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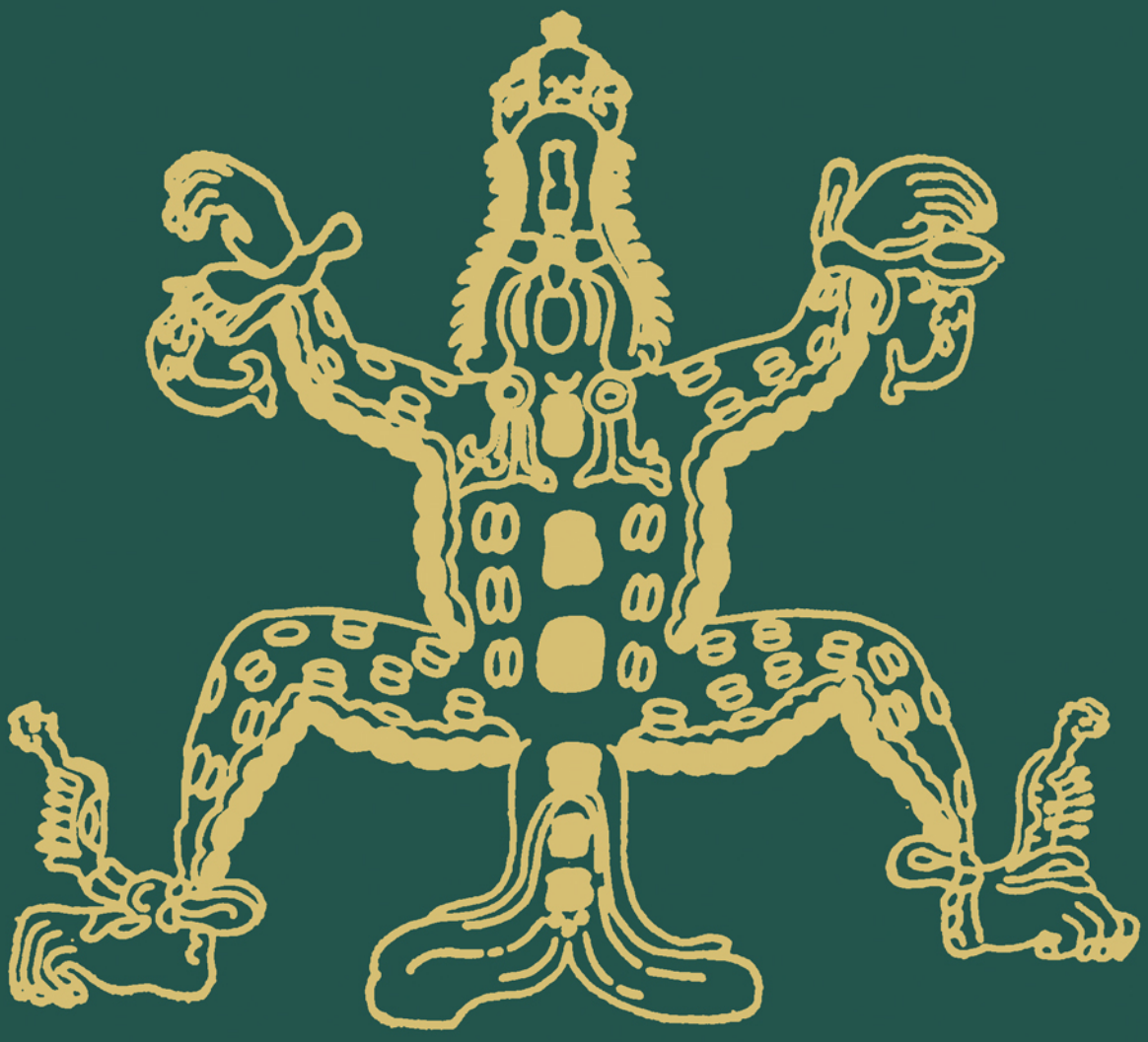

Maya Subsistence

Studies in Memory of Dennis E. Puleston

Edited by

Kent V. Flannery

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Dennis E. Puleston, Maya archaeologist (photo by Peter D. Harrison).

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Preface

In the autumn of 1978, returning from the isolation of a field season in southern Mexico, I was met with very sad news: Mesoamerican archaeology had lost one of its nice guys. Dennis Puleston—a gentle person, a born naturalist, a fearless explorer, and a superb field-worker—had been taken from us prematurely. A chance bolt of lightning—unpredictable, completely unlikely, a truly one-in-a-million accident—had robbed us of one of the most colorful and delightful of all our colleagues.

I remember asking myself, why does it always happen to the good guys? Surely archaeology has had more than its share of bright young people who were taken before their time—Robert Barlow, George Vaillant, David Clarke, Jack Ladd, and Jim Gifford are among those who come quickly to mind. At such times, it does indeed seem that the good die young, while, as the Mexicans say, "*cosa mala nunca muere.*"

Then came a telephone call from the University of Minnesota, where the Anthropology Department was organizing a conference in Denny's memory. Would I chair the conference and edit the resulting volume, they wondered? I replied that nothing would give me greater pleasure than to do something positive for Denny.

The conference, held at the University of Minnesota in October 1979, was entitled "The History and Development of Maya Subsistence." It was felt that this topic, which had been one of Denny's major interests, would be the most appropriate choice to integrate the efforts of his many friends who were invited to contribute papers or ideas. Those friends came in great numbers and arrived in an extraordinarily good mood. All seemed to sense that, although the circumstances leading up to the conference were sad ones, the man we were there to honor was not a sad person. Maya archaeology had been a joyful celebration for

Denny, and such was the mood of the participants that on the final day of talks one of them whispered to me, "This has been the Woodstock of all Maya conferences."

One of the reasons for the success of any conference is the group of people organizing it, and I can barely begin to thank all of them. Chairman Elden Johnson and the Anthropology Department of the University of Minnesota planned everything so well that there was little for me to do. William L. Rowe, Skip Messenger, and Phyllis Messenger orchestrated all the sessions, lunches, receptions, slide presentations, and coffee breaks. Olga Stavrakis Puleston, who knew better than anyone else who Denny's tried and true friends were, played a major role in the selection of speakers. The costs of the conference were underwritten by the Archaeological Institute of America; the Dennis E. Puleston Memorial Fund; the Lucille P. Wellington Trust; and the College of Liberal Arts, Department of Anthropology, Graduate School, and Office of International Programs of the University of Minnesota. Finally, I would like to thank the contributors to this volume for allowing all royalties to accrue to the Dennis E. Puleston Memorial Fund in order that similar conferences may be held in the future.

This volume begins with Gordon R. Willey's analysis of Dennis Puleston's career, a chapter in which Willey reviews the history of inquiry into Maya subsistence and places Denny's contributions in their intellectual context. Following this, the volume is organized into four groups of chapters dealing with Maya subsistence from the earliest Preclassic period up to the present day. Topics include agriculture, hunting, wild plant collecting, animal husbandry, and trade. A pervasive theme throughout the volume, however, is the question of the role of intensive agricultural systems in the rise of ancient Maya civilization.

We know relatively little about the origins of agriculture in the Maya region. Quite simply, most research into the beginnings of agriculture has taken place in the semiarid highlands of Mexico, where plant preservation is better. Bottle gourds are among the oldest plants for which we have any evidence—not much of a surprise when we consider that Mexico's earliest farmers had no pottery. The primitive ancestors of today's squashes and pumpkins came under domestication prior to 7000 B.C. in areas as widely separated as the Sierra Madre de Tamaulipas and the eastern Valley of Oaxaca. Wild runner beans were used during the same period over the same area, and common beans were domestic by 4000 B.C. Actual cobs of maize dating to 5000 B.C. were recovered by MacNeish at Coxcatlán Cave in the Tehuacán Valley of Puebla; domestic chile peppers appeared in the same cave by 4000 B.C. (MacNeish 1964; Cutler and Whitaker 1967; Kaplan 1967). (For a summary, see Flannery 1973: Table 2, pp. 287–301.)

As this book goes to press, however, we may be on the verge of finding out a lot about the origins of agriculture in the Maya region. Richard S. MacNeish and S. Jeffrey K. Wilkerson have embarked on the investigation of a whole series of preceramic sites on the coast of Belize. Their discoveries could fill in an enormous gap in our knowledge of early Maya subsistence.

One of the problems on which MacNeish and Wilkerson may be able to shed some light is the role of manioc among the peoples of lowland Mesoamerica. Ever since Bronson (1966) suggested that the Classic Lowland Maya might have cultivated manioc, the number of manioc "groupies" has grown steadily until we now have people convinced that the Olmec grew manioc, the Preclassic farmers of Tehuantepec grew manioc, and Maya civilization rose and fell on manioc. We even have people ready to argue that there were two forms of early Mesoamerican civilization—a highland culture based on maize and a lowland culture based on root crops. All of this, of course, must be believed on faith because there is no archaeological evidence to support it.

There are at least 5–10 species of wild *Manihot* in the Maya region, but it cannot yet be shown that any one of them is the ancestor of domestic manioc (*Manihot esculenta*). The two most closely related Mexican and Central American species, *M. gualanensis* and *M. aesculifolia,* have stouter and more many-branched inflorescences than *M. esculenta;* on the other hand, the northeastern South American species *M. saxicola* will produce fertile hybrids with *M. esculenta* (Rogers 1963). For this and other reasons, many botanists see northern South America as a possible center for early domestication. Also, the fact that many of the terms used for manioc in Mesoamerica are of Carib or Arawak origin (Marcus present volume, see Chapter 10) may even suggest that the plant is a relatively recent arrival from Central America or the Antilles.

Potentially, archaeology could solve this problem. It is simply not true, as some have claimed, that it is impossible to find archaeological evidence for manioc in the lowlands. Alejandro Martínez (1978) proved this by floating ash from bell-shaped pits at the Protoclassic Don Martín site in the Grijalva Depression of Chiapas. Carbon is preserved even in the tropics, and Martínez recovered two carbonized seeds of *Manihot* sp. out of a sample of hundreds of identifiable plants (Martínez 1978:Figure 17a). Note, however, that his *Manihot* sp. is *not* identified to species; hence, it would be a mistake to leap to the conclusion that it is cultivated manioc rather than one of the numerous wild species that are native to Chiapas and were undoubtedly used for food. The situation is similar to that of the *Manihot* sp. seed recovered by MacNeish (1958) from one of his Tamaulipas caves, which has frequently been cited as evidence for cultivated manioc. According to C. Earle Smith, Jr. (personal communication), the seed is from a wild species native to Tamaulipas.

With evidence for manioc so scanty at present, it is not surprising that archaeologists have turned to circumstantial evidence. Several have argued for Preclassic manioc cultivation on the basis of small, anomalous obsidian chips, which are said to resemble those used in manioc graters in South America. There are several problems with this idea, however, which have recently been summarized by Zeitlin (1978:188–189). First, the type of manioc currently grown in Mesoamerica does not even need to be grated to make it edible. Second, the obsidian chip argument would be convincing only if such chips were present at tropical lowland sites where manioc growing is possible, but absent at