February 14, 1979

Mr. Don Crabtree
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Dear Don,

Sorry that I didn't have time to come up for a final visit. Since being in Mexico it has come to my attention that several pages of the summary chapter of my thesis were not copied. I have enclosed them in this letter.

I would appreciate your expert criticisms of the thesis as a whole and of each of the parts, if possible. As you can imagine, no one on either my orals or advisory committee could give me much feedback. I would appreciate it if you could give me some.

I, for one, would be interested in seeing you work up a short article on your macroblade-making technique. It would probably be a matter of having good-quality pictures taken of the manner of holding the core, hammerstone, and anvil, also of the motion of the hammerstone. I know it would be a great help to Mesoamericanists.

Thanks once again for your help. I wish you good health and hope that all will go well with you. I'll keep in touch.

John E. Clark

John

each lithic industry. The program outlined in Chapter 1 has as its focus the spatial and temporal variability within several aspects of each lithic industry. These aspects are tool (1) morphology, (2) technology, (3) function, (4) source, and (5) distribution. An integral part of the research design is the experimental replication of wear patterns and artifact types.

In order to test the effectiveness of the proposed research program a collection of artifacts was analyzed. These were all of the obsidian pieces from the Middle and Late Preclassic site of La Libertad, Chiapas. The analysis of the La Libertad obsidian showed several strengths and weaknesses in the proposed method. These are presented below.

Before any large group of artifacts can be analyzed they must be classified into meaningful units. The classification system chosen for the lithic artifacts of Chiapas is a behavioral typology. This is in keeping with recent lithic studies in the Mesoamerican area (see Chapter 2). Briefly, such a system focuses on the technological reduction process. The various taxonomic units are distinguishable products of different behavioral sets. Since the taxonomic units are based upon changes in behavior, the typological system is called a behavioral typology. In Chapter 2 the basic concepts of behavioral typologies are explained in greater detail. A general model of these behavioral

sets and taxa for Mesoamerican obsidian industries was also

outlined. The taxa listed in the model were defined and used as

the organizational basis for the study of the La Libertad obsidian

collection. One advantage of using such a system is that the

results are readily comparable to other such studies completed in

the Mesoamerican area. Also, the focus is on technology.

Therefore, the technology can be understood by noting the frequency

of each artifact type. Sometimes, however, one encounters unusual

pieces which do not fit any known category. Such artifacts can be

understood through replication experiments.

A series of replication experiments was carried out previous

to the analysis of the La Libertad obsidian collection. The experi-

ments were of two kinds: (1) experiments in replicating blade and

flake types and (2) experiments designed to replicate wear patterns.

The first series of experiments was described in Chapter 3. The

purpose of the experiments was to duplicate all of the artifacts

listed in the general model for Mesoamerican obsidian industries

(see Chapter 2). The experiments differed from those done previ-

ously in that the whole process was duplicated, not just that portion

dealing with prismatic blade production. All of the products of

these replication experiments were quantified. These data were

then compared to the La Libertad artifacts (Chapter 6) and inter-

pretations were made. Another set of replication experiments were

carried out with the bipolar technique. Results from these experiments made it possible to identify several aberrant artifact types. Perhaps the most beneficial aspect of the replication experiments was the experience and "artifact sense" derived from them. Several preconceived notions about Mesoamerican obsidian industries were found to be incorrect through the simple experience of actually making the tools in question.

Replication experiments were also performed to determine use wear. These are described in Chapter 4. The experimental program carried out at Harvard formed the basis of the experiments (Tringham, et. al., 1974); however, it was modified somewhat to fit the lack of facilities available in Mexico. The basic hypothesis was that tools activated in the same manner over the same objective material, for a comparable period of time, would display a similar edge damage pattern. The experiments showed this to be true. The result of the experiments was the definition of tool functions in terms of microflaking patterns. For cutting and scraping tools this was further divided into wear patterns characteristic of classes of raw materials worked (objective materials). The objective materials were ranked according to relative hardness. Once again the culmination of this experimentation was an increased artifact sense of general tool use and the internalization of various functional correlates to unique microflaking patterns. Another definitive result

of the use-wear experiments was the realization that numerous

tasks result in no observable wear on a tool's working edge. This

fact was taken into account in interpreting the obsidian collection.

In Chapter 5 the logistical problems of description and

base-level analysis are discussed. Since several aspects of the

obsidian industry were being studied it required several sortings of

the artifacts to obtain all of this data. The aspects of the obsidian

pieces studied concerned: (1) morphology, (2) technology, (3)

function, (4) source, and (5) distribution. The basic morphology

is presented in Chapter 5. The method used to derive descriptive

data from the collection is also described. Several suggestions are

given on how to improve the method and make it more efficient. It

is suggested that a step may be saved if the replication experiments

are carried out before the actual analysis begins. Rather than

shuffle the material numerous times one preliminary sorting of the

material would serve to isolate any anomalous pieces which could

then become the focus of a limited experimental program. When

these are understood, if possible, then the final sorting would take

place. All artifacts could then be separated into technological

types with functional subdivisions based upon microflaking patterns.

Data recording and measuring could all be done at one time after

the final classification.