EARLY FORMATIVE CULTURES IN GEORGIA AND FLORIDA

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ABSTRACT

History of development of the American Formative concept is briefly outlined. A chronology is presented that covers the three millennia before the Christian Era and which extends from Ecuador to the Ohio Valley. The Stalling's Island complex of fiber-tempered pottery from the coast of Georgia is compared with the Valdivia Period ceramics of Ecuador, and the Orange fiber-tempered wares of Florida are compared with the Machalilla Period ceramics of Ecuador and related material in Mesoamerica. The conclusion is drawn that these early Southeastern Cultures ultimately derived from the Ecuadorian early Formative by way of colonies that probably existed in the southern part of Mesoamerica.

IN THE PAST 20 years, Herbert Spinden's (1917) theory of the existence of an ancient common base for the Neolithic-level aboriginal cultures of North and South America has emerged from the category of speculation, and most of the archaeologists who have followed the rapid developments now accept it as a rather well-documented fact. Present knowledge of what is called the American Formative has resulted from planned programs of research which were aimed toward the discovery of new cultural phases and the development of the accurate ceramic chronologies necessary to align the new and older information. While the picture of the Formative is beginning to clarify rapidly, it is not a simple phenomenon; all the problems are not solved, particularly in relative dating, and some of us are still pleasantly shocked at the implications for the philosophy of cultural anthropology.

A comprehensive history of the search for the American Formative undoubtedly will be written, but it is beyond the scope of this brief essay. Neither can a complete bibliography be presented here. Important landmarks have been the cooperative research program under the auspices of the Andean Institute, 1940–41, (Ekholm 1944; Willey and Corbett 1954; summarized by Strong 1943); and the Virú Valley Project under the same auspices in 1946, (Strong and Evans 1952; Ford and Willey 1949; Willey 1953; Bird 1948; Collier 1955). Significant research in Peru includes Tello's work at Chavín (Tello 1960); Larco's studies on the north coast (1945); and the recent excavations of the University of Tokyo group at Kotosh (Izumi and Sono 1963). In Ecuador the research of the late Emilio Estrada (1958, 1961) and Clifford Evans and Betty Meggers (Evans, Meggers, and Estrada 1959; Meggers, Evans, and Estrada 1965) have provided the key to the entire Formative problem. In Colombia the major pertinent work has been accomplished by Gerardo and Alicia Reichel-Dolmatoff (1956; Reichel-Dolmatoff 1955, 1961, 1965).

Willey and Meggers (1954) reported on the Formative level in Panama. On the Pacific coast of Guatemala, Michael Coe (1961) described this early period at the La Victoria Site.

In Mexico notable contribution has been made by the New World Archaeological Foundation in Chiapas, under the direction of Gareth Lowe. The Tehuacán Archaeological and Botanical Project directed by Richard MacNeish (1961, 1964) has contributed the major complete chronology of man's prehistory in the New World and a solution to the problem of the origin of important domesticated plants, including maize. The earlier work of George Vaillant in the Valley of Mexico, as well as the excavations at the burial site of Tlatilco (Porter 1953; Piña-Chan 1958), is relevant. On the Gulf coast of Mexico, MacNeish (1954) has extended Ekholm's (1944) chronology at Panuco in the Huasteca; García Payón (1950; 1966) has given a report on his excavations at El Trapiche in Veracruz. Drucker and associates have reported on sites of the Olmec Culture in southern Veracruz (Drucker 1943, 1952, 1955; Drucker, Heizer, and Squier 1959). The present discussion will also take advantage of recent unreported excavations of the writer, Alfonso Medellín, and Matthew Wallrath on the Veracruz coast near Zempoala.
WHAT IS THE FORMATIVE AND HOW DID IT SPREAD?

Willey and Phillips (1958) proposed that Formative is a stage marked by people having reached the level of food production, which is a definition that compares directly with V. Gordon Child’s famous definition for Old World Neolithic. As applied to the Americas, this definition is self-defeating, for it automatically excludes the coast-dwelling, seafaring people, who seem to be the prime agents of the spread of advanced cultural traits. The American Formative is most usefully defined as the 3,000 years preceding the Christian Era, during which Neolithic-level cultural elements were being diffused and added to the Paleolithic-level cultures that already existed. The term will refer to that period of time and also to the cultural elements involved.

The earliest known Formative Cultures date between 3000 and 2500 B.C. and are on the north coast of South America. The Valdivia Culture of Ecuador appears without antecedents and demonstrates some amazing resemblances to the contemporary Middle Jomon Culture of Japan. Specifically, most of the resemblances are to the variety of Jomon found in the southern part of the Island of Kyushu (Estrada 1961; Meggers, Evans, and Estrada 1965: 157ff.). That this culture was introduced by direct transpacific contact seems obvious on the basis of the evidence now available.

This paper deals with some aspects of the diffusion of Formative Culture elements in the Americas, particularly with traits which seem to have come into what is now the states of Georgia and Florida at an early date. A second paper will discuss the differing group of features that entered the Lower Mississippi Valley about 1700 B.C.

The apparent facts about the American Formative Culture are liable to be somewhat strange to archaeologists who have not worked on the problem, since they involve some changes in habits of thought. The standard model of cultural diffusion has been that of a step by step geographical spread, like the expansion of the Inca Empire. Apparently major movements in Early Formative times were more similar to the long-distance colonizing ventures of the Vikings.

If the Early Formative was spread by seafaring people who established colonies on distant shores, then the transported cultural elements should have a high degree of resemblance to those of the culture from which they were derived. Since complex traits, such as pottery, were new for the regions to which they were introduced and had not passed through “cultural filters,” they should be comparable almost point by point.

Cultural change was slow during the early part of these three millennia, particularly in ceramics, for distinctive and competing traditions had not yet developed. Further, by some mechanism which is not clearly understood, these cultures often did not spread as complete units. Groups of ceramic features and other elements tended to be transplanted, leaving behind the remainder of the features of the original cultural complex. This suggests the possibility of a degree of craft or village specialization; small groups of colonists carried with them only their own techniques and specialties.

A further inference to be made from the pattern suggested here is that colonies will tend to be small. They will consist of a few villages clustered closely together in a limited geographical area like the first European settlements on the Atlantic Coast of North America.

Meggers, Evans, and Estrada (1965: 168–78) have cited examples of the selective long-distance distribution of Valdivia cultural elements in northern South America between 3000 and 1500 B.C. Michael Coe (1960, 1961) has presented a most convincing case for direct contact between the Pacific coast of Guatemala and the Guayas Basin in the first millennium B.C. An attempt is made further along in this paper to strain the reader’s credulity in a similar fashion.

THE EASTERN UNITED STATES AND THE FORMATIVE CULTURE

At the present time, the most obscure part of this developing picture is the nature of the relationships of the advanced cultures of the Eastern United States to the Formative of Mesoamerica and the Andean Region. This is not because of lack of interest. Vaillant postulated the early influence of a “Q-complex” which hit rather far from the target because of a lack of chronological information. Strong (1943) and Porter (1953) were able to present a small group of similarities that were distributed on an early level from Peru to the Mississippi Valley. We know now that they were dealing with comparable features on a time level of about the beginning of the Christian Era. These include mound building, cranial deformation,
zoned and unzoned rocker stamping, zoned red paint decoration, arrangement of design in vertical panels, tetrapod vessel supports, and hand modelled figurines. Spaulding (1952) has suggested that the Adena culture of Kentucky came directly from Mesoamerica, and MacMichael (1964) proposes that the Crystal River site in Florida was a way station in the northward movement of Hopewell culture.

Most archaeologists specializing in the Eastern United States will agree that about A.D. 900 a group of traits came from the Huasteca in Mexico, overland through the Gibson aspect of the Caddoan area of Eastern Texas, to contribute to the formation of the Mississippian culture in the central part of the Mississippi Valley. Whether the practice of building rectangular temple mounds around a plaza was introduced at this time or slightly earlier is a subject of debate. There is also general agreement that a group of esoteric art forms was introduced several centuries later into fully developed Mississippian culture providing many of the features of the “Southern Cult.”

The origin of the basic elements for the earlier cultural florescence, loosely known as “Hopewellian,” has been more in doubt. Knowledge of this cultural phase was mainly developed in the 1930’s when Hopewelian was accepted as an integral part of the earliest of the two basic cultural patterns in the East, the Woodland. It seemed probable (and still does) that paddle-malleated ceramics and some polished stone tools such as adzes, gouges, and the grooved axe had entered North America by way of Bering Straits. Rocker-stamped pottery accompanies these traits in the Neolithic of north-central Siberia, and it is possible that the entire Hopewelian complex had filtered in by a northern route. How these traits might have passed over the intervening miles of tundra and forest is obscure, but similar obstacles beset proponents of southern origins.

### Chronology

Ten partial chronologies located from the Georgia coast to Ecuador are shown in Fig. 1. The columns are keyed to geographic locality on the accompanying map. The period limits shown in these columns are estimated from radiocarbon dates, which for the most part are numerous and in reasonable agreement. The early phases of the Georgia (1) and Florida (2) coast columns are from Bullen (1960, 1961).

The dates for the Ohio Valley (3) are the reasoned estimates of Griffin (1964). The Lower Mississippi Valley (4) is based on Gagliano and Saucier (1963), Ford and Webb (1956), and Ford (1963). Dates for the La Venta site on the Veracruz coast (5) are from Drucker, Heizer, and Squier (1959); they reflect also the estimates of MacNeish (personal communication). The Tehuacán Valley column (6) has been provided by Richard MacNeish. Tehuacán gives the longest and best dated sequence in the New World. The plain pottery shown in the chronology fragment below the Guatemala Coast column (7) is the “Pox Pottery” discovered by Brush (1965) near Acapulco, Mexico. The fragment of sequence from the Victoria site on the Northern Guatemala Coast (8) is the estimate of Coe (1961) brought up a couple of centuries in time. The north coast of Colombia sequence (9) is based on Reichel-Dolmatoff’s information as interpreted by Meggers, Evans, and Estrada (1965, Fig. 107). The Guayas Area chronology of Ecuador (10) is from this same illustration.

### The Stallings Island Ceramic Complex

The oldest pottery in the Eastern United States is tempered with vegetable fiber and was manufactured from approximately 2000 B.C. until several centuries after 1000 B.C. Plain pottery succeeds the preceramic levels in a number of sites, and about 1600 B.C. decoration appears (Bullen 1960, 1961). The two principal centers for fiber-tempered pottery are on the Atlantic coast of Georgia and in northern Florida. There is a third center on the Tennessee River in northern Alabama, but the decorations found there belong on the 500 B.C. time level; no radiocarbon dates are available to modify this impression. This, as well as other minor occurrences in the Southeast, is probably later than the fiber-tempered wares of the coast.

The largest number of coastal fiber-tempered sites, and the greatest abundance of decorated wares, appear to cluster in two relatively limited geographic areas. One is along the St. Johns River in northern Florida; the other is along the Savannah River and the nearby coastal islands on the north coast of Georgia. Relatively few and small sites are on the 150 miles of intervening coast.

Aside from the fact that the Stallings Island Complex (Georgia) and the Orange Complex (Florida) share the feature of fiber-tempering, the ce-
Fig. 1. Selected chronologies in North and South America that are involved in the spread of the Formative cultural elements.

Ramosics are quite different in vessel shape and decoration. Nor does there appear to be any evidence of trade or interinfluence between the centers. Orange decorated ware has one initial radiocarbon date of 1615 B.C. ± 120 (G-598). William G. Haag (personal communication) has radiocarbon dates that place the beginning of Stalling's Island decoration between 1800 and 1700 B.C.

Several theories have been advanced to account for the appearance of this early ceramic ware in the Southeast: (1) It was an example of independent invention arising from the earlier use of soapstone vessels; the presence of early wares tempered with steatite fragment farther up the Atlantic Coast might be an intermediate step. (2) It arose as a result of stimulus diffusion from Woodland pottery coming from the north. Unfortunately for this latter hypothesis, no pottery-making cultures to the north have yielded radiocarbon dates older than 1200 B.C. (Ritchie 1962). If this is not to be an example of the independent invention of ceramics, we shall have to look elsewhere for origins.

No fiber-tempered pottery has yet been reported from Mesoamerica. Reichel-Dolmatoff (1961, 1965), however, has described a complex of fiber-tempered pottery from the Puerto Hormiga Site on the north coast of Colombia, which yields beginning radiocarbon dates slightly before 3000 B.C. While the decorations on Puerto Hormiga pottery do include drag-and-jab incising, the resemblances are not close enough to the Stalling's Island material to demonstrate the type of cultural dissemination that is suggested in this paper. This, however, does place the practice of tempering with vegetable fibers on the shores of the Caribbean at the proper date. The further fact that the early people of the north coast of Colombia and of the Georgia coast lived in circular villages, which left doughnut-shaped middens, will be discussed in a later paper.

Meggers, Evans, and Estrada (1965) have advanced the thesis that the early cultures on the
Fig. 2. A selection of Valdivia phase ceramic decorations compared to the full range of designs from the Stalling's Island ceramics of coastal Georgia.
north coast of Colombia are derived from the Valdivia Culture (3000–1500 B.C.) of the Guayas region of Ecuador. Turning to the Valdivia ceramic complex, one finds some remarkable resemblances to Stalling's Island.

The Stalling's Island pottery has been well described by Claffin (1931, Pls. 11–20) and by Fairbanks (1942: 223–31); the type Stalling's Punctated is described by Sears and Griffin (1950). There are four principal varieties of decoration. Most common are drag-and-jab incisions made by a tool held at a 45° angle drawn parallel to the vessel rim (Fig. 2 e–h). This resembles Valdivia Multiple Drag-and-Jab Punctate (Fig. 2 a–c; Meggers, Evans, and Estrada 1965: 67–8, Pls. 79–80) in several particulars:

1. Lines are parallel to the rim, are close together, and punctations are closely spaced.

2. A double-point comb-like tool was occasionally used in Ecuador and in Georgia (determined from examination of collection in Florida State Museum). The teeth of the tool make wide lines from 5 to 10 mm. wide. Teeth are usually round in section but are occasionally square.

3. The horizontal lines frequently are not continuous so as to encircle the vessel, but rather they form panels. Either the ends of the panels touch, or a smooth area several centimeters wide is left between them. This break in encircling decoration is common in several other Valdivia types.

4. A variation of Stalling's Punctated has a motif formed by parallel wavy lines (Fig. 2 h). This same motif is not found in Valdivia Drag-and-Jab, but it is very common in the accompanying type, Valdivia Broad Line Incised, where it is described as Motif 3 (Fig. 2 d; Meggers, Evans, and Estrada 1965, Pls. 34–35).

A less common decoration in the Stalling's complex is simple punctating. Typically the punctates are made with a very sharp pointed instrument (Fig. 2 k–l) and form panels with smooth areas between. These are sometimes combined with crude pendant designs. Similar technique and motifs are illustrated as Technique 6 of Valdivia Punctated (Fig. 2 i–j; Meggers, Evans, and Estrada 1965, Pl. 100 o–r).

The third Stalling's decoration consists of crudely incised dashed lines drawn parallel to the rim in panels (Fig. 2 o–p). In Ecuador similar sherds are classed as Motif 3 of Valdivia Incised (Fig. 2 m–n; Meggers, Evans, and Estrada 1965, Pls. 74–75).

Scratchy cross-hatching made with a pointed instrument and with the lines drawn at several different angles is also found in both complexes (Fig. 2 q–w; Meggers, Evans, and Estrada 1965, Pl. 73). The flattened lips of vessels that bear the above-described designs are occasionally lightly notched in both regions.

All vessels in the Stalling's complex are bowls, either simple or deep bowls with the upper wall turned inward to form a "carinated" shape (Fig. 2 x). These shapes are also common in Valdivia (Fig. 2 w). The same form of carinated bowl with short inturned upper wall reaches its popularity peak late in the cultural phase, shortly before 1500 B.C. (Meggers, Evans, and Estrada 1965, Fig. 54). Claffin (1931: 15–16, Pl. 11) remarks on the sharpness of the exterior angle and the occasional presence of a small ridge. This form in the Valdivia culture has similar features (Meggers, Evans, and Estrada 1965, Figs. 40, 42). This carinated bowl did not spread to other parts of the eastern United States but lasted in this corner of the Southeast for 35 centuries. After A.D. 900 this form was reintroduced into the Caddoan area of Texas, Arkansas, and Louisiana.

The comparisons that have been made above describe all of the Stalling's Island ceramic complex, but this is far from a complete inventory of Valdivia. Other examples of what appear to be selective diffusion of ceramic traits will be cited in the following discussion.

**Fiber-tempered Ceramics in Northeastern Florida: Tick Island Incised**

The best known and certainly the largest shell middens with fiber-tempered ceramics are located along the St. Johns River near the Atlantic coast of northern Florida. Early excavations by Wyman (1875) and Moore (1894) revealed that the lower levels of these deposits were preceramic and that the first pottery was undecorated. It is now known that the earliest pottery in these middens dates at 2000 B.C. or possibly earlier (Bullen 1961). Decoration begins about 1600 B.C. There are two types of decoration, both quite distinct from that found on Stalling's Island ceramics 150 mi. to the north.

The earlier of the types is Tick Island Incised (Moore 1894: 601; Sears and Griffin 1950, "Var-
iant B”; Bullen 1955, Fig. 2 a–c). The usual motif is a series of incised scrolls with the background punctated. Occasionally, as shown in Fig. 3 d–e, small circles are incised in the punctated fields. A rare variation has rows of punctations alternating with incised lines (Bullen 1955, Fig. 2 e). It is notable that the incised lines in Tick Island Incised were made with a cylindrical tool 3–4 mm. in diameter held at an angle. Thus the incisions contrast with the narrow marks, made with a pointed tool, that are a feature of the later Orange Incised.

At the date of 1600 B.C., there is no North or Central American ceramic known with which Tick Island may be compared. There is, however, a directly comparable type on the north coast of Colombia, where the wide-line incising that seems to have derived from Valdivia (Meggers, Evans, and Estrada 1965: 168ff., Fig. 105) was established a few centuries after 3000 B.C. By 1500 B.C. the Barlovento Culture has ceramic decorations rather comparable with Tick Island (Fig. 3 a–e). One variation of the decoration has broad-line incised scrolls, and the background is punctated (Reichel-Dolmatoff 1955, Lam. IV, 1–9). Small circles are either incised in the punctated fields or impressed with a tubular instrument. Smaller circles or dots are centered in these circles. Alternate rows of punctations and incised lines are also found. Some of the punctating forms a border for areas of incising (Reichel-Dolmatoff 1955, Lam. III, 5, 10) and appears to be comparable with the “ticking” that sometimes borders the incising of the Orange Period of Florida.

**STRAIGHT-LINE ENGRAVED CERAMIC DECORATIONS IN SOUTH AND MIDDLE AMERICA**

About 2000 B.C. a new culture of uncertain origin appears on the coast of Ecuador (Meggers and Evans 1962; Estrada 1958; Meggers, Evans, and Estrada 1965: 110ff.). Meggers, Evans, and Estrada think that the Machalilla Culture existed side by side with the later phase of the Valdivia and that it ended about 1500 B.C., when the two merged to form a large part of the succeeding Chororra Phase (Fig. 1).

The ceramic complex of Machalilla includes stirrup-spout bottles and red-on-buff painted ware. Of greatest interest are the pottery types described as Ayangue Incised and Machalilla Double-line Incised (Meggers, Evans, and Estrada 1965). These decorations were incised with a sharp single- or double-pointed tool when the vessel paste was quite dry. Motifs are arrangements of straight lines to form triangles, cross-hatching, checkerboards, slanting bands, zig-zags and similar geometric designs. Red pigment was rubbed into the lines. This decorative complex contrasts with the dominantly broad-line incised decorations of the earlier Valdivia. It does, however, appear to have derived some features from the Valdivia Phase type Valdivia Fine-line Incised (Meggers, Evans, and Estrada 1965: 60).

The authors of the Ecuadorian Formative papers point out that this complex has extensive relationships in the formative sites of Mesoamerica, principally in southern Mexico (Meggers, Evans, and Estrada 1965: 172ff.). None of these occurrences, however, can be dated much earlier than 1000 B.C., and most seem to fall within the first millennium. They are too late to have provided an origin for Ayangue Incised or to have served as a means for the transference of this complex to the Atlantic coast of Florida.

Alfonso Medelillín, Matthew Wallrath, and the writer excavated strata cuts in the sites of Chalahuítes and Limoncito on the coast of the Mexican state of Veracruz last year. These sites are near Zempoala and the famous El Trapiche excavation by José García Payoño (1950, 1966). The ceramic sequence, which appears to run from about 800 to 200 B.C., includes a better representation of material directly comparable to Ayangue Incised and Machalilla Double-line Incised than has been published from other parts of Mesoamerica. Practically the full range of techniques and motifs are represented as well as characteristic vessel shapes.

The accompanying ceramics from these sites exhibit most of the features which characterize the middle part of the Mesoamerican Formative. Ninety-nine per cent of the sherds are undecorated, very well-constructed and well-fired monochrome wares. Included in this collection are features, which as Michael Coe (1960) has pointed out, are shared by the Ocos and Conchas phases in Guatemala and the Chorrella-Tejar phases of Ecuador. These are napkin-ring earspools, typical large constricted-mouth jars which are probably egg-shaped, cuspidor-shaped bowls, composite silhouette bowls made of well-polished black ware with high walls that are horizontally grooved, and red-painted designs on buff ceramic which are sometimes zoned by incised lines. Rocker-stamping is either line-zoned
Fig. 3. Comparison of Barlovento phase designs, Colombia to the type Tick Island Incised, Florida; vessel shape and decorated lips of the Trapiche phase, Veracruz to Orange phase, Florida; and herringbone motifs from the three areas.
or unzoned, made with a smooth, notched, or scallop-shell tool. Shell-back stamping is also found. Finger-nail punctating and pinching are rare. There is a small amount of cob-marked ceramics. Line-burnishing is used to form designs, and the zoned burnishing on matte surfaces is usually in vertical panels. The negative-painted designs are narrow parallel lines on a red slip. There are no true graters in the collection, but in the lower levels the interior of the bottoms of the flat-base dishes described below have shallow-impressed burnished lines that form grater-like patterns. Spindle whorls, bottles, or pottery with handles are absent. Figurines are handmade and are simple, nude females. There are stone bowl fragments, and the accompanying flint tool complex has large crude choppers and flakes.

The Orange Incised Ceramic Complex of Florida (1300 B.C.) and Possible Relationships

The third early group of decorated fiber-tempered ceramics from the Southeast also is best known from the great shell middens along the St. Johns River in northeastern Florida. This is Orange Incised (type description, Sears and Griffin 1950). It has been described at Tick Island (Wyman 1875; Moore 1894); at the Cotton site (Griffin and Smith 1954); at the Summer Haven site (Bullen and Bullen 1961); and at South Indian Field to the south on Indian River (Ferguson 1951). The collection used here was made by Carl Benson from the Tick Island site and is deposited in the Florida State Museum. At Bluffton, Bullen (1955) demonstrated stratigraphically that Orange Incised appears later than does Tick Island Incised. Although the two types were coeval for some time, Tick Island vanished, leaving Orange to transmit its decoration techniques and motifs to the succeeding St. Johns I pottery.

The two radiocarbon dates available for midden levels yielding Orange Incised ceramics are 1065 B.C. ± 200 (M-215) and 1380 B.C. ± 200 (M-1014, Bullen 1961). Thus, it seems that Orange begins a century or so later than either Stalling’s Island Incised or Tick Island. These dates are consistent, too, with the comparisons which I shall make with early cultures to the south. Specifically, most of the comparisons are with the Ecuadorian pottery Ayangue Incised (Meggars, Evans, and Estrada 1965: 117–19). This reaches a peak of popularity of 5 to 6% at the end of Machalilla and continues on into the succeeding Chorrera phase (Meggars, Evans, and Estrada 1965, Fig. 89). The mean date for this type seems to be 1500 B.C. If Ayangue Incised was made from 1700 to 1300 B.C., it overlapped in time with Orange Incised of Florida.

Although it is clear that the material from Veracruz dates after 1000 B.C., and so is too late to be involved directly in the diffusion of ceramic traits postulated here, it clearly is related to the Ayangue tradition; for that reason, specimens are illustrated in Figs. 3–5 for comparison. The possibility exists that there is in Mesoamerica a yet undiscovered culture that does date around 1500 B.C., which served to transmit these traits to Florida and was ancestral to the straight-line engraved decorations which we know in Mesoamerica.

The existence of such a culture is suggested by a comparison of vessel shapes. In Orange and in the Trapiche complex of Veracruz, a prominent vessel form is a flat-bottom pan that varies from 20 to 45 cm. in diameter and has relatively low, out-slanting walls (Fig. 3 f–g). The shape is common in Mesoamerican Formative cultures dating in the first millennium B.C., but it is not found in the earlier Formative cultures of South America. It does appear in Peru on the Chavín-Cupisnique level (Tello 1960, Fig. 144 i).

While the pan-shaped vessels of the Orange complex are made of fiber-tempered pottery and are thicker and less well-finished than those of Veracruz, there are some interesting resemblances. In both areas the bottoms are often thinner than the side walls. The Veracruz pans are polished except for the under side of the bases. In Florida all surfaces except the base are well smoothed, and a low polish was sometimes achieved. Ten per cent of the Veracruz pan bases have red ochre smeared underneath. This is not worked well into the clay and rubs off on the fingers. About 2% of the bases of pans in Florida have red coloring smeared on the underneath side. Matting impressions are found on perhaps one per cent of the Florida bases; this trait has not been noted for Veracruz.

In both Veracruz and Florida these pans are rarely decorated both outside and inside the vessel walls; somewhat more often there is a design in the interior of the bottom, as though in imitation of a true grater or molcajete.
A small percentage of the Veracruz pans have sidewalls gradually thickened toward the rim and flat lips which bear decorations of bands of parallel lines or hatched triangles (Fig. 3 h–m). MacNeish (personal communication) dates these decorated lips in the Tehuacán sequence at 850–550 B.C. The proportion of similar decorated lips is higher in Orange Incised, but the motifs are similar (Fig. 3 n–q). Bullen (1955: 13–15) has presented evidence to suggest these decorated lips are late in Orange, and coevality with the Mexican deco-
rated lips is possible. Similar decorated lips are a feature of the contemporary Momil Culture of the north coast of Colombia (Reichel-Dolmatoff 1956, Fig. 9). This in turn is clearly related to the Incised Rim Horizon style outlined by Evans (1964: 427ff.) for the Orinoco and Lower Amazon basins.

In early Eastern United States ceramic complexes, the pan form seems to be found only in the Orange and Fourche Maline complexes.
The straight-line decorations of the Machalilla phase of Ecuador, the Trapiche phase of Veracruz, and the Orange phase of Florida were made with a pointed instrument in contrast to the broader, rounded lines that characterize the Valdivia-Barlovento-Stalling’s Incised group of decorations. Incising in Machalilla and Trapiche was done after the paste was quite dry, and so it is sometimes called engraving in Orange Incised, decoration was applied while the paste was still damp in such a way that the lines are plowed into the surface.

In Ecuador a flexible, double-pointed engraving tool was used frequently enough that a type, Machalilla Double-lined Incised (Fig. 3 r-t; Meggers, Evans, and Estrada 1965: 123-4, Pls. 137–138), was set up, based principally on this feature. Other examples are found scattered through the type Ayangue Incised. Double-line incising is also rather common in the Trapiche complex (Fig. 3 j, u; Fig. 4 t-u; Fig. 5 g). The multiple-point incising tool that was occasionally used to draw Orange Incised designs usually has 4 to 6 points (Fig. 3 p; Fig. 5 n; Fig. 6 p, lip).

Overall size or delicacy of these designs also should be noted. The later designs from Veracruz tend to be quite small and delicate; sometimes the engraved lines are so fine that they are difficult to see. The designs in Orange Incised are large and comparatively gross. The Ecuadorian decorations are intermediate in size and delicacy. In Figs. 3–6, the drawings are made to the same scale.

In Ecuador and Veracruz these incised decorations usually had red ochre rubbed into the lines; there is no evidence of such treatment in Florida.

A few comparable details, which do not appear in the later Veracruz material, are shared by Orange Incised of Florida and Ayangue Incised of Ecuador. One item is the occasional trait of bordering design elements with a row of punctations. In both areas, two varieties of punctation were used. One consists of a row of dots made with a pointed instrument (Fig. 4 o, v; Fig. 5 c, o); the other consists of small dashes or tick marks (Fig. 4 i, k, q).

Herringbone motifs, running both horizontally and vertically (Fig. 3 r-x) are common in both Machalilla and Orange, but they are rare in Veracruz. In Ecuador they are usually made with a double-point tool and are the principal motif of Machalilla Double-line Incised.

Squares made of concentric incised lines and nested together to form designs (Fig. 6 b, h) are fairly common in Orange Incised, and at the Bluffton site this is the only Orange Incised motif found. It was associated with Tick Island Incised, and Bullen (1955) suggests that this is probably the earliest variety of Orange. Incidentally, this is the only motif found incised on the pottery of the Adena culture. Squares made in precisely this manner are absent in the Trapiche complex and are quite rare in Machalilla (Fig. 6 c–d). They are, however, somewhat more common in the earlier Valdivia Broadline Incised (Fig. 6 a). This latter has the broad rounded incising of the Valdivia tradition.

Triangles arranged alternately, so that a smooth zig-zag band is left between them, are more common in Orange and Ayangue than they are in Trapiche (Fig. 4 a–h). In the Ecuadorian type, the triangles are usually filled with crosshatching simple hatching is more usual in Florida.

Short bands of straight lines arranged vertically, slanting, or at alternate angles are common in all three areas (Fig. 4 l-b’). Also, in all three areas these bands are occasionally made with multiple-pointed engraving tools. In Veracruz and Florida these bands of lines are frequently used as lip decorations (Fig. 3 j, o-q). A further similarity is that these and other decorations are occasionally arranged in line-bordered panels, stacked one above another, that run horizontally around the vessel (Fig. 4 w–z, a’–c’). This arrangement is most common in Florida, less so in Veracruz, and comparatively rare in Ecuador. Incidentally, it is common at Tlatilco (Piña-Chan 1958, Fig. 36 w, 37 d–e, j).

Crossing bands of lines is another motif found in all three areas (Fig. 5 a–p). This motif has two distinctive treatments. In one, the bands of lines were drawn through one another to outline diamonds (Fig. 5 a-b, g, m–n). Punctations were sometimes centered in these diamonds in Ecuador and Veracruz. In the second variation, the lines of one set of bands are terminated where they cross the other so that they appear to pass behind the first set (Fig. 5 c-f, h-l, o-p).

“Basket weave” and checkerboard motifs are another shared trait (Fig. 5 q–y). An example of basket weave from Veracruz is not available for illustration, but I have seen at least one such example in Garcia-Payotí’s collection from El Trapiche site. This motif is fairly common in Orange, is also shared by the later Tchefuncte,
and survives in the stamped wares of the Southeast. The checkerboard variation seems to be confined to Machalilla and Trapiche, and a punctuation is occasionally centered in the alternate plain squares (Fig. 5 r-t).

The hatched diamond motif is related to the above (Fig. 5 w-c''). These hatched diamonds tend to alternate with plain diamonds in Ecuador and Veracruz, while in Florida the figures are filled with hatching at opposing angles. The
vertical paneling and the curving arched bands shown in Fig. 5 y have parallels in Ayangue Incised (Meggers, Evans, and Estrada 1965, Pl. 131 m, p).

Motifs of line-bordered bands of cross-hatching are fairly common in all three areas (Fig. 6 i–q). In Veracruz, these bands are sometimes curved, but in Ecuador and Florida they usually run straight and turn at angles. Usually the hatching lines are placed at 45° to the direction of the band (Fig. 6 k). More common in Florida is an additional variation in which the hatched lines run parallel and at right angles to the direction of the band (Fig. 6 j, p–q).

The above listing accounts for the common motifs that are found in Orange Incised. Bullen (1961, Fig. 6) reports a rare Greek fret motif that does not seem to have parallels to the south, nor does the rectangular form of some of the pan-shaped Orange vessels. Other differences are matters of emphasis. Orange seems to feature bands of lines or hatched bands more than does Machalilla.

I have simplified the foregoing comparisons by disregarding the wide distribution of these motifs in the Formative and later horizons in Mesoamerica and in the early ceramic cultures of the eastern United States. It is impossible to deal adequately with the subject in this brief paper.

At a later date these influences can be seen in the Tchefuncte culture of Louisiana and in the Alexander series of ceramics from northern Alabama. A major paper can be written on the history of these motifs in eastern United States aboriginal ceramic art. For example, they seem to be the dominant factor in the rim decorations of the Plains tribes on the western border of the Mississippi Valley (Wood 1962) and of the Iroquois groups on the east.

It should be noted that the cultural items, other than ceramics, that are found in the early Georgia and Florida shell heaps do not resemble items of similar function in the early Central and South American sites. These include flint projectile points, bone fishhooks, bone atlatl hooks, bannerstones, grooved stone weights, grooved stone axes, and flat, drilled, “gorgets” that are frequently made of limonite. The beautifully engraved bone pins are another item not found in the early sites to the south. Most of these traits are widely spread in the East in late preceramic times and probably were contributed to the Stalling’s Island and Orange cultural complexes by local people.

**Other Early Ceramics in the Eastern United States Before 1000 B.C.**

“Woodland” paddle-stamped ceramics may well have become established in New York State and about the Great Lakes shortly before 1000 B.C., but the arrival of this ceramic family on the Gulf Coast was delayed for almost a thousand years. Both the Stalling’s Island and the Orange complexes contributed substantially to the Tchefuncte development in the Lower Mississippi, and in the vicinity of Mobile, Alabama, “as Griffin has pointed out a number of times” (Sears and Griffin 1950), but this culture did not flourish until the second half of the first pre-Christian millennium. A group of elements which came from Valdivia by way of the Gulf Coast of Mexico was incorporated in the development of Tchefuncte and of the succeeding Marksville. These elements include rocker-stamping, broad-line incising, zoning, vessels with four feet, etc. This distinct importation of cultural traits into the Mississippi Valley will be the subject of a paper planned for the near future.

What seems to be a small colony of people carrying the Orange complex of cultural traits is located, most improbably, along the Fourche Maline River in eastern Oklahoma (Orr 1952: 242–4; Newkomet 1940: 1–9). Radiocarbon dates are not available, but the initial date is probably several centuries before 1000 B.C. Middens are small, round, and 4 to 12 ft. deep. The pottery is tempered with clay rather than fiber, but it has the flat-base pan shape with occasional matting impressions on the bottom and is sometimes square rather than round, as in Orange. The full range of Orange decoration is not represented, but all of Fourche Maline ceramic decorations are included in Orange; however, of significance is the fact that the ceramic traits mentioned above as coming into the Mississippi Valley at the time of the Poverty Point Culture are not represented. Bone pins are another element which is shared with Orange. The limonite gorgets, boatstones, chipped axes, hoes, and types of projectile points are late Archaic traits which are general at this time level over the Southeast.
**Formative Elements in Florida Cultures After 500 B.C.**

After the middle of the first millennium B.C., several formative traits appear in the St. Johns I period of northern Florida which are not found, or which are rare at this time, farther to the west in the Mississippi Valley. One of these is the practice of applying red slip to vessel surfaces. This is common in the Trapiche complex of coastal Veracruz, and while red slip may be traced back in time to the Valdivia culture, it is not necessary to go farther than contemporary cultures of coastal Mexico. In Florida the earliest red-slipped pottery is Dunn’s Creek Red (Goggin 1952: 102). A similar condition exists for broad bands of red paint applied to the natural buff vessel surfaces. In St. Johns I times this is called St. Johns Red-on-Buff (Goggin 1952: 102-3).

Meggers and Evans (1964: 6) have pointed to the fact that a large neckless jar form, in Mexico called a “tecomate,” is found in the Purron Period of Tehuacán, Mexico, and is early in the Kotosh sequence of Peru. It has lips characteristically thickened on the interior and bears similar simple looped-line decorations. This form is quite popular in both regions and lasts, with slight changes in surface finish, until at least the beginning of the Christian Era.
Tecomates are a rather prominent early form in the Trapiche complex of the Veracruz coast, have the typical thickened rim, and sometimes have crude rocker-stamped impressions encircling the mouth (Fig. 7 a). The neckless jars that appear in northern Florida about 400 B.C. are smaller than the “tecomate” of Mesoamerica or Peru, but they have similar proportions (Fig. 7 b). They are made of the typical St. Johns chalky paste and are frequently red-slipped, or a band of red paint encircles the mouth as it does with the Veracruz specimens. Excised decorations also occur on this form.

Excised designs came into Florida about 400 B.C. Oklawaha Incised (Fig. 7 m–n; Goggin 1952: 103) lasted only a short time and probably evolved into the exotic vessels of the Weedon Island period, where the vessel wall was completely cut through to form part of the decoration. Excising is a feature of Middle Jomon culture of southern Kyshu Island, Japan. A broad chisel-like tool was used to cut away the vessel surface to form simple broad-line motifs after the paste was leather hard. The ends of the excised lines are widened in a characteristic fashion. When the design is a short bar, the motif is termed “dog bone” (Fig. 7 h–i; Meggers, Evans, and Estrada 1965, Pls. 58 o, 59 k). A U-shaped motif and triangles are also common. Red pigment is applied to the excised area, which is usually rougher than the surrounding surface. This pigment is not fired into the clay, and it comes off easily. With practically no change, this decoration occurs in Valdivia, in Tlatilco (Porter 1953: 36–7), in the Trapiche complex of Veracruz, and in St. Johns I of Florida.

Other traits of apparent Mesoamerican origin probably were diffused into the St. Johns complex from the Lower Mississippi Valley, where they may be slightly earlier and are more abundant. These include unzoned rocker-stamping (Fig. 7 a–g) and vessels with four small feet, which are placed more closely together than appears practical. This latter feature also has its earliest occurrence in Valdivia ceramics of Ecuador.

MacMichael’s (1964) thesis that Hopewell was imported from Veracruz by way of the Crystal River site on the Gulf Coast of Florida is unnecessarily precise. This site, however, does participate in the spread of Formative traits. Negative-painted pottery, an element of the late Formative in Veracruz, occurs at Crystal River, apparently dating a century or so after the beginning of the Christian Era. This site has recently been made into a state park. The clearing and reconstruction work, under the direction of Ripley Bullen, has revealed two limestone slabs, each roughly elongated, about 3 ft. wide, 18 in. thick, and 3 ft. and 5 ft. high, which stand on end to either side of the conical burial mound and are roughly aligned with the long ramps that descend from the tops of the two large, flat-topped, rectangular mounds (Moore 1902, Fig. 16). A human face is crudely carved on the slab that aligns with the ramp of Mound A. From charcoal mixed with flint chips at the foot of the slab, a date of about A.D. 440 was obtained (Bullen 1966). Many of the Formative Period stelae in Veracruz are equally crude, to be expected, if this site were in Mexico, these standing stones would be accepted as stelae without question.

Conclusions

The reader who has made the suggested comparisons may agree that the resemblances of the Stalling’s Island complex to a portion of the Valdivia ceramics, and of Orange Incised to a part of the Machalilla, are of an order that suggest cultural contact. The compared complexes seem to follow one another in the proper order and to be coeval. Direct derivation of the two groups of Southeastern ceramics from Ecuador is not to be inferred, for they incorporate certain features that existed at early dates in northern Colombia and in Mesoamerica, but not in Ecuador. These traits are fiber-tempering, the design featured in Tick Island Incised, the pan-shaped bowl form, and the practice of decorating widened vessel lips.

Probably in the southern part of Mesoamerica on the Caribbean Coast, sites are yet to be discovered which will date in the second and third millennia before the Christian Era, and in which fiber-tempered pottery with Valdivia-like drag-and-jab decorations will be followed by Ayangue-like decorations. Only small colonies of sites are to be expected, and these will certainly be coastal middens, for this was well before the effective spread of maize agriculture.

Meggers, Evans, and Estrada (1965: 166ff.) note that before 1500 B.C. the Valdivia and Ayangue traditions tend to maintain their identity as they spread to other regions of South and Central America. In the Georgia and Florida complexes that have been described in
the foregoing discussion, this identity is maintained to a remarkable extent. All of the ceramic features of Stalling’s Island are referable either to Valdivia or to the north coast of Colombia where colonies of the Valdivia tradition were already established. In turn, nearly all of the features found in Orange compare directly with Ayangue or with early Mexican traditions that are Ayangue-related. After 1500 B.C. these traditions merge in South America, Mesoamerica, and after 500 B.C. in the Southeastern United States. In the Momil Period ceramics of Colombia, the Machalilla tradition motifs are expressed by dentate-stamp impressions in a striking fashion (Reichel-Dolmatoff, Gerardo y Alicia 1956). The ceramics of the Tchefuncte culture of Louisiana (Ford and Quimby 1945) clearly show the result of the combination of three early Formative traditions.

The Atlantic coastal colonies in Georgia and Florida could only have been established by sea, and the Gulf stream may be the explanation as to why the earliest ceramics are on this coast rather than on the nearer shores of the Gulf of Mexico.

Traits cited which appear in Florida to the exclusion of other parts of the Southeast just before and after the beginning of the Christian Era suggest that contact with cultures in Mesoamerica was still continuing. In addition, I fully realize that many of the peculiar vessel shapes and decorations of the later Weeden Island period lack parallels in other parts of the East, but that similar forms are found to the south.

A second paper in preparation will discuss the Middle and Late Formative features that came into the Mississippi Valley after 1700 B.C. and contributed to the rise of the Hopewellian-related cultures.

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