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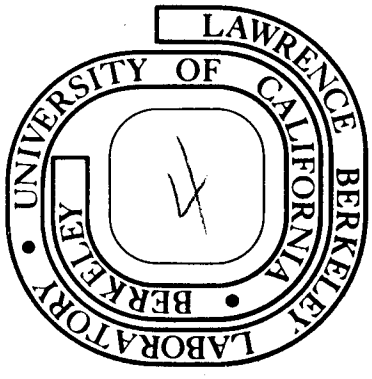

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DISCLAIMER

CONSIDERATION OF THE TEL NAGILA BICHROME WARE KRATER AS A CYPRIOTE PRODUCT*

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A previous publication[1] presented evidence for the Cypriote origin of the distinctive pottery repertory dating from about 1600 B.C. which has been known as "Palestinian Bichrome Ware". Neutron activation analysis showed that the chemical composition of the pottery matches that of local wares from eastern Cyprus and arguments were discussed pertaining to stylistic antecedents and matters of chronology. This assignment of Cypriote provenience has a number of ramifications in Palestinian and Cypriote archaeology.

One of the stylistic problems which has arisen concerns the krater form which was popular in Palestine and Syria around 1600 B.C., but was not common in Cyprus at the time. An unusually fine example of a Bichrome krater from Tel Nagila (Fig. 1), on display in the Israel Museum, was the subject of a detailed discussion[2] of its style and the distribution of its stylistic parallels. This particular vessel had not been sampled for analysis in the previous study.[3] The authors who analyzed its stylistic attributes[4] examined carefully its relation to other pictorial kraters found from Ras Shamra to Tell el 'Ajjul and in Cyprus. They suggested that strong similarities in an animal motif on this type of ware and later Mycenaean Ware in the Cypriote "Rude Style" might be the result of Canaanite inspiration, but felt they could not deduce any specific distribution areas or workshops for Bichrome Ware in Greater Canaan.

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*Work performed under the auspices of the U. S. Atomic Energy Commission.

A chemical analysis of the fabric of this particular vessel would show whether it has indeed a Cypriote origin, and would help show if kraters are a vessel form which could also be considered as Cypriote. A 100 mgn sample of pottery was scraped from a cleaned area at the base of the krater. In the process we noted the walls were surprisingly thin for its size, unlike the walls of other Bichrome Ware kraters we have sampled. Neutron activation analyses were made on the pottery powder and the abundances of some 40 elements were carefully measured. Of these, eighteen elements have been selected for diagnostic purposes as was done in the earlier study.[5] The chemical profile is compared in Table 1 and Fig. 2 with similar data pertaining to reference pottery groups of Cypriote origin from Tell el 'Ajjul and Milia (Cyprus).

The first column of figures in Table 1 represents a group of 36 Bichrome Ware pieces from Tell el 'Ajjul. For each element, the mean value for the group is listed along with the standard deviation which characterizes the spread of values encountered. The second column presents the data for the Tel Nagila krater, and the last column is for a group of eight hand-made sherds from Milia which are dated to ca 1600 B.C.[6] The Tel Nagila krater fits well in the reference group from Milia and also agrees with the Bichrome group from Tell el 'Ajjul, particularly if each of its values is adjusted upward by about 10%. The need for such an adjustment is frequently encountered and does not confuse the interpretation of pottery provenience.[7] It arises where there are variations in dilution of the elemental abundances by residual CO_2 as carbonate, by water, and by such "sterile" inclusions as quartz sand. It might be mentioned that although the numbers for the Tel Nagila krater require a 10% adjustment to fit the group from Tell el 'Ajjul in Table 1 and a group of 27 pieces of Bichrome from Milia which are not shown here, it agrees without adjustment with two individual sherds of Bichrome Ware from Milia, also not shown here.

Also omitted from this brief report are results of extensive samplings of pottery from a considerable number of Palestinian sites and of many sherds from Syrian sites. In no case does the chemical composition pattern of local potteries agree with that of the Bichrome wares under discussion. The conclusion is that the Tel Nagila krater is very likely made from clay of eastern Cyprus and not from clay of Palestine and Syria.

In attempting to reconstruct the history of a new pottery reportory through stylistic criteria, the issue of the actual provenience of the vessels is often taken for granted. Under some circumstances, this is manifestly justified. When vessels of the new style are found in abundance within a milieu in which most of the stylistic elements follow an existing tradition, the question of provenience hardly arises. Such a happy concordance provides a good base for pondering the innovative features in terms of what connections with the outside world could have provided their inspiration.

Difficulties arise when archaeological evidence does not point clearly to the provenience of the pottery. Then, the stylistic features and their possible connections are used to help decide the issue of provenience. The problems become compounded when the stylistic elements do not provide a self-consistent set of clues upon which to judge stylistic connections. The Bichrome Ware assemblage seems to fall into this category.

In the case of Bichrome Ware, the geographical distribution tells us little as to where they were made. Fairly large collections came to light at widely separated sites such as Tell el 'Ajjul, Megiddo, Ras Shamra, Milia and other Cypriote sites. In principle, the dates at which they appeared at different sites would be of value, but here too the necessary chronological discrimination cannot yet be established with confidence.

Cast loose from any definite knowledge about provenience, the application of stylistic analysis can have much latitude, and the interpretation of the Bichrome repertory is a case in point. Cyprus was rejected as the home of Bichrome Ware even though almost all of the shapes and many of the decorative motifs were recognized as typical of the Cypriote White Painted sequence. No doubt, the prevailing idea that the potter's wheel was not used on Cyprus as early as 1600 B.C. was an important factor in this judgment. Once this step was taken, it became necessary to arrive at a consistent picture of events in another setting. Heurtley,[8] became convinced that Bichrome Ware was Palestinian in origin but at the same time did not look to the local Canaanite potters for its inspiration. He looked upon the importation of Cypriote White Painted Ware as the factor"...which precipitated a revival of vase painting in Palestine, long-overdue".[9] It then remained to decide how the innovative features were introduced. Epstein[10] dealt with this problem in great detail after becoming convinced that some of the distinctive design motifs could not be found indigenous in the Syro-Palestinian setting.

One of the most distinctive features of Bichrome Ware design is the elegantly rendered animal motif which appears on many of the vessels. This feature is innovative in any of the localities which have been considered as places of manufacture of these wares. In Cyprus during this period, zoomorphic vessels are known but there is a conspicuous dearth of animal forms painted on ceramics. In a similar vein, the Syro-Palestinian setting did not produce this design motif during a lengthy period preceding the appearance of the Bichrome Ware. Unless this design arose as pure artistic invention, one must look to areas external to both Cyprus and Syro-Palestine for its inspiration.

Epstein[11] believed that this motif (as well as the spoked-wheel) was an invention of the Hurrians who had a talent for amalgamating and developing artistic styles as they spread out over a region from Northern Mesopotamia to Syria. Elegant stylized animal motifs, albeit not in bichrome rendition, did appear at the right time and as a foreign element in this region, and she attributed these to the Hurrians. The Bichrome Ware was explained as another example of this kind of development taking place in a different setting.

Finally, we return to the krater shape which is the subject of this report. It was well known in Syrian and Palestinian corpora, but was also not absent in Cypriote pottery of the White Painted era. Milia Tomb 10 yielded kraters,[12] and a White Painted krater in the Nicosia Museum (number RR1748) was sampled by us and found to be of eastern Cyprus origin. Again, it seems necessary to recognize that the Bichrome Ware repertory has features of diverse pottery making traditions: traditional Cypriote shapes, some shapes more prominent in Syro-Palestine, painted design elements well known in Cypriote wares, others which are foreign to both Cyprus and Syro-Palestine.

REFERENCES

1. Michal Artzy, F. Asaro, and I. Perlman, "The 'Palestinian' Bichrome Ware", J. Am. Oriental Soc. 93, 4 (1973).

2. Ruth Amiran and A. Eitan, "A Krater of Bichrome Ware from Tel Nagila", Israel Exploration Journal 14 (1964), pp. 219-231. See also Ruth Amiran, Ancient Pottery of the Holy Land, (Jerusalem, 1969), ph. 137, PL. 48:10.

3. Artzy, op. cit.

4. Amiran, op. cit.

5. Artzy, op. cit.

6. We chose handmade ware since it is agreed upon to be Cypriote by all archaeologists.

7. See: F. Asaro, I. Perlman, and T. Dothan, "Provenience of the Deir el-Balah Coffins", Israel Exploration Journal 23 (1973), pp. 147-151, see also: F. Widemann, M. Picon, F. Asaro, H. V. Michel, and I. Perlman, "A Lyons Branch of Pottery-Making Firm of Ateius of Arezzo", submitted to Archaeometry.

8. W. A. Heurtley, "A Palestinian Vase Painter of the Sixteenth Century B.C.", Quarterly of the Department of Antiquities in Palestine, VIII (1939).

9. ibid., p. 34.

10. C. Epstein, "The Palestinian Bichrome Ware", Brill, Seiden, 1966.

11. ibid.

12. A. Westholm, "Some Late Bronze Tombs at Milia", Quarterly of the Department of Antiquities in Palestine, VIII (1939), pp. 1-20.

Table I. Chemical abundances[a] of the Tel-Nagila krater and Cypriote reference groups.

	Aju. Bichr.[b] (36 pcs.)[d]	Nagl. 1 (single sherd)	Mla. Handmade[c] (8 pcs.)[d]
Fe%	5.54 ± 0.23	4.76	5.00 ± 0.50
Ta	0.691 ± 0.034	0.600	0.658 ± 0.066
Sc	22.08 ± 0.92	19.46	20.83 ± 2.56
Co	30.54 ± 1.78	27.46	27.13 ± 2.94
Cs	4.70 ± 0.50	4.34	3.59 ± 0.63
Cr	351 ± 68	410	346 ± 62
Hf	2.95 ± 0.21	3.00	2.97 ± 0.29
Th	7.05 ± 0.46	6.51	6.81 ± 0.78
Ni	251 ± 21	253	229 ± 19
Rb	95 ± 25	86	63 ± 16
La	21.2 ± 1.2	19	20.7 ± 1.9
Lu	0.319 ± 0.019	0.296	0.320 ± 0.019
U	2.56 ± 0.92	1.71	2.48 ± 0.77
Ti%	0.420 ± 0.034	0.355	0.454 ± 0.031
Mn	973 ± 99	893	1076 ± 94
Na%	1.076 ± 0.187	0.916	1.202 ± 0.213
Al%	6.85 ± 0.39	6.48	—[e]
Ca%	9.8 ± 1.7	9.70	9.9 ± 2.6

[a] All values are in parts-per-million or, if indicated after the chemical, in per cent.

[b] Cypriote Bichrome Ware from Tell el-'Ajjul in Israel.

[c] Cypriote hand-made pottery from Milia, Cyprus.

[d] The two values for each element are the mean abundance for the group and the root-mean-square deviation.

[e] Al measurements were not being made when these sherds were analyzed.

FIGURE CAPTIONS

Fig. 1. Bichrome krater from Tel Nagila (Israel Department of Antiquities 66.921). Figure taken from R. Amiran, Ancient Pottery of the Holy Land, PL. 48:10.

Fig. 2. The bars represent mean value for the indicated pottery groups; the hatched zone on each represents the ±, the standard deviation for the group. The value for each element is in units of parts-per-million unless designated "%".

Aju. Bichr.: A group of 36 pieces of Bichrome Ware excavated at Tell el-'Ajjul.

Nagl. 1 Bichr. krater: A Bichrome krater excavated at Tel Nagila.

Mla. Handmade: A group of 8 pieces of hand-made Cypriote wares typical of the period.

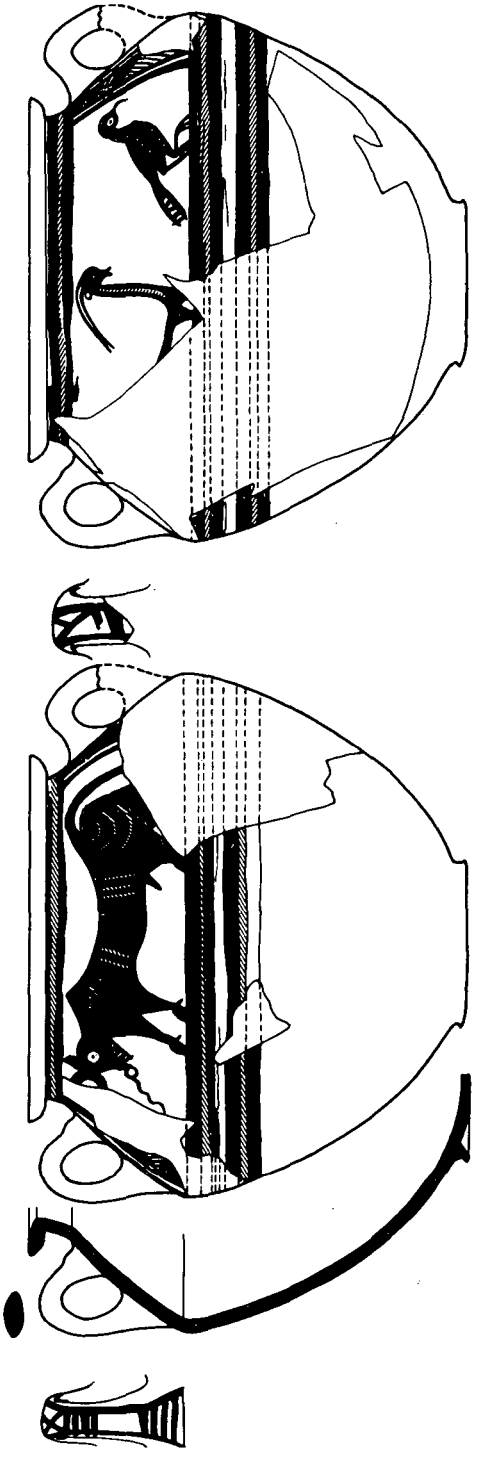

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Fig. 1

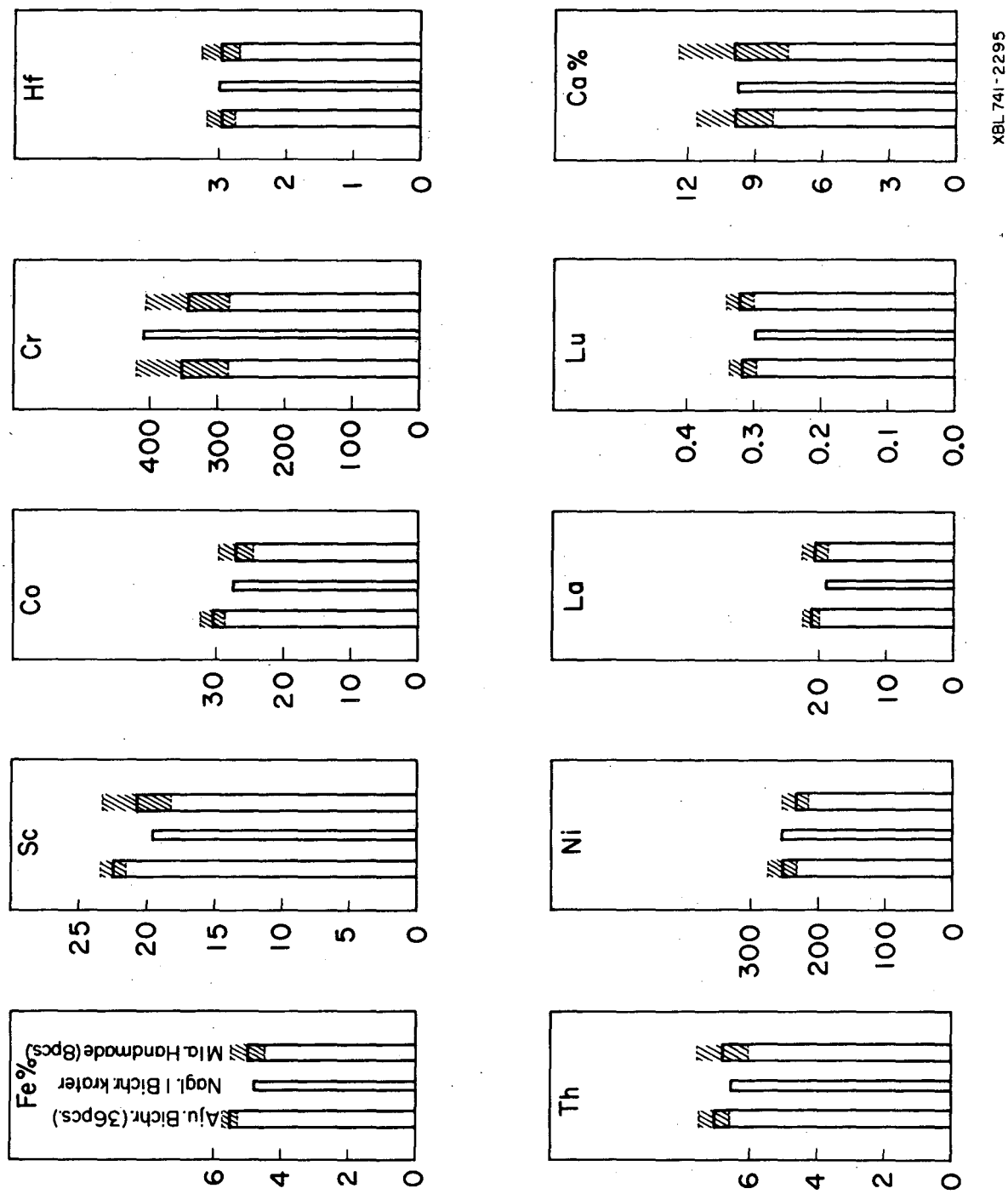
Fe%
Sc
Co
Cr
Hf
Th
Ni
La
Lu
Ca%
Alu. Bichr. (36pcs.)
Nagl. I Bichr. krater
Mla. Handmade (8pcs.)
XBL 741-2295

Fig. 2

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