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TRANS-SAHARAN COMMERCE IN THE MEDIEVAL AND POST-MEDIEVAL ERAS: RESULTS FROM THE LABORATORY STUDY OF CERAMICS

Rahma El Hraiki, Anne Schmitt and Maurice Picon

SUMMARY

On different sites in the south of the Sahara, imported ceramics have been found. Their origins make it possible to identify caravan routes during the medieval and post-medieval periods. Ceramics gathered mainly in Mauritania, on the Tegdaoust site, and also in Niger, on the Azelik site have been studied in the laboratory in order to determine their origins. The reference material used for this purpose come from excavated sites and prospection in Morocco, Algeria, Tunisia and Egypt. The origins identified in the laboratory confirm the leading part played by Sijilmasa, Morocco, in the trade with the Mauritanian sites. On the Niger sites, the material originating from Sijilmasa seems to be absent. However, strong Egyptian influences can be observed.

INTRODUCTION

Imported ceramics have been discovered on many sites south of the Sahara desert. These are mainly pale-coloured clay, calcareous, lead-glazed and tin-glazed ceramics originating from neighbouring Mediterranean countries. The ceramics under study at the Laboratoire de Céramologie come mainly from two sites - Tegdaoust in Mauritania, formerly called Aoudaghost Region, and Azelik in the Niger Republic, formerly Takadda (Fig. 1).

The town of Aoudaghost in Sahelian Africa is frequently mentioned by Arab writers. They attach considerable importance to it as far as trans-Saharan trade is concerned during the medieval and the beginning of the post-medieval periods. The ancient town has been identified with the present site of Tegdaoust in Mauritania. Excavations began on the site in 1960 and continued with some interruptions until 1976 under the direction of Professor J. Devisse; Ms D. Robert and Mr S. Robert. The excavations revealed various living quarters and craft activity areas which indicate a highly developed urban organization. Thousands of imported ceramics have been discovered, the origin of which was totally unknown. The dating of the different stages of the occupation of the site is particularly difficult. The small number of fourteenth-century dates are very uncertain, and the imported ceramics do not possess sufficient stylistic information to enable precise dating.

The beginning of imports to Tegdaoust has been placed by excavators somewhere between the eighth and tenth centuries; it is the later date that now seems more probable. The ending of imports presents similar uncertainty and has been placed between the thirteenth and sixteenth centuries.

The town of Takadda appears later than Aoudaghost in Arab texts. It is also an important caravan centre which has been identified with the present site of Azelik in the Republic of Niger. It has been the object of surface prospections and some limited excavations between 1973 and 1985. The imported material is rarer than in Tegdaoust. However, written documents place the activity at Takadda with much more precision between the fourteenth and the sixteenth centuries.
METHODS AND RESULTS

The laboratory team was asked to determine the origin of imported ceramics in order to deduce aspects of trans-Saharan commerce. The objective was to use these findings to complete or query indications documented in the literature.

The method used is based upon the comparison of the chemical composition of ceramics of unknown origin, with that of known references. Analyses were performed using X-ray fluorescence spectrometry (employing a Siemens SRS 200 sequential spectrometer), concentrating on the following 17 chemical elements: K, Rb, Mg, Ca, Sr, Ba, Mn, Ni, Zn, Al, Cr, Fe, Si, Ti, Zr, Ce, V.

The three-step approach adopted will be outlined briefly, using the Tegdaoust ceramics as an example.

Preliminary classification

Preliminary classification covers 66 samples of ceramics from the Tegdaoust region. It was performed using cluster analysis by average linkage methods on standardised variables relating to the 17 measured chemical elements (an in-house laboratory computer programme). Classification reveals the existence of several groups, including the group A which will be used as an example in this paper (Fig. 2).

Highlighting of similarities

Among the large number of reference samples (the compositions of which were compared with those of the Tegdaoust ceramics), the samples originating from the medieval site of Sijilmasa, in the south of Morocco, feature strong composition similarities with group A ceramics (Fig. 3).

Appraisal of similarities

As similarities may be identified only in relation to differences, two additional approaches were included to establish effectively that the group A ceramics effectively originated from the Sijilmasa site:

1. Comparison with ceramics from sites which were thought (for historical, geographical or other reasons) to have exported ceramics to Tegdaoust (for example, Fez, Marrakech, Cordova, Tahert, Achir, The Beni Hamad Kalaa, Kairouan etc.). It is feasible to check that the group A ceramics are different from those originating from these sites.

2. Comparison with ceramics and clays from regions close to Sijilmasa, where geological data suggests they could present composition similarities with samples from Sijilmasa and thus with the group A (e.g. ceramics from Zagora (Fig. 4)). Therefore, we can check that the compositions of group A are closer to those of the Sijilmasa ceramics than to those of ceramics and clays from the various regions close to Sijilmasa.

The deeper the investigation of these last two stages, the more likely it seems that the group A ceramics originate from Sijilmasa.
RESULTS

The research operations conducted on the basis of these principles, resulted in just over half the Tegdaoust ceramics being assigned to Sijilmasa. The second largest group which figures among the ceramics imported in Tegdaoust, is among the most ancient imports collected from this site. This group is currently undergoing identification. It may originate from Sedrata in the south of Algeria (however, current research conditions in Algeria seriously inhibit identification possibilities). A third group, not especially represented at Tegdaoust, originated from the Kairouan region in Tunisia. These imports seem to begin in Tegdaoust in the tenth century and continue up until the thirteenth-fourteenth centuries.

Compositions of the three ceramic groups are listed in Table 1. It is noted that the compositions of the groups are very different from one another. However, similar compositions can be found in many places in the Maghreb. This being the case, it is important to consider the following two points: it is necessary to have, for all the sites which have produced the ceramics found in the south Sahara, analyses of numerous pieces of reference material from the likely place of production (37 on Figure 3, more than 100 were analysed). It is also necessary to use very sensitive methods of classification and comparison of the compositions, of which Figure 3 is only a simplified illustration. It is also very desirable to have a large data bank of compositions of the imported ceramics in all these regions to permit the validation of the similarities of compositions observed. Thus this means that several thousands of analyses were necessary for this research of caravan routes.

DISCUSSION

In the Azelik region, there do not appear to be any imports from Sijilmasa. It is also true that the later date of settlements in this location (no earlier than the thirteenth century), may partially explain the rarity of imports. It is yet again this late date which may explain the absence of samples from the group presumed to come from Sedrata, despite the relative proximity of this site. However, imports from the region of Kairouan and more generally from Ifriqiya, appear somewhat plentiful as compared with Tegdaoust; although the literature makes no reference to this point, proximity undoubtedly played a role. Imports from Egypt, however, are the most significant aspect of ceramics collected from the Azelik region. These imports were unknown in Tegdaoust. With regard to Azelik, all these imports seem to date from between the thirteenth and sixteenth centuries.

Determining the origin of ceramics imported into Tegdaoust and Azelik is only the first stage of the research undertaken on trans-Saharan caravan routes during the medieval and post-medieval periods. To be able to trace exactly the routes taken by the caravans, it is necessary to study the ceramics of the principal caravan stops also. The work has been done for the Zagora site (Fig. 1) and for Tamedoult, 300 km to the south-west of Zagora. These two sites have a small local production of ceramics, but a very large quantity of ceramics imported from Sijilmasa can also be found there. These observations seem to confirm local traditions according to which, caravans from Sijilmasa followed the Anti-Atlas towards the south-west before cutting south around Tamedoult.

The study of other caravan stops is in progress. Such studies, unfortunately, remain in the planning stage as the political situation in the regions concerned does not permit any research at the present time. Despite the thousands of imported sherds collected from Tegdaoust, it is difficult to talk about true commerce for these objects. In both Tegdaoust and Azelik, they were probably household goods for a section of the population living in these towns. The distribution of such products outside urban locations, seems virtually non-existent.

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NOTES


Table 1 Compositions of three groups of ceramics found at Tegdaoust probably from Sijilmasa (A), perhaps from Sedrata (B) and from Kairouan (C)

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<th>Elements expressed as per cent</th>
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<tbody>
<tr>
<td>Group</td>
</tr>
<tr>
<td>A m</td>
</tr>
<tr>
<td>n=16</td>
</tr>
<tr>
<td>C m</td>
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<tr>
<td>n=3</td>
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<table>
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<tr>
<th>Elements expressed as parts per million (ppm)</th>
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<tr>
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Notes n = number of samples in each group, m = mean, s = standard deviation
Fig. 1  Location of the Tegdaoust and Azelik sites and some of the production centres in the Maghreb region
Fig. 2  Preliminary classification of ceramics imported on the Tegdaoust site and identification of a specific group (group A)

Fig. 3  Classification of imported ceramics at the Tegdaoust site (in black, samples of group A from Fig. 2), and various types of samples from Sijilmasa (identified by white symbols). The remaining samples come from Kairouan and perhaps from Sedrata, or are isolated samples and samples with composition changes.

Fig. 4  Classification of ceramics imported on the Tegdaoust site (in black, samples of group A from Fig. 2), and samples from the region of Zagora (identified by white squares)