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Georgetown County Marsh Middens and Clam Shell Analyses

By Chester DePratter

As a part of my continuing interest in the clam shell middens found in the marshes of Georgetown County, I am currently working with the Florida Museum of Natural History on a project that will allow us to better interpret the origin and history of those middens as well as other sites in the area that contain clam shells.

To date, James Legg and I have visited 25 clam shell middens located between Winyaw Bay and Murrells Inlet on the northern South Carolina coast. We have made transit shot maps of 13 of those sites, and we have excavated test units in 12 of them. Radiocarbon samples will be submitted from three of these sites. It is apparent from the locations and position of these sites relative to present sea level that at least some of them may be 4,500 or more years old. Others contain pottery in their upper levels that indicates that they are less than 1,000 years old.

Fig. 1: James Legg in deep excavation of Murrells Inlet shell midden. (*SCIAA photo by Chester DePratter*)

These clam shell middens are different from most known middens along the southeast U.S. coast. Most noticeably, they are all composed primarily of shells of hard clams (*Mercenaria mercenaria*), which are the same clam species that we consume today in seafood restaurants. More typical coastal middens are composed primarily of oyster shells with many other species also present including knobbed and channeled whelks, hard clams, razor clam, Atlantic ribbed mussels, marsh periwinkles, and other less common species. In the Georgetown County clam shell middens, oysters (*Crassostrea virginica*), ponderous arks (Noetia ponderosa), cross-barred venus clams (*Chione cancellata*), banded tulip (*Fasciiolaria tulipa*), Atlantic ribbed mussels (*Geukensia demissa*), and stout razor clams (*Tagelus plebeius*) are among the most common inclusions.

The clam middens differ from the more typical oyster middens in another major way. Typical oyster shell middens nearly always contain an abundance of food bones including those of large mammals (deer, raccoon, opossum, etc.), reptiles (mainly turtles), birds (turkey, ducks, plus a wide variety of other species), and fish in great abundance and variety. The Georgetown County clam shell middens contain very few bones, indicating that hunting was not a major activity associated with accumulation of these middens.

Our excavations into the clam middens disclosed that they all contain dense, lensed deposits of ash separated by lenses of clean shell. At the present time, we do not know if the Indians were using heat to open the clams or if they were using heat to dry or smoke the clams so they could be transported elsewhere for consumption, but there were certainly extensive fires burning on the summits of these clam middens during their accumulation.

Based on what we know so far, it appears that these clam middens were primarily extraction stations used by people who were intensively harvesting clams, though occasionally other species were gathered as well. They contain very few, if any artifacts. We have found no stone tools or flakes (even though all middens are eroded with abundant exposed surfaces) and only occasional pottery sherds. They do not contain food bone except as rare, incidental inclusions.

Given that collecting clams was the primary focus of the middens' inhabitants, a logical question concerns whether this collecting activity was confined to a particular season of the year or were the middens used for the same activity throughout the year? This question can be readily addressed by looking at the growth rings in the clam shells.

Fig. 2: Kalla DePratter collecting clam sample from Club House Creek; Litchfield Beach is in background. (*SCIAA photo by Chester DePratter*)

As clams grow, they put down growth rings in their shells, much like the rings that chart the growth of trees. Clams can be sliced longitudinally to expose the growth rings with the last ring indicating when the shell was collected/killed. But those rings can only be interpreted through comparison of the patterning of those rings to a modern sample. We know from previous studies of clam growth in Virginia that maximum growth there (represented by abundant and widely spaced growth rings) occurs in the summer, while in Florida samples, maximum growth occurs in the winter. Since our Georgetown middens fall between these two extremes, neither of these growth models can be used to interpret the collection date for the shells in our Georgetown County sites.

To remedy this problem, I collect a sample of live clams from a portion of Club House Creek behind Litchfield Beach once a month. This collecting is done under a permit from the S.C. Department of Natural Resources, because that marsh is closed to shellfish harvesting due to pollution from various sources. The shells of these clams are shipped to the Florida Museum of Natural History where they will be cut and analyzed by my colleagues in this project, Dr. Douglas Jones, Director of the museum, and Irvy Quitmyer, Senior Biological Scientist in the museum's Environmental Archaeology Laboratory. With a year's worth of clams in hand, they will be able to chart the growth patterns of clams from Club House Creek. By comparing our archeological specimens to the modern sample, it will be possible to determine the season during which the excavated specimens were collected.

The results of this work will allow us to say whether the Indians were going to the coast to collect clams only during a particular season of the year or whether they were collecting clams year round. Also, by looking at the size of the clams from the individual sites and from the various levels within sites, it should be possible to determine if the Indians were over-harvesting the clam beds at various times in the past or whether they were rotating their collecting from bed to bed to keep from stressing local populations.

My clam gathering trips to Club House Creek began in March 2005, and will continue until February 2006, by which time we will have a sample of clams spanning an entire year. My daughter, Kalla DePratter, has been my capable field assistant on most of the collecting trips to date. The clam collecting project has been supported by Bob Mimms, owner of the Litchfield Beach Fish House.

Between now and February 2006, I will be working to find the funds necessary to complete the analysis of the archaeological clam collection. For more information about this project or to make a tax-deductible donation, please contact me directly at SCIAA by email: depratter@sc.edu or by phone (803) 777-8170.

Fig. 3: Chester DePratter (right) with Dr. Doug Jones (left) and Irvy Quitmyer (center) of the Florida Museum of Natural History. (*SCIAA photo by James Legg*)