like other chapters in this volume, provides an excellent overview of general problems, detailed interpretations, and data available for the study of Oaxacan archeology and Precolonial ethnohistory. And it provides a convenient assemblage of materials for the reader who has more than a casual interest in Mesoamerica. It is also a useful supplement and updating of the Oaxacan portions of the *Handbook of Middle American Indians*, including the more recent archeological supplement to that series. *The Cloud People* is well illustrated with accurate drawings of sites, monuments, and sources—there are no photographs—although it does not include a list of illustrations. The index is very general, with limited entries and no indexing of authors cited. The bibliography is extensive and up-to-date.

The whole work is organized around the concept of "divergent" evolution, which Flannery believes to be more useful than a "general" evolutionary model that emphasizes major cultural transformations from one stage to another and that has been the dominant paradigm in North American archeological circles over the past decade. Theoretical discussions at the beginning and end of the volume employ analogies taken from biological evolution and, unlike Flannery's other works, include a minimum of satirical characterization. However, one may question his casual dismissal of much ethnological work in Oaxaca with a sweeping "snowball in Hell" metaphor, and his plea for a new self-esteem among archeologists seems unnecessary.

Further, though the divergent evolutionary model seems most useful for depicting the initial differentiation of Zapotec and Mixtec cultures from a common Formative base, it is not always appropriate for characterizing other periods of Oaxacan history. In their introduction to the chapter on Postclassic Oaxaca, Flannery and Marcus admit that "the Aztec, Mixtec, Cuicatec, and Zapotec were in continual contact and conflict, borrowing from each other at an accelerated rate" (p. 218), a process they refer to as "parallel evolution." This latter concept also seems to have but limited applicability. In the opinion of this reviewer, what the authors describe is, rather than a parallel evolution of Mixtec and Zapotec cultures, a situation in which Postclassic Mesoamerican regional elites were but components in a single "social system" or "world," sharing "culture" despite the fact that the elites of various regions were in conflict and competition with one another. The unit that was evolving was thus much larger than any single regional entity or local cultural manifestation.

That alternative interpretation notwithstanding, this volume is a monumental contribution to Oaxacan archeology and ethnohistory. For scholars it will stand as the place to begin and as the standard reference work for many years to come. Further, the editors have achieved a simplicity of writing style throughout that does not obscure technical details and arguments and will make the book comprehensible to the general reader and to undergraduate students. It should be read by anyone with an interest in Mesoamerica or Oaxaca.

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Myth and Urbanism

Quetzalcoatl and the Irony of Empire. Myths and Prophecies in the Aztec Tradition. DAVÍD CARRASCO. University of Chicago Press, Chicago, 1983. xii, 234 pp., illus. $20.

The Mesoamerican deity Quetzalcoatl has always been a source of inspiration and controversy for scholars. Although he has been the subject of a large number of studies, there is no definitive synthesis. Legend, god, or man, Quetzalcoatl has proven to be an elusive target. Carrasco uses the techniques and perspectives of history of religion, anthropology, and urban geography to explore the nature and character of the complex symbolism of Quetzalcoatl particularly with respect to the development of urbanism.

Following the views of Mircea Eliade and Paul Wheatley, Carrasco regards the "traditional city" as primarily a center of rites and ceremonies in which religion mediates the interaction of priestly elites and the ecological complex in which the city is located. The worldview involved (cosmo-magical thought) presupposes an intimate connection between the orderly motion of the heavens and the rhythm of life on Earth. Cities are symbols in which the macrocosmos is mirrored by the spatial layout of the city. The ideal city would contain a quintessentially sacred *center* in the form of a temple or temple pyramid. This locale represents an *axis mundi*, that is, the center of the world, intersection of all the world's paths, the meeting point of heaven, earth, and hell. This identification of the city (and of its rulers) with the order of the cosmos serves to legitimize their power and authority.

The premise of the book is that Quetzalcoatl and the symbolism associated with him have played a large role in the organization and legitimization of the

"Quetzalcoatl in his wind god aspect as depicted in the Codex Magliabecchiano. Note the conch shell buckle, wind god mask, and four-quarter design of the shield." [From *Quetzalcoatl and the Irony of Empire*]

urban tradition in Mesoamerica. Quetzalcoatl is one of the principal creator gods and, depending on the source, was involved in the creation (and destruction, since events were cyclical) of the world, of humankind, of corn, of knowledge, and so on. In this case, however, the focus is his identification with Tollan, the archetypical Mesoamerican city. Tollan, the capital of the Toltec empire was cited in Aztec myth and history as a place of abundance and the center of creativity. The Quetzalcoatl-Tollan symbolism was also associated with the legitimization and development of Teotihuacan, Cholollan, Xochicalco, Chichen-Itza, and Tenochtitlan.

Just as Quetzalcoatl was involved in the creation of Tollan, his overthrow by the rival forces of Tezcatlipoca led to its downfall. According to Aztec mythology he would return from the East one day and reclaim his throne. Cortes and the Spanish conquerors arrived in Mexico from the East. They were believed by Moctezuma to be the god himself, a factor that made Moctezuma abdicate his leadership role and contributed to the downfall of the Aztecs. Thus, ironically, the myth of Quetzalcoatl was a paradigm both for the creation and legitimization of the Aztec empire and for its downfall.

Carrasco does an excellent exposition of a model of urbanization that serves as a corrective to a current cultural materialist trend that uses population pressure as the prime mover for cultural change. In the present case, the sacred city stimulates population increases and attracts more people into the city's sphere of influence. In turn this requires intensification in agriculture and technology. The key component is the emergence of a religio-political elite controlling all institutions, which in turn is legitimized by its identification with and control of the sacred microcosm of the central city. The archeological work of Sanders, Parsons, and Santley in the Valley of Mexico certainly supports this theory of state formation for Teotihuacan.

Carrasco is not uniformly successful in demonstrating the centrality of Quetzalcoatl in all of the six cities. It is difficult to perceive Tollan as a paradigm for Teotihuacan, which was founded a millennium earlier. It is also clear that the dominant symbolic structures at Teotihuacan are the pyramids of the Sun and Moon, with an *axis mundi* centered in the cave located underneath the pyramid of the Sun, and that the dominant agricultural-fertility diety is Tlaloc, not Quetzalcoatl. In the case of Tenochtitlan, the principal deities that legitimized the rulers and the empire belonged to the warrior-god complex of Tezcatlipoca rather than to the Quetzalcoatl myth.

The argument of the book would have been enormously strengthened if some of the possible alternative sources of mythic justification for an empire had been examined critically and compared to the Quetzalcoatl model. Such an example is the Aztecs' belief that they were the "people of the sun" who prevented the end of the world by nourishing the sun by sacrificing war captives.

A fringe benefit is an excellent discussion and critique of the usual primary sources of information on Mesoamerican beliefs. These range from pre-conquest codices to the encyclopedic work of Sahagun. The discussion would not be new to experts in the area, but the virtue of this chapter is that all the various types of sources are discussed here and that Carrasco brings together views from a variety of widely dispersed sources.

This book constitutes an interesting and challenging approach to the interpretation of Mesoamerican religion, urbanism, and archeology. It will provoke considerable debate.

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An Elizabethan Scientist

Thomas Harriot. A Biography. JOHN W. SHIRLEY. Clarendon (Oxford University Press), New York, 1983. xii, 508 pp., illus. $55.

Thomas Harriot (1560–1621) was England's leading scientist as the Elizabethan age drew to an end. To cite just a few of his achievements: he discovered the sine law of refraction (Snell's law) and the parabolic path of projectiles, and, independently of Galileo, he first turned the telescope to the heavens, drew a lunar map, and observed sunspots. He was, moreover, not solely a contemplative scholar: during 1585 and 1586 he participated in Sir Walter Ralegh's epoch-making, though ill-fated, voyage to explore Virginia and establish an English colony.

Harriot's name, nonetheless, is barely known outside a small group of scholars. Undoubtedly, this is because he published only one work, his (non-scientific) *Briefe and True Report of the New Found Land of Virginia* (1588), and his literary executors just one more, *Artis analyticae praxis* (1631), on algebraic equations. Harriot's reputation has undergone many vicissitudes in the past four centuries. In his own day he was highly regarded despite his lack of publication, for he communicated his results to a wide circle; and his fame even reached Kepler in Germany. It is, however, only in the last four decades, with the systematic study of his surviving papers and the documentation of his life, that we are attaining a true historical assessment. John W. Shirley has been in the vanguard of this renaissance of Harriot studies, and the present biography culminates more than 35 years of research.

Through his long association with Ralegh as a scientific and technical adviser, Harriot actively participated in England's growth into a major maritime nation. He applied mathematics, astronomy, and mechanics to contemporary problems of navigation, cartography, and ballistics and made notable contributions both to improved practice and to the sciences themselves. For instance, to construct a true sea chart he demonstrated that stereographic projections are conformal, solved the rectification and quadrature of the equiangular or logarithmic spiral, and developed sophisticated interpolation formulas—all in advance of his time. In addition to preparing papers and charts for Ralegh and lecturing to him and his men on seafaring, the efficient Harriot also handled his administrative and business matters.

Though moving in court circles may have been exciting and financially rewarding, it could also be a risky business. In the 1590's, when Ralegh's enemies attacked him as a free-thinking atheist, they also implicated Harriot. He was investigated for atheism, but no formal charges were laid against him. In 1605, Harriot's second patron and Ralegh's close friend Henry Percy, 9th Earl of Northumberland ("the Wizard Earl"), was imprisoned on trumped-up charges in the Gunpowder Plot. Harriot and others associated with Northumberland were also rounded up and imprisoned. Harriot spent some time in the Gatehouse, but he fared far better than his patrons, Ralegh, who spent 13 years in the Tower, and Northumberland, who spent 16. Beginning in the 17th century, the story grew up of the Wizard Earl and his Three Magi (Robert Hues and Walter Warner, in addition to Harriot) who carried out philosophical discussions and scientific experiments in the Tower as a sort of early learned society. Shirley devotes a chapter to debunking this myth, although he has set up something of a straw man by so rigidly demanding "a formal association" involving all four