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## ARCHAEOLOGICAL TEXTILES: THE NUMBERS GAME

Nettie Adams  
*University of Kentucky*

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## ARCHAEOLOGICAL TEXTILES: THE NUMBERS GAME

By Nettie K. Adams  
University of Kentucky

Archaeological textiles are generally so rare that each one can be dealt with as the precious individual it is. But when ancient rags are emerging from the ground by the basketful, how do you deal with them? When, at day's end, you are confronted with two to three hundred separate textile specimens, and similar numbers are expected each day of excavation? That is the challenge that Elisabeth Crowfoot and I faced together for five seasons at the site of Qasr Ibrim.

The archaeological site of Qasr Ibrim is located on a bluff high above the Nile River in Egyptian Nubia, about 30 miles north of the Sudanese border. It was a powerful fortress-city, dominating the area for many miles both upstream and downstream. This strategic location must have attracted settlers from very early times; we know that Qasr Ibrim was continuously occupied for at least 3000 years, and was only abandoned finally in 1811 AD.

Since Qasr Ibrim is in Nubia, one of the driest regions of the world, the preservation of organic remains is truly amazing. In addition to literally thousands of textiles, we find remains of leather, wood, basketry and matting, parchment, papyrus, paper, and forgotten or lost stores of wheat, dates and beans. The town was built on its own trash, so the archaeological deposits are all refuse, and the recovered objects are mostly fragmentary. For example, a rag, which was originally part of a man's garment, was cut down to make a child's dress, and finally was used as a scrubbing rag, before being discarded. Though the fabric is in relatively good condition because of the extreme dryness of the site, its fragmentary condition makes it often difficult to ascertain an original purpose. However, if hems, seams, or other features are present, we can often recognize the ghost of the original garment.

The study of textiles at Qasr Ibrim has been carried out by Elisabeth Crowfoot and myself. The field methods we have devised have necessarily been adapted to meet the unusual conditions just described. A central feature of our study is the analysis and recording of every fragment of textile which comes from the ground, no matter how small. In the 1980 season alone, this number totaled 23,432 specimens, and other seasons have yielded similar numbers. We devised a form on which to record the textiles from each provenience, or location. The form includes spaces to record all the basic features of woven cloth: fiber, direction of yarn twist, weave, thread count, color, borders, and the numbers of fabrics in the group which answer that description. Space is left for comments to augment or clarify the tabulated description: stripes are recorded by counting the number of warps which compose each stripe; checks or plaids are analyzed using both systems of warp and weft. Often we sketch a pattern. Our ultimate aim is to produce a description sufficiently complete so that a weaver could reproduce each piece that has been found.

The best-preserved or most unusual textile fragments are catalogued. In addition to undergoing the initial analysis just described, they are given a number, measured, cleaned, photographed, possibly drawn, and mounted for safe travel to Cairo. The catalogued specimens in 1980 numbered 525, or slightly over 2% of the total number of textiles recorded. The uncatalogued specimens are reburied on the site.

These numbers have allowed us to do the same kinds of quantitative studies that archaeologists have long brought to the study of potsherds. Quantitative analysis, in which the textiles are viewed, not as individuals but as members of a population, is a useful way of addressing questions of variation of fibers and fabric types over time and space. Using percentage frequencies I have been able to construct graphs and charts which help to organize this vast body of material.

### STUDY 1 (Figure 1)

The first study, of 12,061 specimens, shows the fluctuations of the frequencies of the three major fibers of flax, wool and cotton over a period of 2000 years. In order to understand the meaning of some of these wild variations, some knowledge of the history of Qasr Ibrim is in order.

The earliest level from which we have textiles dates to the Ptolemaic Period (ca.332-30 BC). In these levels, more than 90% of textile specimens are made of flax. It was the dominant fiber of ancient Egypt, and continued to be used in Ptolemaic times as well. Then, in 23 BC the Romans established a garrison at Qasr Ibrim. Our textiles reflect their arrival by a dramatic increase in the percentage of wool. The use of wool was known but not favored by the dynastic Egyptians; it was only with the coming of Roman forces that wool became a major textile fiber at Qasr Ibrim. During the period of Roman occupation, which lasted about 125 years, flax nevertheless continued to be the dominant fiber, used for furnishing material as well as for clothing worn by the local population.

With the departure of the Romans around 100 AD, Qasr Ibrim came under the influence of the Kingdom of Meroe located farther south along the Nile in the Sudan. Meroe had an extensive cotton industry, and, in fact, introduced the fiber to Egypt. During the following span of roughly 4 1/2 centuries the use of flax and wool decreased dramatically, and cotton made an appearance on a large scale. With the collapse of Meroe around 350 AD, the cotton industry gradually declined and then its use plummeted around 550 when Nubia converted to Christianity.

During the early middle ages, cultural influences, along with Christianity, came to Qasr Ibrim again from the north. The use of cotton was replaced by wool. Wool, along with flax, were the two fibers most prevalent throughout the Mediterranean world. Sometime around 800 AD the use of cotton began to increase again. This may be an indication of the early beginnings of an Egyptian cotton industry, so important to the Egyptian economy later on.

The later Middle Ages at Qasr Ibrim were a time of wealth and influence as indicated by the large numbers of imported luxury goods. Decorated pottery, glass vessels, art objects of metal, wood and ivory, as well as religious texts with elaborate decorative leather bindings have been found. Quantities of imported linen cloth also appear among the textiles at this time.

The last 400 years of occupation can be characterized generally by a continuation of the trends of the preceding century. However, we know that near the end of occupation there was a severe economic decline, which is not revealed by this graph. To see evidence of this poverty, we will turn to more sensitive data.

## STUDY 2

During the last 300 years, of occupation, Qasr Ibrim came under Turkish rule when the Ottomans conquered Egypt in 1517. They established a garrison on the citadel and constructed barracks, storage pits, armories and a stable. A number of weapons as well as other imported items such as Chinese porcelain have been recovered, including quantities of luxury fabrics.

The Ottoman era falls into two periods: Period I, 1556-1583 and Period II, 1583-1812. These two time spans were recognized archaeologically in the stratigraphy, and have since been confirmed historically. I have selected six imported luxury fabrics to analyze for the two periods, using the same numerical procedure as described earlier.

The first is fustian, a cloth with a flax warp and a cotton weft, used mostly for cushion covers. The second we call 'cap weave', a specialized wool fabric used for small, close-fitting men's caps, jackets and vests. Three others are fabrics of pure silk, wool pile carpet fragments, and resist-dyed or block printed cotton cloth; these were probably the three most expensive of the imports. The sixth luxury fabric, which we call silk mix, occurs in two types. One has a silk warp and a cotton or flax weft. It is warp face, and the heavy weft produces a ribbed texture. The other type of silk mix is basically flax or cotton fabric with the addition of silk warp stripes, often as a decorative selvedge.

The 27 years of Period I are represented by six excavation units containing a total of 8,770 textile specimens (Figure 2). The combined percentages of the six fabrics from the six excavation units present us with a high of 6.3% to a low of 2.7%. Furthermore, the unit with the lowest total percentage completely lacks two of the luxury fabrics: pure silk and pile carpet. Perhaps this can be interpreted as an indication of a lower economic status for the residents of that house.

For the analysis of textiles in Period II, I took four neighborhoods containing a total of 15 houses (Figure 3). These 15 houses contained 17,394 textile specimens. During this period there seems to be a greater range of variability among neighborhoods and among individual houses than was true in the earlier period. Only neighborhood B contained any pile carpet; the two smaller neighborhoods C and D had no printed cotton or pile carpet and lesser percentages generally of luxury fabrics than the two larger units.

An interesting comparison with Period I is found in the combined percentages of the luxury fabrics from each house. In the earlier period only one of the six excavated units had less than 3% luxury fabrics; in Period 11 that figure climbs to 40%. A further comparison reveals that two-thirds of the units of Period I contained more than 4% luxury fabrics; in Period 11 that figure dropped to only one-fifth of the units with at least 4% luxury goods. The decline in luxury fabrics becomes even clearer when the frequencies of all the luxury fabrics are averaged for the two periods. For period I we arrive at a figure of 4.3 %, and for Period 11, 2.7 %.

The progression of the decline of luxury fabrics throughout the 229 years of Period 11 can be seen in Figures 4 and 5. The graphs show time proceeding from left to right; the earlier stratigraphic levels are on the left. Although the percentages fluctuate, especially for Neighborhood A, the trends in both neighborhoods are clear: there is a marked decline in imported luxury fabrics as the story of Qasr Ibrim was drawing to a close.

### STUDY 3

The majority of cotton fabrics from the Ottoman Period have yarns spun in the Z direction. They were imported from Egypt in several standardized types from which much of men's clothing was made. A locally made cotton cloth is a poor substitute, and is readily distinguishable from the Egyptian types, by its S-spun yarn. This fabric only appears during the Ottoman Period; it is totally absent among the textiles dating to earlier times at Qasr Ibrim.

Looking at the percentages of this cloth type in the six Period I units (Figure 6), we see a variation between .6% and 4% among them. Furthermore, the three units containing the lowest percentages of this fabric are the same ones which show the highest percentages of luxury fabrics.

In Period II (Figure 7), the figures vary between 2% and 19%. This represents a dramatic increase in locally made cotton fabric since Period I. Among the six earlier units only one had as much as 4%; four of the remaining units had less than 3 %. In Period 11 we see that 8 of the 15 houses contained 10% or more of the locally made cloth. The negative correlation between luxury fabrics and locally made cotton cloth that was found in Period I is replicated in Period 11. Neighborhood C with the greatest percentage of locally made cotton is also the one with the fewest luxury fabrics.

The progression of the increase of the home-made cotton cloth throughout the 229 years of Period II can be seen in Figures 8 and 9. Again, the earlier stratigraphic levels are on the left, and proceed in time to the right. Neighborhood A shows a steady amount of this cotton fabric until near the end of the period, when the percentage jumps to 7%. In Neighborhood B we see the same trend. A comparison of these graphs with Figures 4 and 5 reveals again a negative correlation between imported luxury fabrics and locally made cloth.

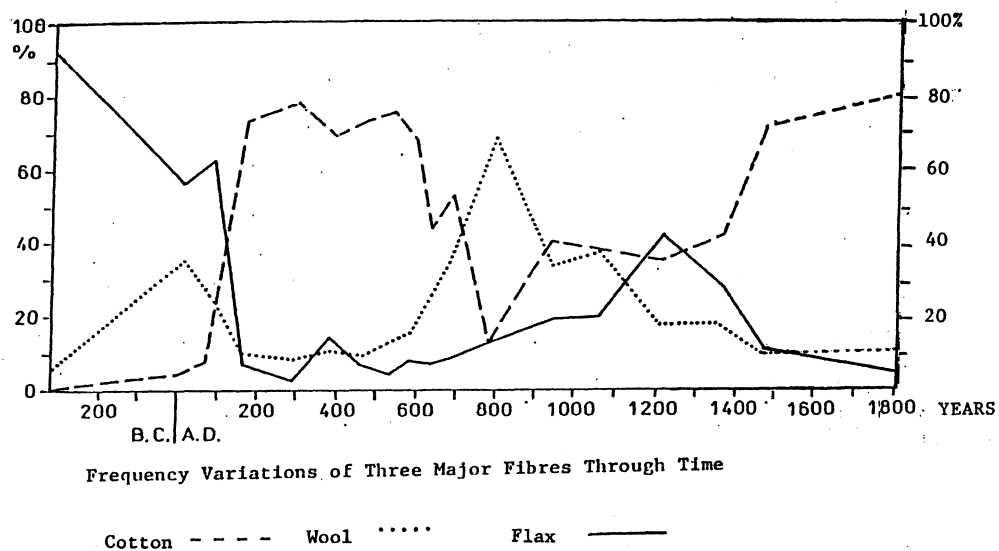
## CONCLUSION

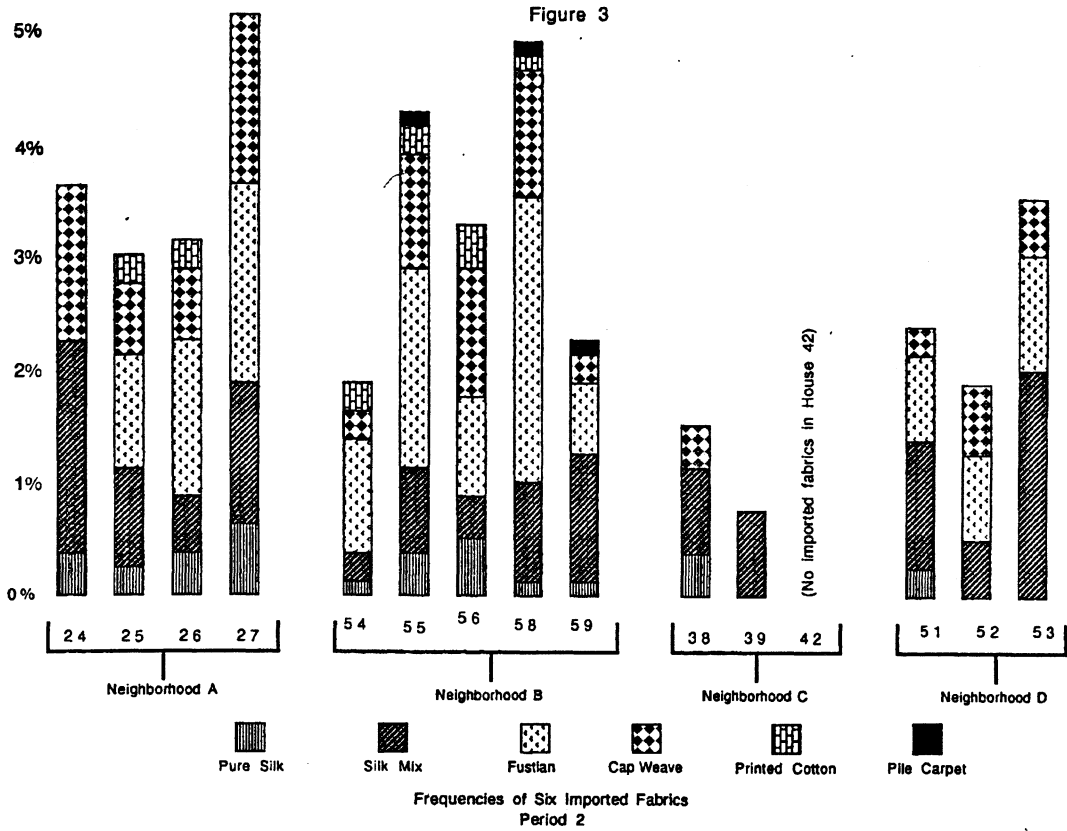
How do these three textile studies contribute to our understanding of life at Qasr Ibrim? Have we really learned anything about the people, or just about the behavior of fragments of textile refuse?

In the first study, the wild fluctuations of the percentage frequencies of the three major fibers reflect the changing fortunes of Qasr Ibrim through 2000 years of history. First, it was dominated from the north by Egypt and by Rome. With the decline of these influences, the Kingdom of Meroe extended its hegemony to the north, introducing its own fiber, cotton. With the collapse of Meroe, its influence, along with the cotton industry, declined, and Qasr Ibrim, by adopting Christianity, again became part of the Mediterranean world

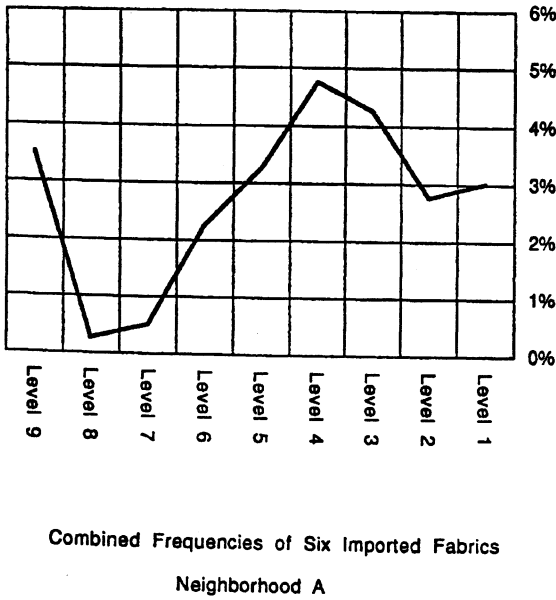
Studies 2 and 3 trace the wealth, especially in luxury fabrics, brought to Qasr Ibrim by the Ottomans. But when governmental support of the garrison was abandoned, the inhabitants were no longer able to import luxury goods, or even good quality cotton fabric. In their poverty, they were forced to produce a home-made cloth which was greatly inferior to the imported types. From these three studies it seems clear that quantitative textile data can be accurate indicators of political and economic conditions.

Figure 1





**Figure 4**



**Figure 5**

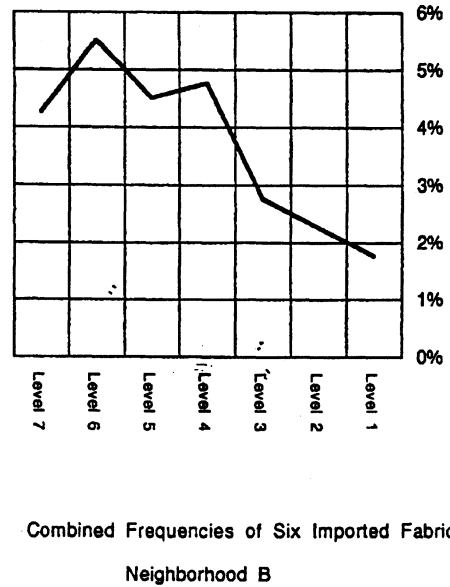


Figure 2

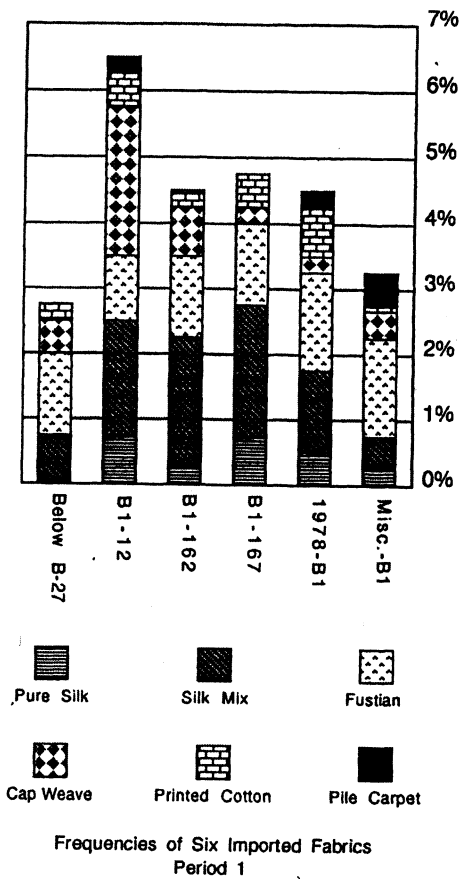


Figure 6

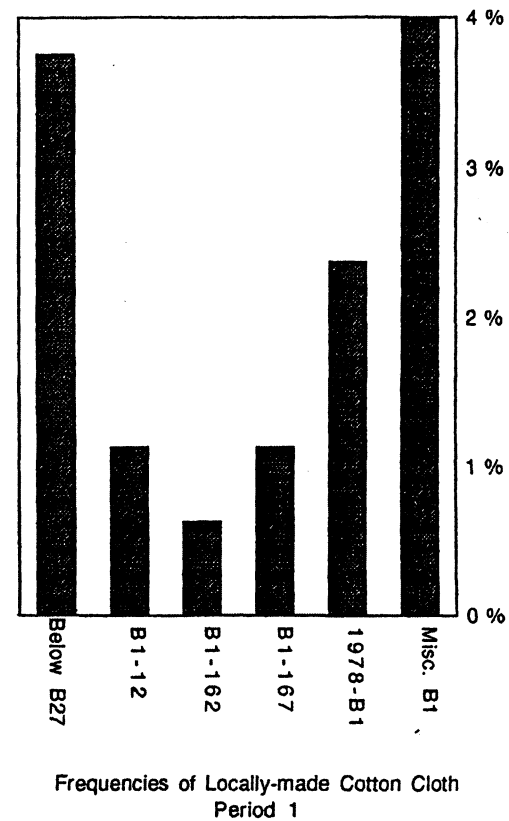




Figure 7

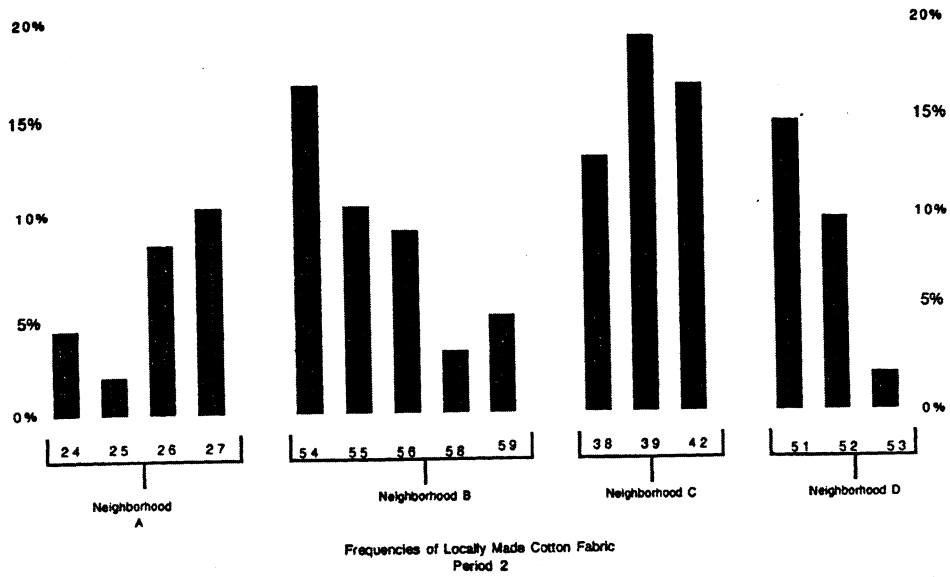


Figure 8

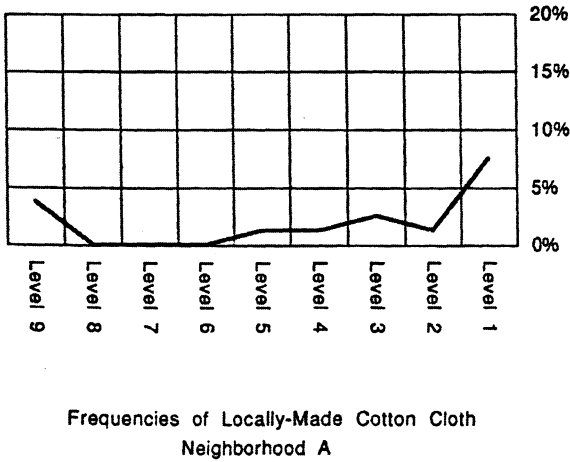


Figure 9

