Meetings

Why Did the Pre-Columbian Maya Civilization Collapse?

The Maya civilization arose and flourished in the tropical lowlands of southern Mexico and adjacent Central America in the first millennium before Christ (*1*). By A.D. 300 it had attained the form and pattern of its Classic period. It then enjoyed almost 500 years of elaboration and growth. Shortly after A.D. 770 (*2*), however, the first signs of its disintegration began to appear in a slowdown of monumental architectural activities, great art, hieroglyphic inscriptions, and maintenance of the Maya sacred calendar. By A.D. 830 most of the "cities" or ceremonial centers of the southern lowlands (the Guatemalan Department of Peten and portions of adjacent Mexico, British Honduras, and Honduras) were seriously affected. The year A.D. 889 marked the last Maya Long Count monument date. Very shortly after this —certainly by A.D. 950—the great Maya centers were almost totally abandoned, and investigations in outlying farming villages and hamlets indicate that these were also deserted.

In a symposium held in Santa Fe, New Mexico, from 19 to 24 October 1970, under the sponsorship of the School of American Research and the National Science Foundation, new data were reviewed and new interpretations advanced on the nature of the decline of the Maya civilization in the 8th century A.D.

In approaching the problem, the symposium conferees began by establishing the foregoing data background of archeological facts and dates. They then went on to analyze what appeared to be the most likely internal stresses and weaknesses in Maya lowland society during its 7th-to-8th century zenith, just prior to its downfall. Five stress factors were enumerated, each to some degree systemically related to the others.

First, Late Classic population increases can be linked to expansion and intensification of agriculture through extensive clearing, terracing, exploitation of marginal lands, root crop supplementations, and breadnut harvesting. With such intensification and with the careful scheduling that must have been necessary to allow maximum manpower to be diverted to other nonagricultural activities, short-term farming failures could have triggered long-term troubles.

Second, extensive agricultural modification of the landscape, through clearing, would have increased disease hazards by shifting insect vectors from animal to human hosts. In particular, Chagas's disease could have contributed heavily to infant mortality and adult debilitation.

Third, mounting competition among Late Classic ceremonial centers, reflected in portrayals of captives and in the magnificence of the centers themselves, would have induced priest-leaders to divert all possible labor capital to the aggrandizement of these "cities" in order to outdo rivals.

Fourth, a growing upper class, for which there is good evidence in the Maya archeological record of the Late Classic period, would have increased economic strains on the society.

Fifth, long-distance trade, for both utility and luxury goods, was a hazard as well as a benefit to the stability of Maya society. It brought this very conservative society into contact with the more dynamic and aggressive nations of the central Mexican uplands. With their professionalized merchant groups, backed by military force, these people were formidable competitors for the Maya.

The fifth factor may be viewed, of course, as one either of internal stress or of external pressure; and the symposium group had considerable debate over the relative importance of internal versus external forces in examining the Maya Classic collapse and its causes. The hypothesis which eventually emerged, and for which there was general consensus, attempted to consider, evaluate, and integrate these two sets of forces. It was based on the assumption that the Maya Classic exposure to, and pressure from, Maya nonclassic groups on its western frontier put in motion a series of disastrous events. The combined "external-internal" hypothesis is strongly favored by the west-to-east movement of the events of the collapse. Thus, Piedras Negras was the first of the great centers to be abandoned—at about A.D. 790. This was concurrent with, or was followed very shortly thereafter by, the appearance of the radically new pottery tradition of the Fine Paste wares. These Fine Orange and Fine Gray styles, which are presumed to have been manufactured in the western Maya lowland peripheries of Tabasco, were then carried farther east, so that in a center such as Tikal, Fine Orange pottery did not come in until the cultural decline was well advanced and the site was semiabandoned in about A.D. 870. A still different pattern of occurrence is seen at Seibal in the southern Peten, where Fine Paste ceramics appeared at about A.D. 830 and were associated with a short-lived architectural and monumental renaissance. During this brief Seibal florescence the arts show a fusion between the Maya Classic style and a new iconography that can be associated with the Fine Orange pottery and, very probably, with foreign invaders from the west.

The hypothesis of a Maya Classic decline and collapse precipitated by contacts and pressures from foreign elements on its western boundaries is consistent with disruptions that a delicately balanced socioeconomic system might undergo from small bands of intruders who are expert in violence, are eager to dominate trade and tribute, and are ignorant of the native values. All of the internal stresses and weaknesses within Maya society would have been exacerbated. Breakdowns in trading networks and regional agricultural failures would have led to population movements which, in turn, would have overloaded other regional agricultural resources, with resulting famine and the spread of disease. Intercity rivalries would have been played upon by the foreigners.

Such disturbances continued over the century or more of decline, from A.D. 790 to 950, and probably resulted in such population depletion that the hierarchial structure of the old society could not be reestablished. Certainly, there was no significant recovery of the

Maya Classic way of life in the southern lowlands. Only a few very minor centers, such as the ones at Lake Peten and Lake Yaxha, date from the Postclassic period, but these are poor indeed compared to those of the Classic. For the most part, the area remained abandoned or drastically depopulated and culturally reduced. In Yucatan some significant new centers did spring up, undoubtedly attracting trade merchants, craftsmen, and peasants; however, the more important centers of the Postclassic period lay outside the Maya lowlands altogether. In effect, the Maya lowlands had been bypassed by the progress of Mesoamerican civilization whose main course was then firmly set by the social and political order of the new type that was propagated from central Mexico (*3*).

GORDON R. WILLEY
Department of Anthropology,
Harvard University,
Cambridge, Massachusetts 02138

DEMITRI B. SHIMKIN
Center for Advanced Study in the Behavioral Sciences,
Stanford, California 94305

References and Notes

1. For general introductory but authoritative works on Maya archeology the reader may consult J. E. S. Thompson, *The Rise and Fall of Maya Civilization* (Univ. of Oklahoma Press, Norman, ed. 2, 1966) and M. D. Coe, *The Maya* (Praeger, New York, 1966).
2. Maya Long Count or Initial Series dates are rendered into the Christian calendar by two principal correlations. The one most generally favored, and used throughout this summary, is known as the 11.16.0.0.0 or Goodman-Martinez-Thompson correlation. The 12.9.0.0.0 or Spinden correlation would place all the dates cited as 260 years earlier.
3. Participants of the symposium were T. P. Culbert (University of Arizona, organizer), G. R. Willey (Harvard University, chairman), R. E. W. Adams (University of Minnesota), E. W. Andrews IV (Tulane University), W. R. Bullard, Jr. (Florida State Museum), J. A. Graham (University of California, Berkeley), R. Rands (Southern Illinois University), J. A. Sabloff (Havard University), W. T. Sanders (Pennsylvania State University), D. B. Shimkin (University of Illinois), and M. Webb (Louisiana State University, New Orleans). A full report on the proceedings, including a series of data papers and a lengthy summary of the discussions, will be published in the near future as a monograph of the School of American Research.

Forthcoming Events

September

8–10. **Design Automation**, intern. conf., Toronto, Canada. (A. Seireg, Dept. of Mechanical Engineering, Univ. of Wisconsin, Madison 53706)

8–10. **Pharmacology of Antiepileptic Drugs**, Scottsdale, Ariz. (J. K. Penry, Bldg. 36, Room 5D-10, Natl. Inst. of Neurological Diseases and Stroke, Bethesda, Md. 20014)

8–10. Society of **Therapeutic Chemistry**, 8th intern., Lyon, France. (H. Pacherco, Service de Chimie Biologique, INSA 20 Ave. Albert Einstein, 69 Villeurbanne, Lyon)

8–10. **Urban Transportation**, 5th intern., Pittsburgh, Pa. (A. V. Harris, Pittsburgh Urban Transit Council, U.S. Dept. of Transportation, Transportation Research Inst. of Carnegie-Mellon Univ., P.O. Box 2149, Pittsburgh 15230)

8–11. **Drugs Affecting Lipid Metabolism**, 4th intern. symp., Philadelphia, Pa. (W. L. Holmes, Lankenau Hospital, Lancaster and City Line Aves., Philadelphia)

8–11. International Assoc. of **Gerontology**, Bern, Switzerland. (B. Steinmann, Medizinische Abteilung C. L. Laury-Haus, Inselspital Bern, 3008, Bern)

8–12. National Conf. on **Mechanical Vibrations**, 3rd annual, Toronto, Ont., Canada. (P. W. Curwen, Mechanical Tech. Inc., 968 Albany-Shaker Rd., Lathan, N.Y. 12110)

8–15. **Illumination.** 17th intern. conf., Barcelona, Spain. (Secretary, Intern. Commission on Illumination, 25 rue de la Pepiniere, Paris 8°, France)

9–10. **Aerospace Mechanisms**, 6th annual symp., Moffett Field, Calif. (G. G. Herzl, ORGN. 52-60, Bldg. 201, Lockheed Missiles and Space Co., 3251 Hanover St., Palo Alto, Calif. 94304)

9–11. **Cardiovascular** Soc., 10th intern., Moscow, U.S.S.R. (A. D. Callow, 171 Harrison Ave., Boston, Mass. 02111)

9–11. American Assoc. of **Obstetricians and Gynecologists**, Hot Springs, Va. (C. A. Hunter, Jr., Indiana Univ. Medical Center, 1100 W. Michigan St., Indianapolis, Ind. 46202)

9–11. **Parapsychological** Assoc., 14th, Durham, N.C. (J. G. Pratt, Box 152, University of Virginia School of Medicine, Charlottesville 22901)

9–11. **Photosensitization in Solids**, 3rd intern. conf., Sarlat, Dordogne, France. (J. Bourdon, Centre de Recherches Kodak-Pathe, 30 rue des Vignerons, 94 Vincennes, France)

9–15. Union of **Prehistoric and Protohistoric Sciences**, 8th intern., Belgrade, Yugoslavia. (A. Benac, Archeoloski Inst., Knez Mihajlova 35-11, Belgrade)

10–12. International Soc. of **Hematology**, Milan, Italy. (A. T. Maiolo, Istituto di Pathologia Medica, Via Pace 15, 20122 Milan)

10–12. **Pollution and Conservation of the Seventh Continent, Antarctica**, Blacksburg, Va. (B. C. Parker, Dept. of Biology, Virginia Polytechnic Inst. and State University, Blacksburg 24061)

12–15. Canadian **Agricultural Chemicals** Assoc., 12th annual, Montreal, P.Q., Canada. (J. Chevalier, Suite 1004, 1010 Ste. Catherine St., W., Montreal)

12–15. **Ceramic-Metal Systems** Div., American Ceramic Soc., St. Louis, Mo. (Secretary, ACS, 4055 N. High St., Columbus, Ohio 43214)

12–16. American Assoc. of **Blood Banks**, Chicago, Ill. (L. J. James, 30 N. Michigan Ave., Chicago 60602)

12–17. **American Chemical** Soc., 162nd natl. fall mtg., Washington, D.C. (F. T. Wall, ACS, 1155 16th St., NW, Washington, D.C. 20036)