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Chemical Composition of Cypriot Red Slip Ware from Kourion and Nea Paphos

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Artykuł został opracowany do udostępnienia w internecie przez Muzeum Historii Polski w ramach prac podejmowanych na rzecz zapewnienia otwartego, powszechnego i trwałego dostępu do polskiego dorobku naukowego i kulturalnego. Artykuł jest umieszczony w kolekcji cyfrowej bazhum.muzhp.pl, gromadzącej zawartość polskich czasopism humanistycznych i społecznych.

Tekst jest udostępniony do wykorzystania w ramach dozwolonego użytku.



NEA PAPHOS CHEMICAL COMPOSITION OF CYPRIOT RED SLIP WARE FROM KOURION AND NEA PAPHOS Małgorzata Daszkiewicz and Gerwulf Schneider

A series of 29 samples of Cypriot Red Slip Wares (CRSW) was analyzed to compare finds from Nea Paphos and Kourion¹ (Tables 1 and 2).² At first glance, the composition of all CRSW samples analyzed so far is very similar and differs only slightly from Cypriot Sigillata (CS). Using multivariate statistical clustering methods, all dendrograms agree in grouping into two major groups, the last assembling all deviating samples (Fig. l). The first major group can be divided into four subgroups. Two of the subgroups (I and IV) include nearly all the finds from Kourion. The first group consists only of finds from Kourion, the second includes two finds from Nea Paphos, which in a previous paper had been taken as a subgroup of CRSW from this site (Daszkiewicz et al. 1995). On the other hand, the remaining samples from Nea Paphos (with the exception of D580) make up two other subgroups, together with four samples from Kourion. The samples in the last subgroup are more similar to CS than to CRSW, a fact checked by comparing all analyses of CS and CRSW in a dendrogram. This showed a separation of CS and CSRW with only a few exceptions. This

¹ Samples for analyses were selected by H. Meyza from the Centre for Mediterranean Archaeology of the Polish Academy of Sciences.

² Chemical analyses were made in the laboratory of the Arbeitsgruppe Archaometrie FU Berlin by WD-XRF. Analysis was made of ignited samples, major elements are given in percent by weight, normalized to a constant sum of 100%, the original total is given in the column "Total", loss of ignition at 900° C is given in column "LOI", traces are in ppm, elements in brackets are determined with lower precision.

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Groups	Sample	Si02	Ti02	AI203	Fe203	MnO	MgO	CaO	Na2O	K20	P205	(S)	(LOI	TOTAL
	D 680	57.54	0.94	19.12	7.78	0.087	2.98	7.07	0.86	3.46	0.18	0.02	0.02	3.31	100.60
	D 681	56.63	0.94	19.62	7.71	0.083	3.13	7.35	0.87	3.49	0.19	0.00	0.02	2.18	101.28
	D 682	56.34	0.93	18.75	7.71	0.088	3.15	8.58	1.03	3.23	0.19	0.01	0.01	2.18	100.37
	D 683	55.55	0.85	18.51	7.48	0.121	3.77	9.09	0.85	3.58	0.19	0.08	0.02	3.95	100.47
	D 685	54.60	0.89	17.83	7.40	0.087	3.37	11.53	0.82	3.28	0.19	0.08	0.01	7.07	100.01
	D 686	55.40	0.87	18.32	7.40	0.126	3.89	9.57	0.75	3.47	0.21	0.04	0.01	4.94	100.49
1:1	D 687	55.98	0.93	19.40	8.04	0.094	3.21	7.86	0.85	3.43	0.20	0.01	0.01	2.86	100.77
	D 688	57.11	0.83	18.60	71.7	0.098	3.19	8.10	1.24	3.48	0.19	0.02	0.02	2.09	101.53
	D 691	55.44	0.83	17.52	6.97	0.094	3.06	11.67	1.07	3.17	0.17	0.10	0.01	5.62	100.95
	D 693	54.51	0.82	17.82	7.07	0.108	3.90	10.88	1.03	3.21	0.66	0.02	0.01	0.64	101.06
	D 695	54.58	0.90	18.62	7.40	0.080	3.19	10.87	0.93	3.23	0.20	0.10	0.01	2.90	98.05
	D 696	56.70	0.90	18.65	7.54	0.098	3.49	8.14	0.91	3.39	0.18	0.02	0.01	2.23	100.53
	D 697	54.87	0.84	18.15	7.24	0.112	4.15	10.09	0.97	3.41	0.17	0.03	0.02	0.62	101.01
	D 702	55.62	0.84	18.82	7.56	0.110	3.56	8.83	0.94	3.56	0.16	0.01	0.01	3.20	100.72
	D 703	55.84	0.83	18.60	7.51	0.110	3.59	8.76	0.92	3.65	0.19	0.01	0.01	2.90	101.24
1,1	D 684	56.38	0.94	19.08	7.78	0.086	2.98	8.34	0.80	3.41	0.21	0.01	0.01	3.83	100.82
	D 689	56.84	0.98	19.21	7.59	0.087	3.39	7.85	0.73	3.14	0.19	0.04	0.02	1.38	100.23
1,11	D 692	57.41	1.03	17.53	7.34	0.091	2.63	10.26	0.76	2.79	0.19	0.00	0.01	1.76	101.13
	D 694	56.18	1.05	19.18	7.69	0.067	2.66	9.15	0.65	3.19	0.19	0.09	0.01	3.89	101.16
	D 698	59.74	0.94	18.22	7.09	0.080	2.94	6.60	0.73	3.45	0.21	0.01	0.02	2.82	100.95
	D 699	58.83	0.94	19.41	7.42	0.057	2.79	6.32	0.71	3.36	0.17	0.05	0.01	1.09	100.82
	D 700	57.80	0.91	18.44	7.14	0.083	2.83	8.33	0.92	3.37	0.18	0.03	0.01	1.04	101.03
1,1	D 701	58.68	0.88	17.59	6.86	0.069	2.59	8.85	0.87	3.43	0.17	0.00	0.01	4.87	101.93
	D 704	56.86	0.87	17.12	6.74	0.065	2.82	11.34	0.75	3.25	0.18	0.12	0.01	6.61	99.81
	D 705	59.46	0.93	18.42	7.13	0.072	2.83	6.69	0.70	3.59	0.17	0.02	0.01	3.44	100.20
	D 707	58.73	0.94	19.14	7.46	0.058	2.73	6.48	0.69	3.46	0.31	0.05	0.01	2.10	98.91
	D 709	58.97	0.88	17.65	6.95	0.080	3.19	7.86	0.82	3.42	0.18	0.06	0.01	3.41	100.78
2,1	D 690	55.64	1.05	20.91	7.95	0.079	3.55	5.82	0.91	3.92	0.19	0.02	0.01	0.92	100.33
2,2	D 708	54.59	0.84	17.91	7.31	0.115	4.09	11.02	1.79	2.03	0.32	0.02	0.01	0.87	100.69

Tab. 1. Results of chemical analysis, major elements (% by weight).

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Sample	D 680	D 681	D 682	D 683	D 685	D 686	D 687	D 688	D 691	D 693	•	D 695	D 695	D 695 D 696 D 697	D 695 D 696 D 697 D 702	D 695 D 696 D 697 D 697 D 702 D 703	D 695 D 696 D 697 D 702 D 703 D 684	D 695 D 696 D 697 D 702 D 703 D 684 D 689	D 695 D 696 D 697 D 702 D 702 D 684 D 689 D 689 D 689	D 695 D 695 D 696 D 697 D 702 D 703 D 684 D 684 D 689 D 692 D 694	D 695 D 695 D 696 D 702 D 703 D 684 D 689 D 689 D 689 D 692 D 692	D 695 D 696 D 696 D 702 D 702 D 684 D 684 D 684 D 684 D 688 D 688 D 698 D 698 D 698 D 698	D 695 D 697 D 697 D 697 D 694 D 684 D 689 D 689 D 698 D 697 D 697 D 697 D 700 D 700	D 695 D 696 D 697 D 702 D 703 D 684 D 689 D 689 D 698 D 698 D 698 D 698 D 698 D 697 D 700	D 635 D 636 D 636 D 637 D 702 D 703 D 634 D 639 D 639 D 638 D 638 D 638 D 637 D 701	D 635 D 636 D 636 D 637 D 702 D 702 D 634 D 639 D 638 D 638 D 638 D 638 D 637 D 701 D 701	D 635 D 636 D 637 D 702 D 702 D 634 D 639 D 638 D 638 D 638 D 638 D 638 D 637 D 701 D 701	D 635 D 636 D 637 D 702 D 702 D 634 D 638 D 638 D 638 D 638 D 638 D 638 D 638 D 701 D 701 D 705 D 705	D 635 D 636 D 636 D 637 D 702 D 702 D 639 D 638 D 638 D 638 D 638 D 701 D 701 D 705 D 705 D 705 D 705 D 705 D 630
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Tab. 2. Results of chemical analysis, trace elements (ppm).

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grouping was checked by using Mahalanobis distances, which, however, cannot be applied to the very small number of samples in the groups of the dendrogram in Fig. 1.

If the analyses are ordered according to the dendrogram, only little differences between the groups can be seen, and these can be interpreted as resulting from different sources within an area of the same geological origin. Secondary burial effects, different at the two sites, are improbable when the distinguishing elements are regarded.

It is difficult to reach a final conclusion bearing in mind that all the samples from Nea Paphos which fell into subgroup II and IV with samples from Kourion are dated to the 6th-7th century, in contrast to samples of Early Cypriot Red Slip Ware from Nea Paphos that form subgroup III.³

In this case more analyses are advised to check, if the grouping was indeed connected with sites or with dating.

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³ Information concerning the investigated samples is given according to H. Meyza, List of samples - CRSW, CS, ESA and IS from Polish excavations at Nea Paphos, submitted for analysis (ms).