

at Las Haldas, now appears to date well back into pre-ceramic times. A recent radiocarbon date of 1630 ± 130 B.C. is derived from the construction materials of an early building stage, underlying the floor of a patio of the final stage and separated from it by a thick refuse fill (Kigoshi and others 1962, G-607). The central date of 1630 B.C. is some 400 years earlier than the estimated introduction of pottery to the region.

The possibility of wide-ranging connections between Mesoamerica and Peru on an early time level is a fascinating one, and deserves a careful study which, by giving full attention to all of the existing evidence, will lead to valid conclusions about the existence and nature of such connections. Recent research in both areas and in southern Central America and northern South America has brought us much closer to the day when such a study can be made in the full light of well-known local sequences and carefully coordinated regional chronologies. What is needed now is a comparison, not of isolated traits, nor even of single cultural units, but of whole chronological sequences which have been cross-dated on the basis of the best evidence available. Each of the known similarities between early cultures in the two areas — and in the intervening area — should be studied in its full stylistic and temporal context wherever it occurs, without advance assumptions about its origin(s) and diffusion. Diffusion should be proved or disproved on the basis of comparative dating, kind and degree of similarity of traits-in-context, and presence or absence of antecedents. Direction and route of diffusion should be inferred from the pattern of first occurrence of the trait in each region or locality, and above all from concrete evidence which establishes the locus of its earliest occurrence. When such a study is made, perhaps we will all be surprised by the results.

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OLMEC AND CHAVIN: REJOINDER TO LANNING*

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ABSTRACT

The maize design on a bottle from Kotosh is unusual for its time and place in its choice of subject matter and mode of depiction, and a previous statement that the motif might be of Olmec origin is defended. Lanning's

* I wish to thank Edward P. Lanning for his kindness in forwarding his reply to me in ample time to prepare a rejoinder. I am also indebted to Irving Rouse for reading a preliminary draft of this rejoinder and suggesting revisions, although I take full responsibility for it in its final form.

attack on past arguments for early diffusion from Mesoamerica to Peru is countered by questioning (a) the role of the Intermediate area and lowland South America as alternative sources for the observed similarities, (b) the nature of unpublished data, (c) the age of the architectural complex at Las Haldas, (d) the likelihood of establishing final "proofs" or full chronological contexts, and (e) the reasoning of the "wait-until-all-the-facts-are-in" school. It is proposed that hypotheses are not assumptions but concepts subject to change which are ever attempting to explain large bodies of data. Such a hypothesis is that which originates New World civilization on the Gulf Coast of Mexico, and a revision of this hypothesis is made which accounts for the Chavín civilization as the result of a fusion of intrusive Olmec art and religion with an older, native-Peruvian tradition based on fabric construction and the worship of the condor and serpent.

IT WOULD HAVE BEEN most surprising if my somewhat rashly titled note on the Kotosh bottle had been allowed to pass without comment. The paper was meant to provoke useful dialogues on an important subject. It is therefore a pleasure to have the well-organized reply of an archaeologist with firsthand knowledge of Andean prehistory. Since Edward Lanning has differentiated between (a) the problem posed by the Kotosh bottle and (b) the more general problem of diffusion from Mesoamerica to the Andean area (or vice versa), I will follow suit in this rebuttal.

Lanning indicates that maize representations are not "out of place" in Andean archaeology. This does not represent the intention of my words. I meant to imply that *this* way of showing maize is unusual. I should also have added that, on this early time level, it is very definitely "out of place." If it is granted that both the Kotosh and Olmec artists "knew and presumably ate maize," does this mean that the artists of a particular culture normally choose their foodstuffs as subject matter? Very large quantities of hamburgers are consumed in contemporary America, but these do not seem to be represented with any frequency in our art galleries. Maize cultivation was widely distributed in the pre-Columbian New World, but the choice of maize or other domesticate as an artistic motif is really quite rare, even in ancient Mesoamerica; the Andean area is, in fact, aberrant in this respect. Furthermore, *how* this maize, or any other subject selected out of the external world by the artist, is depicted varies greatly. There is no "natural" way to depict anything: even a photograph is a technologically, culturally, and individually directed selection of certain external features. If one wished to represent maize on the surface of a pot, what features might one select from the total plant? In a fairly complete maize "language," the viewer, another member of the artist's own culture, should be able to recognize roots, stalk (with internodes), leaves, ears, husks, silks, kernels (either straight or irregular rows), and tassel. Some cultures, such as Navaho (in their sand-paintings), show most of these features, others only a few.

The Olmec and Kotosh choice of the ear alone, and their formalization of the husks into a single, U-shaped element, are definitely not a "reasonably realistic" procedure. Many other ways of showing both parts of the maize plant are known in the aboriginal New World, for instance, in the headdress of the Maize God among the Classic Maya, or the ears attached to maize plants painted on Mochica vessels (Means 1931, Fig. 1). I know of only one period and one area in the Andes where such a formal canon is present, namely, the Middle horizon in southern Peru (at Wari). All other Andean maize motifs differ significantly from that on the Kotosh bottle.

I tentatively proposed a temporal priority of Olmec over Chavin on the basis of my interpretation of the published radiocarbon dates (and on the statements of the archaeologists about the cultural materials said to be associated with the samples dated) and on the ideas which this bottle and other early Peruvian objects have suggested to me. If, as Lanning states, there are really no published radiocarbon dates associated with a Chavin style, then how, unless he has a number of unpublished ones up his sleeve, does he know that Kotosh IV is "almost certainly" contemporary with the fully developed Chavin style in far-off northern Peru?

As for Lanning's wider attack on the argument for extensive diffusion within Nuclear America on the Formative level, I would like to say that his alternatives have been seriously considered by many of those who have written on this subject. On the basis of present evidence, "village by village" diffusion and/or migration from or through the Intermediate area cannot now satisfactorily explain the striking similarity between Olmecoid and Chavinoid cultures, as I have stated in more detail elsewhere (Coe 1962). The major reason is that there is nothing quite like either in this intervening region on the early time level required. On the contrary, culture traits seem to have been moving overland from the Andes and from Mesoamerica into, but not out of, the Intermediate area.

Even more unlikely as an explanation of the similarities is the proposal of overland diffusion from a third, outside, area which necessarily would be the Tropical Forest or Caribbean Zone of South America. Such a process was proposed by Lothrop in 1940, but can hardly be maintained in the face of the rather extensive information which we now have on lowland South American archaeology.

The parallelism and convergence alternatives raise the old problem of independent invention versus diffusion. Only the most rigid addict of the culture circles would deny the ancient Peruvians any inventiveness. Whether the alternative of independent invention can reasonably explain the similarities with which we are here concerned will be considered later.

To bolster his attack on the proponents of Mexican priority, Lanning threatens us with a large body of yet-unpublished data on Andean prehistory for which, on the order of Dr. Watson's untold story of "The Giant Rat of Sumatra," the world is apparently "not yet prepared";

at least Lanning has not offered us more than a few tidbits of our perusal. It is clear, however, that some of this new material is being interpreted by discounting the possibility of sea-borne introduction of traits on a sporadic basis, discontinuous in time and space; the curiously mosaic first appearance of maize in Peru would suggest such a discontinuous introduction from the sea, and here we are on quite secure grounds in saying that this particular item originated in Mexico (some time in the 5th millennium B.C.). Thus, a first appearance of negative painting on the south coast of Peru hardly cancels out the possibility of an origin in the north, if it were diffused by maritime trade.

Although I am in no position to comment on the age of the ceremonial complex at Las Haldas, it would seem to me, on the basis of the modest test excavations reported by Engel (1957: 87) and by Ishida and others (1960: 444-7), extraordinarily difficult to decide which, if any, of the two radiocarbon dates obtained for the site, GaK-107 (1630 B.C. \pm 130, on "sugar cane" used to bind up a stone pile) and GaK-106 (730 B.C. \pm 150, on a ceramic level), is applicable to the site in its final form. The published data leave one in doubt whether the complex is truly preceramic.

It is simply not so that recent advocates of diffusion from Mexico to Peru have been comparing, out of context, traits scattered over "more than 1,000 years" of Peruvian prehistory, accepting Lanning's estimate for this span in spite of his statement about the lack of radiocarbon determinations for Chavinoid cultures. While making more wide-range comparisons, the two phases that were specifically compared by Muriel Porter in her 1953 study were the Olmecoid Tlatilco culture of the Valley of Mexico, and the Chavinoid Cupisnique culture, the latter well-known from the researches of Larco Hoyle. Regardless of their absolute dating, both of these are reasonably well-defined in space and time. Not just one, but a complex of traits that are themselves complexes is shared: stirrup-spout jars, bottles, zoned dentate rocker-stamping, color zoning, animal effigies, split-face dualism, and the jaguar or were-jaguar as a cult motif. In the reasoning followed by Lanning, these complexes cannot be compared until the full cultural and chronological contexts of both are completely known, when some sort of "proof" for or against diffusion will be forthcoming.

Will there ever be a final "proof" that diffusion has ever occurred anywhere on the face of the earth? Certainly not in the naive sense in which this word is often used. For instance, let us suppose that a gold disk with a relief design of a man's head in profile on one side, and on the other, a chariot drawn by two horses above a series of signs which, if read as Greek, would say "Filippou," has been found inside a mummy-wrapping within a sealed tomb of the "Paracas Necropolis" culture in southern Peru. This is not "proof" that through some sort of diffusion process a coin of Philip II made its way from Macedonia to Peru in pre-Columbian times. On the principle of Occam's razor, it is far easier to

account for the presence of this object by a diffusion hypothesis than it would be to propose a parallel or convergent invention of the wheeled chariot, the survival here of the ancient American horse and its domestication, the lucky chance of Greek letters and the Greek art style being independently invented in coastal Peru, and so forth. Obviously, the more complex the shared traits, the less likely that they have been separately invented. Using the Tlatilco-Cupisnique case above mentioned, as an example, it might be argued that a stirrup-spout bottle is a perfectly natural ceramic form to invent more than once; if so, then one would expect to find it in those parts of the Old World where vessels were used to store liquids. On the contrary, this form was evidently unknown in the Eastern Hemisphere, suggesting diffusion from a single point of origin as the most reasonable hypothesis to account for its distribution in the Western Hemisphere. The same degree of improbability is characteristic of most of the other items on the list.

Parenthetically, I also have my doubts whether knowledge of the "full temporal context" of any trait, complex, or culture will ever be attainable, given the uncertainties inherent in most techniques of "absolute" dating. Such techniques have their assumptions too, and an assumption which is apparently faulty is one which states that the concentration of C^{14} in the earth's atmosphere has always remained constant; in fact, it is now known that it has fluctuated, and the error produced by the resulting "de Vries effect" in radiocarbon dates may be on the order of 1-200 years (Minze Stuiver, personal information). Let us suppose that an important trait like negative painting actually diffused from Mexico to Peru within a span of 50 years; plotting the radiocarbon dates of first occurrences within the two areas might make it appear that, through the de Vries effect, this technique was really invented in south Peru and that all sorts of other errors were built into this method of dating and the gathering of samples.

In a larger context, I think that I can see fundamental differences between the logic of Lanning's approach to the data and my own. Lanning seems to believe that (a) until all the facts are in, one does not talk about them (and, above all, not let them come into print), and (b) once enough facts have been accumulated, they will somehow be able to speak for themselves and tell us what actually went on. In effect, we are being asked not to think until we have "concrete evidence." The fallacy of the "wait-until-the-facts-are-all-in" school was pointed out by Kluckhohn in 1940, in an essay directed toward Maya archaeologists, the lessons of which seem not to have been learned. Most of the other sciences, including the "hardest" of all, physics, have long ago abandoned this pre-Kantian strategy. As Parsons has said (quoted in Kluckhohn 1940: 42), "The facts do not speak for themselves; they have to be cross-examined." The majority of advances in knowledge seem to take place by a dialectic process, in which a hypothesis is put forward that most reasonably explains the variation ob-

served in a body of carefully collected data; a subsequent hypothesis is really an antithesis to the foregoing, framed in terms of old and of newer data not previously available or examined; and a later hypothesis may represent a synthesis of the preceding, itself to be followed by a new antithesis. Call these "assumptions" if you will; so long as such hypotheses are explicitly stated and do not ossify into hard dogma or circular argument, such concepts not only have the advantage of making meaningful large bodies of data but also may suggest new lines of endeavor. These hypotheses may prove to be completely faulty, but merely by having once been posed, knowledge has been increased. As Maitland has said, "If only we can ask the right questions we shall have done something for a good end."

Such a hypothesis, or series of dialectically changing hypotheses, has been the concept that New World civilization had its start in Mexico and was diffused from there to the rest of Nuclear America, as first stated by Spinden (1917) and reformulated in increasingly different terms by Strong, Porter, Willey, and others. Given present information, such a hypothesis reasonably accounts for a very large body of archaeological data pertaining to the Formative period in New World culture history. Even if it should one day be discarded as totally improbable, it will have served its purpose if it stimulates our colleagues in Andean archaeology to propose alternative hypotheses which will be backed by new information which only they can properly bring to the light of publication.

In conclusion, and at the risk of throwing more oil on the fire, I would like to enlarge on the hypothesis that all New World civilizations have a single point of origin on the Gulf Coast plain of southern Mexico. One could view the cultures of Mesoamerica and Peru prior to 1500 B.C. as quite analogous in their adaptations to a collecting existence eked out with a modest gardening of food plants; a significant difference would be that the Mesoamericans had maize, and the Peruvians did not. Nevertheless, Archaic or Incipient Agricultural Peru already showed a distinctive configuration of its own, taking the form of (a) an art style based on the structural limitations of fabrics and (b) an iconography featuring the condor and the double-headed serpent; these motifs have been exhibited in the twined fabrics from Huaca Prieta so painstakingly analyzed by Junius Bird (1962). One might add to this pantheon a feline depicted as a "kitty-cat" without gnashing teeth, appearing on carved gourds from the same site. Pottery-making may have been invented in northwestern South America (Ecuador to the Caribbean coast) or in the adjacent Isthmian region before the beginning of the second millennium B.C., and diffused overland to Mesoamerica and Peru from that center. Primitive maize of Mexican origin reached Peru at about the same time as did pottery (about 1200 B.C.), most likely introduced by sea-borne people. In Mesoamerica itself, by about 1500 B.C., village-farming life was well-established, and in the next five centuries had given rise on the Gulf Coast to a great civilization, the Olmec,

which reached its apogee in the Middle Formative, about 800-400 B.C. Coincident with the ascent of Olmec, a long-range, maritime, trading network had been established between the Pacific coasts of Mesoamerica and Ecuador (Coe 1960). This route, or an extension of it, could have been utilized by Olmec or Olmecoid missionaries and traders to reach Peru, perhaps by as early as 1000 B.C. Possibly reflecting the initial results of such contact is the complex of ceremonial courts and mounds of Las Haldas which, however unsatisfactory the published plan (Engel 1957, Fig. 4), would appear to be a close copy of the linear layout of La Venta in Mexico.¹ These Mesoamericans would have introduced, along with a Tlatilco-like ceramic complex, the Olmec art style and Olmec religion, centering on the worship of a large spotted cat with snarling mouth, a feline which could only be the jaguar. This curvilinear, "realistic," and basically sculptural art style merged with the native Peruvian canon based on fabric structure to produce the art of Chavin and, by extension, the later styles which stemmed from it (although the older tradition was never suppressed and reappears from time to time throughout Peruvian prehistory). Jaguar and were-jaguar joined with condor and serpent in the new pantheon, and Peruvian civilization was born.

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AN INCISED MOCHICA KNIFE OF COPPER

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ABSTRACT

In the Nathan Cummings collection, Chicago, is a copper knife from Peru with an incised design depicting the Mochica-style cat headdress often shown in vase paintings and on modeled figure jars. The knife is similar in form to weapons carried by warriors shown in vase paintings; these weapons are probably knives rather than axes.

IN THE COLLECTION of Peruvian artifacts (formerly the Wasserman-San Blas collection) belonging to Mr. and Mrs. Nathan Cummings of Chicago (at present on

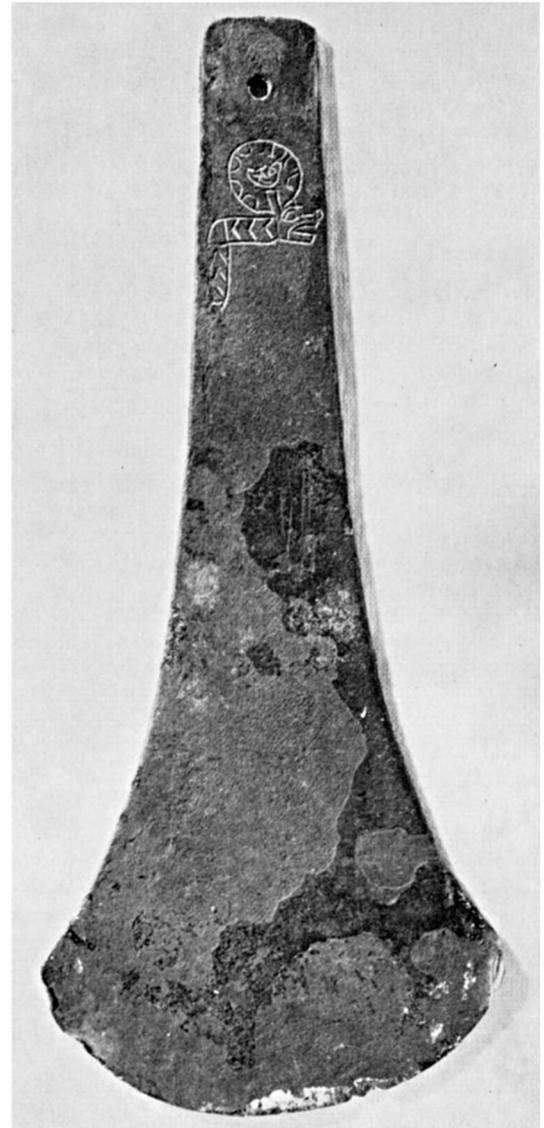


FIG. 1 [COLLIER]. Mochica copper knife with incised design. Length 16.2 cm. Cummings collection.

¹It is for this reason that the figurine head from Las Haldas (illustrated in Ishida and others 1960, Fig. on p. 103) is significant, for to me it is closely comparable to hand-modeled figurines from La Venta.