LITHIC REDUCTION TRAJECTORIES AT LA HUECA AND PUNTA CANDELERO SITES, PUERTO RICO: A PRELIMINARY REPORT

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ABSTRACT
In order to add another dimension to the debate surrounding the structural configuration of the first ceramic-bearing groups that ventured into the Caribbean, the lithic implements from Punta Candelero and La Hueca sites are being analyzed. Since both sites present a Huecoid component vertically and horizontally segregated from a Saladoid deposit, an analysis of inter-assemblage variability is being undertaken in order to determine the ubiquity of similarities and differences in the reduction sequences involved in the production of the pecked, ground, use modified and flaked utilitarian lithic materials. Therefore, this study is both descriptive and analytical since it is intended to offer the first detailed description of the lithic materials associated to the Huecoid component of these sites in order to compare, from a technological standpoint, the reduction protocols followed in each component. Such a comparison offers a high resolution since the variability that may be induced by differential raw material availability is left aside as both groups exploited the same environments. Even though this study is still at a preliminary stage, some marked dissimilarities that suggest different reduction protocols between components are beginning to emerge.

INTRODUCTION
Much has been debated since Ivonne Narganes’ and Luis Chanlatte’s discovery of an archaeological deposit without precedent in the Caribbean archaeological record. Taking note on the extreme dissimilarities that these materials exhibited with regards to ceramic decoration and lapidary iconography when compared to other early ceramic assemblages, they postulated that a different migration of pottery making people, named by them the Huecoid, ventured into the Antilles prior to the Saladoid expansion from South America (Chanlatte 1981). This discovery remained unique in the West Indies until 1985, when Miguel Rodríguez excavated other site in the eastern coast of Puerto Rico known as Punta Candelero. This site not only yielded a replica of the assemblage discovered at La Hueca, but also added the novelty of containing such material without any relation to other early ceramic deposits as was the case in the former (Rodríguez Lknown as Punta Candelero. This site not only yielded a replica of the assemblage discovered at La Hueca, but also added the novelty of containing such material without any relation to other early ceramic deposits as was the case in the former. (Rodríguez Lknown as Punta Candelero. This site not only yielded a replica of the assemblage discovered at La Hueca, but also added the novelty of containing such material without any relation to other early ceramic deposits as was the case in the former. Rodríguez Lknown as Punta Candelero. This site not only yielded a replica of the assemblage discovered at La Hueca, but also added the novelty of containing such material without any relation to other early ceramic deposits as was the case in the former.

Unfortunately, this debate surrounding the makeup of the earliest migrations of ceramic bearers to the Antilles has been mostly remitted to ceramic modal analysis. Therefore, in order to add another dimension to this debate, the utilitarian lithics of these two sites are currently under analysis. This ongoing study is intended first and foremost to offer a technological description of the lithic reduction sequences and the materials produced by such processes in association to the Huecoid component. These internal dynamics of stone tool manufacture will then be compared to the ones evidenced in the Saladoid lithic materials that were recovered from these sites. This comparison offers a high resolution as the interassemblage variability that may arise from differential raw material availability is excluded as both where operating under similar subsistence constrains and thus, it would be expected that both would produce similar stone tool kits to extract energy from such environment if they indeed shared the same cultural traditions.

This study will look at the flaked, pecked, ground and use modified utilitarian materials. I only selected materials provenient from areas of high contextual preservation and where only one of the cultural components was represented. Therefore, all of the selected units contain solely materials that present Huecoid or Saladoid traits.

It is extremely important to note that different from the systems of production of other items of material culture, lithic technologies tend to be almost immutable for extended periods of time. In fact,
during the Saladoid and the later ceramic periods of Caribbean prehistory, dramatic changes in the flaked lithic technology have not been documented. For instance, in sites like Trans in Monserrat (Bartone and Crock 1998), Sugar Factory Pier site in St. Kitts (Walker 1980), and in Hacienda Grande (Walker 1985) and Monserrate (Pantel 1986; Roe et al. 1990) sites in Puerto Rico, lithic technology has been described to remain unchanging for as long as 800 years. Therefore, if in fact the Huecoid and the Saladoid were cultural groups that shared similar ancestries as postulated in Rouse’s (1992) most recent model, then the lithic technologies should reflect that as the tropical environment is not a context where marked betterment of the flaked lithic technology would be expected. On the other hand, the pecked and ground materials would be predicted to improve as part of the processes of adaptation to the insular living conditions. In fact, this has been described to be the process observed in the lithic technologies from the Early ceramic to Later ceramic phases: a “devolution” of the flaked lithic technologies concomitant with a marked improvement of the pecked and ground materials.

The Flaked Technology

The flaked lithic technology associated to the Huecoid deposits presents marked dissimilarities when compared to the Saladoid materials. Beginning with the patterns of raw material procurement, the Huecoid middens contain a representation of a wide spectrum of raw material sources, both local and extraneous. Based on the macroscopical characteristics of the different raw materials, I have identified the presence of imported materials such as flint from Antigua and radiolarian limestone from St. Martin.

Local materials include milky quartz as well as silicified tuff, a fine grained material whose fracturing properties resemble those of flint. No local chert source has been located in the eastern part of Puerto Rico nor in the Island of Vieques. However, the north eastern section of Vieques presents geological formations that can be idoneous for the development of nodular flint but, due to the appropriation of the US military of two thirds of the total acreage of the island, I have not been allowed to sample that sector.

Different from the Saladoid components of these sites, materials were imported in nodular form. The only evidence of this practice in the Saladoid deposits comes in the form of cortical flakes, while in the Huecoid deposits I have been able to find a high quantity of both, tested and untested nodules. The Huecoid knappers applied some protocols of reduction directed towards a standardization of flake morphologies and terminations. One of these was the side striking of flakes. This was conducted at the ridge formed at the confluence of the proximal section of the flake and one of its lateral margins. In most cases, this platform ridge met with another ridge at the dorsal side of the flakes thus directing the force of the blow through previously designed paths. This not only permitted to increase the size of the flake but also promoted a higher occurrence of feather terminations. Another protocol of reduction was evidenced in a Levallois-like technology which consisted on the centripetal removal of flakes in the core prior to flake detachment. When the flake was struck, it followed the trajectory delineated by the flakes removed on the face of the core. I indeed found this technique performed on both the local and imported materials, thus indicating that it was a localized practice and not one evidenced in materials obtained by exchange or indirect procurement.

In many cases, a heavy blow was applied to detach primary flakes. This produced a lot of collapsed platforms and sheared cones of percussion, as well as very large cortical flakes. In fact, the flakes produced by the Huecoid knappers have been in average almost as twice as large as the flakes retrieved from Saladoid deposits. Also the concentration of lithic materials in the Huecoid middens almost doubles that reported from the Saladoid units.

With regards to the core types, the most recurring are the bifacial cores with a discoidal morphology (Figure 1). These usually present centripetal removal of flakes and could very well be the objective pieces from which side struck flakes were detached. Most of these cores were split in order to continue their reduction towards the bipolar technology. Other types of core include the core on flake and a wide variety of randomly shaped multidirectional cores.

Also, there is a relatively high incidence intentionally retouched flakes. The most common types of retouch are the abrupt and the denticulate. The abrupt retouch was applied to create a concave working edge which has been usually associated to spoke shaving. The denticulate retouch was performed by both, unilateral and alternate flaking used in order to create serrated edges.
A striking difference between both components is the presence of massive bipolar cores and large bipolar flakes in the Huecoid middens which are not found in neither Saladoid deposit. In the Huecoid materials, in contrast to what has been previously observed by Walker in Saladoid contexts, the bipolar technology does not seem to have been directed strictly to the extraction of micro flakes for their further insertion in cassava grater boards. The purpose seems to have been, at least in the earlier stages of reduction, to detach large flakes with straight profiles to be employed in a different array of activities. Only in the cases where further core exhaustion was evidenced, we would suspect that such micro flakes were produced. However, due to the fact that the materials were sieved through 1/4” screens, I have not been able to find any of those micro flakes and the only indirect evidence of their production comes from the presence exhausted bipolar cores.

The Pecked and Ground Materials

The pecked and ground materials have been the lithic items that have received the most attention in West Indian archaeological literature. The only implement that has been characterized as a fossil indicator of Saladoid groups in Puerto Rico and Vieques has been the plano-convex adze (Figure 2). This type of tool is present in high quantities in the Saladoid deposits from both Punta Candelero and La Hueca sites while it is totally absent in neither Huecoid context. This is a rather important point as this type of artifact has been associated to superstructural activities as, for instance, Saladoid burials in Puerto Rico. The functional analogue of this tool type in the Huecoid materials is biconvex in shape (Figure 3). Even though it does not present the unifacially beveled edge characteristic of the Saladoid specimens, its bit is elapsed to either side of the tool’s centerplane thus forming a use angle of around 65 degrees which is equivalent to that of the plano-convex adzes.

The celts also present marked dissimilarities between components. The most apparent difference is in surface termination since Saladoid celts present polishing as an integral part of their manufacturing technology while the surface treatment in the Huecoid celts consists mostly of confined grinding (Figure 4).

Many of these celts and adzes were made over imported materials, specifically the radiolarian limestone provenient from St. Martin. There is a total lack of the reduction flakes associated to the production of these implements so it is most probable that they where imported from other locations in a pre-shaped or finished form.

Among the ground materials, I have found at least two types of implements that were not present in the Saladoid deposits. The first of these is what I defined as an edge-ground biface (Figure 5). In the Huecoid middens it was present in all stages of reduction. This type of tool is made exclusively on a silicified slate, a raw material which is scarcely represented in the Saladoid middens.

The second of these Huecoid tool types is the channeled stone (Figure 6). It presents parallel incisions with concave bottoms, shaped first by delineating the trajectory and the width of the incision by pecking, and then ground to the desired depth.

The collection also contains some pestles. These are pretty rough in form and present minimal modification by peripheral battering.

Use Modified Materials

Some of the artifacts present alterations due only to the activities that they were submitted to. Among these, are the anvils employed in bipolar reduction, the striated pebbles (usually known as ceramic polishers) and different types of percussors. These include pecking stones, unmodified river rolled pebbles and a third type which consists of round fine grained stones with battering around their entire circumference.

From the Huecoid middens two types of artifacts modified by use were recovered, which are very important as they have usually been associated to Archaic contexts. These are the edge ground pebbles and the round pitted stones. The edge ground pebbles are of the traditional half moon morphology and present hammering and grinding wear in at least two of their margins (Figure 7). The round pitted stones contain circular incisions in either one or two faces and also marked battering all around their entire circumference.
CONCLUSION

When the lithic reduction sequences evidenced in both components are compared, some clear differences in their technological protocols begin to emerge. The flaked materials produced by the Huecoid knappers present distinct patterns in everything from the procurement of raw materials, the protocols of reduction, size of the detached pieces and their further modification when compared to those of the Saladoid. Also, the pecked and ground materials present apparent variations in the techniques that produced them as these exhibit different terminations, much more rustic than the Saladoid materials. This somewhat paradoxical process of a more refined flaked tool manufacturing strategy alongside a coarser pecked and ground technology differs from what has been observed in other early ceramic components and does not conform to what should be expected of ceramic groups that have, as postulated by Rouse, had ancestries that proceeded from a tropical environment.

We also need to stress that similar reductive sequences were applied to the imported and the local materials. For instance, the same types of adzes were made on both, the material provenient from St. Martin as well as on the material procured from Vieques and Fajardo. The same occurred with the flaked stone industry, in which similar reduction systems were applied to both the local and the foreign materials. This evidences a very cohesive lithic technology in which the issue raised by Pantel (1988) regarding the effects of differential raw material availability on tool variability, does not seem to hold for explaining the variances observed between components since it is evident that the same resources were equally available for both groups as they occupied the same geographic locations. Therefore I understand that these differences in the dynamics of stone tool manufacture indeed reflect the presence of culturally distinct traditions of lithic technologies which also complement the differences that have been observed in ceramic, lapidary, burial patterns and dietary remains, among others. The significance of this evidence will be ascertained only after more comparative quantitative studies are conducted in these and other sites where the Huecoid manifestation is represented.

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LIST OF FIGURES

Figure 1. Discoidal cores (Top row, complete; bottom row, split).

Figure 2. Plano-convex adzes from the YTA Saladoid deposit of La Hueca site.

Figure 3. Huecoid adzes.

Figure 4. Huecoid celts.

Figure 5. Edge ground bifaces.

Figure 6. Chanelled stones.

Figure 7. Edge ground cobbles.
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