

VRG_Folder_0634

Koan clay analysis: List of Samples

Item	Inv. no.	Reading	Shape	Corpus no.
1	SS 8019	Ἀναξ κ γύρα	Double	31
2	JYE KF 1585	"	Non-double (broad)	31
3	SS522	Δίος lyre	Double	220
4*	SS 12196	"	Double	220
5	SS 12975	"	Double	220
6*	SS 12417	"	Non-double (Rhodian shape)	220
7	SS 10027	Δί lyre os (round st.)	Non-double (Rhodian shape)	(221)
8	SS12045	"	"	(221)
9	SS 12271	"	"	221
10	SS 12639	"	"	(221)
11	SS 12974	lyre Διός κού πίδου	Non-double (broad, arched)	--
12*	SS 12913	Εὐρυχ(Double	305 A
13*	SS 7985	"	Non-double (broad)	305 A
14	SS 14081	Εὐρυχίδα club	Double	307
15	SS 815	"	Non-double (broad)	307
16	SS 12700	club, crab	Double	714
17	SS 12703	"	Double	714
18	M/273	crab, club	Non-double (broad)	715
19	SS 9529	thunderbolt	Double	730
20	SS 3176	"	"	730
21	SS 13883	"	"	730
22	SS 12430	"	Non-double (broad, rolled rim)	730

* tested by Brookhaven 1958

Koan double/non-double Clay Analysis

31.i.84

Permission has come through from the Ministry to take the samples (Nov. 1983). It should be done with the supervisor of the Acropolis, so we wait for Mr. Tsakos to return (Feb 10?) to see the handles laid out before Steve Korb and Richard Jones take the samples.

Letter to John Camp of Nov. 26, 1981, listing the handles originally applied for, has been added to in various ways. (It is filed in the AS (Agora Sample) folder "GRACE (TATHESON)" in the Agora.)

- 1) AS numbers have been given to ³2 non-Agora handles, JYE KF 1585 (sample already taken and handle returned to JYE) and M/273. ^{also Kent no 4}
- 2) SS 12271, ^{in original list}SS 3176, ^{corrected of SS 3176 in original list}SS 14081 ^{NO} ~~as added~~ were added later (between ~~now and~~ Nov. 1981 and now) and have received AS numbers.
- 3) 3 additional AS numbers appear on ~~the list~~ the list of AS numbers kept in the AS records, AS 614-616, representing SS 3569, SS 14233, and another (no SS number given) ^{Kent no 9}
- 4) It appears that one handle on the original list to JC never received an AS number (SS 3174) - ^{mistake (PWW typing original request) for 3176}

Ap = applied for
Ex = extra

laying out the handles for sampling and inspection:

Ap	SS 522	AS 594	-	with envel.
Ap	815	605	-	"
Ap	3176	610	-	" (mistakenly given as "SS 3174" on list of request)
Ex	[3569	614	-	"]
Ap	7985	603	-	"
Ap	8019	592	-	"
Ap	9529	609	-	"
Ap	10027	598	-	"

OVER,

(list of Kean/non-double to be sampled cont)

Ap	SS	12045	- AS 599	- with envelope	
Ap		12196	- 595	"	
Ap. Ex		12271	- 600	"	Ex
Ap.		12417	- 597	"	
Ap.		12430	612	"	
Ap.		12639	601	"	
Ap.		12700	606	"	
Ap.		12703	607	"	
Ap.		1291 ³ 7	602	"	
Ap		12974	613	"	
Ap		12975	596	"	
Ap.		13883	611	"	
Ap Ex		14081	604	"	Ex
Ex	[14233	615	"]
Ex		14			

20 applied for 2 additional

Not Agora material (but in the same group for testing) 3 others

Benachi collection: M/273 - AS 608

J-Y Empereur: JYE KF 1585 (sample already taken) - AS 593

Kent (Pyrgos, Rheneia): 4 - AS 616

Total 25 handles

2.11.84 1. ii. 84

Typed version of the above ~~given~~ (just the lists ~~of~~ of SS-AS and others-AS, but including mention of ones sampled by Brookhaven and A. Hesnard) given to Margot for her "AS Grace (Ratheson) file", together with her copy of our letter to John Camp.

Koan clay analysis

Mr. Tsakos came this morning and looked at the trays laid out for sampling. I showed him the two that we had added since our original request for permission (SS 3569 and SS 14233) and he said that was fine. He asked how much we would need to take and I showed him the piece we had taken from JRE's handle, explaining that the 3 things in the 2nd tray (the JRE piece, a Benaki handle and a Kent (Rhenia) handle) were ~~the~~ not from the Agera excavation, that "this one, for instance, was brought to this Grace by Mr. Benaki from Egypt." He asked if the handles would leave the building (no, Steve Korb and Richard Jones will take the samples here) or the samples the country ~~&~~ which would require them to be specially packed and a further ~~πρόσκληση~~ (no, the samples will be done at the Αρχαιολογική Έκθεση).

He telephoned Mrs. Touloupa to see if any further paperwork was required, apparently she said not, and he told Έφρον Μπουμπάκης that it was OK for us to go ahead.

Richard Jones has agreed to come down on Thursday at 10:00 and take the samples with Steve Korb.

24. ii. 84

ask. He came and broke off pieces with his pliers for about $\frac{2}{3}$ of them. The others would be better done with his diamond-bladed, water-cooled saw at the Fitch, ~~but~~ so we left them until we could ask Mr. Tsakos if they could be taken to the Fitch. Today Mr. Tsakos, through Έφρον, told us we would have to make another ~~δύο~~ ²

OVER

Tel Anafa

1980

1.

?

(R)

(Koran clay contd.)

2.

for this^{*} to him, which would be sent on for approval to the *Τμήμα Μουσείων και Αρχαιολογικών Χώρων* (of the Service). So we decide to try to take them here with ordinary saws, which is fine for the petrographic samples but may lead to iron (?) contaminants in the chemical ones. Richard will ring ~~when~~ to make another appointment for next week.

* i.e. to have the handles go to the British School and back. [NB we did not ask Egon to ask Mr. Tsakos - I meant to ask him myself - but it came up at coffee, and she beat me to it. Probably it made no difference to the reply...]

AGORA EXCAVATIONS
AMERICAN SCHOOL OF CLASSICAL STUDIES
ATHENS, 146, GREECE



Copy
Given to Target Camp
1 Dec. 1981

REQUEST FOR SAMPLES FOR SCIENTIFIC EXAMINATION

Samples

- (1) How much sample is required? *A chip (approx. 1 cm²)*
- (2) How will the sample be taken and by whom? *Broken off by the Agora conservator, Steve Koob.*
- (3) How many samples do you wish from the Agora? List inventory and /or A.S. number on back of this sheet. *20 handles (see list on back)*
- (4) How many samples have you taken for comparative purposes and from where?
Two, one from a private collection in Athens.

Analysis

- (1) What type of analysis is to be used? *Retographic*
Is it destructive or non-destructive? *Destructive*
- (2) Where will the analysis be carried out? *Fitch Laboratory, the British School.*
By whom? *Ian Whitbread (and/or Richard Jones)*
- (3) Where will the samples be located following completion of analysis? *Fitch Laboratory*
Will they be available to other researchers? *Yes*
- (4) Please give short summary of the aim of the analysis.

To compare the clay of some double Kean amphora handles with that of some non-double handles (of various shapes) bearing the same stamp.

Results

- (1) When are the results expected? Do you agree to return the samples to the Agora if the analysis is not carried out in a reasonable amount of time?
Same time in 1982. Yes.
- (2) Do you agree to report your findings to the Agora as soon as the results are available? Will you send off prints of any articles that include Agora material?
Yes. Yes.

Philippa Thw Matheson
Signature

Date *25th Nov. 1981*

Address

*43 McKenzie Ave.
Toronto M4W 1K1*

*% The American School of Classical
Studies
Solonchis, 57
Athens 146.*

SS 522	AS 594 and 215*
SS 815	605
→ SS 7985 (already sampled by Brookhaven)	603 and 218* 31. i. 84
SS 8019	592 * sampled by A. Hesnard
SS 952 ⁹ 8	609
SS 10027	598
SS 12045	599
SS 12196 (already sampled by Brookhaven)	595 and 222*
SS 12271	600
√ SS 12430	612
→ SS 12417 (already sampled by Brookhaven)	597 and 223*
SS 12639	601
SS 12700	606
SS 12703	607
SS 12913 (already sampled by Brookhaven)	602 and 225*
SS 12974	613
SS 12975	596
SS 13883	611
SS 14081	604
↪ SS 31746	610

20 handles

Add by MET 4. ii. 83

SS 3569

SS 14233

AS 614

AS 615

[5]
4.2.83
list by MSH

<u>Sample no.</u>	<u>SS order</u>		
AS 215 - 594 ✓	for SS 522	sample taken	MSR Harvard
AS 605 ✓	815		
610 ✓	3176		
AS 218 - 603 ✓	7985	"	"
AS 592 ✓	8019		
AS 609 ✓	4529		
598 ✓	10027		
599 ✓	12045		
600 ✓	12271		
222 - 595 ✓	12196	"	"
223 - 597 ✓	12417	"	"
612 ✓	12430		
601 ✓	12639		
606 ✓	12700		
607 ✓	12703		
225 - 602 ✓	12913	"	"
613 ✓	12974		
596 ✓	12975		
611 ✓	13883		
604 ✓	14081		
	3569	} added by MSH 4.11.83	
	14233		
	Kent no 4 (Delos)		
593	non-Agora handle		
608	" "		

*To accompany request for
permission to Mr. Dentas*

30.xi.81

6

List of Koan amphora handles from the Agora Excavations in Athens for which permission is requested to take clay samples for petrographic analysis at the Fitch laboratory, the British School, Athens.

SS 522	SS 12417
SS 815	SS 12430
SS 3174 <i>- mistake for SS 3176</i>	SS 12639
SS 7985	SS 12700
SS 8019	SS 12703
SS 9529	SS 12913
SS 10027	SS 12974
SS 12045	SS 12975
SS 12196	SS 12975 SS 13883
SS 12271	SS 14081

This project is proposed by Miss Virginia Grace and Mrs FMW Matheson in connection with a corpus of Koan amphora stamps now in preparation as an Agora volume.

The handles are both double-barrelled Koan handles and single (non-double) handles. The latter are assumed to be from Kos because they bear stamps either identical to, or closely similar to, the stamps appearing on the double handles. We wish to find out whether clay analysis can help to confirm or disprove the tentative identification of the non-double handles as Koan.

The work is to be carried out by Mr. Ian Whitbread at the Fitch laboratory. It will entail breaking off a piece from each handle approximately one square centimetre in area (to be done by the Agora conservator, Mr Steve Koob).

American School of Classical Studies,
 Souidias Street, 54
 Athens 140

November 26th, 1981

Dr. John McK. Camp,
 Assistant Director,
 Agora Excavations,
 The American School of Classical Studies,
 Athens.

Dear John,

Here is a list of the Koan amphora handles from the Agora which Miss Grace and I would like to have tested in connection with the corpus of Koan amphora stamps at present in preparation.

The clay analysis would be done by a petrographic method at the Fitch Laboratory at the British School in Athens. This entails breaking off a small piece (about 1 cm²) from each object, from which Ian Whitbread at the Fitch will then take a thin section. I understand that he already has some samples of Koan amphoras from Corinth, which may provide additional comparative material.

May we have the permission of the Agora Excavations to take clay samples from these pieces? If so, would you be will to write a letter to this effect to Mr. Dontas to support our application to take these samples for analysis?

The handles are:

SS 522	SS 12417
SS 815	SS 12430
SS 3174 — mistake for	SS 12639
SS 7985 SS 3176	SS 12700
SS 8019	SS 12703
SS 9529	SS 12913
SS 10027	SS 12974
SS 12045	SS 12975
SS 12045	SS 13883
SS 12196	

Yours sincerely,

Philippa MW Matheson (for Miss V. Grace)

Sent John also a copy of the Project Statement (25. xi. 81)

Koan clay analysis

Agera form ~~for~~ for Agera Samples
file filled out 25th Nov. 1981



Request for Samples for Scientific
Examination

American School of Classical Studies,
Souidias Street, 54,
Athens 140.

26th November, 1981

The Fitch Laboratory,
The British School of Archeology,
Souidias, 52,
Athens 140

Dear Richard and/or Ian,

Herewith:

- 1) 4 pages of results from Brookhaven of clay tests done for Miss Grace in 1958, with a copy of a covering letter from Mr. Sayre (Dec. 10, 1958). I gather that you have the first page of these results on file. Page 4 is of my own concoction, since no. 23 was omitted from the results and is a sample from SS 12196 (no. 4 in the enclose List of Samples). As you can see, the last decimal place is not always to be taken as accurate, but it should be good enough to show why it didn't seem to come close enough to the other Koan to be counted as such. A concordance for the Koan may be useful:

Brookhaven no.	Agora inv. no.	List of Samples 1981
21	SS 12913	12
22	SS 7985	13
23	SS 12196	4
24	SS 12417	6
25	SS 12452 SS 14252	NOT USED (double Koan w. st. of well-known fabricant, ΑΟΧΟΕ)
26	P 11880	NOT USED (no st.)
27	SS 8257	NOT USED (Latin st.)
28	SS 11739	NOT USED (Latin st.)
29	P 12468	NOT USED (late, no st.)

- 2) List of Samples (to be done at the Fitch in 1982)

- 3) Project Statement (as requested). I should perhaps add that the variation in shape of the different styles of non-double handle is not likely to be a matter of date: some are 'imitation' Rhodian shape, others broad and flat, broad and arched, but all (except nos. 1 and 2) are in some way connected with the Middle Stoa building fill in the Agora and so presumably not wildly different in date (in any case, none should be later than about 180 BC).

When appropriate permissions come through, I have asked Steve Coob (the Agora conservator) to take samples from the series of handles which I have left laid out for the purpose at the Agora, and I am leaving also labelled envelopes for him to put them in.

I hope this gives you all you need in the way of documentation, and with any luck the samples will reach you before I return to Greece in the spring (mid-March?). We are, alas, leaving on December 3rd.

Yours sincerely,

Philippa MW Matheson

PS One further point-- Miss Grace used the term 'Pseudo-Koan' to apply to some imitations of the later Koan jars (perhaps used for imitation Koan wine -- cf. Amphoras Fig. 60 and text); the 'Koan' samples put by Brookhaven under Campania? may qualify as pseudo-Koan (i.e. nos. 27, 28, 29), but the term is not really appropriate for any of the items on the 1981-1982 List of Samples, which are all much earlier and presumed (until proved otherwise) to be real Koan, made in Kos of Koan clay with Koan stamps (though some, of course, might be called 'pseudo-' something else, e.g. Rhodian).

BRITISH SCHOOL AT ATHENS

14/11/81

52, ODOS SOUEDIAS,

ATHENS, 140

Tel. 710974

Dear Margaret Matherson,

I talked to Ian Whitbread soon after you left yesterday and told him that you were setting things in motion for the project on the pseudo Koan amphorae. I should have asked you yesterday, but forgot, whether you could write a one page 'project statement' setting out the problem and saying how petrological (and chemical) analysis may help. This is just a matter of form for all pieces of work we do in collaboration with people outside this School. Please send it either to me or Ian Whitbread.

I looked through my files and found the sheet of Brookhaven's analyses of Rhodian, Knidian and Chian amphorae; if you could let me have a copy of the results for the other amphorae you mentioned had been done at Brookhaven, I would be very grateful.

With best wishes

Yours sincerely

Richard Jones

RE Jones

Send to the Bitch with
letter of 26.xi.81
as p.4 of Brookhaven

1958 results. See BROOKHAVEN folder

14.xi.81

PMWM

12

Brookhaven analysis : results of amphora tests 1958

The results for no. 23 (double Koan handle) have been omitted from the lists of figures for the constituents of the other items tested. However, the logarithmic plot exists for this sample as well, and from it the figures for no. 23 can be ESTIMATED:

	MgO	ZrO ₂	NiO	CoO	Cr ₂ O ₃	Fe ₂ O ₃	Al ₂ O ₃
23	2.1	0.019	0.057	0.0034	0.016	3.5	15.5

NB These figures are not to be considered as accurate as the ACTUAL figures given in the list. A similar process of estimation from the logarithmic plots of numbers 1 and 14, for instance, gives:

1 (estimate)	1.52	0.021	0.029	0.0026	0.036	5.1	12.7
(actual)	1.52	0.021	0.029	0.0026	0.036	5.1	12.9
14 (estimate)	6.3	0.021	0.082	0.0066	0.091	6.9	14.5
(actual)	6.3	0.021	0.082	0.0066	0.90	6.9	14.3

The figures for number 23 should not be used without asking for the actual data from Brookhaven; in any case Brookhaven should be consulted about use in publication of any of their results.

Koan clay analysis: Project Statement

The accompanying list represents twenty stamped amphora handles from the Athenian Agora excavations, together with two other handles (JYE KF 1585 and M/273, both from Egypt).

The double-barrelled handles are assumed to have been made in the island of Kos (cf. Amphoras, Figs 56-59 and accompanying text; EAD 27, pp. 363-365). The others are not double-barrelled and vary in shape; however, they all bear stamps which are similar to, or (in most cases) identical to, stamps appearing on the double handles.

The items are arranged in groups of related stamps in the order in which they will appear in the corpus of Koan amphora stamps (an Agora volume now in preparation by V. Grace and M. Savvatianou-Petropoulakou). For example, nos. 14 (double handle, corpus no. 307) and 15 (non-double handle, also corpus no. 307) bear stamps from the same die. Where the corpus no. is given in parentheses, the item referred to bears a stamp with the same reading as a double handle, but is not of the same die. Item no. 11 is included because of its similarity in shape, clay, and style of stamp with nos. 7-10: the same name occurs also on double handles but without the device.

*

Tests at Brookhaven in 1958 showed a basic similarity in clay for the Koan double and non-double handles tested (with the exception of item no. 4 (SS 12196), a double handle which appeared too different in composition to be included in the group). With a larger selection of double and non-double handles, including some non-doubles which have no available double counterparts, we hope to discover:

- a) whether in clay composition all these handles form a recognizable group,
- b) if not, whether certain types of handle can be shown to be exceptional,
- c) whether the clay composition of such handles as do form a recognizable group is geologically consistent with their assumed provenance,
- d) whether any handles which do not conform to such a recognizable group appear to belong to some other identifiable clay source,
- e) whether a second batch of tests by a different method on the four handles already tested at Brookhaven will show similar results.

*

For some results of tests made by Brookhaven on Knidian and Rhodian amphora handles, see EAD 27, pp. 319-320 and note 1.

SAMPLES of Agora material to be taken for CLAY ANALYSIS - KOAN [14]

14. xi. 81

to be done at the Fitch laboratory.

* Handle sampled by Brookhaven in 1958

SAMPLE no.	Thr. no.	Reading	context	shape	corpus no.
1 3	SS 522	Δ105 lyre	dist. Hell. fill	double Koan	(220) 220
2 4	SS 12196*	"	T, behind S. stoa wall	"	"
3 5	SS 12975	"	MSBF	"	"
4 6	SS 12417*	"	MSBF (possibly disturbed)	ND Rh. shape non-double, Rh.	"
5 7	SS 10027	Δ1 lyre OZ round st.	late fill	ND Rh. shape non-double Rh.	(221) -
6 8	SS 12045	"	MSBF	"	(221)
7 9	SS 12271	"	MSBF (possibly disturbed)	"	(221)
8 10	SS 12639	"	MSBF	"	(221)
9 11	SS 12974	lyre Δ102 KOY Π140Y	MSBF	ND broad (arched) non-double (broad, arched)	(-)
10 12	SS 12913*	EYTYX	MSBF	double ≠ Koan	(305A)
11 13	SS 7985*	EYTYX	Σ2 (Futush fill)	ND broad (broad) non-double (broad)	"
12 14	SS 14081	EYTYX ΔA club	ΣA under gutter	double Koan	(307)
13 15	SS 815	"	Σ. Hell. level	ND broad non-double (broad)	"
14 16	SS 12700	club, crab	MSBF	double Koan	(714)
15 17	SS 12703	"	MSBF	"	"
16 183	M/273	"	from Alexandria	ND broad	(715)
17 19	SS 9529	thunderbolt	Hell/early Roman	double Koan	(730)
18 20	SS 3176	"	K dump	"	"
19 21	SS 13883	"	≡≡ Fill II	"	"
20 22	SS 12430	"	MSBF	ND broad (called rim)	"
21 1	SS 8019	Αραξαγορα	late Hell/early Rom	double Koan	(31)
22 2	JYE KF 1585	"	Fayum	ND broad	(31)

KOAN CLAY ANALYSIS : to be
done by FITCH LABORATORY 1981-2

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