Hurricanes Not the Key to a Sustainable Coast
Virginia Burkett, et al.
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Did the Olmec Know How to Write?

IN THEIR RESEARCH ARTICLE “EARLIEST WRITING IN AMERICA” (15 Sept. 2006, p. 1610), Ma. del Carmen Rodríguez Martínez et al. suggest that the inscribed “Cascajal block” is the first discovery of Olmec writing. Although we agree with the authors that it is possible that the Olmec did write, we have strong reservations concerning this artifact and its incised motifs.

1) Being found by persons unknown in a pile of bulldozer debris does not constitute reliable provenance.
2) The block does not fit any known category of Mesoamerican inscribed artifact; it is not a stela, celt, sculpture, or jewel. The heartland Olmec did not build in stone; therefore, it cannot be an architectural inscription. Indeed, there are many hundreds of similar serpentine blocks known at LaVenta that were used as basal ornament on earthen platforms and in the buried pavements, but not a single one of these has engraving or relief carving. The authors’ musings about the block being used for practice and repeatedly erased (resulting in a concave surface) are farfetched.
3) Known Mesoamerican writing systems are written either vertically or linearly (or a combination of the two, as in Maya glyph blocks); they do not randomly “bunch” glyphs as on the Cascajal block [c.f. (1)].

4) Many of the so-called glyphs replicate decorative motifs found on a wide range of largely unprovenanced (i.e., their authenticity is not proven, nor can it be proved) small-scale artifacts. None of these motifs in their original context has been identified as a form of writing. For example, “glyph” #2/24/38/52 is found as part of the headress assemblage on a number of the celts (nos. 116, 117, 118, 119) reproduced in Olmec Art of Ancient Mexico (2); “glyph” #28/58 is found on another celt (no. 114), and “glyph” #4 is inscribed on a stone figure (no. 47) again in the same catalog.

5) What we can only describe as the “cootie” glyph (#1/23/50) fits no known category of Mesoamerican glyph and, together with the context of the discovery, strongly suggests a practical joke.

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References

Response
WE THANK BRUHNS AND KELKER for articulating several issues that others have raised concerning the Cascajal block and for providing us the opportunity to lay them to rest.

1) The provenance of the block is what it is, reported by nonarchaeologists but still fixed to an area of a few square meters within a known archaeological site in Veracruz, Mexico. Many other bona fide examples of ancient writing have even less secure find spots, including every known example of Mesoamerica’s Isthmian Script and Egypt’s Rosetta Stone. Such objects will continue to appear in the future, and each will require careful study for evidence of reliability. We have done this to the extent of our ability with the Cascajal block and stand by our considered and, to most scholars, valid assessment that it is a key addition to the corpus of inscriptions in Mesoamerica.
2) The authors claim that “[t]he heartland Olmec did not build in stone; therefore, it cannot be an architectural inscription.” Then, in their next sentence, they cite precisely such architectural ornaments at the Olmec site of La Venta. We now suspect that the block may have served such a function. Such texts, especially from coastal Veracruz and the Maya region, characteristically are executed in shallow lines. Indeed, the celebrated La Mojarra Stela 1, found in circumstances much like those of the Cascajal block, was housed in the Museo de Antropología, Xalapa, for more than a year before anyone noticed the more than 500 glyphs on its face. It took some further time to see that an additional text appeared on its side, this on a sculpture under exceptionally thorough scrutiny (1). Therefore, we would not be surprised to learn that other previously discovered examples went unnoticed.

3) The signs form purposeful sequences; they do not “randomly ‘bunch,’” as Bruhns and Kelker assert. The patterns in the Cascajal text are spelled out carefully in our paper.

4) The block contains signs found on objects with provenance and others that lack it. Some of the latter have been known since the 19th century (i.e., the “Humboldt Celt”) (2). One previously unknown sign (glyph 19) appeared years after the discovery of the block in a secure archaeological context at Canton Corralito, Chiapas, Mexico (3). All known hieroglyphic systems in the world relate to pre-existing iconography or codified symbolism; new signs appear when warranted by scribal needs. Any hieroglyphic
system that deviated from local iconography would be not only unique but, indeed, an inexplicable phenomenon.

5) If the “insect glyph” was a practical joke, the joker was an Olmec. The motif is shown three-dimensionally in the diminutive Monument 43 at San Lorenzo, discovered and excavated by one of us (Coe) in 1966 and published by Coe and Diehl in 1980 (4).

We reject the author’s specific criticisms and their implicit claim that the block is a modern forgery. However, we appreciate the fact that such challenges are the essence of scientific enquiry and that they eventually lead to truth. We still affirm that the Cascajal block is the oldest example of writing in the New World and among the most important finds ever made in Mesoamerica.

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Hurricanes Not the Key to a Sustainable Coast

IN THEIR DISCUSSION OF THE SIGNIFICANCE of wetland sedimentation during Hurricanes Rita and Katrina, R. E. Turner and co-authors concluded that “riverine sources bring relatively trivial amounts of inorganic sediments into the marsh” (“Wetland sedimentation from Hurricanes Katrina and Rita,” Reports, 20 Oct. 2006, p. 449). Although this new study adds to the body of knowledge concerning the role of tropical storms in sediment redistribution, the authors’ conclusion about the unimportance of the Mississippi River in delivering sediment to the coast defies all that we know about deltas and their sustainability. The authors also do not mention that although some marshes received sediments, a net total of 562 km² of coastal marshes, natural levee ridges, and barrier islands was converted to open water during the two hurricanes (1, 2).

Turner et al. vaguely refer to the sediment deposited by the two hurricanes as having arrived “from offshore.” Resuspension and transport of sediments from offshore and delta-plain sources by storms are among the mechanisms by which sediments originally supplied by rivers are distributed across the Mississippi and other deltas...
Their samples, mostly taken many kilometers inland, were not analyzed in a manner that would enable them to determine the source, i.e., offshore or inshore water bottoms, barrier islands, or pre-existing marshes.

The comparison of the sediment benefits of hurricanes with the benefits of the Caernarvon Freshwater Diversion structure by Turner et al. was out of context, since this structure was designed in the mid-1980s to convey fresh water (not sediments), to manage salinities, and to benefit oysters. Without major sediment contributions by the river, sediments redistributed by storms are the dominant sediment source for wetlands. Contrary to the conclusions of Turner et al., two recent scientific panels have suggested that more aggressive diversion of the Mississippi River water and sediments is needed to build and maintain land in coastal Louisiana (7, 8).

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References and Notes
1. Preliminary estimates of net wetland losses after Hurricanes Katrina and Rita were released by the U.S. Geological Survey on 1 Nov. 2005 (http://www.nwrc.usgs.gov/releases/pr05_007.htm).

Response
BURKETT ET AL. ACKNOWLEDGE THAT OFFSHORE SEDIMENTS PROVIDE COASTAL MARSHES WITH INORGANIC SEDIMENTS AND THAT OUR QUANTIFICATION OF THESE SEDIMENTS “ADD TO THE BODY OF KNOWLEDGE CONCERNING THE ROLE OF TROPICAL STORMS IN SEDIMENT REDISTRIBUTION.” THEY CLEARLY REALIZE THAT WE MADE COMPARISONS OF THE QUANTITY OF HURRICANE-DERIVED INORGANIC SEDIMENTS WITH THE AMOUNT OF INORGANIC SEDIMENTS FLOWING OVER THE NATURAL LEVEES OF AN UNCONFINED CHANNEL AND THROUGH CREVASSES IN THE CONSTRUCTED LEVEES, BUT NOT AT THE RIVER MOUTH. THEY TAKE US TO TASK FOR MINIMIZING THE CONTRIBUTIONS OF RIVER DIVERSION TO MAINTAINING WETLAND COASTS, WHICH IS AN APPROACH THEY FAVOR, AND FOR IGNORING WETLAND LOSS CAUSED BY HURRICANES. THEY ALSO MENTION THAT TWO RECENT PANELS ENDORSE RIVER DIVERSIONS.

We made our comparisons about sediment delivery because it is part of building a sediment budget for this coast. There are published estimates available and various management documents that highlight sediment introductions via diversions as a positive attribute (1). We did not examine the significant hurricane-induced marsh–to–open water conversions, which may not be permanent (2), because that was not our research objective.

We offered a hypothesis, not a conclusion, that these new sediments came from the shallow water zone immediately offshore of the deposition site. The Chenier Plain in the western half of the state received about 50% of posthurri-
cane sediment deposition, it has no large rivers or large estuarine bays to act as a between-hurricane sediment storage site, and the newly deposited sediments at the oceanic shoreline were mostly sands. Burkett et al. offer no alternative hypothesis for the newly deposited Chenier Plain sediment sources. Surely the other 50% deposited on the deltaic plain is partially from offshore sources.

We did not, and do not, make a recommendation about building river diversions. There are many factors influencing such management choices, including scientific analyses and sociopolitical aspects. We trust that reputable science panels and insightful administrators might wish to receive, not exclude, new information. For example, we agree with Burkett et al. that salinity control at the Caernarvon diversion is a design objective meant to enhance oyster yields. Would a science panel not consider new information indicating that oyster yields in the Gulf of Mexico will be diminished with additional freshwater introductions (3)?

Building a more robust sediment budget for these coastal wetlands can be part of the process of making more informed decisions. We provided a field-based quantification of the new sediments deposited during these two hurricanes. Use these data and constructively critique the methods, but please don’t fear the consequences about conclusions not made.

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References

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