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THE ORMOND BEACH MOUND, EAST CENTRAL
FLORIDA

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PREFACE

The Ormond Beach mound, in Volusia County, east central Florida, has been known for some time. There is mention of it by LeBaron (1884, p. 771), Small (1929), Stirling, (1935), and Goggin (1952, p. 93). Goggin has designated the site as Vo-75, and his symbol is here used instead of the temporary symbol V-1 used at the time of excavation. The V-1 symbol must be noted, however, because it is the symbol used in establishing provenience for the collections as accessioned in the United States National Museum. In both symbols, of course, the "V" or "Vo" signifies Volusia County.

The Ormond Beach project was originally planned as the first of a series of excavations in a 6-month project to be conducted in Volusia County under Smithsonian Institution sponsorship, with funds from the Federal Emergency Relief Administration (FERA) of Florida, which took over the Federal relief program when the Civil Works Administration (CWA) was discontinued in April 1934. As it turned out, funds proved to be available only for the investigation of the Ormond Beach mound; this was excavated with a limited labor force between April 13 and May 21, 1934. Dr. M. W. Stirling, then director of the Smithsonian Institution area research program in Florida, and chief of the Bureau of American Ethnology, selected the site for investigation. Jesse D. Jennings was the archeologist in charge of the excavations.

Upon completion of the fieldwork at the Ormond Beach site, Mr. Jennings shipped all notes, photographs, plans, and collections to the Smithsonian Institution, where the data were stored in the Bureau of American Ethnology files and the collections were accessioned in the United States National Museum.¹ In 1950 the Ormond mound collections were studied by Gordon R. Willey, then senior anthropologist on the staff of the Bureau of American Ethnology. Subsequently, in 1954-55, Jennings and Willey reviewed the field and laboratory data and prepared the present report. In this they were aided by Marshall T. Newman, associate curator of physical anthropology in the United States National Museum, who studied and described the skeletal material from the mound.

It should be noted that the Ormond Beach report is the last of a series of publications (Stirling, 1935; Willey, 1949 a, 1949 b, 1954)

¹ Catalog numbers range from Nos. 383893 to 383970. The only exceptions in this series are Nos. 383964-383965, which pertain to the "Turtle Mound" rather than to the Ormond Beach mound.

which treat of the archeological projects carried out under the aegis of the Bureau of American Ethnology in Florida with Federal relief funds. The authors of this report realize that it is woefully late in its appearance. The course of Florida archeology has swept around and beyond it in the 20 years or more that have elapsed since the date of the fieldwork. Nevertheless, the obligation to make available the basic factual information of the excavations and the primary analyses of the data is recognized. Such is the purpose of the report.

It is also realized that excavation procedures, observations, and the field record on the Ormond Beach mound were not up to standard. Reasons for this are numerous, but one seems to stand out: we were working with a relief organization and this involved so many complexities that the investigation was seriously hampered at every turn by delays and difficulties in procuring both men and equipment. That any vestige of record exists is a tribute to the sagacity and loyalty of the foreman, Hobart Hughes, of Murphy, N. C., who came fresh from work at the Peachtree mound to assist at Ormond. Although Mr. Hughes prepared no final notes, his observations and aid were at all times a benefit to the excavation supervisor, and much is owed to the loyalty and careful work he inspired in our crew.

Throughout the long and discontinuous operations which have led to the publication of this work we have been aided by Dr. M. W. Stirling, Bureau of American Ethnology, and F. M. Setzler, Dr. W. R. Wedel, and Dr. Clifford Evans, Jr., of the United States National Museum. We also wish to thank E. P. Henderson, Drs. Tucker Abbott, Alexander Wetmore, and Remington Kellogg, of the United States National Museum, for their respective identifications of stone materials, marine shells, and bird and mammal remains. E. G. Schumacher, staff artist of the Bureau of American Ethnology, prepared the ground plans which accompany the report, and Mrs. Natalie Stoddard and Miss Maria von Mering, Peabody Museum, Harvard University, did the final typing of the manuscript. Finally, on behalf of the Smithsonian Institution as well as ourselves, we extend thanks to W. E. French, of Daytona Beach, Fla., who gave permission for the excavation of the mound, which was situated on his property, and to Mrs. Richard Reed and P. D. Gold, also of Daytona Beach, for the many courtesies shown to us.

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THE ENVIRONMENTAL, ARCHEOLOGICAL, AND ETHNOHISTORICAL SETTING

The Ormond Beach mound is located in the southern portion of the Northern St. Johns archeological region. This region, as defined by Goggin (1947; 1952, pp. 15-16, "subarea IIP"), comprises most of the northeastern quarter of the State of Florida plus a small adjacent section of Georgia. The St. Johns River flows northward through the region, turning east and emptying into the Atlantic at Jacksonville. This major drainage and its numerous stream and lake tributaries was the principal concourse of aboriginal occupancy for the region. A somewhat less dense clustering of archeological sites is found along the Atlantic beach and the inland lagoons which lie immediately behind it. The Ormond mound lies on one of these brackish lagoons known as the Halifax River.

The Northern St. Johns region is low-lying country composed of limestones, marls, coquina, and sand deposits. It offered only moderately good soils for maize agriculture, but the St. Johns system with its lakes and the inlets and lagoons of the coast were once rich reservoirs of fish and shellfish for the Indians. The vegetation cover is largely of Temperate Zone type, including pine and cypress as well as oak and other deciduous trees. There are swamps, open savannas, and forests. In general, the region is warm, with only light winter frosts. Goggin (1952) has characterized it as subhumid mesothermal; i. e., an essentially subtropical climate. The low elevation of the Florida peninsula, the alternating swamps and sandy hammocks, and the climatic factors exercise some control over the vegetation, and tend to make for a more varied flora, and a consequently more varied fauna, than would be found in comparable climatic circumstances where soils and other factors were more uniform. The major floral complexes are, it might be noticed, those characteristic of most of the

temperate southeast rather than those of the extreme tropical tip of the peninsula.

Faunal food resources of the region are reflected in remains in the Ormond site. From scrap bone and waste shell recovered from cooking pits (these pits were later used for food waste), the following food animals were identified: 1 turtle, 9 fish, 100 birds, 8 deer (*Odocoileus virginianus*), 2 opossums (*Didelphis virginiana*), 5 bottlenose porpoises (*Tursiops truncatus*). The following shellfish have been identified from both the pits and the fill of the Ormond Beach site: *Busycon carica* Gmelin, *B. perversum* Linné, *Arca incongrua* Say, *Ostrea virginica* Gmelin, *Donax variabilis* Say, *Tagelus gibbus* Spengler, *Mercenaria mercenaria* Linné, Unionidae, *Neverita duplicata* Say.

Goggin (1952, pp. 38-74) has summarized the prehistory and early history of the region by means of five major cultural traditions which are expressed chronologically in six periods.

The first of these traditions, and one which is represented by very scanty remains, is the Paleo-Indian. It refers to those early hunting and gathering populations that occupied North America in remote times and whose evidences are best known from areas like the High Plains and the Great Basin. There seems little doubt, however, that the Eastern United States was also inhabited at the same time, and Goggin lists a number of Florida finds which may, possibly, belong to this epoch.

The first substantial evidence for occupation in the northern St. Johns region is attributed to the Archaic tradition and is represented by two periods in the cultural chronology: the Mt. Taylor and the Orange. The Archaic sites of both periods are the great shell mounds along the St. Johns River. The Mt. Taylor period is characterized by large- and medium-sized stemmed triangular points of chipped stone, *Busycon* shell gouges, and bone awls, pins, and projectile points. The succeeding Orange period is an obvious continuation of the Archaic tradition plus the addition of fiber-tempered pottery and certain additions to and modifications of nonceramic artifacts. There are both general and specific relationships between these Archaic periods of the Northern St. Johns region and other Archaic manifestations of the Southeastern United States.

These periods of the Archaic tradition are, in turn, followed by the St. Johns I and II periods of the St. Johns tradition. Goggin (1952, p. 68) defines the St. Johns tradition as—

. . . a pottery using, mound building, semi-sedentary complex probably with agriculture. . . . The pottery is simple and seems to have been relatively unimportant, plain and check stamped ware being dominant. Crude clay effigies of plant products and animals for funeral offerings, and other unusual artifacts such as flanged clay spools and funnel-like objects, are found. Smoking pipes of clay and stone now appear, and stone celts of foreign materials were imported.

As such, the St. Johns tradition marks a break with the presumed non-agricultural past. The pottery of the St. Johns genre is soft, chalky temperless ware as opposed to the fiber-tempered pottery of the late Archaic. Finally, the significant element of the burial mound is a part of the St. Johns tradition while it is lacking in the Archaic. As elsewhere in the Southeast and the Eastern United States, this shift from the Archaic to the succeeding cultures is marked by both continuity and change. The culture of the St. Johns I period cannot be derived wholly from the Archaic; but, nevertheless, there are certain traits which carry over and persist. For example, the incised decorative motifs of Orange period pottery continue in the incised pottery designs of the St. Johns I period. The new traits, such as the burial mound idea and a number of pottery trade wares, appear to be derived from the Florida Gulf region to the west. The St. Johns tradition lasted for many centuries in the Northern St. Johns region. The major chronological divisions, periods I and II, are defined by ceramic changes, chiefly by the appearance of the small-checked stamped type in St. Johns II. Both periods are further subdivided, largely upon the basis of trade sherds which come into the region from the West and the North. The latter one-third of the time span assigned to the St. Johns II period is further characterized by the appearance of early European trade items.

A Spanish-Indian tradition is established from archeological sites which show the fusion of native and Spanish cultures. These sites were fortified posts and missions in which the community plan or organization was essentially that of the invader. The St. Augustine period, which is representative of this tradition, is marked by a type of complicated stamped pottery, San Marcos Stamped. Materials of European manufacture or inspiration are also found in St. Augustine period sites, including ceramics, tools, weapons, ornaments of metal, and glass beads.

The final tradition and period is that of Seminole. These Indians, of diverse origins but largely Georgia Creeks, moved into the Northern St. Johns region in the late 18th century.

An estimated chronology of these events in the Northern St. Johns region is based upon guess, comparisons with other areas of the Southeast, and some historical documentation for the later periods. Goggin (1952, fig. 3) places the close of the Orange period of the Archaic as 400 B. C. St. Johns I is extended from this date up to A. D. 1100. St. Johns II terminates about A. D. 1600. The St. Augustine period is given approximately a century and a half, closing at about 1750 with the arrival of the Seminole.

The first recorded knowledge of the Northern St. Johns country and its native inhabitants comes from the account of Ponce de Leon, who

landed in northeast Florida in 1513. (See Goggin, 1952, pp. 21-30, for a detailed statement of ethnohistory and ethnography.) Subsequent Spanish voyages to Florida were directed, for the most part, to other sections of the peninsula; and it was not until the French Huguenot expeditions of the 1560's that attempts at permanent colonization were made. It is to this brief period of French exploration that we owe some of the best ethnographic accounts of the 16th century Indians of the Northern St. Johns region. The Spanish quickly smashed the French attempt to establish a colony near the mouth of the St. Johns, and from 1565 until 1763 Spain dominated Florida. The Spanish fort and city of St. Augustine dates from this victory over the French. During the 17th century the Spanish established a chain of missions along the northeast coast and across north Florida. These missions were the principal foci for the changes that were remaking Indian life during the above-mentioned St. Augustine period.

At the time of European contact, northern Florida was held by Indians speaking the Timucuan language. As Goggin (1952, p. 28) has rightly pointed out, the culture of these Indians was not the same throughout north Florida, and he has suggested that the term "Eastern Timucua" be applied to those Timucuan-speaking Indians who were living in the Northern St. Johns region. There were a number of tribes among these Eastern Timucuan, including the Saturiwa, the Tacatacuru, the Yui, Icafui, Yufera, Surruque, and Urubia. These tribes were the possessors of the culture of the St. Johns tradition as represented by the sites of the latter part of the St. Johns II period. As the St. Johns tradition showed no great modification from the time of its inception until the European incursions, it is reasonable to suppose that Eastern Timucuan were in the Northern St. Johns region as early as the St. Johns I period (ca. 400 B. C., following Goggin's chronology). Goggin (1952, p. 76) has suggested that Timucuan speech in this territory may go back into Archaic times.

The 16th-century accounts describe the Eastern Timucua as intensive maize agriculturists who supplemented their grain diet with abundant wild plants, game, and fish. Towns were surrounded with wooden stockades. There were both sib organizations and social classes, and chieftainship was well developed. Goggin (1952, p. 30) comments:

Politically the people were grouped together in small towns, each ruled by a minor chief. Several towns formed a confederacy, or what we have called a tribe, and these were controlled by an important chief, such as Saturiba or Utina. Apparently there was considerable fluctuation in the relationships of the confederacies with each other, all striving to be the dominant group.

THE SITE

DESCRIPTION OF THE SITE AND ENVIRONS

The Ormond Beach mound was situated inside the corporate limits of Ormond Beach, Fla., near Halifax Drive, alongside the Halifax River, 1.3 miles south of Ormond bridge. The property was owned (in 1934) by W. E. French. Mr. French's permission to excavate was contingent upon our agreement to distribute waste earth in the low spots over the entire property to level it for a building site. The mound was obliterated and the land leveled to the satisfaction of the owner, even though some data from below the base of the mound were not recovered.

For archeological interpretations, the relationship of the site to the immediate terrain is of importance. The mound was a small sand tumulus about 60 feet in diameter by (an original maximum of) 6 feet in height, on the peninsula side, i. e., left or east bank, of the Halifax River. Modern dredging had increased the distance from site to river from an estimated 10 yards to approximately 100 yards; Halifax Avenue itself runs between the present riverbank and the site on the artificial fill resultant from the dredging. Construction of Halifax Drive had indeed destroyed a small part of the extreme west edge of the mound.

When excavation began, the mound was far from virgin. Its surface was pocked and pitted with amateur digging which had partially flattened and increased its area (from, it is believed, a smaller but higher original domed or conical structure). One deep crater or pit on the summit surrounded by a ring of spoil dirt, a weed-choked trench cut in from the south side, and a dense growth of scrub oak, palm, and a large pine stump (pl. 1) gave ominous and accurate threat that the materials in the fill would at worst be rotten; at best, broken and shifted, and that digging would be tedious. At this stage, the mound looked higher than it eventually proved to be because road-work had, on two sides (west and south), cut away about a 2-foot depth of the sandy hammock upon which the mound had been built (pl. 2, *a*). Later, when the site was cleared, a broad and quite shallow moatlike trench was seen to encircle the mound on the east and north. The moat is presumed to have been the borrow source for the sand in the mound fill.

The site had served essentially as a burial ground although it was underlain by midden refuse. On the basis of field guesswork, at least 66 individuals were observed. Because of the fast and complete drainage of the sandy fill, some skeletal material remained reasonably solid, but was broken, crushed, and scattered through the combined

effects of the interlaced myriads of pine and palmetto roots, the churning of the upper layers by the pot hunters (and a few rodents), and the carelessness of the aborigines themselves. Generally, however, all bone except skulls had become soft and spongy, possibly because of the humic acid content of the seeping surface waters.

EXPLORATION AND MOUND FEATURES

Following the clearing of vegetation from the mound surface, exploration began with the cutting of an east-west trench along the south edge of the site. The mapping control system was the grid (see figs. 1, 2, 3), oriented north-south, and laid out in 5-foot intervals. The first trench lay between lines 2½ and 10, extending from line L5 to R4, a distance of 45 feet. This exploratory cut permitted

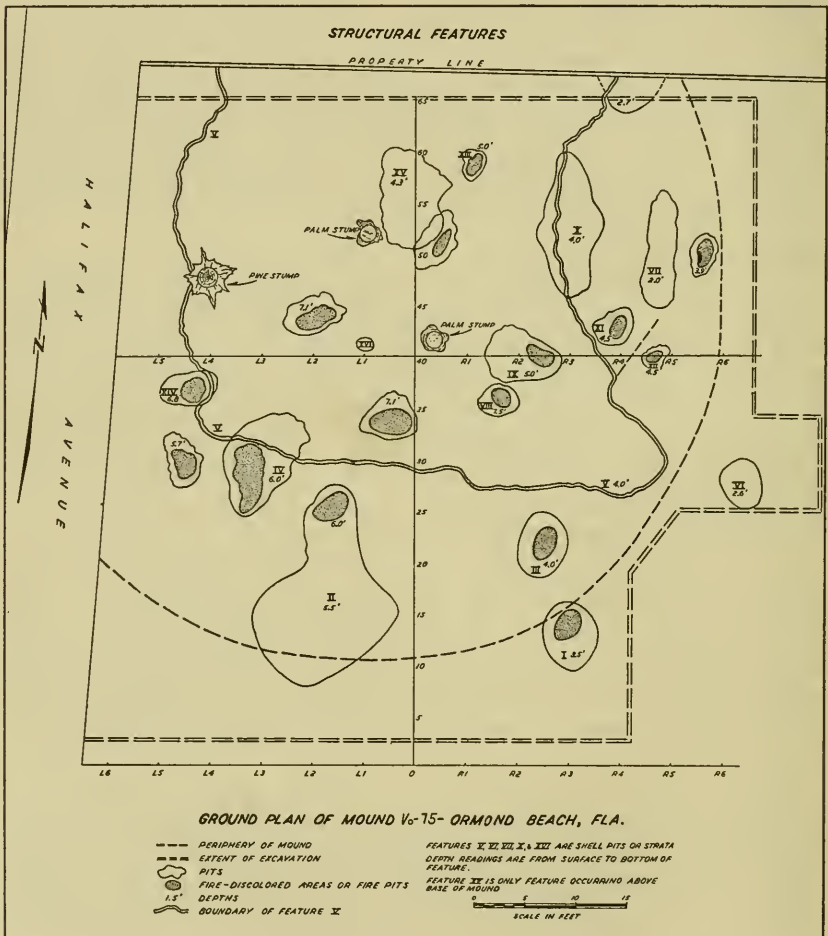


FIGURE 1.—Ground plan of features in Ormond Beach mound.

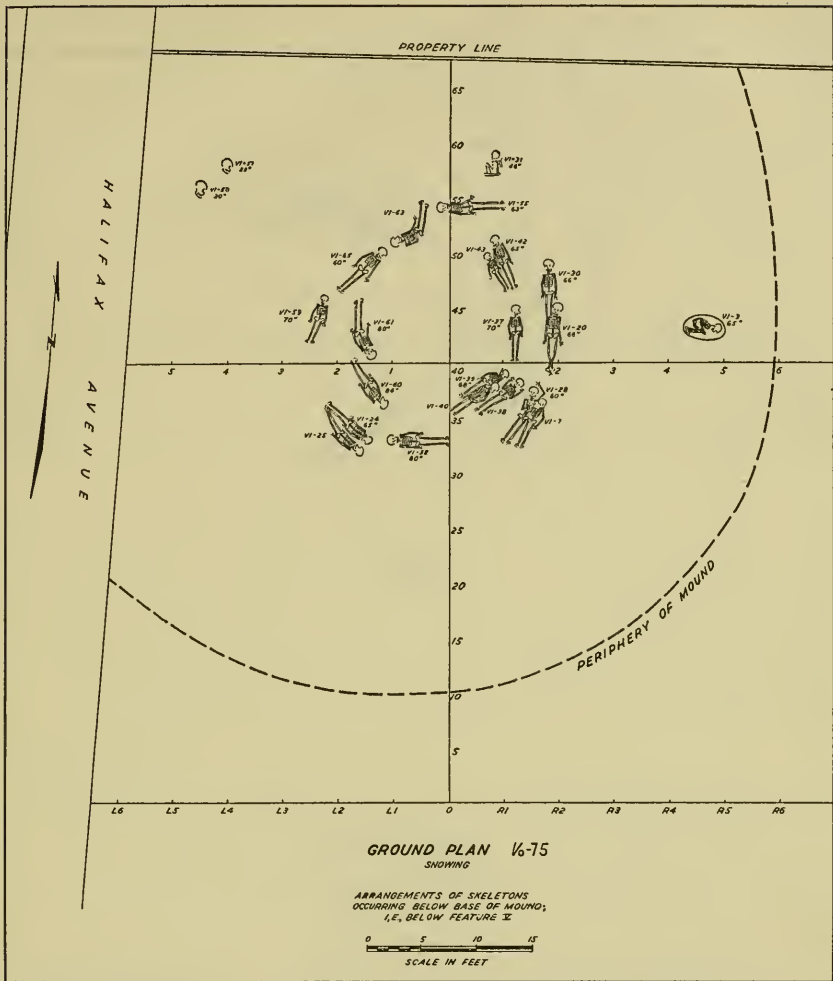


FIGURE 2.—Ground plan of burial arrangements below mound level, Ormond Beach. Burial or skeleton number preceded by prefix "V1." Depth below mound surface, in inches, is noted by each burial.

determination, by cross section, of the exact extent of the pot hunter's trench on the south; at the same time we learned the local problems of soil texture, color, and stability while the first steps in the training of the labor crew in archeological digging began.

This first cut, soon widened by 5 feet to the north, was informative in many ways. Discovery of the low, north-south trending sand ridge (locally called a "hammock") on which the mound was erected, gave notice that there was less artificial structural mound fill to deal with than had been anticipated. The loose, free-running fill sand slumped and slid and sloughed off as the trench walls dried out in the daily

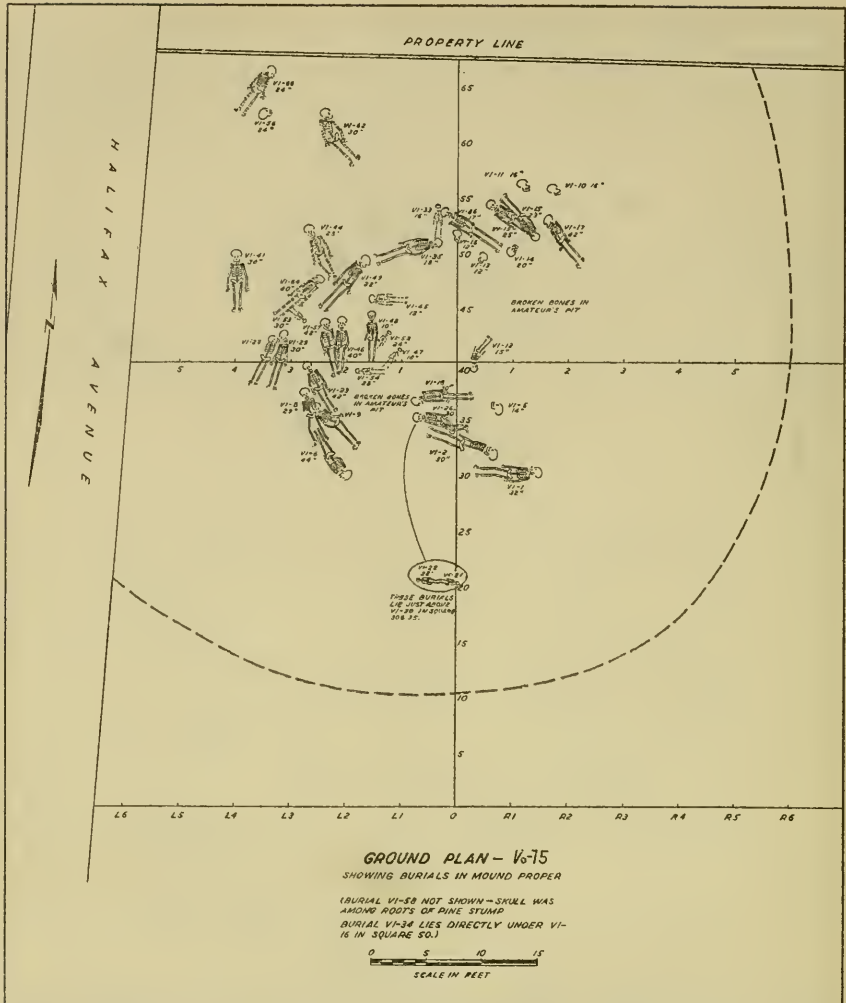


FIGURE 3.—Ground plan of burial arrangements in mound proper, Ormond Beach. Burial or skeleton number preceded by "V1." Depth below mound surface, in inches, is noted by each burial.

greater heat. A few days' work convinced us that the clean, neat trenches and sleek cross sections so desirable for good photographic record would not be possible at Ormond. And a network of oak and palm roots laced through the sand to make the digging difficult from the first.

Excavation procedure, after the approach cut, was the simple and obvious one. After the brief period of training and orientation for the crew, the north side of the approach trench served as a working face and the fill from top to bottom was cut rapidly away in thin slices with shovels. As a concession to the unstable sandfill, the

working face was kept on about a 60° to 70° slope, rather than near vertical. This technique prevailed until perhaps one-third of the site was cut away to a depth some 3½ feet below mound base. In fact, near-vertical cutting continued to line 30; here a layer of very dark humus-laden soil containing coquina clamshell (feature V), which emphasized the two-phase nature of the site, was encountered. The source of this dark soil is uncertain; it may well have been river-bank or river-bottom muck, with heavy sand content. The coquina came from ocean waters.

By the time feature V was understood to have wide extent (see fig. 1) and crucial importance in this site, the working face was nearly 10 feet high at the highest point. A two-level or step-cutting technique was adopted at this time. The mound proper—i. e., all fill *above* the humus-coquina blanket (feature V)—was removed for a distance of 5 or 10 feet. Then the basalar material was to have been cut away. This, at least in theory, was the procedure. Actually the jumble of 40 mound-fill skeletons, and the problems of determining intrusions and other relationships, led to an early abandonment of any tidy preconceived plan of excavation. And in the final phases of the project, even less attention was paid to the niceties. As soon as the horizontal location relationship was determined and recorded for each specimen or structure, it was identified as being referable to the "below-mound" level or to the mound fill proper, and cleaned or snatched up.

Before a week of digging had passed, the major structural features and sequences of the site had appeared and were vaguely understood (see pl. 5). As these finally worked out, we recognize as first and earliest, the domed north-south hammock of clean, light tan sand, which was almost white when dry. Upon this unstained and undisturbed clean hammock sand lay an irregular 6- to 12-inch stratum of light ash-gray sand. This was an old soil, its color derived from a high humus content. The ash-gray sand was interpreted as a stable original ground surface antedating any human use of the spot. (For the relationships here discussed, see fig. 4.)

From this old surface of sand-humus mixture, many rather deep, slope-sided round or elliptical pits had been dug (pl. 5, *b*). There were 15 of these pits, 10 of which are designated herein as features I, II, III, IV, VIII, IX, XI, XII, XIII, and XIV. Five additional pits, comparable in all respects, were not assigned numbers, but show in figure 1 in squares 25L4, 30, 40L1, 45R6, 50R1. (The latter five pits were discovered, mapped hastily, and emptied during the frantic last day of project operation; in fact, the project ended before exploration of the hammock deposits was completed.) The pits were usually less than 36 inches deep from the level of origin. (The depths on

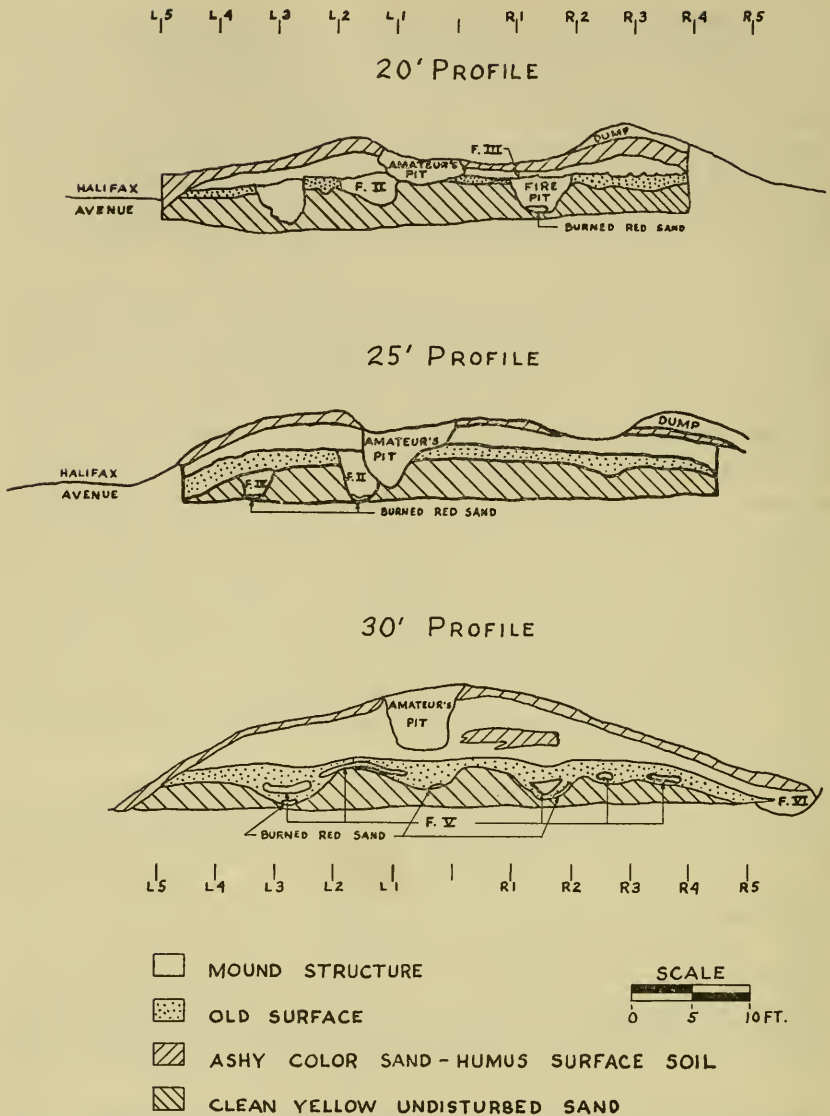


FIGURE 4.—Typical cross sections, Ormond Beach mound. Profiles along lines 20, 25, and 30. All viewed from south.

figures 1, 2, and 3 were recorded from the mound surface at the time of the reading.) The pits, occurring at random, vary in diameter from 3 to 6 feet at the old forest-floor surface of origin and from 1 to 3 feet at the bottom. Each pit was filled with a very rich black earth, bits of charcoal, charred or even calcined shells, sherds, and bone scrap. The pit sides, near the constricted bottoms, were marked by a zone of fire-reddened sand, which had been subjected to quite intense

heat. In the pit floor or bottom, with perhaps two exceptions, was a hard, stony formation composed of ash and bits of shell, cemented together with heat-fused sand; these lumps were usually faintly red in color. Many of the sherds, as well as the animal bone and shell, used in analyses came from these pits. The data justify the identification of these features as aboriginal cooking pits or ovens, perhaps used once or twice, after which they served as midden disposal pits. In two or three cases (feature XI is an example), burials were subsequently laid down where a pit had once stood open, but no burial had been laid into any refuse pit. No functional or structural connection existed between the pit features and the burials of the "below-mound" level. It is believed that none of the pits stood open at the time of the mass interment.

Upon the old ground surface of the slightly elevated hammock, after the entire submound area had served as a cooking, and presumably a dwelling, site, a series of extended, single, double, and triple burials—totaling 26 individuals, all but one adults—were placed on the ground. They were arranged head to toe in a circle nearly 25 feet in diameter (fig. 2). Over these burials a 6-inch-thick blanket of coquinalike, consolidated clamshells and dark soil (feature V) was placed (pls. 4; 5, *b*). Evidence, strong but not conclusive, was that the score of burials represented a mass interment. This is the conclusion reached during the excavation period; a careful restudy of the notes and drawings tends to confirm this view, although the record is somewhat puzzling and difficult to interpret on this score. There was also evidence that the site stood unprotected for quite a time after the mass burial ceremony. This evidence consisted of the broken and shifted condition of some of the burials (although six or more feet of mound fill lay above these "below-mound" skeletons), suggesting that they were disturbed before the mound proper was erected. Verification of this was seen in a clearly identifiable thin accumulation of forest soil or humus above the coquina clam layer. The notes reveal that there was considerable preoccupation, during excavation, with this matter of a time lapse between the interment of the first group and the raising of the mound, and long vacillation by the excavator in interpretation. His final opinion, appearing in a preliminary report done immediately after the project closed, was that there was a lapse of time between the deposition of the coquina layer and the construction of the mound itself. Such would mean that burial consisted of placing the dead upon a prepared spot or low platform with no immediate covering other than a mantle of earth and shells. At an appreciably later time a sand burial mound was constructed over the spot.

In addition to the cooking pits, there were four features (VI, VII,

X, XIV) below the mound base and one in the mound proper (feature XV) described as shell beds or layers (see fig. 1). These features are local, but thick and extensive, deposits of nothing but unburned shell.

From some features, but oftener at random in the mound fill or in random little pits, 12 to 18 inches beneath the premound surface, several nearly complete pottery vessels were recovered. One such vessel (St. Johns Plain, globular bowl, pl. 7, *a*) came from feature II.

The final phase of activity at the site was the building of a sand burial mound. The sand of this structure occasionally had the faint gray cast of forest-humus-stained surface sand, but was chiefly clean tan subsurface sand. The notes reveal that the humus content of the fill sand was heaviest near the mound center—i. e., about line 45. This is assumed to demonstrate that construction began in the central area where the borrowed surface soil was used. The remainder of the mound was then built of the lower cleaner and unstained sand from the borrow area.

Within the mound proper were some 40 burials. There were scattered human bones in the spoil dirt from amateur pits; these were neither saved nor numbered. An estimated eight or more individuals are represented by these scattered bones. In rare cases it was suspected that burials lay in grave pits let down from the surface, but evidence of these grave pits was never conclusive. Many other bodies, however, had clearly been laid upon mound fill during construction and simply covered over with more fill.

Random burials over a short period of time, while the mound gradually grew in size, would seem to be the best explanation of the mound building process, except for the semicircle of skeletons lying in the north half of the mound (see fig. 3); but even here the flat plan is deceiving because the half circle of skeletons was not upon a common level. Adjacent burials were found at elevations as much as 20 inches apart—e. g., Nos. 15 and 19 versus No. 17. This³⁸ possibly can be explained as mass burial upon the uneven surface of the first few heaps of fill dirt. Whether intentional or not, the circular pattern is certainly as plain in the mound burials as in those beneath the mound. Also, the mass-burial idea gets some support from our observation that the central portion of the mound was built of markedly darker sand, representing surface scrapings. A continuous, short-lived building spurt to accommodate a mass burial of several dead in a concentric pattern may, indeed, have been the nucleus or first stage of the mound construction, while the remainder of the mound was added later at a more leisurely rate as occasional death rites occurred.

Throughout the mound fill, and particularly in the central darker portion, random sherds were common. Over 250 sherds were recovered.

In summary, despite the many details missing from the record, we can confidently sketch the major events in a sequence as follows:

(1) The Ormond site, upon a slight elevation near the river bank, was first a village or a feast site. Village debris and cooking pits mark this period.

(2) Then, without perceptible time lag, 20 or more adults were placed head to toe in two concentric circles and accorded a mass burial under an extensive blanket of humus and coquina shells.

(3) For some time after this ceremony there was exposure or casual reoccupancy of the spot, with a soil zone developing on this surface.

(4) At length, another mass burial called for the erection of a low mound of earth.

(5) Intermittently thereafter the mound was the scene of burials; before it was abandoned the mound grew to be 6 feet or more high, and 50 to 60 feet in diameter.

BURIALS

Figures 2 and 3 adequately record the positions of all burials encountered. Of the 66 so presented, only 1 was definitely in a flexed position; this flexed body is believed to antedate both the first mass burial and mound construction. Most interments (sometimes multiple) appear to have been primary—made in the flesh—upon the then-current surface and covered with sand or shell. There were, however, several loose single skulls unassociated with any other bones. There may have been a few burials made in shallow pits dug into the mound proper; the notes, in one or two cases, record this possibility, but in no case could a pit, intrusive from a higher level, be observed clearly enough to permit positive statement on the point. The condition of the bones was usually poor. Roots had often destroyed facial bones, particularly in the mound proper. Long bones were often soft and fragile. Only the cranial bones remained solid.

Of major interest in the burial complex is the mass burial, with bodies arranged in large concentric circles. This is one of the few documented occurrences of the "burials in a circle" so often reported by amateur diggers. Another burial trait of importance is the paucity of grave furniture. With only two exceptions, the scanty artifact series derived from burials came from submound burials.

Burial locations, burial relationships to each other and to other features, depth from surface, and other location data are best learned from the maps. Table 1 summarizes only those burial data not otherwise available.

In Hrdlička (1940, pp. 325, 331, 361, 367) measurements of 16 female and 9 male crania are given; the United States National Museum catalog numbers referred to by Hrdlička have been added to table 1.

TABLE 1.—*Burials.*
BELOW-MOUND BURIALS

Burial No.	Position	Sex		Condition 1	Remarks (grave goods) 2	USNM No.
		As marked on skull	As marked on skeleton			
3	Flexed.....	♂		Fair.....	Adult—lay in pit intrusive from original ground surface. Probably antedates mass burials; only skull saved. Broken calvaria and jaw.	372.603
7	Extended, supine.....			Poor.....	Nos. 7 and 25 constituted a multiple burial. The tibia of No. 7 showed pathology. No other bones saved.	372.606
20	do.....	♂		Fair.....	Coquina rubbing stone associated (pl. 12, e).	372.618
24	do.....	♂		do.....	Fragmentary calvaria and jaw.	372.620
25	do.....	♀?		Poor.....	Warped and broken calvaria and jaw. Nos. 24 and 25 were a multiple burial.	372.621
28	do.....	♀		Fair.....	Calva and jaw. Longheaded.	372.623
30	do.....			Poor.....	Buried with No. 7. Unrestorable skull and jaw. Bone awl with No. 28 (pl. 11, h).	372.625
31	Flexed.....			Poor*.....	Only scraps.....	372.626
32	Extended, supine.....	♀		Fair.....	Broken calvaria and jaw.	372.629
37	do.....	♀		Fair.....	Warped and broken cranium. Shell plummet at right shoulder (pl. 11, b).	372.630
38	do.....	♀		do.....	Nos. 38, 39, and 40 were a multiple burial.	372.631
39	do.....	♀		Poor.....	Skull scraps of 2 individuals, a ♂ and a ♀. Only 3 fragmentary bones.	372.632
40	do.....	♀?		do.....	Only clavicles and hand bones; skull scraps	372.632
42	do.....	♀		do.....	Nos. 42 and 43, adult and preadult, multiple burial.	372.634
43	do.....		Child, 4-6.....	do.....	Warped and unrestorable skull and jaw (adult).	372.635
50	?.....			do.....	Skull only observed.....	372.640
51	?.....			(?) Fair.....	Incomplete cranium.....	372.643
55	Extended, supine.....	♂		do.....	Unrestorable calva and jaw	372.644
58	?.....	♂?		Poor.....	Calva and jaw only.....	372.609
59	Extended, supine.....	♂		Fair.....	Broken cranium.....	372.677
60	do.....	♂		Poor.....	Frontal and scraps.....	372.648
61	Extended, supine (legs twisted).....	♂		do.....	Unrestorable and warped skull and jaw. Shell and stone plummets found at throat (pl. 11, a, c).	372.649
62	Extended, supine.....	♂		Fair.....	Cranium. Only skull solid enough to clean. Pottery vessel with burial (St. Johns Plain).	372.650
63	do.....	♀	♂?	Poor.....	Unrestorable warped skull and jaw.....	372.652
65	do.....	♂		do.....	Unrestorable skull and jaw.....	372.653
66	do.....	♂		do.....	Calva and jaw. Only skull solid enough to clean. Pipe with burial (pl. 12, d).	372.653

MOUND BURIALS

1	Extended, supine.	♀	Child	Poor	Calva and jaw, longheaded.	372.601
2	do	♀		Fair	Skull only observed; fragmentary calva and jaw. Unassociated with other bones.	372.602
4	?	♀		Poor	Skull only observed.	372.604
5	Extended, supine.	Adolescent.	Child	Crushed.	Skull only observed. Unassociated with other bones.	
6				Poor	Nos. 6, 8, 9 multiple burial. Fragmentary calva and jaw. The right arm of No. 9 lay under the pelvis of No. 8; the left arm of No. 8 was under the head of No. 9.	372.605
8	do	♀	♀	do	Calva and jaw.	372.607
9	do	♀	♀	Fair	do	372.608
10	?	♂?		(*)	Skull only observed.	
11	?	♂?		Poor	Unrestorable skull.	372.610
12	Supine, twisted.	♀	Child, 6-10.	Fair	Calvaria and jaw.	372.612
13	?	♀	♀	Good.	Calvaria and jaw. Unassociated with other bones.	372.611
14	?	♀	♂	(*)	Skull only observed.	372.613
15	Extended, supine.	♀	♀	Good.	Calvaria and jaw. Nos. 15 and 19 were multiple burials.	372.614
16	?	♀	♀	do	Cranium. Not associated with other bones.	372.615
17	Extended, supine.	♀	♀	do	Calvaria.	372.616
18	do	♀	♂	do	do.	372.617
19	do	♂	♂	Good.	Cranium. Tangled with No. 15.	
21	do	♀		(*)	Nos. 21 and 22 multiple burial (presault).	
22	do	♀		(*)	Unrestorable calva and jaw.	372.619
23	do	♀	♂	Fair	Lay just above Burial 6.	372.622
26	do	♀	♀	do	Calva and jaw. Multiple burial with 29.	
27	do	♀	♀	Poor*	Calva and jaw.	
29	do	♀	♀	Fair	Infant badly deteriorated; not saved.	372.624
31	?	♀	♀	(*)	Nothing saved. Scattered and fragile.	
32	?	♀	♀	(*)	Calvaria and jaw. (Extra jaw).	
33	Extended, supine.	♀	♀	Good.	Calvaria and jaw.	372.627
36	do	♂	♂	Fair	Calvaria and jaw.	372.628
41	do	♀	♀	Poor	Calvaria and jaw.	372.633
44	do	♀	♀	Good.	Broken skull and jaw.	372.636
45	do	♀	♀	do	Only cranium solid enough to clean.	
46	do	♀	♀	do	Only skull solid enough to clean (presault).	372.637
47	do	♀	♀	Fair	Calvaria and jaw. Made multiple burial with 57.	
48	do	♀	♀	do	Only skull solid enough to clean (presault).	372.638
49	do	♂	♂	Fair	Calvaria and jaw.	372.639
52	do	♂	♂	Good.	Calvaria and jaw. Pathology, right tibia.	372.641
53	do	♂	♂	do	Cranium. Only skull solid enough to clean (presault).	
54	do	♂	♂?	(*)	Only skull solid enough to clean (presault).	372.642
57	do	♂	♂	Poor	Posterior calvaria and jaw. Only skull solid enough to clean (presault).	
58	?	♀	♀	Good.	Cranium. Multiple burial with 46.	372.645
64	Extended, supine.	♀	♀	Poor	Fragmentary calva and jaw.	372.646
				do	Fragmentary calva and jaw. Only skull solid enough to clean.	372.651

* Where skull and skeleton are present, judgment of "poor," "fair," or "good" is made on a compromise basis. Asterisk indicates bones were very fragmentary and were discarded in the field.

♀ Calva indicates skull vault only; calvaria, skull vault and base minus face and calvarium, skull with face but minus mandible; cranium, skull with face and mandible.

DISTRIBUTION AND CHRONOLOGICAL SIGNIFICANCE OF THE
ARTIFACTS IN THE SITE

The 735 pottery specimens from the Ormond mound, including both restorable vessels and sherds, are classified into the following types:

St. Johns Plain.....	667
St. Johns Simple Stamped.....	23
St. Johns Check Stamped.....	1
Dunns Creek Red.....	12
Little Manatee Shell Stamped.....	1
Cord Marked (soft paste).....	4
Indeterminate Stamped (soft paste).....	1
Pasco Plain.....	1
Pasco Simple Stamped.....	1
Deptford Bold Check Stamped.....	5
Orange Incised.....	1
Residual Plain.....	17
Unclassified Incised.....	1
Total.....	735

There are three principal provenience categories into which these pottery specimens may be assigned: the "below-mound zone," including the cooking and refuse pits in the old surface and the sherds found in the black coquina stratum; the "mound proper," including the body of the mound; and, finally, those proveniences where placement as to stratigraphic position in the mound is uncertain. In all, there are 59 small ceramic provenience units cataloged in the Ormond Beach mound collections in the United States National Museum. Twenty-one of these units belong to the "below-mound zone," and these units total 225 pottery specimens. Twenty-seven units are grouped together in the "mound proper," and these combined total 284 specimens. The remaining units of uncertain stratigraphic assignment number 11 and contain 226 pottery specimens.

The typological breakdowns by these three major categories are as follows:

	<i>Number of speci- mens</i>
Below-mound zone:	
St. Johns Plain.....	206
St. Johns Simple Stamped.....	3
Dunns Creek Red.....	10
Indeterminate Stamped (soft paste).....	1
Pasco Plain.....	1
Unclassified Incised.....	1
Deptford Bold Check Stamped.....	2
Residual Plain.....	1
Total.....	225

	<i>Number of spec- imens</i>
<i>Mound proper:</i>	
St. Johns Plain.....	270
St. Johns Simple Stamped.....	6
Little Manatee Shell Stamped.....	1
St. Johns Check Stamped.....	1
Cord Marked (soft paste).....	1
Pasco Simple Stamped.....	1
Residual Plain.....	4
<hr/>	
Total.....	284
<i>Uncertain stratigraphic position:</i>	
St. Johns Plain.....	191
St. Johns Simple Stamped.....	14
Dunns Creek Red.....	2
Cord Marked (soft paste).....	3
Deptford Bold Check Stamped.....	3
Orange Incised.....	1
Residual Plain.....	12
<hr/>	
Total.....	226

The principal differences between the pottery lot from the below-mound provenience category and that from the body of the mound proper are the presences of the types Dunns Creek Red and Deptford Bold Check Stamped in the first group, their absence in the second group, and, conversely, the presence of Little Manatee Shell Stamped and St. Johns Check Stamped in the second group. These particular types have a chronological significance elsewhere in Florida, and their stratigraphic relationships in the Ormond mound tend to support the inference, made during the excavation, that there is an appreciable time difference between the original occupation of the site and the first burials as opposed to the construction of the mound proper and the second mass of burials. Goggin (1952, p. 102) has noted that while Dunns Creek Red is found in both the St. Johns I and St. Johns II periods, it is more common on the earlier horizon. Deptford Bold Check Stamped is a ceramic type that is at home on the Georgia coast, and is also found in significant amounts on the northwest Florida coast (Willey, 1949 b, p. 357). Its general chronological position in the lower southeast is early, following immediately after the fiber-tempered wares. More specifically, it is pre-Santa Rosa-Swift Creek in northwest Florida (Willey, 1949 b) and, by this, antedates the first clearly recognizable Hopewellian influences in Florida. Along the St. Johns River, Goggin (1952, p. 105) assigns it to a very early St. Johns I time interval (St. Johns Ia, early). The presence of these two Deptford Bold Check Stamped sherds in the below-mound zone, together with three more fragments of the same type of uncertain

stratigraphic position, indicates a relatively early occupation of the Ormond Beach site. The single fiber-tempered sherd of undesignated provenience, Orange Incised, substantiates this. This is not to say that the basal occupation of Ormond is St. Johns Ia, early, or Orange period; but it does indicate a possible retention of minor percentages of these older types.

Opposed to the earlier pottery types are the single occurrences of St. Johns Check Stamped¹ and Little Manatee Shell Stamped in the mound proper. St. Johns Check Stamped is the marker type for the St. Johns II period (Goggin, 1952, p. 104), and Little Manatee Shell Stamped dates from about the same time (Goggin, 1952, p. 109; Willey 1949 b, p. 444). Obviously, these two sherds do not place the Ormond Beach mound as St. Johns II period; but, like the few early sherds in the below-mound collections, they provide a bracketing date.

The bulk of the Ormond pottery, from both upper and lower stratigraphic zones, is of the type St. Johns Plain. This type characterizes both St. Johns I and II periods (Goggin, 1952, pp. 101-102), although there are certain vessel form changes within this chronological span. The presence of necked or collared jar forms (pl. 8, *f-h, j*) suggests period II rather than period I. Yet the near absence of the type St. Johns Check Stamped makes it difficult to place any part of the Ormond site as fully St. Johns II. The type we have called St. Johns Simple Stamped does not help us much in resolving our dating problem. As reviewed under the pottery descriptions, simple-stamped surfacing on soft, St. Johns type paste is not a reliable period marker. Although such surface treatment has been reported for the St. Johns IIb and IIc periods in some localities (Goggin, 1952, p. 105), it is also noted in St. Johns Ia contexts.

In summing up the relative dating of the Ormond Beach site we can, first, consider it as falling within the time span of the St. Johns periods. Almost certainly this span can be shortened at the top, as there is no substantial evidence of early European contact at the site; and a complement of St. Johns Check Stamped, the reliable horizon marker for the St. Johns II period, is lacking. Thus, the essential occupation of both the premound and mound levels is most likely to have been St. Johns I. The few early sherds in the below-mound zone and the few late sherds in the mound proper suggest a use of the site ranging throughout that entire period (estimated at 400 B. C. to A. D. 1100, Goggin, 1952, p. 36 and fig. 3). Quite possibly this use or occupation was an intermittent one.

¹ Goggin (1952, p. 93) dates the Ormond Beach mound as of the St. Johns II period. I am inclined to think that he may have been influenced here by 2 provenience lots of sherds of the St. Johns Check Stamped type. These 2 lots (catalog Nos. 383964 and 383965), although within the Ormond Beach number series, and stored with them in the same trays, are listed as "Turtle Mound" and apparently came from the large shell mound near New Smyrna, south from Ormond.

Although only one pottery vessel, a St. Johns Plain, incurving rim bowl, was found with a burial (No. 62), several of the nonceramic artifacts from the Ormond site were associated with burials. With only two exceptions, these associations were with burials from the below-mound, or pre-mound, zone. Thus, we have in the same general context—the mass burial on the old ground surface—the following ornaments and implements: the flared-mouth pottery elbow pipe, shell and stone plummets, a coquina hone, and a bone awl. The two artifacts from burial associations in the body of the mound proper are the worked deer vertebra and the skull of a green heron. Without immediate burial associations were several sheets of mica and the point of a bone dagger. These objects belong to the below-mound zone. Loose in the body of the mound were three chipped stone projectile points, a socketed bone point, a rubbing stone, a piece of worked pumice, a fragment of a stone celt, and some shell picks and chisels. Five iron fragments came from an old looter's pit, and are, clearly, late intrusions. A single fragment of European crockery is without provenience.

None of the above-listed aboriginal artifacts is of significance in dating the Ormond Beach mound with greater definitiveness than we have already attempted. The pipe, the plummets or pendants, and the projectile points all fall within the St. Johns I and II time range.

SKELETAL MATERIAL

The skeletal collection from the Ormond Beach site consists of 50 skulls in all stages of completeness and preservation, of which 31 are associated with postcranial skeletons or parts thereof. Eighteen of the skulls, 14 with some skeletal parts, came from below the mound; 32 skulls, 17 with skeletons, were excavated from the mound structure. The submound bones are considerably more discolored than those from the mound; indeed they can be quite accurately sorted by color alone. In addition, poor preservation and breakage of bone is more prevalent in the submound bones. Although all the bones are partially mineralized, those from below the mound seem to be more so. We do not know whether these differences are attributable to the surrounding soils and water seepage, to a time factor, or to both.

Of the 50 skulls in the Ormond Beach collection, Hrdlička (1940, pp. 459, 462) considered only 25 (9 males, 16 females) worthy of measuring. Of these, only two males (USNM 372603, 372640) and one female (USNM 372626) are from below the mound. Obviously, then, a metric comparison of the submound versus the mound skulls is not worth while. Yet from inspection we could see no differences between the two groups, and judge them to be samples of the same racial type. Hrdlička's summary tables of the combined submound

and mound means show these small series to fit in closely with other Florida series, although the Ormond Beach males and females are more brachycranial than most, with mean indices of 82.1 and 83.1, respectively. From Hrdlička's measurements and our own observations, we judge the Ormond Beach series to represent the Gulf type of Hrdlička (1940) and Neumann's (1952) Walcolid variety, although in common with other Florida skulls they have higher cranial vaults and more massive facial skeletons. This difference is particularly noticeable in their deep and heavy lower jaws. Hrdlička (1922, p. 87) attributed the massive skulls and skeletons of coastal Florida Indians to a marine diet especially rich in phosphates, which seems likely enough. Further details on the racial anthropology of aboriginal Florida have already been published in summary form (Newman, *in* Willey, 1949 b, pp. 549-553) and need not be repeated here. Although the Ormond Beach series is probably too small to be representative, we are particularly impressed by the massiveness and the very heavy areas for muscle attachments of the male skeletons. In addition, several of the males showed heavy anteroposterior bowing of femoral and tibial shafts. In contrast, the female skeletons are consistently small in size and gracile in long-bone cross section, and make for a strong sexual dichotomy in body mass.

Two of the Ormond Beach skulls are remarkably longheaded, and thus stand out as alien to the rest of the series. These are USNM 372602 from the mound structure and USNM 372621 from below the mound. In the course of cataloging these skulls some 20 years ago, someone (perhaps Hrdlička) caused the catalog card for USNM 372602 to be marked "Indian (Negro?)". If it was Hrdlička, we suspect he reasoned that a longheaded Indian skull had no business being in a late stratum, and that perchance it was Negro. Since only the skull cap without base and face are present, no one can really tell. To us, however, the lateral profile of the vault is longheaded Indian since it lacks the more prominent forehead and the flattened parietal area characteristic of Negroes.

For pathology, the teeth show the extensive wear so characteristic of coastal and riparian Indians, and there is considerable tooth loss through pulp exposure as a result. The right tibia of USNM 372606 shows nodular changes of a pathological nature, and USNM 372639 from the mound structure shows marked periostitis of the right tibia, fibula, and ulna of a possibly syphilitic origin.

There are not even the slightest indications of artificial head flattening in the entire Ormond Beach series. The lack of even the simple and presumably accidental flattening of the occiput suggests that no cradleboards or any other kind of rigid beds were used for infants.

ARTIFACTS

POTTERY

As stated in the foregoing discussion of the distribution of pottery in the Ormond mound, there are 735 specimens in the excavation collections. These include eight partially restorable vessels; the remainder are sherds. By far the greater portion of this pottery belongs to the St. Johns ceramic series, mostly to the type St. Johns Plain. St. Johns is the dominant pottery tradition in eastern Florida. It has a long life span, ranging in time from the close of the Archaic periods (ca. 400 B. C.) to the middle of the 17th century (Goggin, 1952, fig. 3 and pp. 68-70). St. Johns pottery is characterized by a soft buff or gray ware of chalky texture (Griffin, 1945; Rouse, 1951, pp. 221-222; Goggin, 1952, pp. 99-105). It is similar or identical to the ware series described from south Florida as Biscayne (Goggin, 1940; Willey, 1949, pp. 98-99).

In addition to the St. Johns pottery types, there is a scattering of other types in the Ormond mound collection which appear to be attributable to other major Florida ceramic series. This includes a specimen of the Little Manatee series which is closely related to the St. Johns group in ware qualities and which seems to center in west-central Florida, some check-stamped fragments which are reminiscent of the Deptford series, a few cord-marked pieces on soft, St. Johns-like paste, an occasional limestone-tempered sherd of the Pasco series, a fiber-tempered sherd of the Orange series, and some plain grit or sand-tempered pottery.

St. Johns Plain.—There are 667 St. Johns Plain specimens in the Ormond collections. All eight of the restorable vessels belong to this type. The Ormond material conforms closely to previous descriptions. Paste core is gray and surfaces are usually buff although badly fire mottled. Large nodules of brown clay are often embedded in otherwise homogeneous paste. The ware scratches easily at 2.5 (Mohs scale). It averages about 7 mm. in thickness, but vessel walls are bumpy and unevenly smoothed so that thickness varies a great deal. Tooling marks are in frequent evidence on both surfaces. Coiling fractures are seen on many sherds (pl. 8, *e*). Vessel forms include boat-shaped bowls, deep simple bowls, subglobular bowls, jars or globular bowls with short collars, shallow platelike bowls, deep bowls or pots with flared rims, and large bowls with outslanted rims. Rims are usually unmodified, although a few show marginal thickenings.

Approximately 30 sherds of the Ormond mound total of St. Johns Plain have smooth, polished surfaces. Goggin (1952, p. 101) has noted these occasional well-finished examples in his descriptions of St. Johns Plain. The Ormond Beach polished specimens are small subglobular

bowls (pl. 7, *a*), simple bowls with slightly incurved rims (pl. 7, *b-d*), and collared jars (pl. 8, *b-h, j*). Interestingly, several of these show heavy exterior folds or thickenings on the rim. These rim folds and the tendency toward surface polish, when combined with the sub-globular form, suggest the Weeden Island and Papys Bayou series pottery of the Florida gulf coast (Willey, 1949 a, pp. 409 ff. and 442 ff.).

St. Johns Simple Stamped.—Twenty-three of the Ormond sherds have exterior simple stamping. These are fragments of deep bowl or pot forms with unmodified rims (pl. 7). The simple stamping is arranged diagonally to the vertical axis of the vessel, and in all cases it runs up to the edge of the rim. The lands of the stamping are 1 to 2 mms. There is some crisscrossing or overlapping of the stamping. Half a dozen sherds show occasional faint cross lands (pl. 9, *a, e, g*), but these cross lands or crossbars occur so rarely and irregularly and are so widely spaced on (3 or 4 cm. apart) that such sherds can hardly be classified as check stamped.

Griffin and Smith (1949, p. 348) have defined a type, St. Johns Simple Stamped, which they identify as a marker of the St. Johns II period. On the other hand, Goggin (1952, p. 105, footnote, and pl. 1, *H, J*) calls attention to a form of simple stamping on soft St. Johns paste that is found in early St. Johns I contexts. The differences between these two types are not clear, and we cannot identify positively the material from the Ormond mound as belonging to either the early or late variety.

St. Johns Scored.—Griffin and Smith (1949) defined this type as being characterized by exterior surface scorings. These markings are parallel and close spaced and may be straight or wavy. They can be distinguished from simple-stamped impressions in that the technique of wiping, dragging, or scoring the soft surface of the vessel is evident from the result.

We did not classify any of the Ormond Beach pottery as St. Johns Scored, but it is noteworthy that several sherds included in the count as St. Johns Plain do show such scoring marks (pl. 8, *a-c*).

St. Johns Check Stamped.—There is only a single sherd of this type in the Ormond Beach collection. This is a quite typical piece with square checks 3 mm. in diameter and lands which are of equal size (1 mm. wide) on both axes. (See Griffin, 1945; Goggin, 1952, pp. 103-104.)

Dunns Creek Red.—This is the red-slipped or red-filmed type of the St. Johns series. It has been described by Goggin (1948; 1952, p. 102). There are 12 Dunns Creek Red sherds in the Ormond collection. Although the brick-red pigment is not "fugitive" in the sense of being applied after firing of the vessel, it, nevertheless, wears off

easily. Because of this it is possible that the percentage of Dunns Creek Red in the Ormond mound was originally higher than we have tallied it and that a number of specimens have lost their red paint coating through erosion.

This particular collection of red-painted ware shows the pigment on either the exterior or on both the exterior and interior surfaces. Some sherds indicate relatively large (30 cm. in diameter) subglobular bowls; others suggest small (15 cm. in diameter) simple bowls with slightly incurved rims.

Cord Marked.—Four soft paste, St. Johns-like sherds have exterior markings that look somewhat like the impressions of a cord-wrapped paddle (pl. 10, *c, d*). These impressions are badly blurred, however, and it is possible that four fragments are semiobliterated, simple-stamped pieces. Cord marking does occur with St. Johns paste, although it is not common. Goggin (1952, pl. 1, *G*) illustrates such a sherd and places it as early St. Johns I period.

Orange Incised.—This is a fiber-tempered type, a marker of the Archaic horizon, which has been described by Griffin (1945) (see also Goggin, 1952, p. 98). A solitary sherd is in the Ormond collections (pl. 10, *h*). It bears fine, sharp incised lines which compose some sort of a pattern of parallel bands.

Deptford Bold Check Stamped.—There are five sherds of a hard, sandy ware which stand in contrast to the soft paste, temperless St. Johns pottery. The identification of these sherds with Deptford Bold Check Stamped is somewhat doubtful, but they appear to be closer to that type than to any other (Caldwell and Waring, 1939; Willey, 1949 b, p. 357). They bear medium-deep check impressions which are somewhat, although not markedly, linear (pl. 10, *e, f, g*). The individual rectangles measure about 5 by 10 mm. with the lands from 1 to 2 mm. in width. The impressions are too crudely done for either Wakulla Check Stamped (Willey, 1949 b, pp. 437-438) or Gulf Check Stamped (Willey, 1949 b, pp. 387-388). The hard, sand-tempered paste sets these sherds apart from the St. Johns Check Stamped type.

Pasco Plain.—This is a crushed limestone tempered type (Goggin, 1948). There is one sherd from the Ormond mound.

Pasco Simple Stamped.—Another sherd of Pasco paste and temper was in the Ormond collection. This one bore very faint, close-spaced simple stamping.

Little Manatee Shell Stamped.—There is one sherd of this type (pl. 10, *a*). It reveals a fragment of a zoned design in which the outline is executed in incision and the filler elements in shell edge stamping (cf. Willey, 1949 b, p. 444; pl. 38a).

Unclassified Incised.—This sherd bears a deep, broad-lined incised design combined with what appear to be heavy grooves (impressions

or incisions?) (pl. 10, *b*). This could, possibly, be a fragment of a St. Johns Incised vessel; but such an identification is by no means certain (see Griffin, 1945; Goggin, 1952, p. 102).

Indeterminate Stamped.—One sherd, with indistinct stamping or impressions on soft St. Johns paste.

Sand-Tempered Plain.—There are 17 sherds of sand- or fine grit-tempered pottery. Most of these are body fragments. The one rim sherd indicates a large, deep bowl with a slightly incurved rim. These sherds cannot be satisfactorily identified as either Glades Plain or Weeden Island Plain, the characteristic sand-tempered plain wares of south Florida and west Florida, respectively.

IMPLEMENTS AND ORNAMENTS

Pipe.—There is a single pottery smoking pipe made of St. Johns ware (pl. 12, *d*). It is of the elbow-form variety with a slightly flared bowl. The bowl arm measures 3 cm. while the stem arm is 2.5 cm. in length. Diameter of the bowl at the orifice is 4.7 cm. The pipe is undecorated and unpolished.

The pipe was found associated with skeleton 66.

Plummets or pendants.—Two shell plummets or pendants made from conch columellae were found in the mound (pl. 11, *a, b*). These objects are approximately 9 cm. long and expand to a maximum diameter of 2.7 cm. at the center. Both plummets have a knoblike or expanded head at one end. The opposite ends have a slightly smaller nub which is encircled by a single groove, in one case, and a double groove in the other. The knoblike or expanded end of one of the plummets is partially coated with black pitch or asphaltum.

One of these plummets was found at the neck of skeleton 61; the other came from near the right shoulder of skeleton 37.

A third plummet is made of coquinalike limestone (pl. 11, *c*). This one is 7.2 cm. long and flattened in cross section so that at midpoint one diameter measures 3.5 cm. and the other 2 cm. One end of the plummet comes to a smooth-rounded point. The other end is tabular and encircled by a single groove.

This plummet or pendant was found associated with skeleton 61.

Shell chisels.—Two fragmentary sections of worked conch columellae may have been used as chisels (smaller end) or light hammers (blunt, heavy end) (pl. 11, *d, e*).

Shell picks.—There are two of these. One is made of a *Busycon carica* shell. The point of the conch has been sharpened into a pick-like implement, but there are no hafting holes in the body of the shell. The other specimen is made from a *Busycon perversum*. The point is fine and sharp, and there are two rather irregularly shaped holes in the body of the conch that could have been used for hafting.

Stone celt.—There is a section broken from the cutting edge of a gray-green stone celt (diorite or igneous rock). The piece shows careful shaping and smoothing.

Rubbing or abrading stones.—A coquina stone has unsmoothed flat surfaces, but the edges have been used for pounding or grinding. This specimen is 6 cm. in diameter and 1.2 cm. thick. A second artifact, a large flat chunk of coquina, has been used as a hone (pl. 12, *e*). The fragment is 14 by 10 by 2.5 cm. A deep groove extends the full length of one surface.

The hone, together with a bone awl, was found near the left hip of skeleton 7.

Worked pumice stone.—A piece of pumice, irregularly shaped, has been ground on one edge and both faces. The specimen measures 9 by 6 by 2.5 cm.

Sheet mica.—Nine mica sheets, averaging about 6 cm. in diameter, were recovered from an area of clean soil in immediate proximity to a firepit. This firepit was located 80 inches below surface in section 35.

Points.—Three chert projectile points show medium to fine retouch flaking (pl. 12, *a-c*). They range from 7.5 to 6 cm. in length. All have elongated ovate-triangular blade forms. Two have slight shoulders and faintly flared stems. The third specimen has a small nubbin stem and pronounced barbs. One came from mound surface and the other two from the body of the mound.

A socketed bone point was made from a deer ulna (pl. 11, *g*). It is just under 9 cm. in length with a basal diameter of 1.5 cm. The socket extends through from butt to point and still retains traces of black pitch. The blade of the point is smoothed and well sharpened. This point came from the body of the mound.

The tip of a large bone point (or, perhaps, a dagger) similar to the one described above was recovered from feature XIII, a firepit in section 55R2 (pl. 11, *f*). This tip is 6 cm. long.

Bone awl.—A bone awl was found with skeleton 28 in section 30R2. This artifact was made from a large splinter of deer bone (pl. 11, *h*). It is 10 cm. long and 1 cm. wide. The butt is broken and unworked. The point is broad, flat, and well smoothed and these smoothed edges and surfaces continue for 5 cm. up the shaft of the tool.

Worked vertebra.—A worked vertebra of a deer (?) was found with skeleton 2 in section 30R2 (pl. 11, *i*). Both the articular surfaces and all of the sides of the bone have been ground off. The diameter of the specimen is 4.5 cm., the thickness 4 cm.

European pottery.—A single sherd of reddish, wheel-made pottery (pl. 11, *j*) was found in a provenience lot described simply as "section 25." All other specimens in this lot were aboriginal ceramics

or artifacts. The exterior surface of this piece of crockery is covered with a mottled yellow-white glaze. There is a decoration in low relief consisting of a series of lines radiating out from a circular center.

Iron.—Five rusted-iron fragments came from the spoil dirt of an old pit in the vicinity of section 35L2. These appear to be fragments of tool blades and a bolt or section of a rod. It seems likely that they are late intrusive objects.

Bird skull.—Next to the left wrist of skeleton 23, in section 35L2, was a bird skull with bill attached. It appeared to have been purposely placed with the burial. The bird has been identified as *Butorides virescens* or a Little Green Heron.

SUMMARY AND CONCLUSIONS

The Ormond Beach mound (Vo-75) is a burial tumulus constructed of sand. It is located on the east side of the Halifax River in Volusia County, east central Florida. The mound was originally about 6 feet in height, dome shaped or conical, circular in outline, and approximately 60 feet in diameter. It stood on and was surrounded by a small village area. Goggin (1952, p. 93) records such a village midden as site Vo-76. The locale was, obviously, a favorable one for fishing and shellfishing in past times. Such food remains, along with animal and bird bones, were found in and under the mound.

The history of the mound site may be recapitulated in two major occupational or constructional phases. The first phase is marked by a village refuse and cooking area which was situated upon a slight natural rise. A number of cooking and garbage pits are associated with this occupation. Immediately over this village debris 20 or more adult burials were arranged in extended, on-the-back-position, head-to-toe, in two concentric circles. A few artifacts, such as shell or stone plummets or pendants, a pottery elbow pipe, miscellaneous tools, and a pottery bowl, were placed with the burials. Although it appears from their arrangement that these burials were a mass interment, the artifacts found with them were placed singly with individual burials and not as a mass offering. A thin but extensive layer of black earth and clamshells was placed over all of these burials. Subsequently, the shell in this covering tended to consolidate into a coquinalike substance.

The second occupation-constructional phase is represented by the body of the sand mound proper. Apparently this construction did not immediately follow the earlier mass burial, but an unknown period of years was allowed to elapse, during which time some of the burials under the black earth and shell mantle suffered disturbance. Upon construction of the body of the mound proper, another mass-burial ceremony must have been held, and, again, the extended bodies

were placed in a circular, head-to-toe fashion. Subsequently, other burials were made in and upon the mound with the result of a gradual increase in the bulk and height of the structure. Over 40 individuals, including both adults and children, were buried in the mound proper.

Although an extended, on-the-back position was the most common, some burials appear to have been no more than single skulls; and below mound base, quite possibly antedating the first mass burial, was a primary flexed interment. Most of the extended burials appear to have been primary, but the interpretation of mass burial suggests that these individuals had, perhaps, been stored or kept as cadavers for some time previous to their placement in the ground.

An examination of 50 of the Ormond skulls, together with some of the postcranial skeletons, reveals no noticeable differences between the earlier, or below-mound, phase of site occupation and the mound proper; however, the limited number of crania from the lower level that were suitable for study renders this judgment inconclusive. In general (with two exceptions), the Ormond skulls are brachycranic with high vaults and rugged faces. The males give evidence of heavy musculature. As a whole, the group fits into Hrdlička's (1940) "Gulf" type or into Neumann's "Walcolid." None of the skulls showed the fronto-occipital head flattening that is found along the northwest coast of Florida on what are probably contemporaneous (Weeden Island period) skulls.

The bulk of the Ormond pottery from both below-mound and mound-proper levels belongs to the St. Johns tradition. Most of it, including all of the restorable vessels, is of the type St. Johns Plain. The presence of the type Dunns Creek Red and the near absence (1 sherd) of the type St. Johns Check Stamped suggest that the period of occupation and construction falls into the St. Johns I range. A few earlier sherds, such as Deptford Bold Check Stamped and Orange Incised, imply an old, thin occupation antedating this; but there is little doubt that the first substantial habitation of the site and the first mass burial were St. Johns I in time. The St. Johns I period has been estimated by Goggin as 400 B. C. to A. D. 1100. As a fragment of St. Johns Check Stamped was found in the body of the mound it is likely that there was some activity at the site, however minor, as late as the close of the period.

In a somewhat wider frame of reference the Ormond Beach mound site is probably contemporaneous with the Santa Rosa-Swift Creek and Weeden Island I periods of northwest and Gulf coast Florida. Its salient cultural characteristics are those of the Burial Mound or Middle Woodland stage of the Southeastern United States, although use of the site may have continued on into periods of contemporaneity with Temple Mound or Mississippian cultures elsewhere.

LITERATURE CITED

- CALDWELL, J. R., and WARING, A. J., JR.
 1939. Newsletter of the Southeastern Archaeological Conference, vol. 1, No. 6 (Mimeographed). Lexington, Ky.
- GOGGIN, J. M.
 1940. The distribution of pottery wares in the Glades archaeological area of South Florida. *New Mexico Anthropol.*, vol. 4, pp. 22-33.
 1947. A preliminary definition of archaeological areas and periods in Florida. *Amer. Antiquity*, vol. 13, pp. 114-127.
 1948. Some pottery types from central Florida. *Gainesville Anthropol. Assoc. Bull.* No. 1.
 1952. Space and time perspective in northern St. Johns archeology, Florida. *Yale Univ. Publ. Anthropol.*, No. 47.
- GRIFFIN, JAMES B.
 1945. The significance of fiber-tempered pottery of the St. Johns area in Florida. *Journ. Washington Acad. Sci.*, vol. 35, No. 7, pp. 218-223.
- GRIFFIN, JOHN W., and SMITH, HALE G.
 1949. Nocoroco, a Timucua village of 1605, now in Tomoka State Park. *The Florida Hist. Quart.*, vol. 27, pp. 340-361. St. Augustine, Fla.
- HRDLIČKA ALEŠ.
 1922. Anthropology of Florida. *Publ. Florida Hist. Soc.*, No. 1.
 1940. Catalog of human crania in the United States National Museum collections. *Indians of the Gulf States. Proc. U. S. Nat. Mus.*, vol. 87, pp. 315-464.
- LEBARON, J. F.
 1884. Prehistoric remains in Florida. *Ann. Rep. Smithsonian Inst. for 1882*, pp. 771-790.
- NEUMANN, G. K.
 1952. Archeology and race in the American Indian. *In Archeology of Eastern United States*, James B. Griffin, ed., pp. 13-34.
- NEWMAN, MARSHALL T.
 1949. Peoples [of the Florida Gulf Coast]. *In Archaeology of the Florida Gulf Coast*, by G. R. Willey, *Smithsonian Misc. Coll.*, vol. 113, pp. 549-552.
- ROUSE, IRVING.
 1951. A survey of Indian River archeology, Florida. *Yale Univ. Publ. Anthropol.*, No. 44.
- SMALL, JOHN K.
 1929. From Eden to Sahara, Florida's tragedy. Lancaster, Pa.
- SMITH, HALE G., *see* GRIFFIN, JOHN W., and SMITH, HALE G.
- STIRLING, M. W.
 1935. Smithsonian archeological projects conducted under the Federal Emergency Relief Administration, 1933-34. *Ann. Rep. Smithsonian Inst. for 1934*, pp. 371-400.
- WARING, A. J., JR. *See* CALDWELL, J. R., and WARING, A. J., JR.
- WILLEY, GORDON R.
 1949 a. Excavations in southeast Florida. *Yale Univ. Publ. Anthropol.*, No. 42.
 1949 b. Archeology of the Florida Gulf Coast. *Smithsonian Misc. Coll.*, vol. 113.
 1954. Burial patterns in the Burns and Fuller Mounds, Cape Canaveral, Florida. *The Florida Anthropologist*, vol. 7, pp. 79-90.



Ormond Beach mound from the southwest before clearing. Halifax Avenue in the foreground.



Ormond Beach mound from the southwest at the beginning, and upon completion, of excavations. *a*, Cleared site and the first cut along the south side. The low dome shape of the mound and the encroachment of the Halifax Road are visible. *b*, View of site after leveling was completed.



Views of burials below mound base. Both *a* and *b* show burials in the outer ring (see fig. 2 for plan of burials). Burials 7, 28, 20, and 30 from left to right.



Views of burials below mound base. Both views show skeletons in the inner ring (see fig. 2 for plan of burials). *a*, Nos. 40, 39, 38, and 37 from left to right. *b*, Closeup of Nos. 39, 40, and 38.



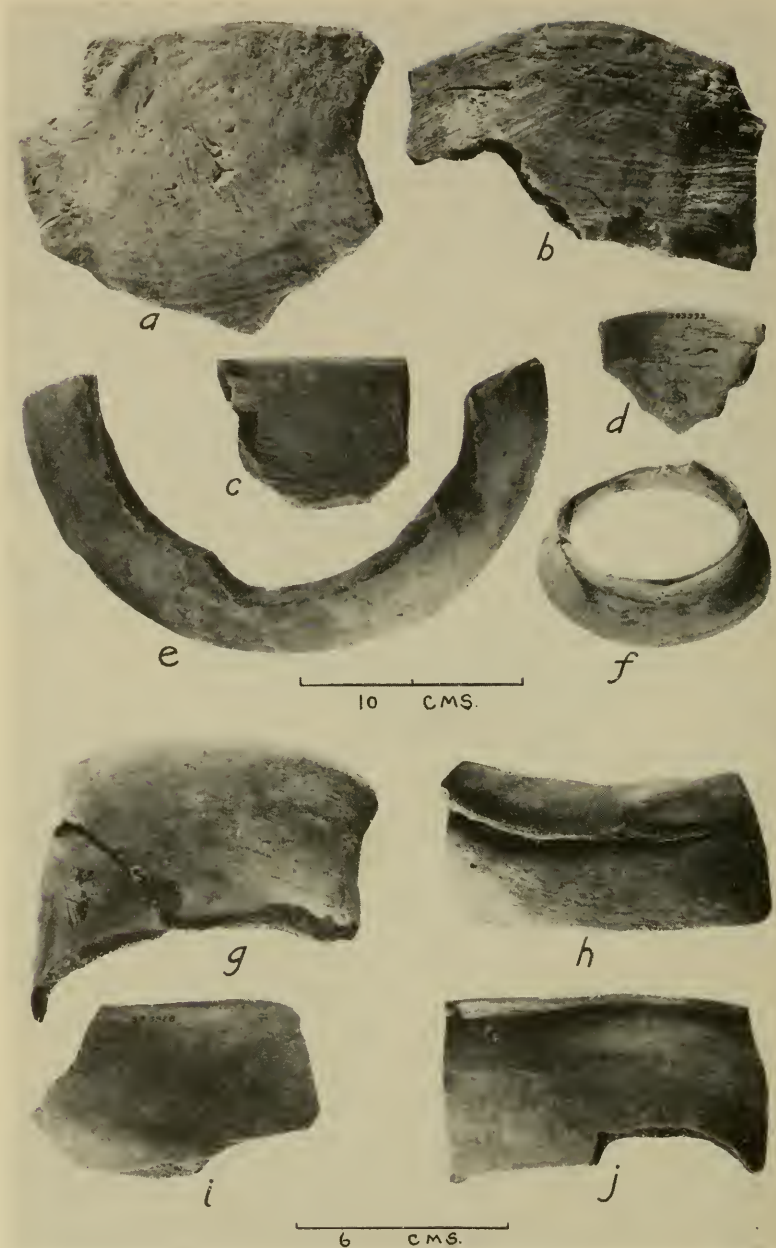
Views of the excavation showing the contrasts in the three major soil zones. At the base is the irregularly stained natural sand. Next above is the black sand containing coquina. The upper zone, the mound fill, is composed of natural sand containing various amounts of humus stain. *a* and *b*, Views of the approach trench on the south side. In *a*, on extreme edge of site, the pot hunter's trench into the mound shows clearly. In *b*, appears the most extensive of the submound pits (feature II), which the earlier amateur's trench had skimmed over.



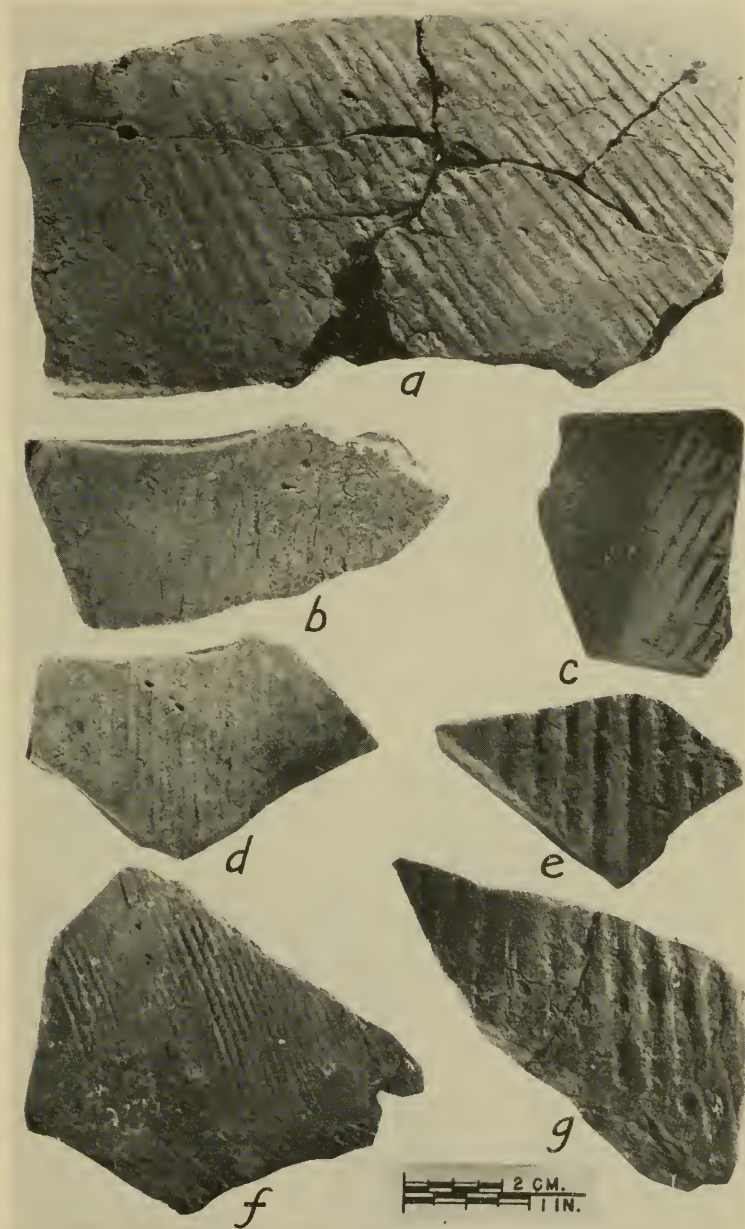
Views of excavation and burials. *a*, View of the approach trench on the east side of line R4. *b*, Burial 20, with coquina layer visible in the bank behind skeleton.



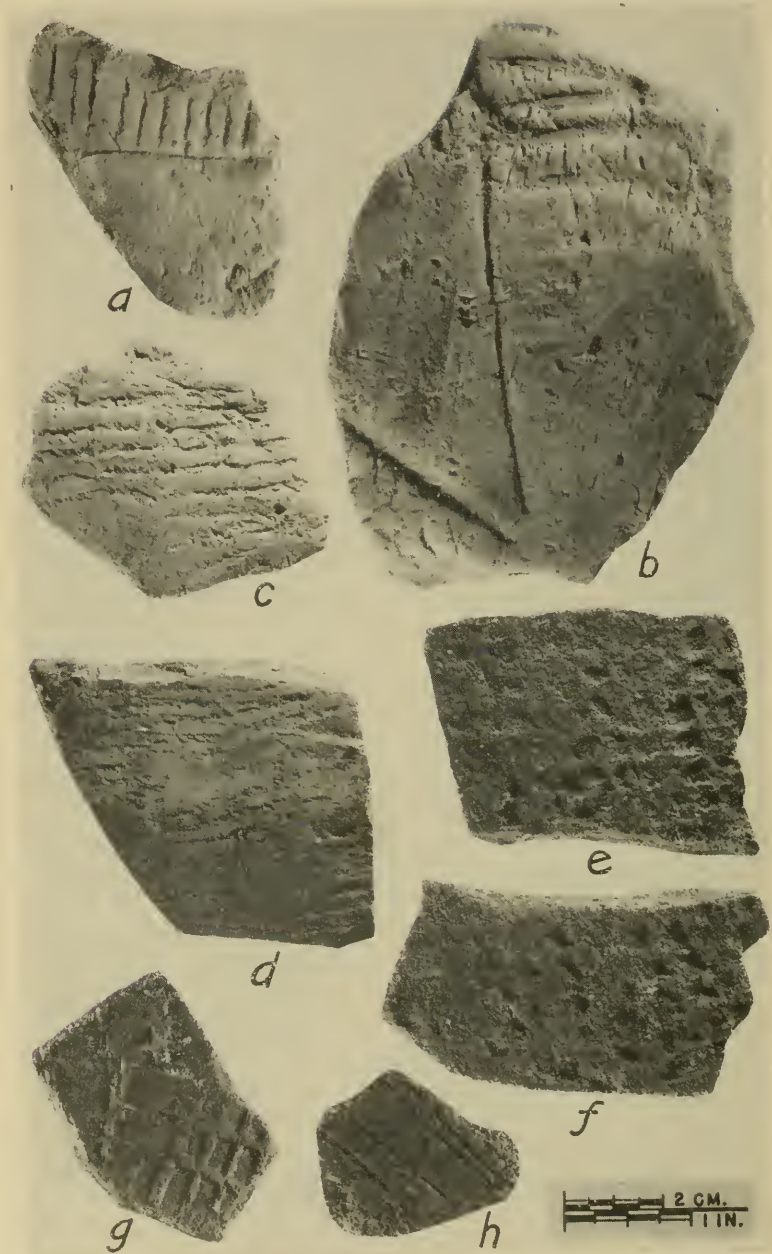
Partially restored vessels of the St. Johns Plain type. (Streaking on specimen *a* results from mending fluid and is not paint. Other specimens show fire smudging.) (USNM Nos. *a*, 383896; *b*, 383895; *c*, 383948; *d*, 383893.)



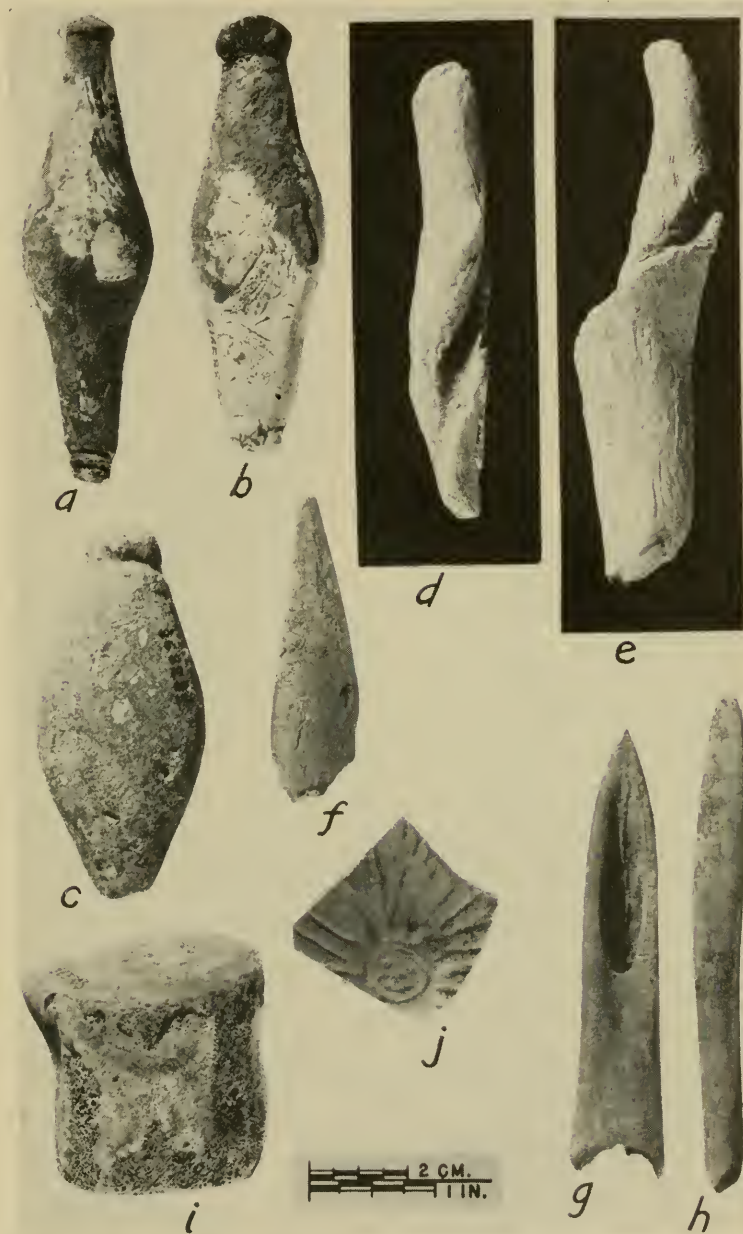
St. Johns Plain sherds. Specimens *a-c* show scoring similar to type St. Johns Scored; *d*, interior of open bowl rim sherd; *e*, large sherd showing coil fractures; *f*, short, outflared collar of bowl or jar (picture inverted); *g*, jar collar; *h, j*, bowls with short outflared collars; *i*, rim sherd from subglobular bowl. (USNM Nos.: *a*, 383959; *b*, 383933; *c*, 383939; *d*, 383932; *e*, 383951; *f*, 383908; *g*, 383959; *h*, 383931; *i*, 383918; *j*, 383909.)



St. Johns Simple Stamped sherds. Sherds *a* and *c* are rim fragments; all others are body pieces. Sherds *a*, *e*, *g*, show occasional cross lands, vaguely reminiscent of check-stamped treatment. (USNM Nos.: *a*, 383916; *b*, 383939; *c*, 383914; *d*, 383959; *e*, 383907; *f*, 383909; *g*, 383907.)



Potsherds of various types. *a*, Little Manatee Shell Stamped. *b*, Unclassified Incised. *c*, *d*, Cord-Marked (soft paste). *e*, *f*, *g*, Deptford Bold Check Stamped. *h*, Orange Incised. (USNM Nos.: *a*, 383921; *b*, 383906; *c*, *d*, 383959; *e*, 383925; *f*, *g*, *i*, 383959.)



Various artifacts. *a, b*, Pendants or plummetts made of conch shell columellae. *c*, Pendant or plummet of coquina. *d, e*, Chisels made of conch columellae. *f*, Tip of bone dagger or point. *g*, Socketed bone point. *h*, Bone awl. *i*, Worked vertebra (deer?). *j*, Fragment of European pottery. (USNM Nos.: *a*, 383899; *b*, 383919; *c*, 383898; *d, e*, 383970; *f*, 383956; *g*, 383902; *h*, 383962; *i*, 383905; *j*, 383959.)



Various artifacts. *a-c*, Chipped stone projectile points. *d*, Pottery smoking pipe. *e*, Hone of coquina. (USNM Nos.: *a*, 383900; *b*, 383915; *c*, 383901; *d*, 383897; *e*, 383928.)