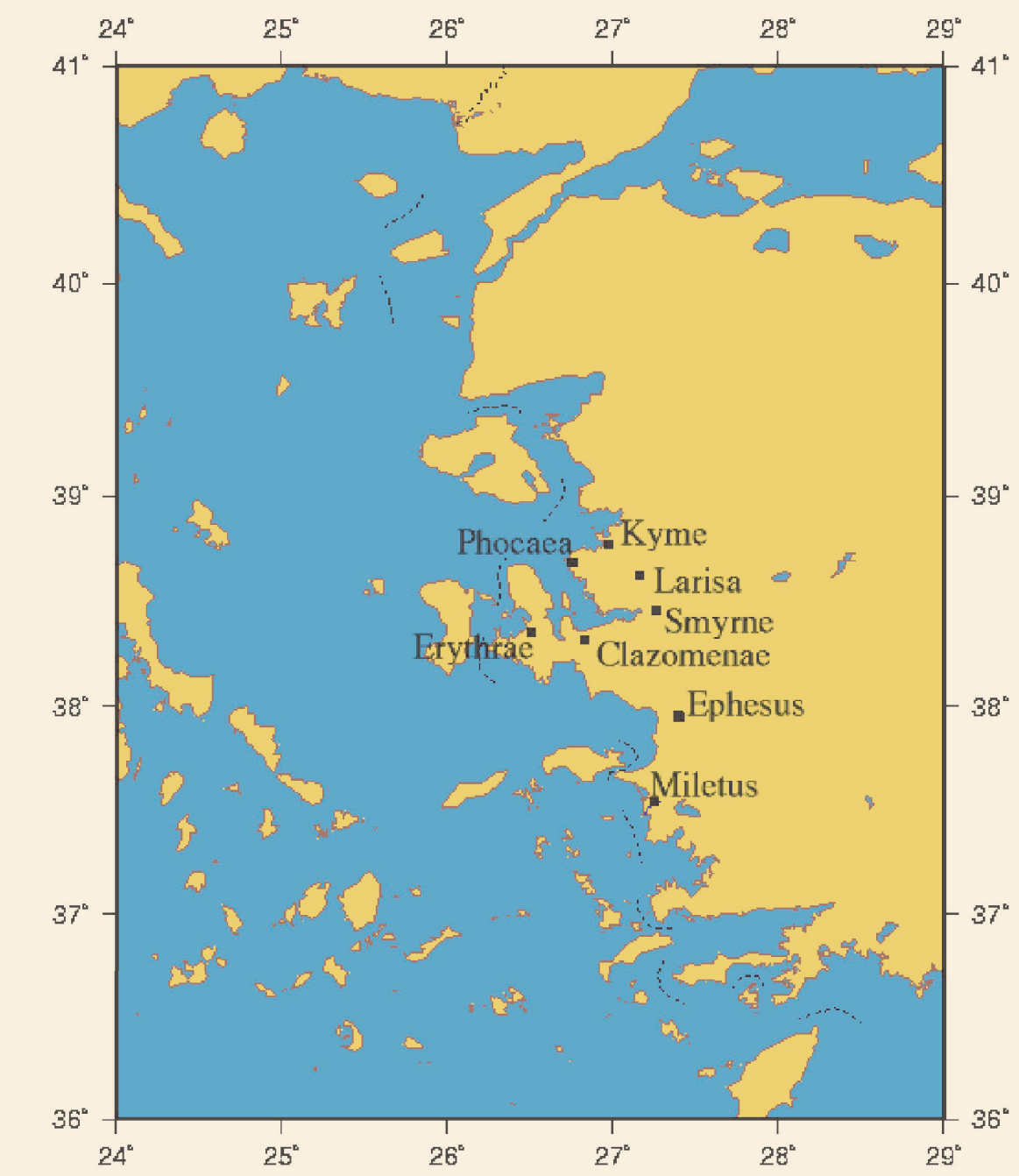


# Neutron Activation Analysis of Mycenaean, Geometric and Archaic Pottery from Sites in Western Asia Minor

H. Mommsen, A. Schwedt and M. Kerschner(\*)

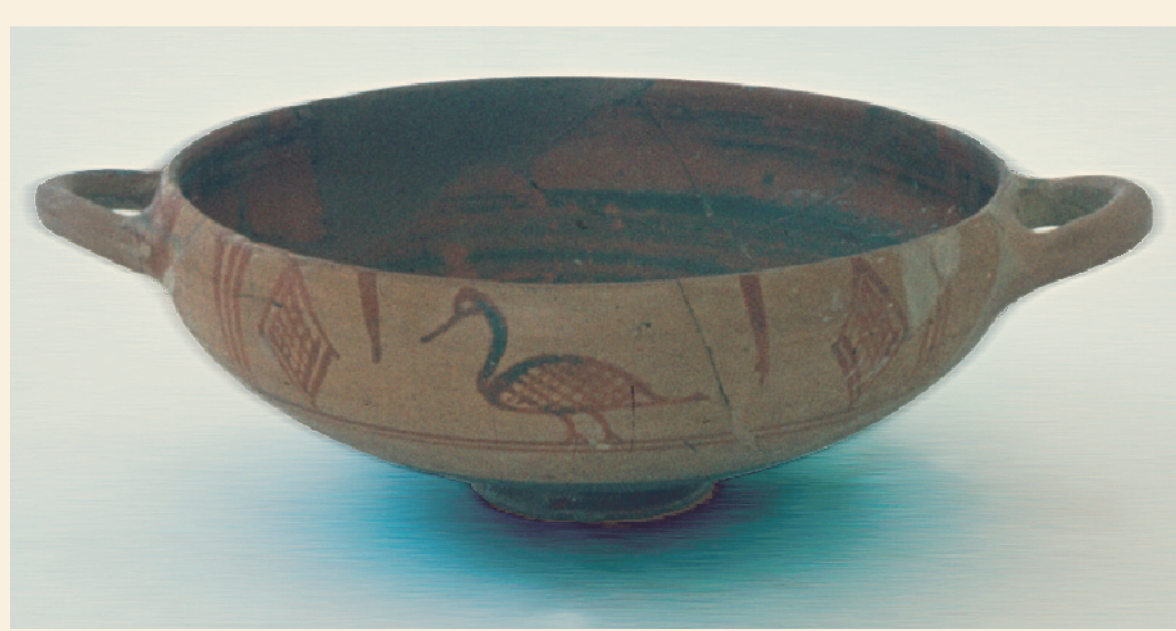
Institut für Strahlen- und Kernphysik, University Bonn, Germany  
Archäologisches Seminar und Museum(\*), University Münster, Germany



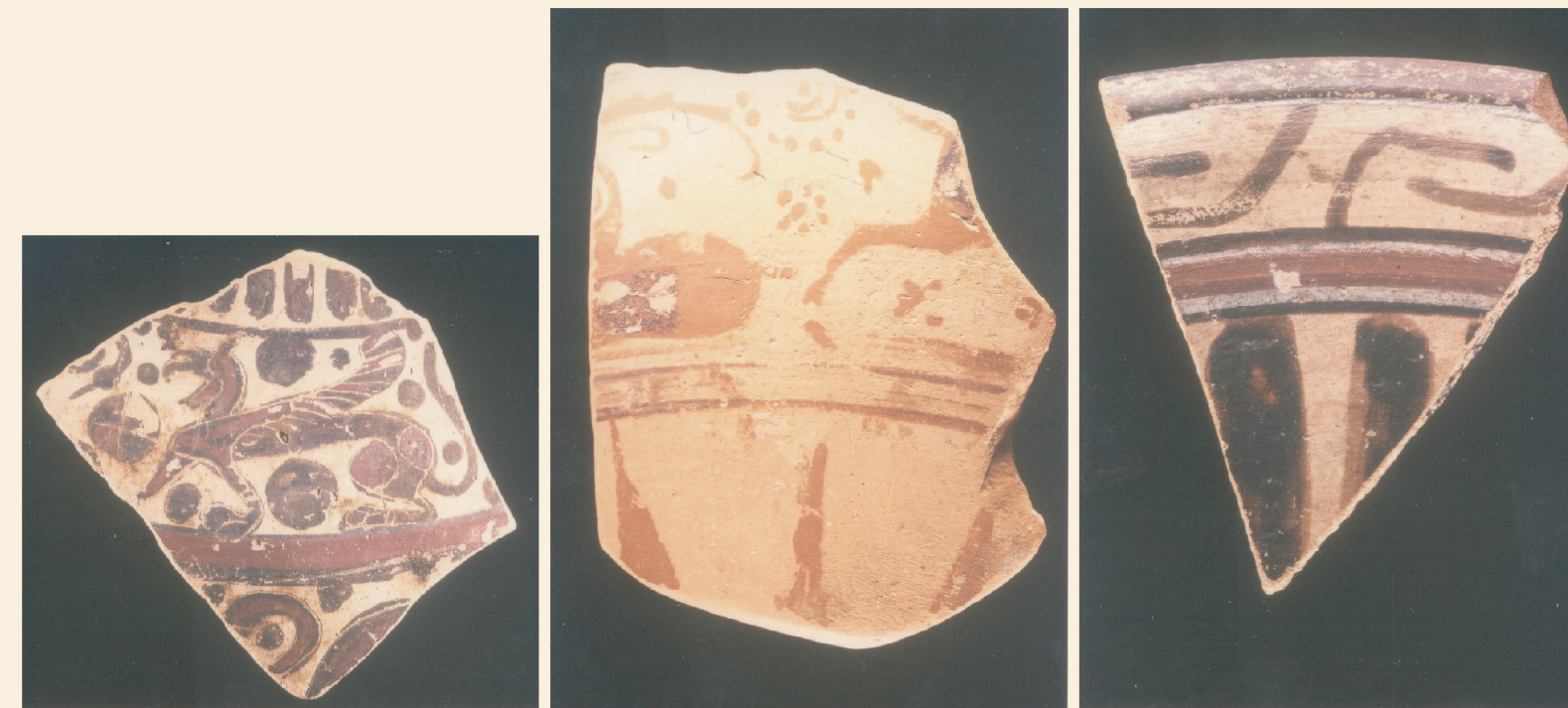
## Objectives:

Determination of **production workshops** of the main pottery types found in Western Asia Minor during these time periods

- e. g. - Mycenaean and Mycenaean-like vessels
- Bird kotylai, - cups, - dishes
- Animal frieze style
- Fikellura wares
- Calotte-shaped cups with rosette-, meander- and band-decoration



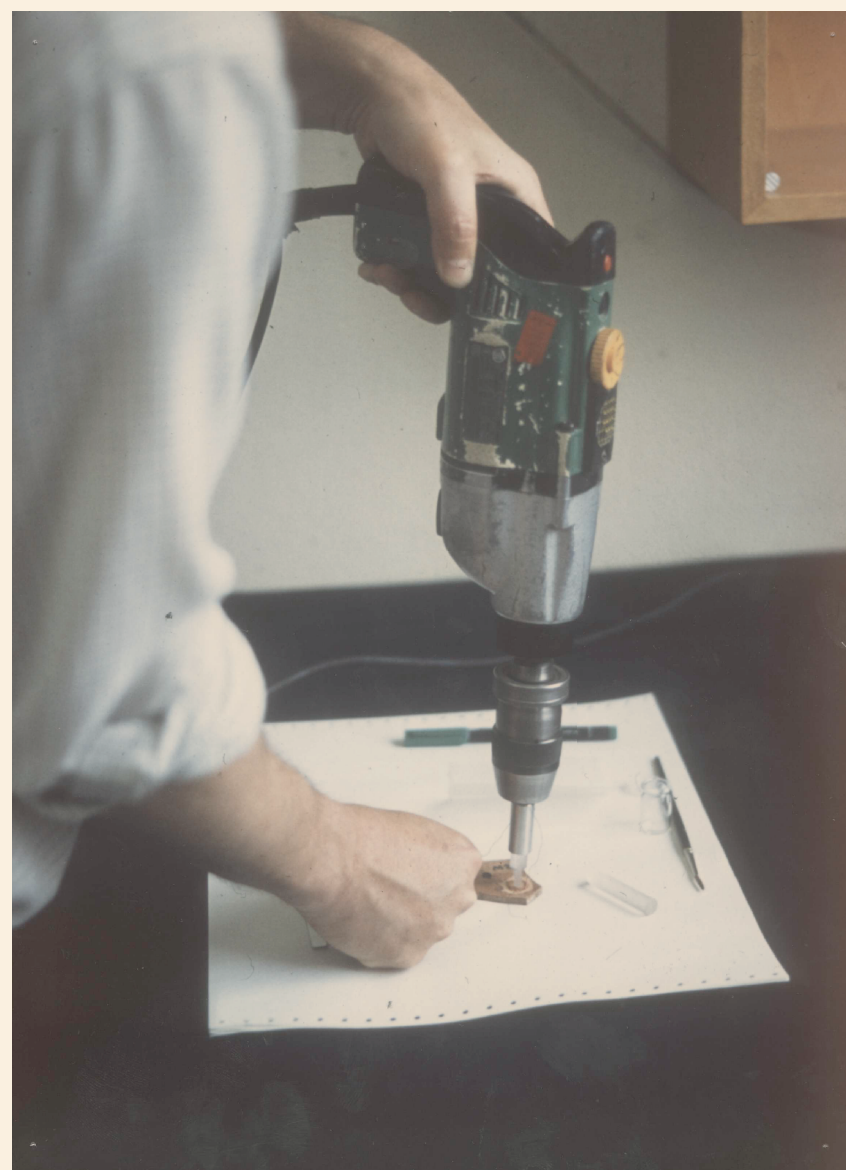
- 1) 2) 3)  
**List of plates:** Archaic East Greek pottery found in Ephesus (second half of the 7th cent. - first half of the 6th cent. B.C.)
1. Frgt. of an oinochoe or krater with figural decoration, South Ionian Middle Wild Goat (MWG) I style, produced in Miletus (chemical group D)
  2. Frgt. of a large pyxis, North Ionian Middle Wild Goat (MWG) II style, produced locally in Ephesus (chemical group H)
  3. Frgt. of an oinochoe, North Ionian Middle Wild Goat (MWG) II style, produced by the 'Bird bowl workshop' in an so far unidentified city of North Ionia (chemical group B)



- 4) 5) 6)  
**List of plates ff.:** Archaic East Greek pottery found in Ephesus (second half of the 7th cent. - first half of the 6th cent. B.C.)
- All three pieces are produced by the 'Bird bowl workshop' in an so far unidentified city of North Ionia (chemical group B)
4. Frgt. of a krater with corinthianizing animal friezes, North Ionian Late Wild Goat (LWG) style
  5. Frgt. of an oinochoe, North Ionian Late Wild Goat (LWG) style
  6. Rim frgt. of an fruit dish, orinthizing style, with meander hook decoration

**Overview of grouping results** of 146 sherds from western Asia Minor, distribution of the sherds from different findspots into the NAA groups (A, D = Miletus, H = Ephesus, I = Ephesus?, B = northern Ionia(Teos?), E, F = Smyrne?, G, K = Aeolis?, R = Sardis?)

findspot	NAA groups									
	A	D	H	I	B	E	F	G	K	R
Miletus	10	8	-	-	13	-	-	-	-	-
Ephesus	8	2	9	6	22	-	1	-	-	11
Clazomenae	-	-	-	-	-	-	1	1	-	-
Erythrae	-	-	-	-	1	1	-	-	-	-
Smyrne	2	-	-	-	6	7	10	2	1	-
Daskyleion	1	-	-	-	-	-	-	-	-	-
Phocaea	-	-	-	-	-	1	-	-	-	-
Larisa	-	-	-	-	-	-	-	8	3	-
Kyme	-	-	-	-	1	-	-	3	7	-
<b>totals</b>	<b>21</b>	<b>10</b>	<b>9</b>	<b>6</b>	<b>43</b>	<b>9</b>	<b>12</b>	<b>14</b>	<b>11</b>	<b>11</b>



## Results:

191 samples form 19 chemical (16 local and 3 import) groups, 39 are chemical loners.

- 10 **regional groups** have more than 5 members.

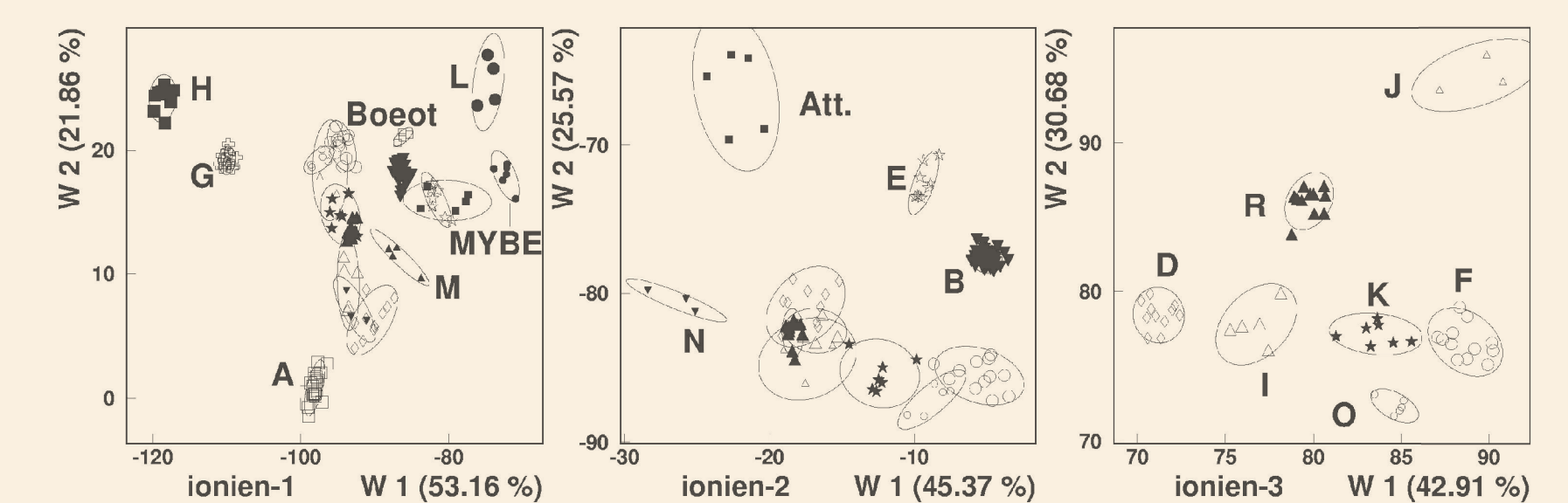
These are:

- surely assigned (wasters):**
- A: local Miletus (Kalabaktepe workshops)
- D: local Miletus (a second workshop)
- H: local Ephesus

**preliminary assigned (distribution):**

- I: Ephesus?
- E: Smyrne? (incl. a loom weight)
- F: Smyrne?
- B: northern Ionia (Teos?)
- K: Aeolis (Kyme?)
- G: Aeolis (sec. workshop in this region)
- R: BoR ware (Sardis?)

- 3 **imported Greek groups** are from:
- MYBE: Berbati (near Mycenae, Argolis)
- Att: Attica
- Boe: Boeotia



**Discriminant analysis** (left) of 186 sherds assuming 18 groups (10 large regional groups (see Table), 3 import groups: MYBE, Att, Boeot, and 5 small groups: J, L, M, N, O). The ellipses are the 2-sigma boundaries of the groups. The well separated groups are labeled and left out in the following calculations (depicted to the right).

## Conclusions:

A number of important pottery production centres in the eastern Aegean could be characterized by their chemical patterns and and localized by reference material or distribution arguments. For the time periods covered the ceramic production spectrum of these workshops and their intra- and interregional trade relations are now defined in a better way.