PLANTCULT: Identifying the Food Cultures of Ancient Europe

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ARISTOTLE UNIVERSITY OF THESSALONIKI

European Research Council
Established by the European Commission

European Commission
Horizon 2020
European Union funding for Research & Innovation

ERC Consolidator Grant, GA number **682529**

PLANTCULT: Identifying the Food Cultures of Ancient Europe

Aim of project:

To develop a suite of new methods to identify Plant Food Cultures of Ancient Europe, the specific ways in which plant foods contributed to identity formation and social change in prehistoric Europe

ARISTOTLE UNIVERSITY OF THESSALONIKI

Host Institution

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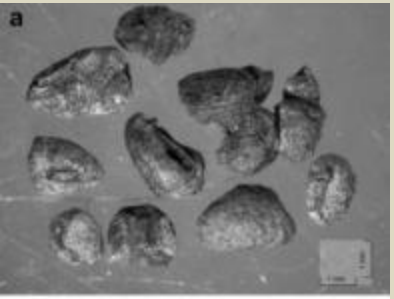
Integration of **actual plant food remains**, **related processing equipment**, **ancient written sources**, **experimentation and ethnography**

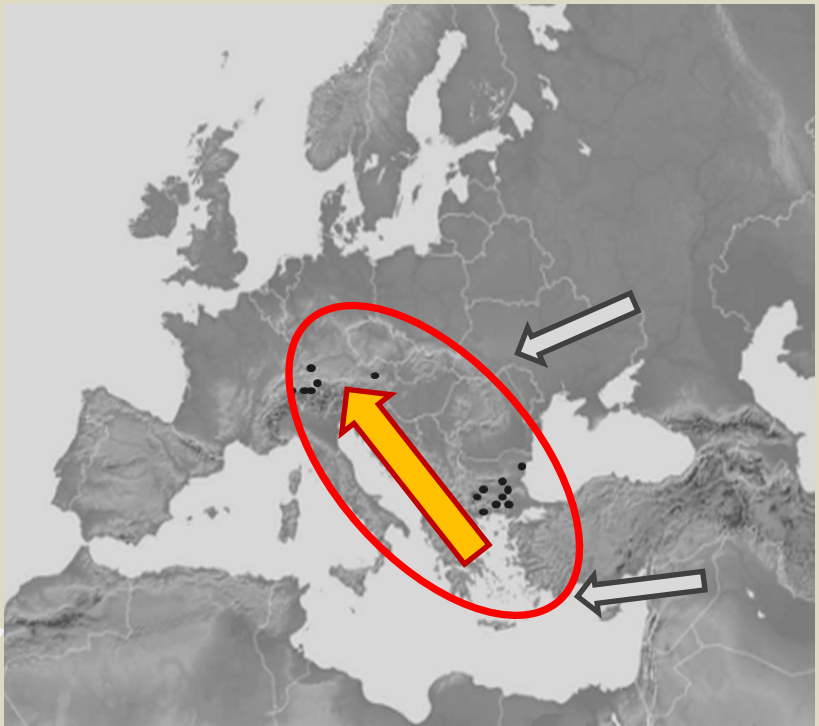


Study area

Culinary practice among early farming European communities

Aegean to Central Europe

Neolithic (7th millennium BC) to the **Iron Age** (1st millennium BC)



Identifying the Plant-Food Cultures of Ancient Europe

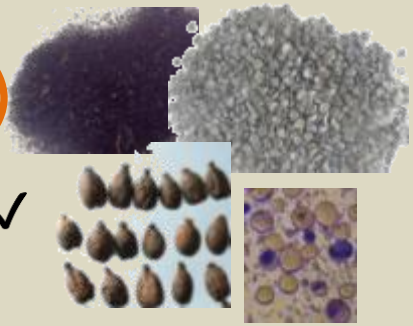
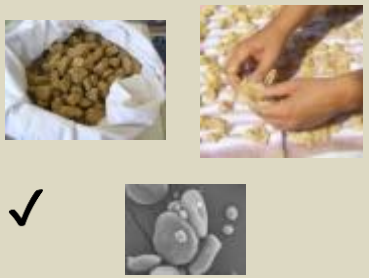
Major question:

How did cuisine shape and modify cultural identities in prehistoric European societies over time?

Focus: **plant foods**

Case study: Prehistoric and Ancient Greece

Deciphering plant foods of prehistoric Europe

	Archaeological	*Ethnographic*	*Experimental*	*Textual*
Plant food remains	✓ 	✓ 	✓ 	✓ 
Grinding equipment	✓ 	✓ 	✓ 	✓
Cooking equipment	✓  	✓ 	✓ 	✓

Archaeological context

Plant food data base

Veget Hist Archaeobot (2002) 11:17–22

Vegetation History and Archaeobotany

Food remains from Bronze Age Archondiko and Mesimeriani Toumba in northern Greece?

Soultana Maria Valamoti

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Received January 8, 2002 / Accepted April 1, 2002

Abstract. Finds of fragmented cereal grain from the sites of Mesimeriani Toumba and Archondiko in Macedonia, northern Greece, dated to 2100-1900 cal. B.C. provide the basis for the experimental investigation of the effects of a) fragmentation before and after charring, b) treatment of grain with water and c) charring conditions, on the morphology of the fracture surface. The experiments indicate that it is possible to distinguish fragmentation before and after charring and, with low charring temperatures, it is possible to distinguish prior treatment of grain with hot water. Comparison of the archaeological grain with the grain produced experimentally suggests that both archaeological finds represent ground grain, and at least those from Mesimeriani correspond to some type of wheat bulgur, probably intended for human consumption. These finds mark the prehistoric origins of a foodstuff widely used in Mediterranean cuisine. Further experimentation along the lines followed here would be desirable.

Key words: Greece – Bronze Age – Bulgur – Charring experiments – Cereal processing – Grain morphology

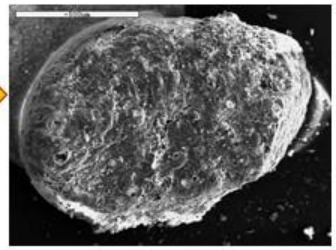
Introduction

An increased interest in the retrieval of charred plant remains from Neolithic and Bronze Age sites in northern

Materials and methods

The archaeological material

The finds consist of charred fragmented cereal grain and come from the tell sites of Mesimeriani Toumba (Grammenos and Kotsos, in press), in the region of central Macedonia, and Archondiko (Papaefthymiou-Papanthimou and Pilali-Papasteriou 1995; Papaefthymiou-Papanthimou et al. 2002; Chrysostomou and Chrysostomou 1999), in the region of western Macedonia (Fig. 1). Both finds have been dated to 2100-1900 cal B.C. which corresponds to the end of the Early Bronze Age in northern Greece. The find of fragmented grain from Mesimeriani Toumba comes from the interior of a 'pot' which was imbedded in a clay construction. The find from Archon-



Delwen Samuel **Mustafa Bayram**

•Original Article

•Published: 24 October 2008

Prehistoric cereal foods from Greece and Bulgaria: investigation of starch microstructure in experimental and archaeological charred remains

•Soultana-Maria Valamoti,

•Delwen Samuel,

•Mustafa Bayram &

•Elena Marinova

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•712 Accesses

•49 Citations

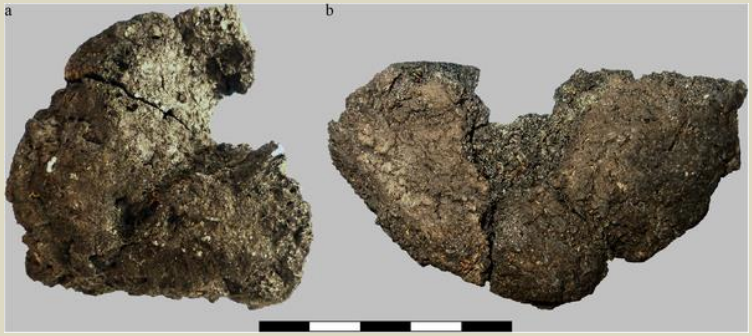
•Metrics details

Abstract

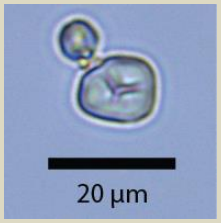
In order to investigate ancient cereal cooking practices, the microstructure of preserved starch in charred ground cereal remains recovered from prehistoric sites in Greece and Bulgaria has been analysed. A comparative modern set of cooked and subsequently charred cereals was produced. By scanning electron microscopy it is demonstrated that, under some conditions, distinctive cooked starch structure survives the charring process. Charring alone can occasionally produce morphological changes which typically occur during cooking. Despite this caveat, starch microstructure features which are indicative of heating in liquid, and which are visible in the experimental material, have been detected in

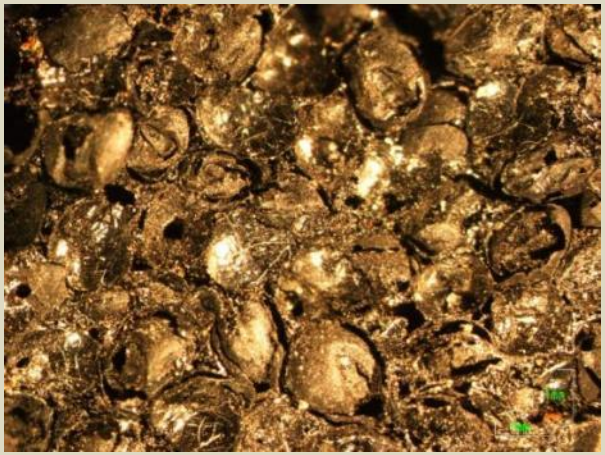

a
b


a
b
1 mm
1 mm


a
b


20 µm


20 µm



Wild pears stored,
Dikili Tash, 4300 BC

Broomcorn millet stored,
Archondiko, 2nd millennium BC

Glume wheat
dehusking by-products,
Apsalos, early 6th
millennium BC

ERC Project PLANTCULT Partners

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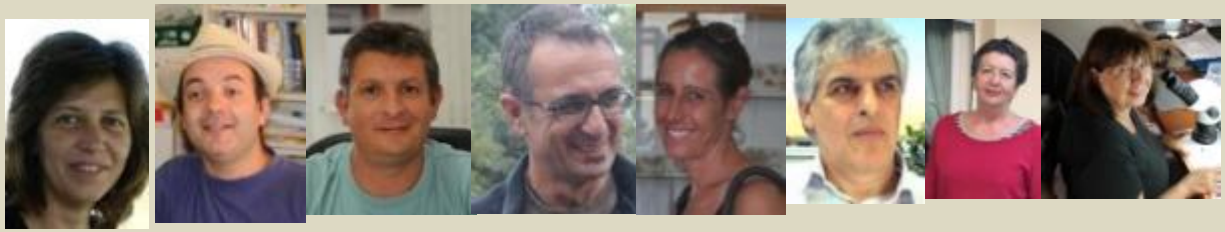
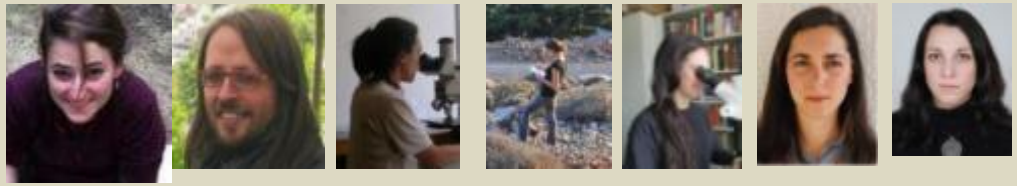


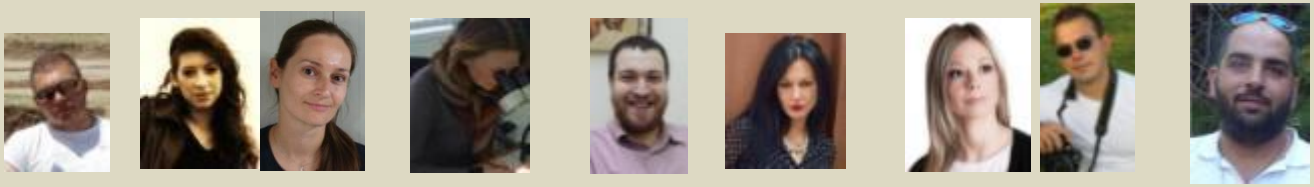
V. Fyntikoglou, L. Papadopoulou, L. Bouby, J-F Terral, A. Palomo, C. McNamee, K. Tokmakidis, A. Bakalaki, V. Fyntikoglou, S. Spatalas, Tz. Popova



M. Bofill, F. Antolin, M. Ntinou, C. Pagnoux, M. Berihuete-Azorin, E.Kalogiropoulou, I. Hristova, S. Laparidou, A. Dimoula

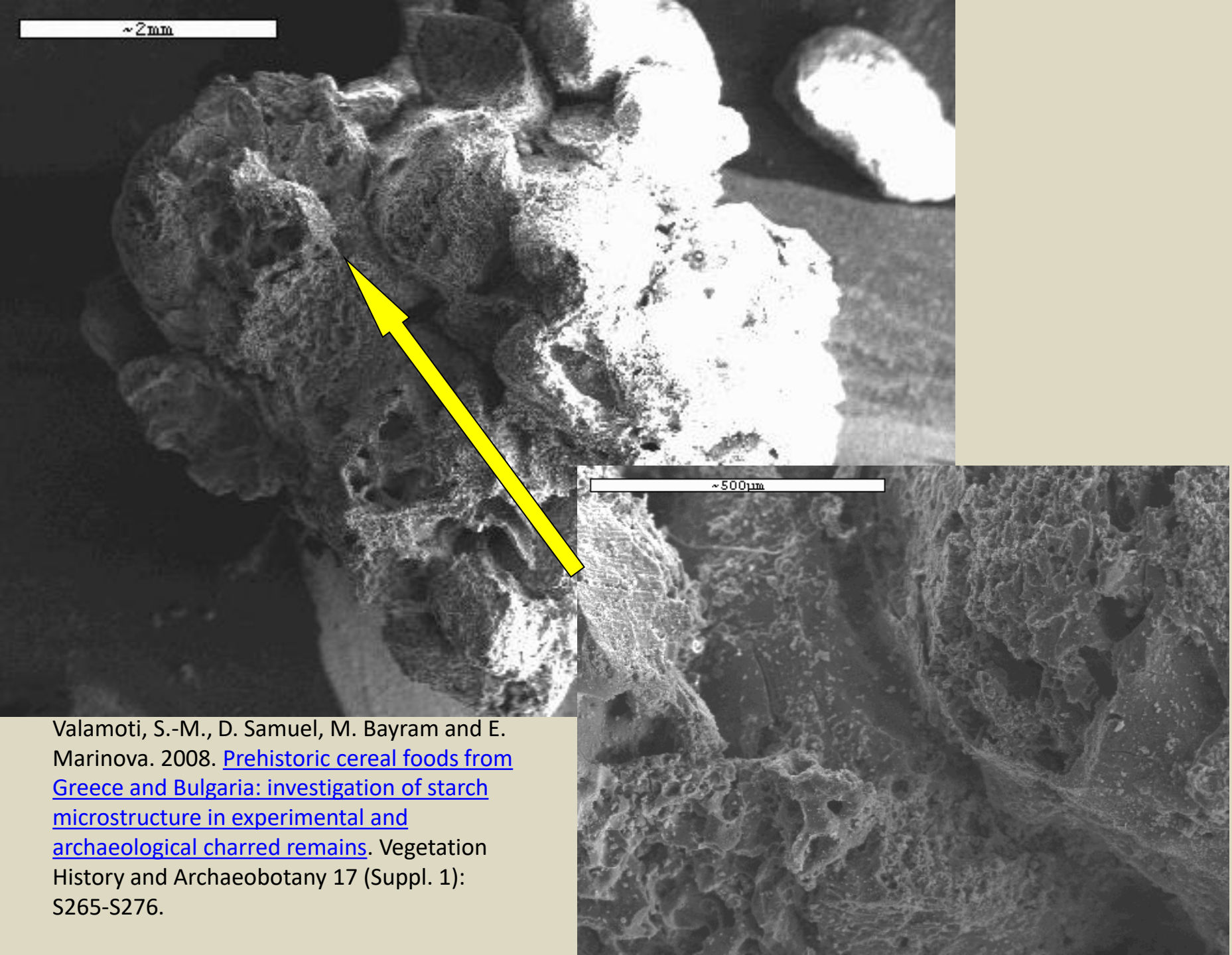
OEAW

Andreas H. Heiss, Austrian Academy of Sciences,

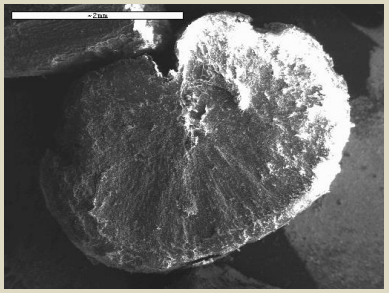


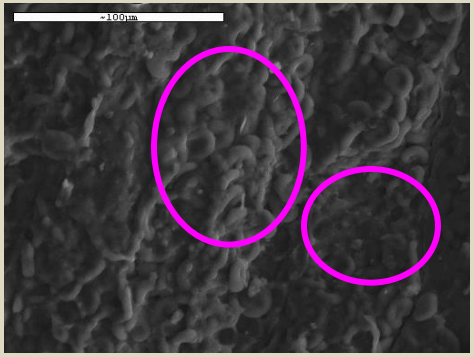
Bekiaris, T., .Chondrou, I. Ninou, S. Michou, P. Anagnostoudis, A. Tzelepidou, N. Vouronikou, N.Katsikarides, P. Tokmakidis, T. Roustanis

Recipes…….



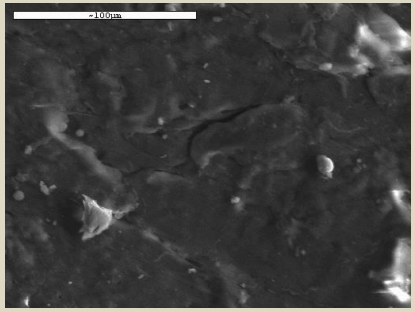
Valamoti, S.-M., D. Samuel, M. Bayram and E. Marinova. 2008. Prehistoric cereal foods from Greece and Bulgaria: investigation of starch microstructure in experimental and archaeological charred remains. Vegetation History and Archaeobotany 17 (Suppl. 1): S265-S276.

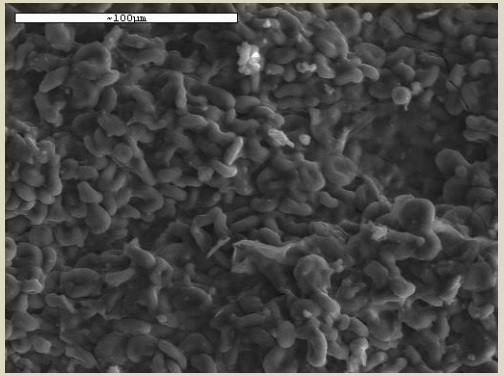




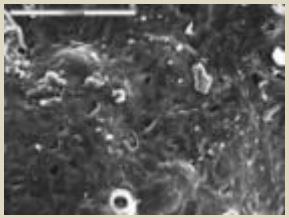
Bulging

Bulging and shiny



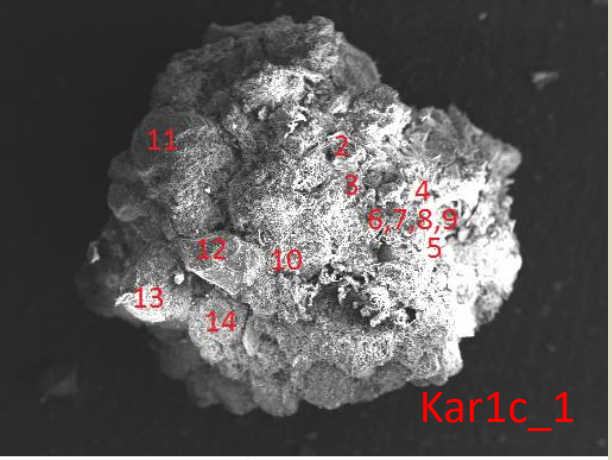


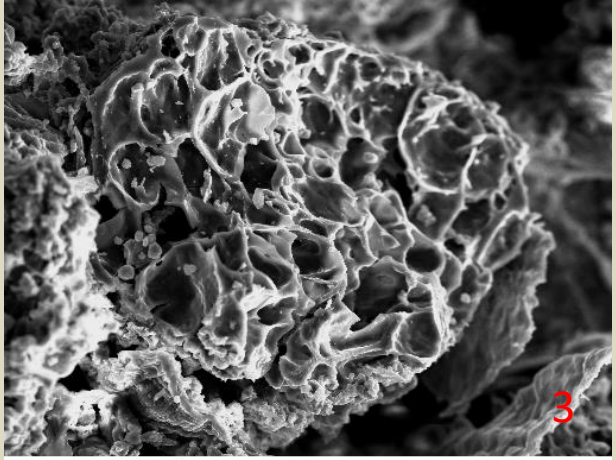
Ground prior to charring

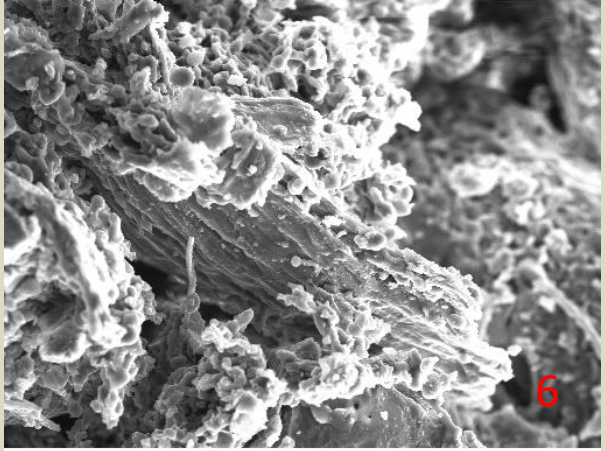


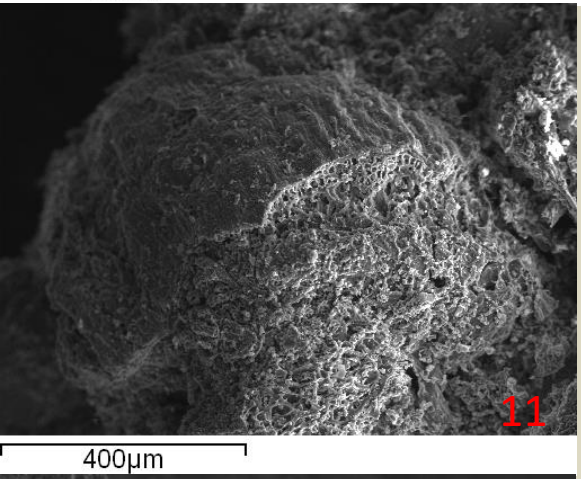
Boiled (?) in a liquid

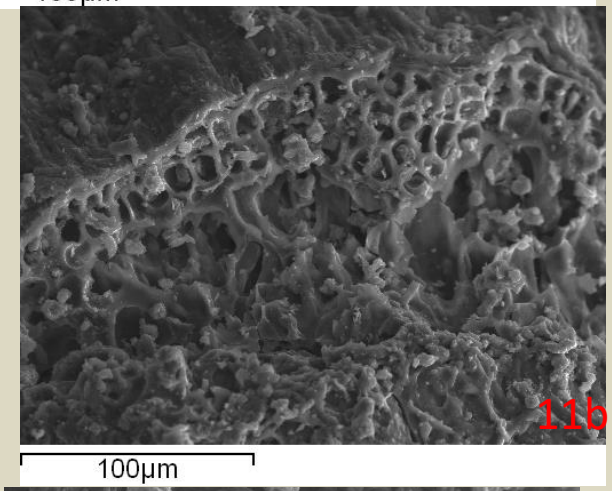
Barley, cooked, dried, milled

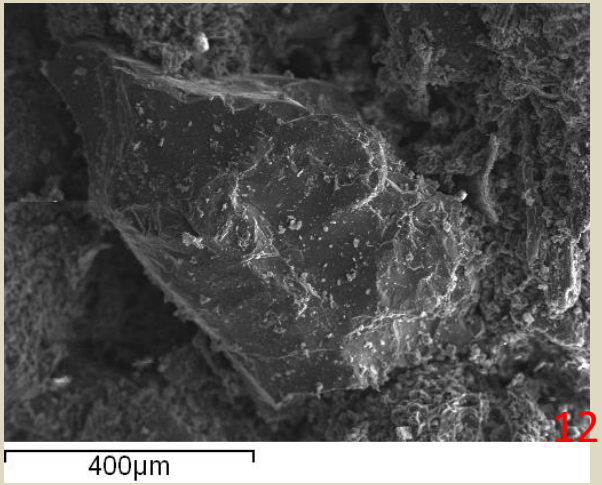

11
2
3
4
6,7,8,9
5
12
10
13
14
Kar1c_1
2mm

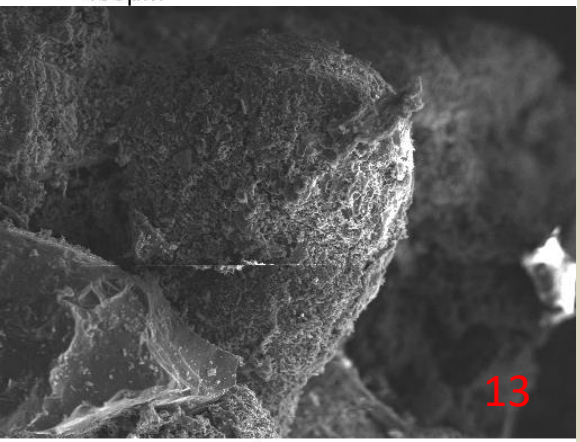

3
100µm

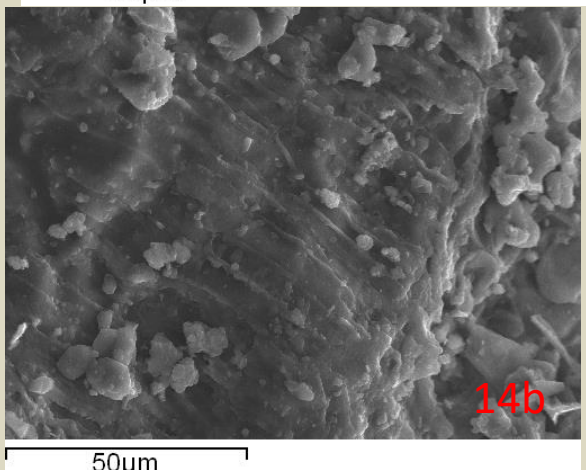

6
100µm

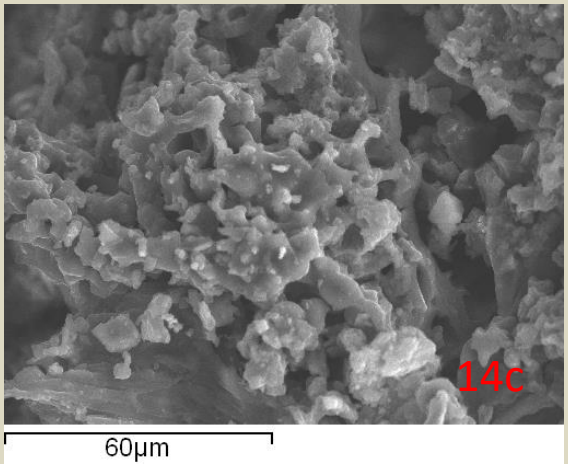

11
400µm


11b
100µm

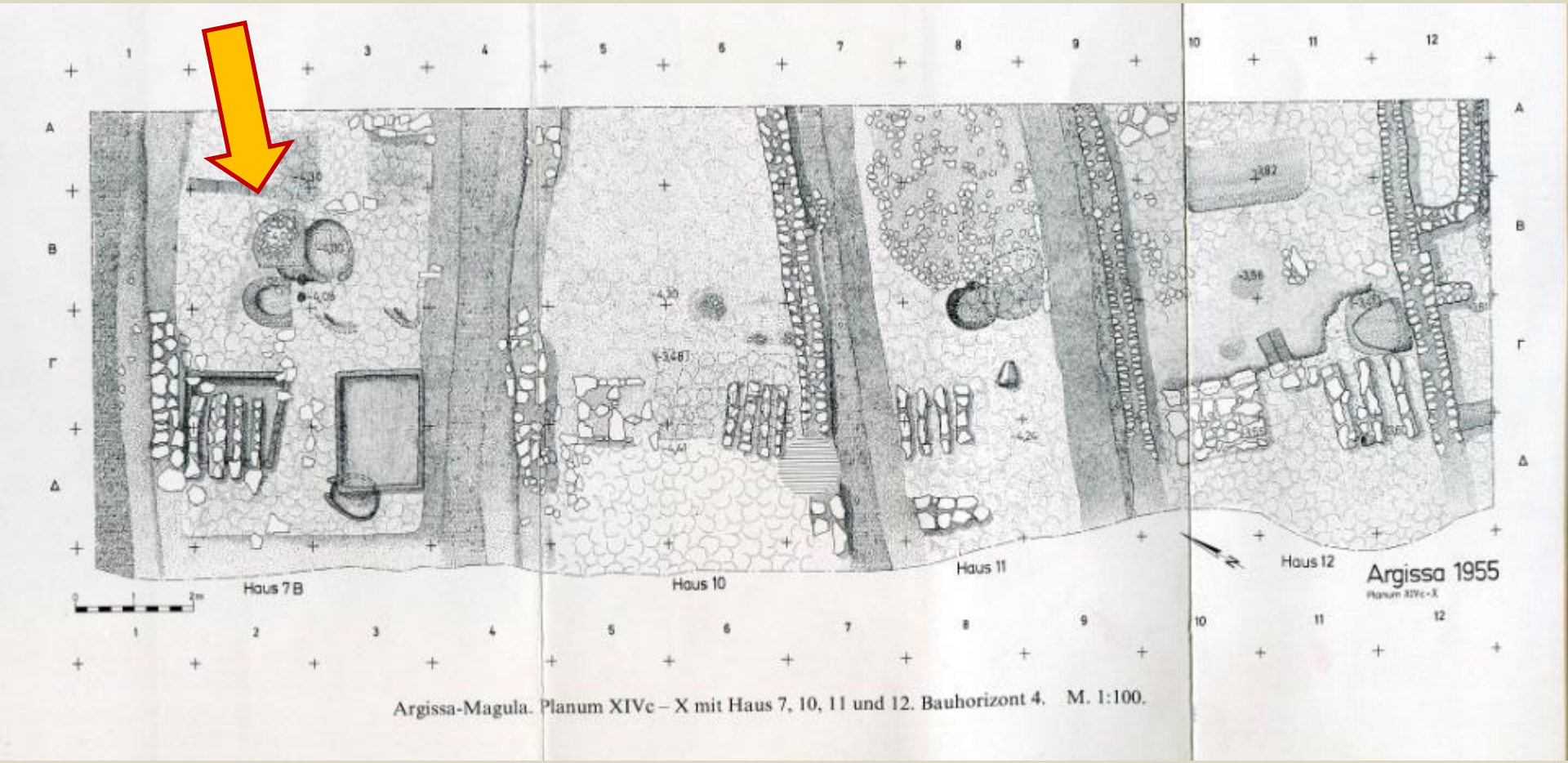

12
400µm


13
500µm

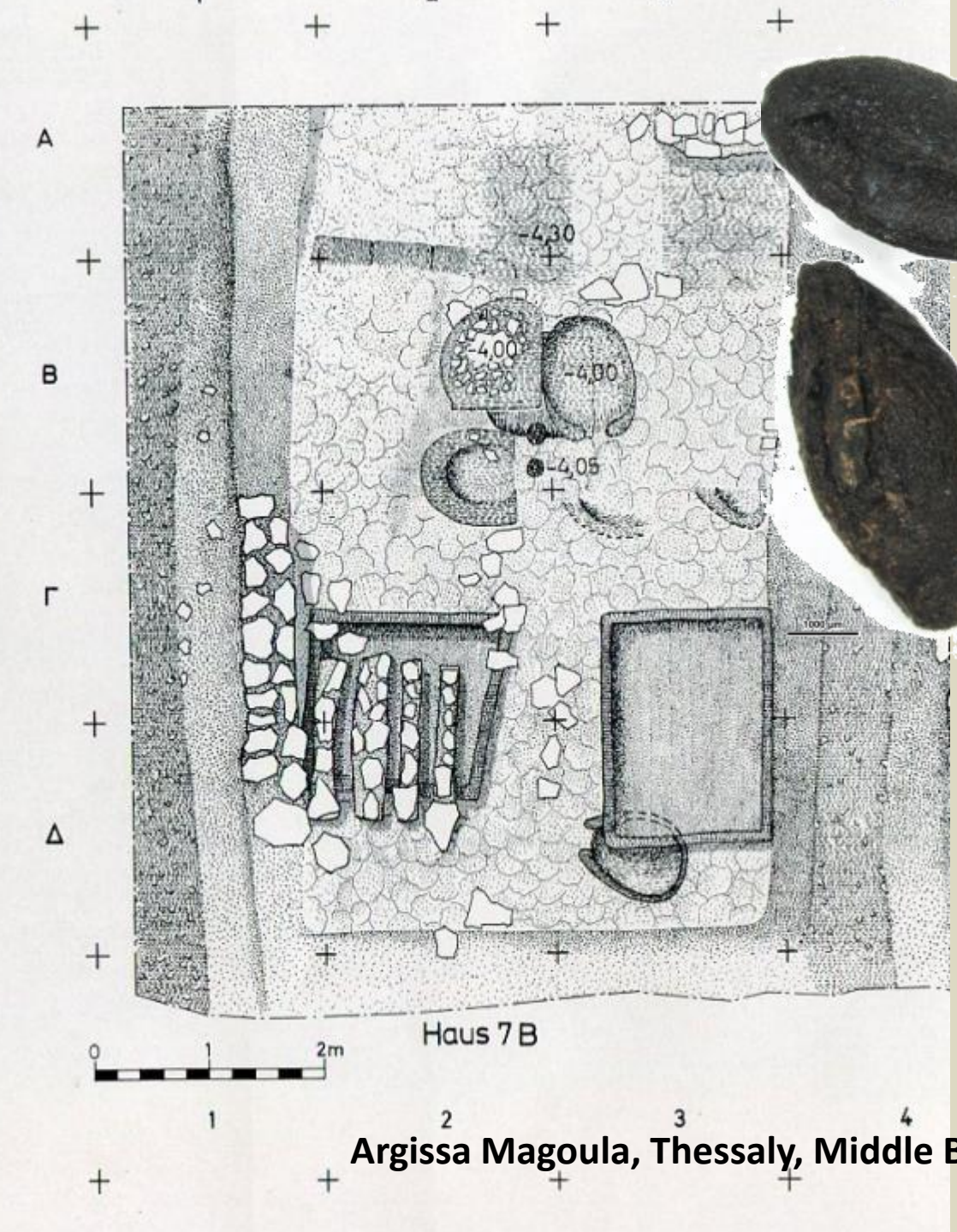

14b
50µm


14c
60µm

Argissa Magoula, Thessaly, Middle Bronze Age, 2100- 1700 B.C.



Argissa-Magula. Planum XIVc – X mit Haus 7, 10, 11 und 12. Bauhorizont 4. M. 1:100.



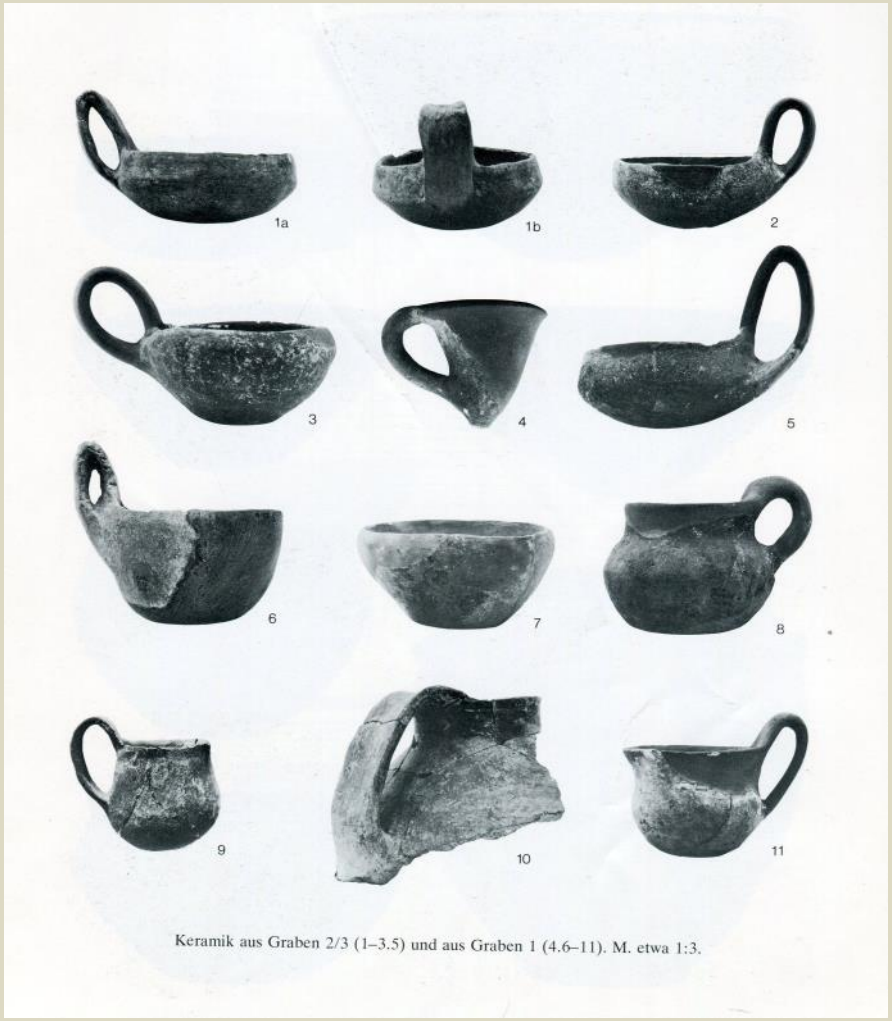
emmer

einkorn

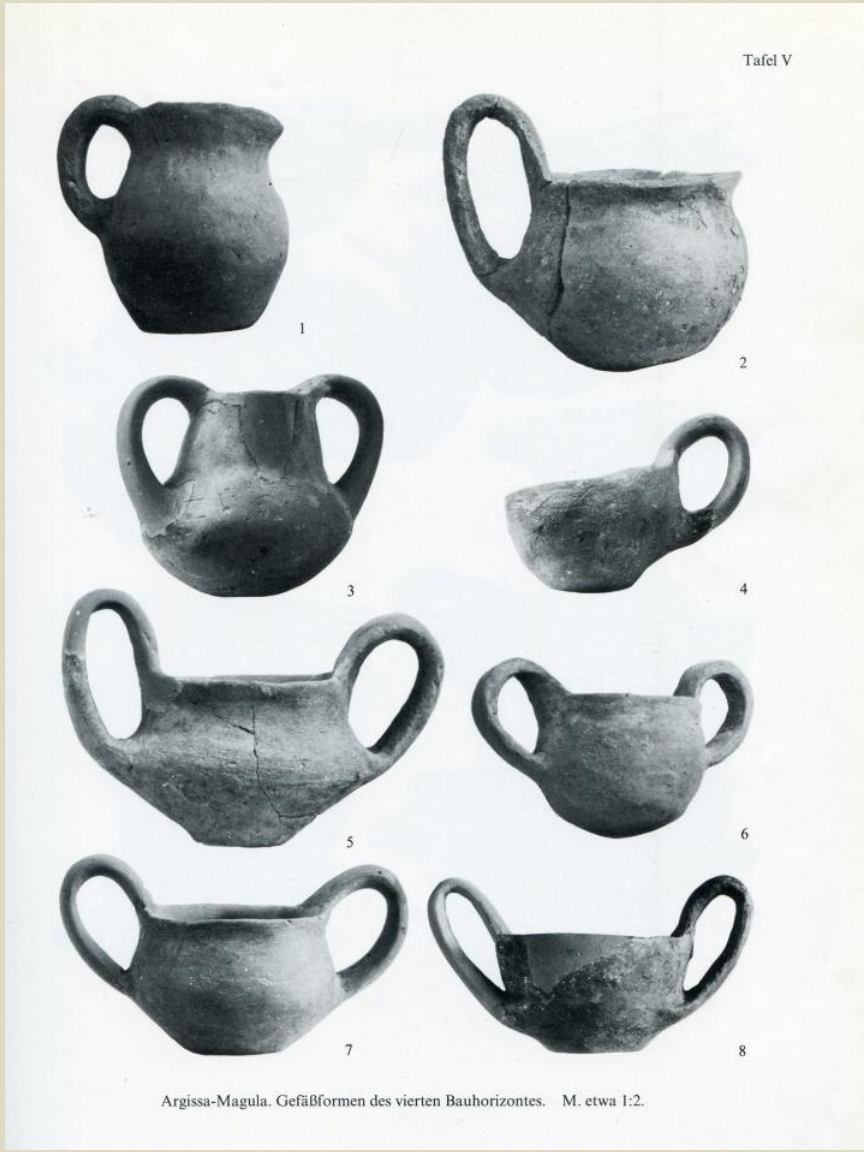
Argissa Magoula, Thessaly, Middle Bronze Age, 2100- 1700 B.C.

Argissa, Thessaly

Early Bronze age (left) and Middle Bronze Age cups (right)



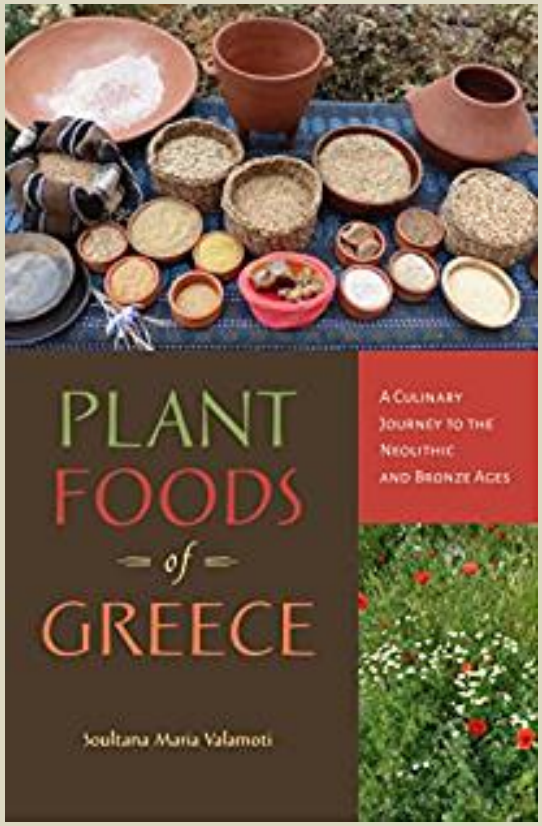
Keramik aus Graben 2/3 (1–3.5) und aus Graben 1 (4.6–11). M. etwa 1:3.



Argissa-Magula. Gefäßformen des vierten Bauhorizontes. M. etwa 1:2.

Wine

Beer?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of
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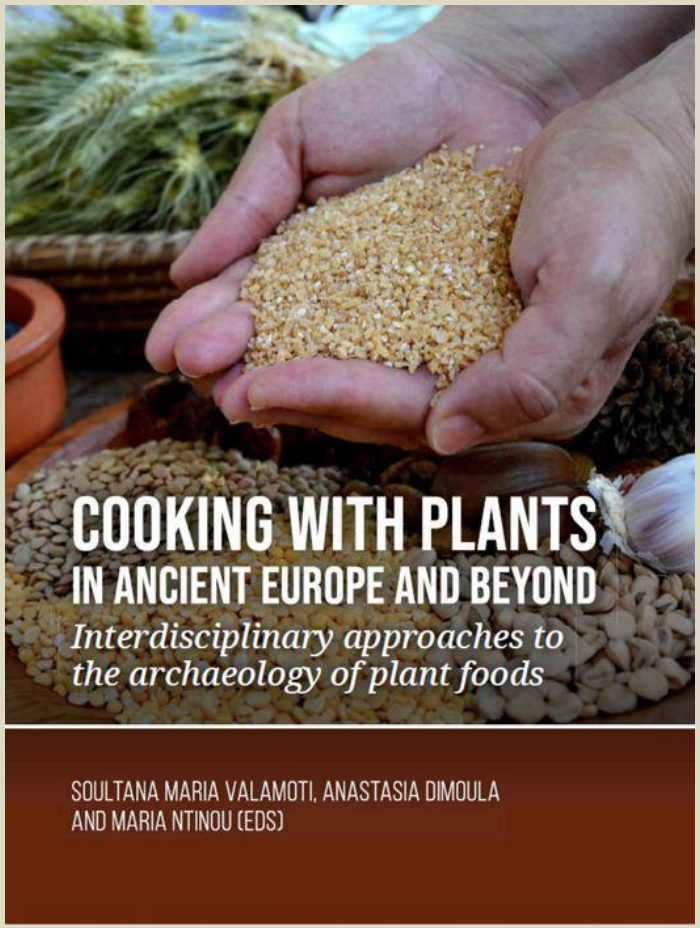
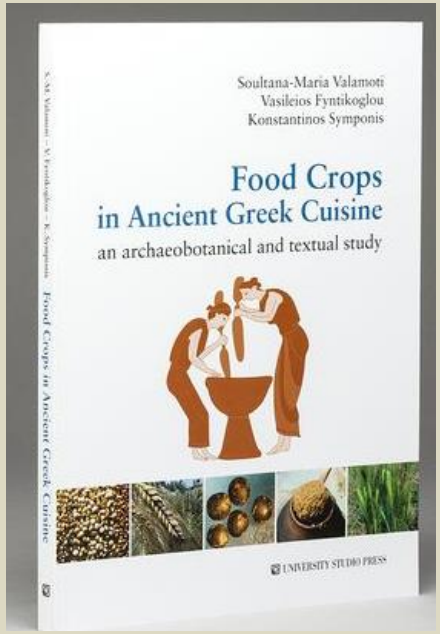
Soultana Maria Valamoti


COOKING WITH PLANTS
IN ANCIENT EUROPE AND BEYOND
Interdisciplinary approaches to the archaeology of plant foods
SOULTANA MARIA VALAMOTI, ANASTASIA DIMOULA AND MARIA NTINOU (EDS)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