

THE RISE OF THE NORTHERN MAYA CHIEFDOMS: A SOCIOPROCESSUAL ANALYSIS

PART II ¹

Joseph W. BALL
San Diego State University

THE EARLY CLASSIC PERIOD: THE NORTHERN CHIEFDOMS AND MAYA CIVILIZATION. The Archaeological Record.

By the close of the third century A. D., recognizeably Classic Maya patterns of culture were present throughout the Northern Lowlands.² The treatment of these here presented is somewhat uneven, reflecting both the spottiness of available data and my own unequal familiarities therewith.³

¹ Part I of this paper traced the culture history of the Northern Lowlands from the time of their first occupation in the sixth century B.C. through the end of the Preclassic period in the third century A.D. It appears in *The Origins of Civilization in the Maya Lowlands*, edited by Richard E. W. Adams. The two parts together were prepared originally as a working paper for an Advanced Seminar on Maya origins held at the School of American Research, Santa Fe, New Mexico during October, 1974.

² The Northern Maya Lowlands generally are defined as consisting of that area included within the modern Mexican states of Yucatan, Campeche and Quintana Roo - roughly some 141,500 square kilometers of land. Within them, the Central Yucatan region is defined by Potter (1973) on the basis of a shared, Late Classic architectural style (formerly subdivided into Rio Bec and Chenes). Geographically, it is roughly equivalent to the Rio Bec, Chenes and Puuc Zones as delineated by the Santa Fe Conference on the Collapse of Classic Maya Civilization (Culbert 1973: Fig. 1), although excluding the actual heights of the Puuc Hills. The Northern Plains Zone stands as defined by the latter source. I would note that Potter prefers to see the Central Yucatan as a single, homogeneous region in terms of architectural style and cultural tradition whereas I suspect that two, culturally distinct regions (a southern Rio Bec and a northern Chenes) are discernible beneath the superficial unity of a shared architectural tradition.

³ All distributional and chronological ascriptions, evaluations and comparisons not representing specific citations are based on my personal examinations of the relevant materials. The latter, which represent the efforts of numerous institutions and individuals over some decades are currently housed in

The Dzibilchaltun locality, so important during earlier Preclassic (Formative) times, appears to have been entirely abandoned during the late third through mid-fifth century interval. As in the Xculul phase (ca. 50 B.C. - A.D. 250), however, conditions at that site were not typical of those throughout the remainder of the Northern Plains. Settlements of late third through fourth century date are indicated ceramically at Yaxuna, Mayapan, Acanceh, T'hoo (Merida), Yaxcopoil, Mani and Kabah. A comprehensive presentation of any Northern Plains ceramic assemblage of this date remains to be made. The Dzibilchaltun Piim complex, presently under study by Michael P. Simmons, unfortunately seems to pertain entirely to the late fifth-early sixth century (Ball and Andrews V 1975: 242). Utilizing materials from all seven of the sites mentioned above, however, a composite picture of the Northern Plains ceramic situation during this interval can be assembled.

There is no information available about unslipped storage vessels, plain or striated. The primary slipped utility forms, narrow-mouthed jars and basins, pertain to the monochrome red Xanaba group of Usil Flaky Ware (Brainerd 1958: Figs. 6b, cl-7; 18al-7). Reduced trickle-on-red vessels (*Caucel Trickle-on-red type*) occur at Balankanche, Yaxuna and Acanceh (Brainerd 1958: Figs. 7; 18cl, 3). Interestingly, monochrome brown slipped pottery does not seem to have gained importance among the far northern communities until the late fifth century despite a considerably earlier popularity in the Rio Bec zone.

Timucuy Orange Polychrome (Smith 1971: 32) is an aesthetically attractive, competently manufactured, red and black-on-orange type of local origin. Its restriction to narrow-mouthed jar forms and its virtually exclusive occurrence in cenote-cave contexts strongly suggest a water-carrying function. The type is currently known from caverns at Mani, X-Kukican and Gruta de Chac (near Sayil) (Brainerd 1958: Figs. 63b-d; Andrews IV 1965a— see especially

the archaeological *bodega* of the Instituto Nacional de Antropología e Historia de México in Mérida, Yucatán. I would like to express my gratitude to the Mexican authorities, especially Arq. Manero Peon and Arq. Norberto Gonzalez C., who have given me access to those collections. The bulk of this paper represents independent research carried out on my part between Nov., 1973 and May, 1974. I would like to thank Mr. and Mrs. Walter A. Ball and Dr. and Mrs. Richard F. Taschek for the generous financial assistance which made this research possible. Finally, I would like to express my appreciation to Dr. Richard E. W. Adams, organizer of the Maya Origin's Conference, and to Dr. Douglas W. Schwartz, Director of the School of American Research, for allowing me to present this portion of my paper independently of the formal Conference volume.

the excellent color illustrations of this type—; Cottier 1967: Fig. 58a).

Two sherds of what is clearly *Actuncan Orange Polychrome* occur in a collection made by E.H. Thompson from an unspecified mound in the Merida neighbourhood (Brainerd 1958: Fig. 63a6, 9). The same small collection includes fragments of either *San Blas* or *Shangurro Red-on-orange* (ibid.: Fig. 63a1-3, 5); incised *Aguila Orange* (Fig. 63a4); *Valladolid Incised-dichrome* (Fig. 63a10-11); an incised and punctuated red-on-cream type of probable local origin (63a7); and *Dos Arroyos Orange Polychrome* (63a8, 12). Fragments of *Dos Arroyos Orange Polychrome* basal-flanged bowls also occur at each of the other sites mentioned above with the exception of Dzibilchaltun. Mani has produced several sherds of *Caldero Buff Polychrome* as well. First-hand examination of this material has convinced me that the Peten Gloss Ware types are *not* of local origin but owe their presence to importation from the Central Yucatan región or further south.

Via both imports and local products, therefore, the Classic Maya polychrome pottery tradition was established in the far north by the early fourth century A.D.. Considerably less is known about other aspects of the contemporary material culture. Certainly there were fewer occupied sites and these were smaller with less emphasis on architectural undertakings. Nevertheless, several important community centers probably did emerge at about this time. Among these, Acanceh is notable for the fortuitous preservation of at least one major pyramidal structure of Early Classic date. The ceramic phasing data for this unit are equivocal (Brainerd 1958: 18); however, I believe the close formal and stylistic correspondencies (including inset stairways with flanking masks in heavily modeled-carved stucco on multiple, back-sloping, terrace faces) between it and a more securely dated structure at Kohunlich, Quintana Roo strongly suggest a fourth century construction date. By extension, the distinctive Classic Maya art style, with its roots in the Peten Preclassic, was already in vogue among the Northern Maya by this date.⁴

⁴ There is also the problematic bas-relief carving over the Hunucab mouth of Loltun Cave, Yucatan. Proskouriakoff (1950: 154-5) suggests a Cycle 8 (ca. A.D. 35-425) dating for this relief on comparative stylistic grounds and notes that its closest analogies are to be found on an Izapa-style stela (No. 1) at Abaj Takalik on the Pacific slope of the Guatemala highlands. There is little else which can be added to this appraisal at the present other than to note that Northern Plains-Guatemalan highlands contacts thus are indicated for as early as the Terminal Preclassic or initial Early Classic period.

Remains of the late fifth-early sixth century are somewhat more abundant and include a stela at Yaxuna (Brainerd 1958: Fig. A) and an Initial Series date (9.2.0.0.0:A.D. 475) on a lintel at Oxkintok (Shook 1940: Fig. 1). At Dzibilchaltun,

Early Period I remains, associated with the Piim ceramic complex, are very poorly represented at the site. In 10 years of excavation and survey only one small building (Str. 612) was clearly datable to this span. (Ball and Andrews V 1975: 242).

The primary component [of Str. 612] consisted of a low stone platform which ... appears originally to have supported a pair of single-room masonry-walled unvaulted structures. The thin (50 cm.) walls of almost unworked block masonry could not possibly have supported a vault over the 360-by-275 cms. rooms, which were probably roofed with thatch. The masonry ... was distinguished from its [Formative] predecessors by worked corner blocks and by prepared full-width jamb stones, the structure itself placed on a low basal molding. Below the original terrace floor ... was a series of earlier middens and hearths, charcoal from which yields the C14 dating of A.D. 430 \pm 200. Post-structural, but still sealed below the following phase, were three tombs, one cut through the floor of the primary (Str. 612-sub), two added as crudely corbeled vaults at the rear of the platform. ... the burials stood out strongly in their richness of offerings, ... Burial 1 contained 22 jade offerings, many tiems that of any later tomb at the site. (Andrews IV 1965b: 33-4, Figs. 5-6) ... associated late Piim poteery included 31 sherds and one cache vessel of *Tituc Orange Polychrome: Camichin Variety*, of local northwest peninsula origin, cross-dated on the basis of stylistic similarities to Tzakol 3, or about 9.1.0.0.0 to 9.8.0.0.0 [ca. A.D. 455 to 593].

Architectural remains for the first portion of Piim (Tzakol) have not been found and are presumably very rare at Dzibilchaltun (Ball and Andrews V 1975: 242).

The late fifth-early sixth century interval apparently also saw the importation of Peten Gloss Ware polychromes supplented by the emergence of a distinctly Northern Plains tradition of polychrome pottery production. Basal-flanged dishes of *Tituc Orange Polychrome: Camichin Variety* (Ball and Andrews V 1975: 231-2) are known from Dzibilchaltun, Oxkintok, Yaxuna, Tanchah, Isla Jaina and several north coastal sites as well. Monochrome brown pottery gained

tremendously in popularity at this time with monochrome reds showing a coincident decline in importance. An emphasis on brown rather than red as the favored slip color for domestic wares is a characteristic which I have found remarkably consistent among Late Classic ceramic assemblages from the Rio Bec northward and one which I suspect reflects a very real areal division between "Northern" and "Southern" Maya groups.

Teotihuacanoid influences are discernable at several sites. Hollow slab supports are present on a brown-slipped, basal-break tripod dish from Oxkintok (Brainerd 1958: Fig. 13g) and on two red-slipped dishes of similar form from Concepcion. The latter site, located about 14 kilometers east northeast of Dzibilchaltun in the *municipio* of Ixil, also produced three black-slipped tripod cylinder vases and one apron lid. Two of the vases have solid, nubbin supports and form a matched pair; the third has hollow, slab supports with vertical slot-perforations.

From Yaxuna, Brainerd (1958: Fig. A) illustrates a stela fragment which, although somewhat cruder in execution, is decidedly similar in depictive content to Stela 31, Tikal. Presumably, whatever inspiration lay behind the profile warrior-figures of the latter monument also was present at Yaxuna.

South of the Puuc Hills, the Central Yucatan and Campeche Plains regions both appear to have experienced reductions in the numbers and sizes of settlements between the late third and late fifth centuries A.D.. Santa Rosa Xtampak, Dzibilnocac, Hochob, Edzna, Lagunita, Chicanna and Xpuhil, all sites of moderate to very heavy Late Preclassic occupations, were partially to substantially or even totally abandoned before the close of the third century. At Becan, occupation continued, but it was accompanied by a drastic reduction in extent and density both inside and outside the fortified zone.⁵ The enclave-like nature of this chiefdom as established in the Terminal Preclassic (see Part I) seems to have persisted. It is reflected by the absences from Chacsik phase (ca. A.D. 250 - 450) remains of the Actuncan polychrome group, hieroglyphic writing and the stela-altar complex. Not until the late fifth-sixth century span do hieroglyphic and stelae appear in the local archaeological record and

⁵ The possibility exists at Becan as well as at Edzna that what we actually are seeing archaeologically is a process of population concentration or centralization rather than one of reduction. While granting that the former very well may have been occurring, I am unconvinced that the latter was not taking place as well.

then it is in association with a whole cluster of elements previously absent from the Rio Bec zone.

As a result of recent research programs of the Middle American Research Institute, Tulane University; the University of Wisconsin, Madison; the University of Texas, San Antonio; the University of Tennessee; and the BYU-New World Archaeological Foundation, a considerably greater amount is known concerning the ceramic history of northern and southeastern Campeche than of any other zone within the Northern regions.⁶ The pottery of the southernmore Rio Bec communities is typified by that of Becan.

At Becan it has been possible to divide the Early Classic period into two major ceramic phases (Chacsik, ca. A.D. 250 - 450; Sabucan, ca. A.D. 450 - 600) and to subdivide the earlier of these into early (ca. A.D. 250 - 400) and late (ca. A.D. 400 - 450) facets.

Both Chacsik and Sabucan contain unslipped-striated storage jars (*Triunfo Striated*) characterized by light, crisscross and/or herringbone patterned striation on the body below the neck-shoulder juncture. Chronologically sensitive variations in rim forms and neck treatments are detailed in Ball 1973: 27-31. Throughout both facets of Chacsik, the majority types of the locality- those comprising locally manufactured domestic utility pottery such as narrow-mouthed jars (*canteros*) and wide-mouthed basins (*apastes*)- pertained to the Northern "Yucatan Gloss Ware" tradition. Characterized by low to non-gloss matte red, red/brown, or brown slips, they are invariably decorated via an oxidized controlled-trickle technique one present and popular among the Northern (Yucatec) Maya from Late Preclassic through Late Postclassic times, but virtually never encountered south of the Central Yucatan region of southern Campeche-Quintana Roo. In contrast, the more limited "fine wares" of Chacsik are fully participant in the Southern "Peten Gloss Ware" tradition. Orange and black monochromes, orange-based dichromes and orange-based polychromes occur via vessel forms and with a polished glossy slip that would not be out of place anywhere in the Peten-pasion-northern Belize sphere. Whether they were actual imports from one or more of these regions or specialized craft products of southeastern Campeche remains an unresolved but crucially important point. (For detailed discussion of Chacsik and Sabucan ceramic situations, see Ball 1973; in press b).

⁶ Each of these programs was assisted substantially by the generous financial assistance of the National Geographic Society. Additional outside support for the 1969-71 MARI project derived from the Archaeological Traineeship program of the Ford Foundation.

Final reports dealing with several of the non-ceramic aspects of Early Classic Becan remain in preparation; however, it is probably safe to categorize the Chacsik phase as a time of reduced architectural activity but continued maintenance of the ditch-and-parapet defensive system. The latter fact, suggested by the absence of Chacsik age rubbish or natural deposition from most parts of the moat, is probably somewhat indicative of the general tenor of Early Classic times. Also worthy of note is the Chacsik phase importation to Becan of considerable quantities of Mexican Plateau green obsidian, apparently in both raw and finished forms (Rovner 1974). This was to be replaced by clear gray and black-streaked types during subsequent Sabucan times.

The second half of the fifth century witnessed the occurrence of several significant changes at Becan. Most apparent of these was what I have elsewhere (Ball 1973: 381-2) termed the "Petenization" of the local ceramic tradition. Essentially this involved a de-emphasis on such Northern traits as trickle painting and brown slipping and a concomitant increase in the importance of Peten-derived (or, at least, Peten-like) vessel forms, surface treatments and decorative modes. Probably the most notable additions are represented by the fragments of numerous Teotihuacanoid tripod cylinder vases (see Ball 1974a), the latter most probably predominantly of Highland Guatemala origin (Ball, in press b).

In overview, the century from roughly A.D. 440 to A.D. 540 represented an interval during which foreign goods and ideas flowed into the Northern regions and significantly affected both contemporary and subsequent culture history therein. The diversity and complexity of those "imports" and the processes they represent preclude their discussion in anything other than a paper of considerable length. I therefore shall defer their consideration on this occasion but note with belief that they were involved intimately in the historical sequence which culminated in the seventh through eighth century florescences of Classic Maya culture in the Central Yucatan and Northern Plains regions.⁷ Elsewhere (Ball 1974b), I have briefly outlined the role of similar factors in the emergence of the Terminal Classic Puuc florescence.

⁷ For a recent discussion of the role of foreign contact and influence in the development of Northern Plains Late Classic (Early Period II) architecture, see Andrews V, 1974.

Socioprocessual Discussion

Probably the single most significant fact about the initial Early Classic period in the Northern Lowlands is that it represented an interval of substantial population reduction and dispersal. In contrast to the widespread, dense occupation of the Late Preclassic, population during this period was thinly scattered in small settlements. For the Northern Lowland Maya, at least, the traditionally accepted model of continuous, unbroken population growth from Middle Preclassic through Late Classic times must be seriously reconsidered. The data as now known simply are inconsistent with such a model. Rather, they suggest a pattern of peaks and troughs in the demographic trend. These were repeated at site after site, but varied temporally at the local rather than regional level. One is reminded again of the cyclic instability of chiefdoms (see Part I), but what the data reflect are primarily demographic rather than sociopolitical situations. I believe that what we are seeing is the emergence of a cyclic pattern of population overgrowth, decline, regrowth, decline, etc. such as Sanders (1973: 364) has stated should characterize population loss resulting from nutritional disease and a consequently increased death rate.⁸ Overtaxing of local subsistence systems certainly was potentially possible in view of the enormity of Late Preclassic population. Malnutrition and related physical debilitation would have been corollary effects. Certainly in the very rare instances in which the latter have been investigated (Saul 1973: 311-21; tables 9-18), their presence is attestable as early as Preclassic times. The probable inability of the early chiefdoms to deal with or perhaps even recognize the problems posed by sanitation and water supply potability among increasingly concentrated populations, would have resulted in the proliferation of parasitic disorders and infectious diseases. These, in concert with malnutritional debilitation easily could eventually have produced population declines of epidemic proportions.

⁸ At Becam, demographic peaks seem to have occurred during the following phases: terminal facet Pakluum (ca. A.D. 100/150-250); Bejuco (ca. A.D. 600/630-730/750); Xcocom (ca. A.D. 810/830-950/1050). Demographic troughs seem to have occurred in Chacsik (ca. A.D. 250-450); Chintok (ca. A.D. 730/750-810/830); and Lobo (ca. A.D. 1200-1450/1550). Acachen through late Pakluum (ca. 600/550 B.C.-A.D. 100/150) appears to represent an interval of steady growth, as does Sabucan (ca. A.D. 450-600/630). There may be an essentially total abandonment of the locality between Xcocom and Lobo. A similarly cyclic peak/trough pattern is reconstructable for Dzibilchaltun (see Andrews IV 1965b; Ball and Andrews V 1975; Kurjack 1974: Figs. 3-8).

Sanders (1973: 364) has also indicated that population reduction probably would only occur to the level at which a viable subsistence balance could become re-established and that the entire process then would begin over. I believe that this is precisely what the archaeological record implies. The areal distribution of Early Classic settlement remains is more reminiscent of the Middle Preclassic than the Late Preclassic pattern. Their occurrence as thinly scattered concentrations suggests a return to the pattern of smaller, more widely dispersed village communities which I believe characterizes a smoothly functioning, swidden agricultural system.

Involution of Northern Maya population densities to levels at which a balanced subsistence system was again possible need not have been accompanied by general sociopolitical devolution as well. It is probable that some chiefdoms —Komchen Dzilbilchaltun and Terminal Preclassic Edzna,⁹ for example— did collapse coincidently with or as a result of their population declines. Others, however, could have retained their identities as ranked societies although declining somewhat in size and power. The substantive loss at Becan, for example, was in population size. Naturally, this reduction of the sustaining force and labor pool produced a concomitant impoverishment of the archaeologically visible material record. Nonetheless, indications exist that Becan continued to function as the organizational center for the surrounding area through the Early Classic interval. At least one multi-roomed, corbeled-vaulted residential unit (Str. XIV-sub) was constructed during this span and there are indications that additional Chacsik phase architecture does underlie the complex West Acropolis. The presence of green obsidian cores, blades and Miccaotli (Teotihuacan II) style projectile points in deposits of Chacsik age (Rovner 1974: 129) also indicates that both long distance trade and militarism were still important aspects of life during this time.

As indicated above, other sites, such as Kohunlich and Acanceh,

⁹ Edzna is an especially interesting case in that it possibly represents a situation much more closely paralleling that of fifteenth century Angkor (Shimkin 1973: 294-5) than any other in the Maya Lowlands. At Angkor, population decline followed on political collapse when maintenance of the elaborate water-control system ceased and its canals became infested by malaria-carrying mosquitoes. At Edzna, failure of the Late/Terminal Preclassic chiefdom and consequent deterioration of that center's extensive water-management system could have provided a similar environment for yellow fever-bearing mosquitoes. If I understand the preliminary sequence correctly (based on D. Forsyth 1974: personal communication), a Late/Terminal Preclassic population peak— corresponding to the era of the water-control system's construction and maintenance— was followed by an Early Classic trough.

also seem to have been formal sociopolitical centers during the A.D. 250 - 550 span.

Lowland Maya ceramic complexes of the Early Classic period are characterized by a regional rather than local diversity crosscut and integrated by variety-level uniformity among their decorated pottery. This heterogeneity is unlike that of the Middle Preclassic in that, although both reflect the presence of sufficient intercommunity isolation to foster the emergence of semi-independent cultural traditions, it probably owed more to sociopolitical provincialism than to ecological isolation. On another hand, the unifying factor is unlike that of the Chicanel sphere in that it is restricted to a specific ceramic category: polychrome-painted bowls and dishes. Thus, commercial and/or socially enjoined exchange probably was the primary mechanism of diffusion in this case. I believe that the Peten Gloss fine ware tradition did extend far enough north to encompass both the Rio Bec and Chenes zones of the Central Yucatan region, as well as Edzna on the Campeche Plains. My familiarity with the available Early Classic ceramics of the Northern Plains, however, convinces me that this region lay outside the production sphere of the decorated Peten Gloss types (*Dos Arroyos Orange* and *Caldero Buff Polychromes*). Those present, therefore, must owe their occurrence to importation from the southern regions. As to the principal mechanism responsible for their movement northward, I strongly favor Andrews' (1968: 47; see also Ball in press c) model of interregional commerce involving the exchange of north coastal salt for central-southern lowland polychromes. This pattern seems to have persisted from about A.D. 250 until sometime in the late fifth century when it was broken by the apparent replacement of the central-southern Maya by central Mexicans or their intermediaries as the principal foreign commercial consumers of Northern Plains-controlled salt.

Thus, in overview, most if not all of the material, archaeological and inferred sociocultural elements of Classic stage Maya culture (civilization) as set down in the background paper for this conference (Adams and Culbert, in press) could be found in the Northern Lowlands by the fifth century A.D.. They seem to have occurred neither so abundantly nor so spectacularly as among the more southern regions and some of them appear to have arrived quite late. At least some of this situation is probably an artifact of sampling, however and on the whole it is safe to say that by the Early Classic period the form or "flavor" of culture in the area was that of Maya civilization. Largely internal as I have suggested the processes leading

to the particular social systems present to have been (see Part I), I believe that the crystallization of *Classic* Maya culture in the Northern Lowlands must be seen as resulting from a conjunction of historical events which brought the Northern chiefdoms of the Terminal Preclassic and Early Classic into contact with the specific ideological and cultural system then coalescing to their south. This system did not enter the Northern regions *en toto* nor were its elements accepted or rejected in any uniform pattern therein. It's spread occurred via the gradual and variable selection, modification and absorption of individual elements and element-packages by the Northern communities over the course of the second through fifth centuries. Existing ideological system with their predispositions for and/or against new concepts interacted and changed in this process. Thus, a regionally diverse but areally similar pattern of culture spread across the Maya lowlands.

The importance of the historical factor is well-illustrated in the case of the Komchen Dzibilchaltun chiefdom (see Part I). It rose, flourished and collapsed too early to averally with any diffusion of specifically Classic Maya patterns and thus, despite it's possession of a "high culture" system with such typically Mesoamerican material and social expressions as monumental architecture, a sumptuary emphasis on jade and long distance trade for sumptuary materials, it can hardly be considered to represent a facet of Classic Maya civilization. Geographic location in the Maya area and the possession of some, generalized Mesoamerican "high culture" traits do not qualify a group as Classic Maya.

Similarly, if the very purpose of the terminal Pakluum Becan chiefdom *was to keep out* certain of those elements (and their associated ideology) which seem to have been developmentally as well as chronologically introductory to Classic civilization (see Part I), it can hardly be considered as anything other than yet another distinct florescence, one considerably closer to that of Classic civilization in time, space and even some ideological aspects but still essentially outside the sphere of the then germinating Classic culture. The "watered down" character of the Early Classic expression in the Rio Bec in part could be due to this fact. Maya hieroglyphic writing has not been encountered in any context of pre-mid fifth century date after which it occurs on some (rare) pieces of imported pottery. No stelae have been recorded of earlier than late sixth century age and the two examples believed to date from that time (Stelae 1 and 2 Becan) are plain, uncarved shafts.

In sum, I believe the locally evolved sociocultural systems of the Northern Plains and Central Yucatan regions largely to have been recipient with respect to most of the specific material and ideological aspects of Classic stage Maya culture. Those systems did represent the products of a long history of independent sociopolitical, cultural and ideological development themselves, however and it was this history and the ways in which it prepared them to accept the southern-originated elements which gave those expressions of Classic Maya civilization to be found on the Yucatan peninsula north of the Peten their distinctive form or cast.

REFERENCED CITED

- ADAMS, RICHARD E. W. and T. PATRICK CULBERT
in press "Introduction: The Origins of Civilization in the Maya Lowlands", *The Origins of Civilization in the Maya Lowlands*, ed. by R.E.W. Adams (Albuquerque: University of New Mexico Press).
- ANDREWS, E. WYLLYS, IV
1965a "Explorations in the Gruta de Chac, Yucatan, Mexico", *Middle American Research Records*, vol. 4, *Middle American Research Institute, Tulane University*, Pub. no. 31 (New Orleans: the institute), pp. 1-21.
1965b "Dzibilchaltun Program," *Middle American Research Records*, vol. 4, *Middle American Research Institute, Tulane University*, Pub. no. 31 (New Orleans: the institute), pp. 23-67.
1968 "Dzibilchaltun, a Northern Maya Metropolis", *Archaeology*, vol. 21, no. 1, pp. 36-47.
- ANDREWS, E. WYLLYS, V
1974 "Some Architectural Similarities between Dzibilchaltun and Palenque," *Primera Mesa Redonda de Palenque, Part I* (Pebble Beach: Robert Louis Stevenson School), pp. 137-47.
- BALL, JOSEPH W.
1973 *Ceramic Sequence at Becan, Campeche, Mexico*, unpublished Ph. D. dissertation, Department of Anthropology, University of Wisconsin, Madison.
1974a "A Teotihuacan-Style Cache from the Maya Lowlands," *Archaeology*, vol. 27, no. 1, pp. 2-9.
1974b "A Co-ordinate Approach to Northern Maya Prehistory: A.D. 700 - 1200," *American Antiquity*, vol. 39, no. 1, pp. 85-93.
in press, a "The Rise of the Northern Maya Chiefdoms: A socioprocessual Analysis, Part I," *The Origins of Civilization in the*

Maya Lowlands, ed. by R.E.W. Adams (Albuquerque: University of New Mexico Press).

in press, b *The Archaeological Ceramics of Becan, Campeche, Mexico*, Middle American Research Institute, Tulane University, Pub. no. 43 (New Orleans: the institute).

in press, c "An Hypothetical Outline of Coastal Maya Prehistory: 300 B.C. - A.D. 1200", *Essays in Honor of J. Eric S. Thompson*, ed. by Norman Hammond.

BALL, JOSEPH W. and E. WYLLYS ANDREWS, V

1975 "The Polychrome Pottery of Dzibilchaltun, Yucatan, Mexico: Typology and Archaeological Context," *Middle American Research Records*, vol. 4, Middle American Research Institute, Tulane University, Pub. no. 31 (New Orleans: the institute), p. 227-47.

BRAINERD, GEORGE W.

1958 *The Archaeological Ceramics of Yucatan*, University of California Anthropological Records, vol. 19 (Berkeley and Los Angeles: University of California Press).

COTTIER, JOHN W.

1967 *Preliminary Archaeological Investigations at X-Kukican, Yucatan, Mexico*, unpublished MS. on file at the Department of Anthropology, University of Alabama, University.

CULBERT, T. PATRICK

1973 "Introduction: A Prologue to Classic Maya Culture and the Problem of its Collapse", *The Classic Maya Collapse*, ed. by T.P. Culbert (Albuquerque: University of New Mexico Press), pp. 3-34.

KURJACK, EDWARD B.

1974 *Prehistoric Lowland Maya Community and Social Organization: A Case Study at Dzibilchaltun, Yucatan, Mexico*, Middle American Research Institute, Tulane University, Pub. no. 38 (New Orleans: the institute).

POTTER, DAVID F.

1973 *Maya Architectural Style in Central Yucatan*, unpublished doctoral thesis, Department of Anthropology, Tulane University.

PROSKOURIAKOFF, TATIANA

1950 *A Study of Classic Maya Sculpture*, Carnegie Institution of Washington, Pub. 593 (Washington: the institute).

ROVNER, IRWIN

1974 "Implications of the Lithic Analysis at Becan", *Middle Ame-*

rican Research Records, vol. 4, *Middle American Research Institute, Tulane University*, Pub. no. 31 (New Orleans: the institute), pp. 128-32.

SANDERS, WILLIAM T.

- 1973 "The Cultural Ecology of the Lowland Maya: A Reevaluation," *The Classic Maya Collapse*, ed. by T.P. Culbert (Albuquerque: University of New Mexico Press), pp. 325-65.

SAUL, FRANK P.

- 1973 "Disease in the Maya Area: The Pre-Columbian Evidence," *The Classic Maya Collapse*, ed. by T.P. Culbert (Albuquerque: University of New Mexico Press), pp. 301-24.

SHIMKIN, DEMITRI B.

- 1973 "Models for the Downfall: Some Ecological and Culture-Historical Considerations," *The Classic Maya Collapse*, ed. by T.P. Culbert (Albuquerque: University of New Mexico Press), pp. 269-99.

SHOOK, EDWIN M.

- 1940 "Exploration in the Ruins of Oxkintok, Yucatan," *Revista Mexicana de Estudios Antropológicos*, vol. 4, pp. 165-71.

SMITH, ROBERT E.

- 1971 *The Pottery of Mayapan, Papers of the Peabody Museum of Archaeology and Ethnology, Harvard University*, vol. 66 (Cambridge: the museum).