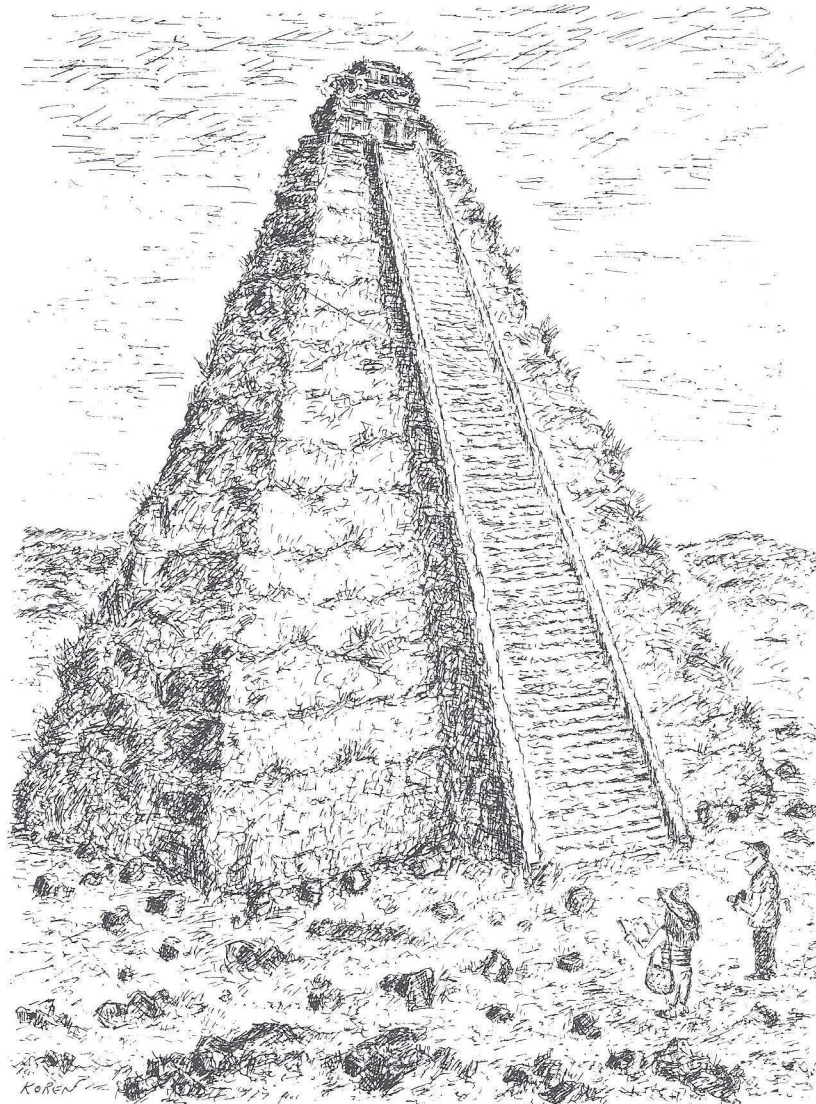
1930 Códices Mayas. Reproducidos y desarrollados por J. Antonio Villacorta C. y Carlos A. Villacorta. Tipografía Nacional, Guatemala. (This work first appeared in sequential parts, each containing 16 codex pages + respective diagrams, in 14 numbers of the Anales de la Sociedad de Geografía e Historia, published in Guatemala from March 1930 — vol. VI, no. 3 — to June 1933 — vol. IX, no. 4. Although the internal title page of the whole volume bears the date 1930, the work did not

appear until late 1933, as indicated on the expanded title page of the wrappers. A small volume containing the whole Dresden Codex was issued separately in 1931, as that manuscript had been completed in that year's March issue — Vol. VII, no. 3 of the ASGHG. A reprint of the 1930/33 edition appeared in 1976, another edition in 1977).

Willard, Theodore A.

1933 The Codex Perez: An ancient Mayan hieroglyphic book. A photographic facsimile reproduced from the original in the Bibliothèque Nationale, Paris. The Arthur H. Clarke Company, Glendale, CA.

George E. Stuart is the Staff Archaeologist for the National Geographic Society and President of the Center for Maya Research, P.O. Box 65760, Washington, DC 20035. Dr. Stuart's field experience in the Maya area includes mapping at the sites of Dzibilchaltun and Cobá, and his main interests lie in the realms of bibliography and the history of research in Maya archaeology and epigraphy. He is co-author with his son David and Linda Schele of a forthcoming volume on the decipherment of Maya hieroglyphic writing.

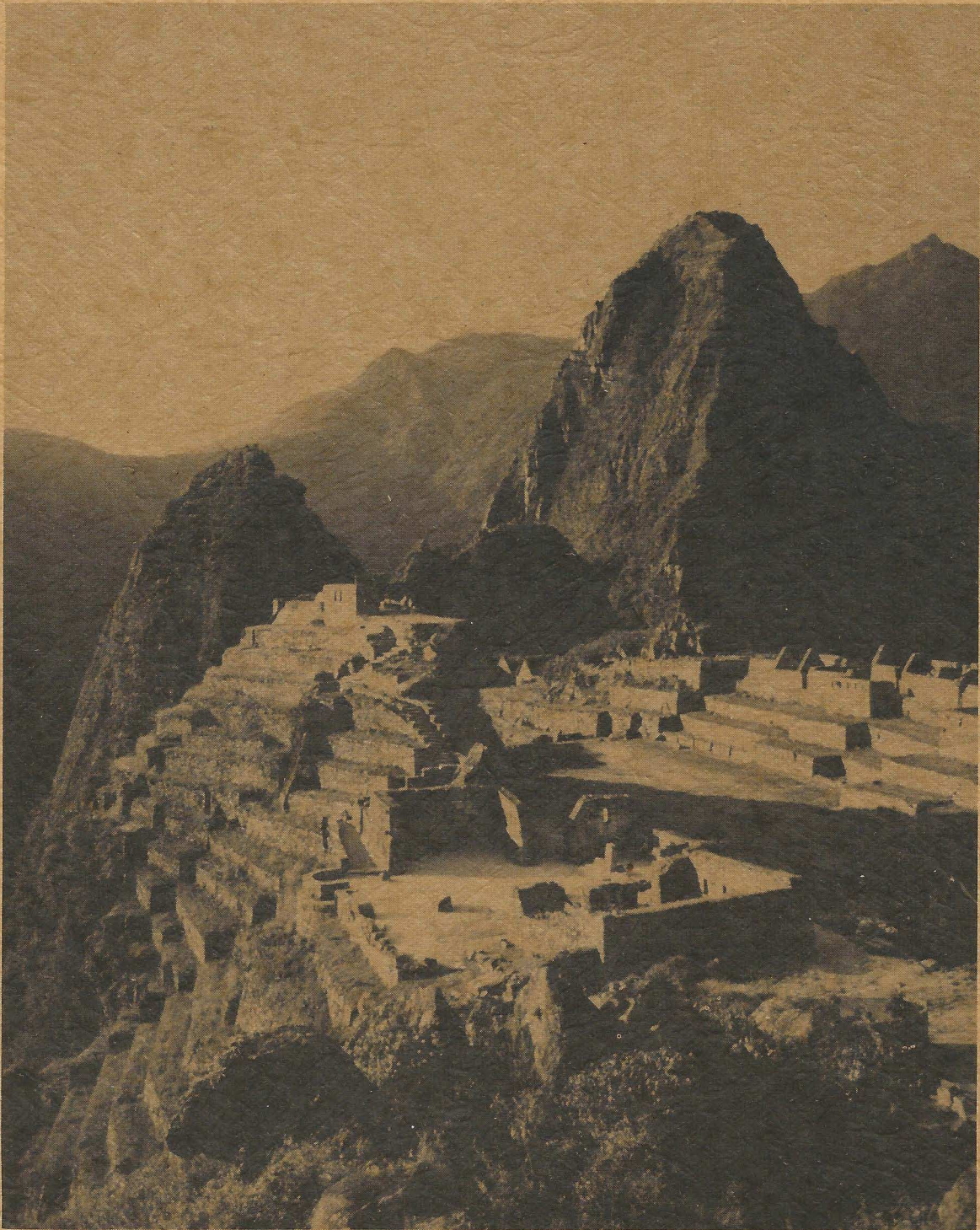


"It was obviously built when the Mayans were feeling good about themselves."

ARCHAEOASTRONOMY

THE JOURNAL OF THE CENTER FOR ARCHAEOASTRONOMY

VOLUME IX, NUMBERS 1-4
JANUARY-DECEMBER, 1986



ARCHAEOASTRONOMY

THE JOURNAL OF THE CENTER FOR ARCHAEOASTRONOMY

Volume IX / Numbers 1-4

January-December 1986



Here Comes the Sun: The Cuzco-Machu Picchu Connection 15
by David S.P. Dearborn and Katharina J. Schreiber

Easter Island's "Solar Ranging Device," Ahu Huri A Urenga, and Vicinity 38
by William Liller and Julio Duarte D.

Celestial Happenings on Easter Island: A.D. 760-837 52
by William Liller

Mescalero Apache Terminology for Venus 59
by Claire R. Farrer

Ethnoastronomy in Navajo Sandpaintings of the Heavens 62
by Trudy Griffin-Pierce

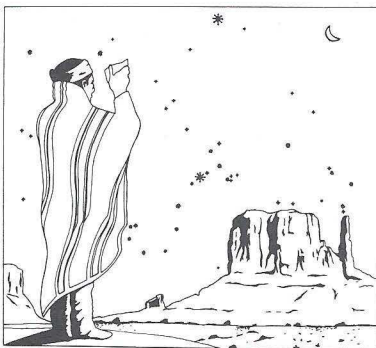
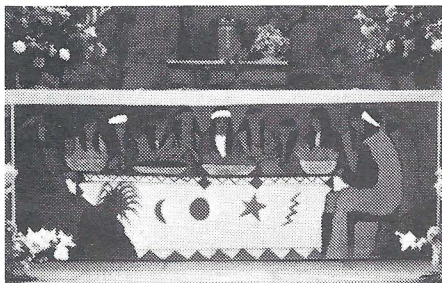
Organization of Space in the Anasazi Ceremonial Site of Yellow Jacket, 5MT-5 70
by J. McKim Malville and Mark Neupert

The Ixtapaluca Archaeological Monument 77
by Roberto Barrie

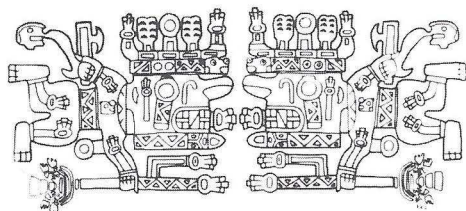
Keeping a Seasonal Calendar at Pueblo Bonito 79
by Michael Zeilik

Model of Planetary Configuration in the Mahābhārata: An Exercise in Archaeoastronomy 88
by Virendra Nath Sharma

The 88 Lunar Month Pattern of Solar and Lunar Eclipses and Its Relationship to the Maya Calendar 99
by Robert K. Smither

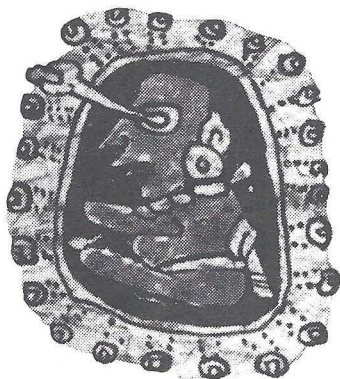


OUR COVER: A view of Machu Picchu looking north toward Huayna Picchu. The Intihuatana Stone is located in the highest structure on the left. (Photo: J.B. Carlson)



Book Reviews:

- Inkawasi: The New Cuzco** 114
A Review of: **Inkawasi: The New Cuzco, Cañete, Lunahuaná, Peru** by John Hyslop
Review by D.S.P. Dearborn
-



- Mapuche Ceramics: Astronomical Symbolism** 123
A Review of: **Simbolismo en la Alfareria Mapuche: Claves Astronomicas** by Carlos A. Gonzalez Vargas
Review by Edmundo Magaña
-

- Inca Architecture** 128
A Review of: **Inca Architecture** by Graziano Gasparini and Luise Margolies and **Monuments of the Incas** by John Hemming, photographs by Edward Ranney
Review by William J. Conklin
-

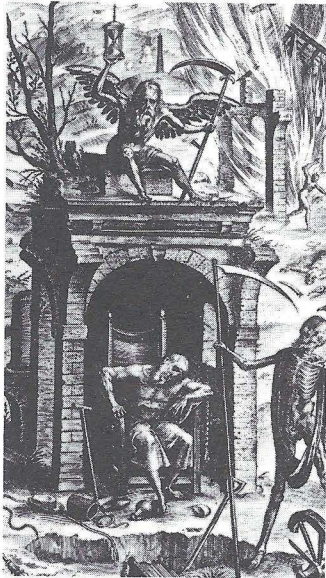
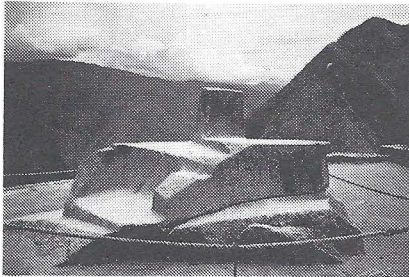
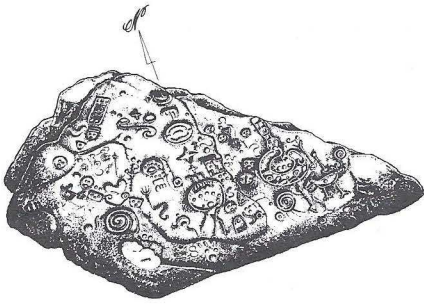
- Early Ceremonial Monuments of the Andes** 134
A Review of: **Early Ceremonial Architecture in the Andes: A Conference at Dumbarton Oaks, 8th to 10th October 1982** by Christopher B. Donnan, ed.
A Review Essay by William H. Isbell
-

- Archaeoastronomy in the Old World** 157
A Review of: **Archaeoastronomy in the Old World** by D.C. Heggie, ed.
Review by Alvar Ellegård
-

- Architecture of the "Mound Builders"** 160
A Review of: **Prehistoric Architecture in the Eastern United States** by William N. Morgan
Review by O.C. St.Cyr
-

- Los Codices Mayas** 164
A Review of: **Los Codices Mayas** Introduction and Bibliography by Thomas A. Lee, Jr.
Review by George E. Stuart
-

- Medieval Cosmology** 177
A Review of: **Medieval Cosmology: Theories of Infinity, Place, Time, Void and the Plurality of Worlds** by Pierre Duhem with Roger Ariew, ed. and trans.
Review by Steven J. Dick
-



Book Reviews: *continued*

Time: The Greatest Innovator 181
A Review of: **Time: the Greatest Innovator. Timekeeping and Time Consciousness in Early Modern Europe**
by Rachel Doggett, ed.; Susan Jaskot and Robert Rand, assts.
Review by Carlene E. Stephens

The Symbolism of the Stupa 183
A Review of: **The Symbolism of the Stupa**
by Adrian Snodgrass
Review by Ann Agee

Astronomy and History 187
A Review of: **Astronomy and History: Selected Essays**
by Otto Neugebauer
Review by Alan C. Bowen

Editorial 4
Archaeoastronomy and the Preservation of Archaeological Sites by Ray A. Williamson
Transitions by John B. Carlson

Earth and Sky: Visions of the Cosmos in Native American Folklore 6
by Ray A. Williamson and Claire R. Farrer

Historical Astronomy Division: Sixth Annual Meeting 12
by E.C. Krupp

The Interaction of Science and Philosophy in Fifth and Fourth Century Greece 14
by Alan C. Bowen

In the Current Literature: Part 1 195
by John B. Carlson

In the Current Literature: Part 2 199
by LeRoy E. Doggett

In the Current Literature: References 200

ARCHAEOASTRONOMY

Volume IX, Numbers 1-4, Jan.-Dec. 1986

The Journal of The Center for Archaeoastronomy
P.O. Box X, College Park, MD 20740-1024
(301) 864-6637

Editor:
John B. Carlson

Associate Editor:
LeRoy E. Doggett

Consulting Editors:

Anthony F. Aveni
Aubrey Burl
Von Del Chamberlain
Thor Conway
David S.P. Dearborn
John A. Eddy
Claire R. Farrer
Ruth S. Freitag
Evan Hadingham
Robert L. Hall
O.L. Harvey
Gerald S. Hawkins
Ronald Hicks
Stanislaw Iwaniszewski
David A. King
E.C. Krupp

Euan MacKie
Alexander Marshack
Stephen C. McCluskey
Robert L. Merritt
J. Derral Mulholland
Allen F. Roberts
Jack H. Robinson
Clive L.N. Ruggles
Thomas L. Sever
Nathan Sivin
F. Richard Stephenson
Gary Urton
Ray A. Williamson
M. Jane Young
Michael Zeilik

Editorial Assistants:
Lawrence M.S. Kroger
Laura J. Mann
Mary N.S.W. Parker

Layout and Design:
Cinthia Radowich

©1987 John B. Carlson, Director

THE CENTER FOR ARCHAEOASTRONOMY

ISSN 0190-09940

The Center for Archaeoastronomy is a non-profit corporation established in the State of Maryland and is tax exempt under Section 501(c)(3) of the United States Internal Revenue Service Code. The Center is an independent foundation created to advance research, education, and public awareness of archaeoastronomy, including ethnoastronomy, and to promote archaeoastronomy as a discipline within the sciences, the arts and the humanities. ARCHAEOASTRONOMY is a refereed journal published by the Center for Archaeoastronomy. The annual subscription fee for individuals is \$20 U.S. (\$23 foreign) and \$30 U.S. (\$33 foreign) for libraries and institutions, with all back volumes available at these same rates. Tax deductible contributions from individuals and corporations may be directed to the Center. The ideas and opinions expressed by the contributors to ARCHAEOASTRONOMY are not necessarily those of the editors or Board of Directors of the Center for Archaeoastronomy.

Printed in the USA by Community Printing Service,
Washington, DC

Editorial

Archaeoastronomy and the Preservation of Archaeological Sites

An Editorial by
Ray A. Williamson

There is a severe crisis in the protection and preservation of archaeological sites throughout the United States and the world.¹ Archaeologists have long had to contend with the accidental or intentional destruction of their research resources, and in recent years, such destruction has also begun to affect the research of archaeoastronomers. In the American Southwest, in which I do most of my archaeoastronomical work, land managers estimate that as many as 70% of the sites on public land have been vandalized or illegally dug for artifacts. My own experience suggests that very few major sites are undisturbed. At some sites where I have worked, vandalism and pothunting have damaged features that appear to have held information of astronomical significance.

Although pothunting and vandalism constitute serious threats to archaeoastronomical research, numerous other human activities also destroy astronomical information at archaeological sites. For example, anthropologist Ken Hedges has noted that two sites of probable astronomical significance in southern California were destroyed in the last few years.² Campers apparently unknowingly destroyed a winter solstice site on Viejas Mountain near San Diego when they used the marker stones to construct a campfire enclosure. Less understandable was the removal of marker stones pointing to winter solstice sunrise from a site on Cowles Mountain by a construction crew building a trail in Mission Trails Regional Park in San Diego. The site was known and included in documentation available to the managers of the park, but these same managers apparently failed to consult the available record of archaeological sites before planning and building the trail. Unfortunately, archaeologists were unable to study the Viejas Mountain and the Cowles Mountain sites adequately before they were destroyed. No theodolite survey was made and only a few photographs remain to document them.

Earth moving projects pose particular threats to archaeoastronomical sites because the horizon profile may be just as important as the archaeological feature. In this issue, William Liller and Julio Duarte report on the destruction of a potentially significant equinox sightline on Easter Island. NASA has removed much of a small hill to the west of a potential solar observatory in order to construct a runway extension, which would provide an alternate emergency landing strip for the space shuttle. Fortunately, Liller