



**HAL**  
open science

## Medieval ceramics from the Türbe: an archaeometric viewpoint

S.Y. Waksman, Marie-Myriam Carytsiotis

► **To cite this version:**

S.Y. Waksman, Marie-Myriam Carytsiotis. Medieval ceramics from the Türbe: an archaeometric viewpoint. Sabine Ladstätter. Die Türbe im Artemision: Ein frühosmanischer Grabbau in Ayasuluk/Selçuk und sein kulturhistorisches Umfeld, 53, Österreichischen Archäologischen Institut, pp.293-311, 2015, Sonderschriften des Österreichischen Archäologischen Instituts, 978-3-900305-77-2. hal-01391473

**HAL Id: hal-01391473**

**<https://hal.science/hal-01391473>**

Submitted on 8 Nov 2016

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

## **Die Türbe im Artemision**

Ein frühosmanischer Grabbau in Ayasuluk/Selçuk und  
sein kulturhistorisches Umfeld



SABINE LADSTÄTTER

## **DIE TÜRBE IM ARTEMISION**

Ein frühosmanischer Grabbau in Ayasuluk/Selçuk  
und sein kulturhistorisches Umfeld

Mit Beiträgen von

Erdem Soner Bellibaş, Gro Bjørnstad, Helmut Brückner, Marie-Miriam Carytsiotis,  
Yaman Dalanay, Ebru Findık, Gerhard Forstenpointner, Jan Nováček, Gottfried Parrer,  
Georg A. Plattner, Ursula Schachinger, Kristina Scheelen, Nikolaus Schindel,  
Michael Schultz, Süleyman Sırrı Seren, Friederike Stock, Hans Taeuber,  
Ralf Totschnig, Joanita Vroom, Sylvie Yona Waksman,  
Gerald E. Weissengruber

**OAI**

Österreichisches Archäologisches Institut  
Sonderschriften Band 53

Das Österreichische Archäologische Institut ist eine Forschungseinrichtung des Bundesministeriums für Wissenschaft und Forschung



Umschlagbild: Türbe im Artemision. Ausgangssituation von Nordwesten (Foto J. Eitler, © ÖAI)

Bibliografische Information der Deutschen Bibliothek

Die Deutsche Bibliothek verzeichnet diese Publikation in der Deutschen Nationalbibliografie; detaillierte bibliografische Daten sind im Internet über <http://dnb.ddb.de> abrufbar.

Bibliographic information published by Die Deutsche Bibliothek

Die Deutsche Bibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data is available in the Internet at <http://dnb.ddb.de>

Alle Rechte vorbehalten

ISSN 1998-8931

ISBN 978-3-900305-77-2

Copyright © 2015 by Österreichisches Archäologisches Institut Wien

Redaktion: Barbara Beck-Brandt, Gudrun Wlach

Umschlaggestaltung: Büro Pani; Andrea Sulzgruber

Satz und Layout: Andrea Sulzgruber

Gesamtherstellung: Holzhausen Druck GmbH

## INHALT

Vorwort .....	7
<i>Sabine Ladstätter</i>	
Ephesos during the Beylik and Ottoman Periods (14 <sup>th</sup> –16 <sup>th</sup> Century) .....	9
<i>Yaman Dalanay</i>	
Zur Sedimentationsgeschichte im Bereich der Türbe .....	17
<i>Friederike Stock – Helmut Brückner</i>	
Der archäologische Befund .....	25
<i>Gottfried Parrer</i>	
Appendix: Results of Calibration of <sup>14</sup> C-Dates – Order 6740/12	
Die geophysikalische Prospektion .....	123
<i>Sabine Ladstätter – Süleyman Sirri Seren – Ralf Totschnig</i>	
Architectural Analysis and Conservation Proposals .....	129
<i>Erdem Soner Bellibaş</i>	
Die Inschriften .....	185
<i>Hans Taeuber – Sabine Ladstätter</i>	
Ephesische Spolien als Baumaterial der Türbe .....	191
<i>Georg A. Plattner</i>	
The Pottery Finds .....	205
<i>Joanita Vroom – Ebru Findik</i>	
Medieval Ceramics from the Türbe: an Archaeometric Viewpoint .....	293
<i>Sylvie Yona Waksman, in collaboration with Marie-Myriam Carysiotis</i>	
The Small Finds .....	313
<i>Joanita Vroom</i>	
The Glass Finds .....	329
<i>Joanita Vroom</i>	

Münzen und Siegel .....	345
<i>Ursula Schachinger – Nikolaus Schindel</i>	
Anthropologische und paläopathologische Untersuchung menschlicher Skeletüberreste aus dem Friedhof um die Türbe .....	377
<i>Kristina Scheelen – Jan Nováček – Michael Schultz</i>	
Mitochondrial Analyses Suggest a Maternal European Signature of the Skeletons from the Türbe .....	489
<i>Gro Bjørnstad</i>	
Tierreste aus der Türbe .....	495
<i>Gerhard Forstenpointner – Gerald E. Weissengruber</i>	
Die Türbe im Artemision. Eine zusammenfassende Analyse der Forschungs- ergebnisse 2009–2014 .....	515
The Türbe in the Artemision. A Concluding Analysis of the Research Results 2009–2014	531
Artemision'daki Türbe. 2009–2014 Araştırma Sonuçlarının Özet Bir Analizi .....	545
<i>Sabine Ladstätter</i>	
Bibliografie .....	569
Verzeichnis der Abkürzungen .....	590
Anschriften der Autorinnen und Autoren .....	591

## MEDIEVAL CERAMICS FROM THE TÜRBE: AN ARCHAEO-METRIC VIEWPOINT<sup>1</sup>

### 1. INTRODUCTION

In the past archaeological research in Ephesos has mainly focused on the Greco-Roman remains but information about the later periods is gradually also becoming available<sup>2</sup>. The Türbe excavations, therefore, provided a good opportunity to develop interdisciplinary approaches to the Byzantine and Turkish occupations of the site. Previous archaeological and archaeometric studies of Medieval ceramics from the Artemision<sup>3</sup> made it possible for us to define and characterize parts of the local repertoire, further complemented by studies in Hamam<sup>4</sup>. However, the lack of stratified contexts in the older excavations of the Artemision made it difficult to place this material within the broader framework of pottery production in Ephesos, and more generally in Medieval Western Anatolia.

Furthermore, our knowledge of Byzantine and post-Byzantine ceramics workshops in the region has significantly improved over the last years, thanks to extensive studies<sup>5</sup> and to research focused more specifically on single sites such as Pergamon, Ephesos, Anaia and Miletos<sup>6</sup>. Traces of local production are present at many sites<sup>7</sup> and archaeometric studies have provided tools for a better definition of Western Anatolian Medieval ceramics and more comprehensive approaches to their production and diffusion<sup>8</sup>.

The Türbe excavation has supplied further evidence for pottery manufacture in Ephesos/Ayasuluk, as layers of rubefied soil associated to kiln furniture and wasters were found under the foundations of the Türbe<sup>9</sup>. They also offer the opportunity to study Medieval ceramics in Ephesos in context. In spite of the high degree of fragmentation of the sherds, it was hoped that connections with the Artemision material, better preserved but without contexts, would enable us to complete the picture reached in 2005<sup>10</sup>. These excavations did supply several examples similar to the main ›middle Byzantine production‹ manufactured in Chalkis<sup>11</sup> whose chronology in the 12<sup>th</sup> and 13<sup>th</sup> centuries is well established thanks to research carried out in Corinth<sup>12</sup>. These

---

<sup>1</sup> Many thanks to J. Vroom and to S. Ladstätter for giving us the opportunity to carry out this study. Part of it was undertaken as an MA subject by M.-M. Carysiotis while an intern in the »Laboratoire de Céramologie« in Lyon. Other parts were completed in the framework of: the POMEDOR project, funded by the French National Research Agency (ANR) and we acknowledge the support of the ANR under reference ANR-12-CULT-0008; the French-Polish PICS program directed by A. Peignard-Giros (University Lumière-Lyon 2, HiSoMA, Lyon) and H. Meyza (Institute of Mediterranean and Oriental Cultures, Polish Academy of Sciences, Warsaw). We are grateful to them as well as to the CNRS (French National Center for Scientific Research). We would like to thank G. Parrer for his help, E. Findik, N. Math and members of the Ephesos team for the drawings, and the staff of the »Laboratoire de Céramologie«.

<sup>2</sup> Krinzinger 2005; Ladstätter 2010; Pfeiffer-Taş 2010a.

<sup>3</sup> Vroom 2005b; Sauer – Waksman 2005.

<sup>4</sup> Pfeiffer-Taş 2011; Okyar et al. 2011.

<sup>5</sup> Böhlendorf-Arslan 2004.

<sup>6</sup> Spieser 1996; Doğer 2004; Vroom 2005b; Mania 2006; Böhlendorf-Arslan 2008; İnanan 2010.

<sup>7</sup> Böhlendorf-Arslan 2004, III, map 6.

<sup>8</sup> E.g. Waksman 1995; Waksman – Spieser 1997; Waksman – François 2004/2005; Sauer – Waksman 2005; Waksman 2013.

<sup>9</sup> G. Parrer, in this volume; J. Vroom – E. Findik, in this volume.

<sup>10</sup> Sauer – Waksman 2005.

<sup>11</sup> Waksman – von Wartburg 2006; Waksman et al. 2014.

<sup>12</sup> Sanders 2000; Sanders 2003b.



periods have been little documented so far in Ephesos/Ayasuluk<sup>13</sup> and represent an earlier phase of occupation when compared to the Artemision material<sup>14</sup>.

The aim of the present investigations is, on the one hand, to gain further knowledge about pottery production in Ephesos during the Medieval period, using chemical analysis and building on the preliminary study of the Artemision material<sup>15</sup>. On the other hand, analyses have made it possible for us to test the hypothesis of the presence of the main ›middle Byzantine production‹ in Ephesos, thanks to comparative data available at the »Laboratoire de Céramologie« in Lyon<sup>16</sup>, whose database was also used to investigate the origin of other imports.

## 2. SAMPLING

The sampling (tab. 1 pls. 1–5) was selected by J. Vroom<sup>17</sup>, with some later additions by the authors. It included the following categories:

- reference and possible reference samples for local production: tripod stilts, used to stack glazed ceramics in the kiln (BZY 332–333: pl. 2), biscuit-fired sherds (BZY 377 [?]. BZY 378: pls. 1. 3), overfired sherds (BZY 284–286: pl. 2), and pieces of clayey (building [?]) material with prints of organic temper (BZY 334–335: pl. 1). The latter may correspond to a different choice in clay resources, as we had previously seen for example in the case of kiln walls<sup>18</sup>. Possible local references coming from the kiln context (So 5.1, SE 071 and SE 078)<sup>19</sup> where considered local reference *stricto sensu*.

- Polychrome Sgraffito Ware with a profile and fabric similar to a biscuit-fired sherd, thus likely to be local as well (BZY 379: pl. 2, similar to BZY 378);

- plain glazed, Monochrome and Polychrome Sgraffito Wares, divided by J. Vroom<sup>20</sup> into two categories according to fabric (pls. 1–3. 5: BZY 287–298. 331. 372 [first category]; BZY 299–304 [second category]). The first category was expected to be local, the second one, mainly represented by sherds covered with a brown glaze, was thought to be imported, possibly from another Western Anatolian site. Samples of more coarsely potted painted or plain glazed wares (BZY 380–383: pls. 1–3) were added to the first category;

- wares dated back to the Beylik period<sup>21</sup>, similar to ceramics from the Artemision previously attributed to a local or regional production<sup>22</sup>. Based on their techniques of decoration they are related to the Islamic world: turquoise glazed (BZY 371) and moulded wares (BZY 373: pls. 1. 3);

- ceramics decorated with various techniques, corresponding to different types previously shown to belong to the same ›Middle Byzantine production‹<sup>23</sup>: ›Fine Sgraffito‹<sup>24</sup> (BZY 311–316: pl. 1), Incised Sgraffito or ›Aegean Ware‹<sup>25</sup> (BZY 324–330: pls. 1. 4), Green and Brown Painted Ware (BZY 317–323. 374–376: pl. 4), Slip-painted Ware (BZY 305–310: pl. 4) and related glazed sherds based on form, fabric and surface treatment. They represent the earlier phase of occupation of the site within our sampling.

<sup>13</sup> Parman 1989.

<sup>14</sup> Vroom 2005b.

<sup>15</sup> Sauer – Waksman 2005.

<sup>16</sup> Waksman – von Wartburg 2006; Waksman et al. 2014.

<sup>17</sup> Cf. J. Vroom – E. Findik, in this volume, for a detailed description and tab. 1 for correspondence with their catalogue numbers.

<sup>18</sup> Waksman – Capelli – Cabella (forthcoming).

<sup>19</sup> G. Parrer, in this volume.

<sup>20</sup> J. Vroom – E. Findik, in this volume.

<sup>21</sup> J. Vroom – E. Findik, in this volume.

<sup>22</sup> Sauer – Waksman 2005.

<sup>23</sup> Waksman – von Wartburg 2006; Waksman et al. 2014.

<sup>24</sup> Morgan 1942.

<sup>25</sup> Megaw 1975.

### 3. CHEMICAL ANALYSIS AND STATISTICAL HANDLING OF DATA

Chemical analysis of the samples was carried out by Wavelength Dispersive – X Ray Fluorescence (WD-XRF) at the »Laboratoire de Céramologie« in Lyon. Twenty-four elements are quantified, seventeen of which are usually taken as active variables in multivariate statistical treatments used to classify ceramics into groups of similar chemical composition. These include eight major and minor elements in ceramics ( $\text{MgO}$ ,  $\text{Al}_2\text{O}_3$ ,  $\text{SiO}_2$ ,  $\text{K}_2\text{O}$ ,  $\text{CaO}$ ,  $\text{TiO}_2$ ,  $\text{MnO}$ ,  $\text{Fe}_2\text{O}_3$ ) and nine trace elements (V, Cr, Ni, Zn, Rb, Sr, Zr, Ba, Ce).

Classifications of the samples were obtained by hierarchical clustering analysis applied to standardized data, using euclidian distance and average linkage<sup>26</sup>. The corresponding diagram, called a dendrogram, initially represents each sample as a vertical bar at the bottom of the figure (figs. 1–3). The two samples that are the most alike in elemental composition are connected by a horizontal link which is placed lower the more chemically similar the samples are. The two samples are then fused into a »pseudo sample« of average composition. The same process is repeated, with the linkage being formed at growing heights, until all the samples are connected. The resulting diagram constitutes the dendrogram. It shows clusters of samples of similar composition linked at a lower level, all the clusters being ultimately linked together at the top of the diagram. This representation is however not sufficient in itself to define compositional groups, as it does not take into account the significance of elemental differences between clusters. Further examination of the raw data is still needed in order to be able to interpret classifications in terms of productions and workshops<sup>27</sup>.

### 4. RESULTS AND DISCUSSION

The first dendrogram (fig. 1) shows the classification of samples from the Türbe together with those previously analyzed from the Artemision<sup>28</sup>, with reference to chemical groups defined in 2005<sup>29</sup>. The identification of groups corresponding to local production (pls. 2–3) relies on both 2005 groups and on new reference samples. The new data strengthens previous local groups b and c (groups 2 and 4 in fig. 2) and do not constitute additional separate entities, some samples remaining unclassified or marginal to one of the groups. The new reference samples, including the two pieces of clayey material (BZY 334–335: pl. 1, top left), belong to one of the groups 2/b and 4/c. The local status of the latter, which was not supported in 2005 by local references *stricto sensu*, is now better attested; its possible subdivision – as it may appear in figure 1 – is not considered significant at the present state of research (tab. 2). On the other hand, the ongoing reconsideration of moulded wares<sup>30</sup> and the uncertain status as local reference of sample BZY 377 re-qualifies group 2/b as »local *latu sensu*«. Both groups 2 and 4 correspond to non- or low-calcareous pastes and share a number of common features (e.g. fairly high to high concentrations of iron, potassium and aluminium), group 4/b being further characterized by its noticeably high iron contents (more than 10 %  $\text{Fe}_2\text{O}_3$ ) (tab. 2). The chemical features of these groups, together with their possible relationships with the local geology, are discussed in Sauer and Waksman (2005).

Groups 2/b and 4/c include Plain Glazed and Polychrome Sgraffito Wares but samples decorated in the Islamic tradition (turquoise glazed and moulded wares) belong within our sampling to group 2/b only (pl. 1, bottom right; 3). They are manufactured with clayey material possibly exploited at a later period and correspond to the introduction in the regional repertoire of a new stylistic and technological tradition. The manufacture of moulded wares using a matrix – exam-

<sup>26</sup> E.g. Picon 1984.

<sup>27</sup> Picon 1993.

<sup>28</sup> With the exception of ceramics with synthetic paste, whose bodies were manufactured with a completely different technique; these were not considered here.

<sup>29</sup> Sauer – Waksman 2005.

<sup>30</sup> Waksman et al. (forthcoming).

ples of which were found in Ephesos in the Artemision<sup>31</sup> as well as in Miletos<sup>32</sup> – is not attested in the Byzantine pottery production. Similarly, the turquoise-glazed pottery corresponds to a glaze recipe where the fluxing agents include alkali<sup>33</sup>, and not only lead as in the case of Byzantine ceramics<sup>34</sup>. Turquoise-glazed and moulded wares are both very common in the Islamic world, where they are usually associated either with synthetic pastes, or with calcareous to highly calcareous ones<sup>35</sup>. In Ephesos, the association of a low-calcareous paste with turquoise glaze or moulded decoration suggests a deviation from the typical ›Islamic‹ features, a hypothesis which would require further research on these little-studied categories of wares.

Two new groups (fig. 1, groups 1 and 3) which were not represented in the 2005 sampling are now identified and characterized. They contain no local reference and both correspond to imports that we were able to attribute to productions previously defined in Lyon's laboratory. Group 1 gathers all the samples related to the main ›Middle Byzantine group‹ (pl. 1, bottom left; 4), with few exceptions such as an atypical sherd (BZY 316). Through its association of samples bearing different techniques of decoration (Sgraffito, Painted, Slip-painted Wares, etc.), group 1 shows the same trends as the main ›middle Byzantine production‹. The latter was previously defined chemically using samples coming from various sites in Cyprus, Greece, Turkey, the Ukraine, Lebanon, etc. which reflect its large diffusion<sup>36</sup>. This production was recently shown to originate from Chalkis (Greece)<sup>37</sup>. The chemical match of the two groups (fig. 2; tab. 2) confirms the presence of the main ›Middle Byzantine production‹ in Ephesos and shows that the site was included in Chalkis' trade network in the 12<sup>th</sup>–13<sup>th</sup> centuries.

Comparative material matching the other imported group (fig. 1: group 3; pl. 5) was found thanks to preliminary laboratory investigations of pottery production in the nearby site of Anaia/Kadikalesi<sup>38</sup> (tab. 2). The classification (fig. 3) illustrates how group 3 is integrated into Anaia's reference group. Although the close vicinity of the two sites, separated by a few tens of kilometres, makes it little surprising, Anaia seems to have been an important trading post in the Middle/Late Byzantine period<sup>39</sup>, as revealed by the large quantities of its pottery products found in Crusader Acre<sup>40</sup>.

One may note that examples of both groups 1 and 3 were found throughout the stratigraphy of the Türbe excavations. This fact may be explained by fluvial disturbances<sup>41</sup> and most of the Byzantine material may be in secondary position and have been brought to the Türbe site from other parts of the Ayasuluk area.

<sup>31</sup> Vroom 2005b, 49 pl. 11 nos. 31–32.

<sup>32</sup> Böhlendorf-Arslan 2008, 389–390.

<sup>33</sup> E.g. Picon – Thiriot – Vallauri 1995.

<sup>34</sup> Armstrong – Hatcher – Tite 1997; Waksman 2005. With the noticeable exception of ›Polychrome White Wares‹ (Vogt et al. 1997).

<sup>35</sup> E.g. Blackman – Redford 1994; Pérez-Arantegui et al. 1995; Waksman 2011; Waksman (forthcoming).

<sup>36</sup> Waksman – von Wartburg 2006.

<sup>37</sup> Waksman et al. 2014.

<sup>38</sup> Waksman 2013.

<sup>39</sup> Mercangöz 2010.

<sup>40</sup> Stern – Waksman 2003; Waksman 2013.

<sup>41</sup> F. Stock – H. Brückner, in this volume; G. Parrer, in this volume; J. Vroom – E. Fındık, in this volume.

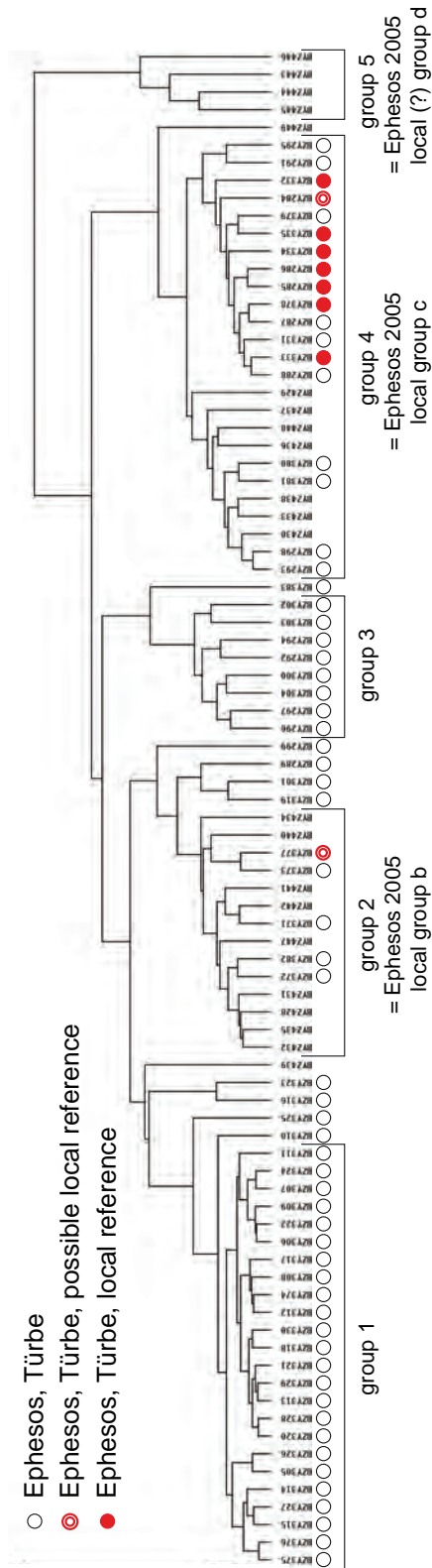


Fig. 1 Classification according to chemical compositions of ceramics from the Türbe excavations, together with samples previously analyzed from the Artemision (Sauer – Waksman 2005). Samples are identified by their laboratory number, and by symbols in the case of the Türbe, local references being specified. The main compositional groups are underlined, correspondence with groups defined in 2005 is indicated (S. Y. Waksman)

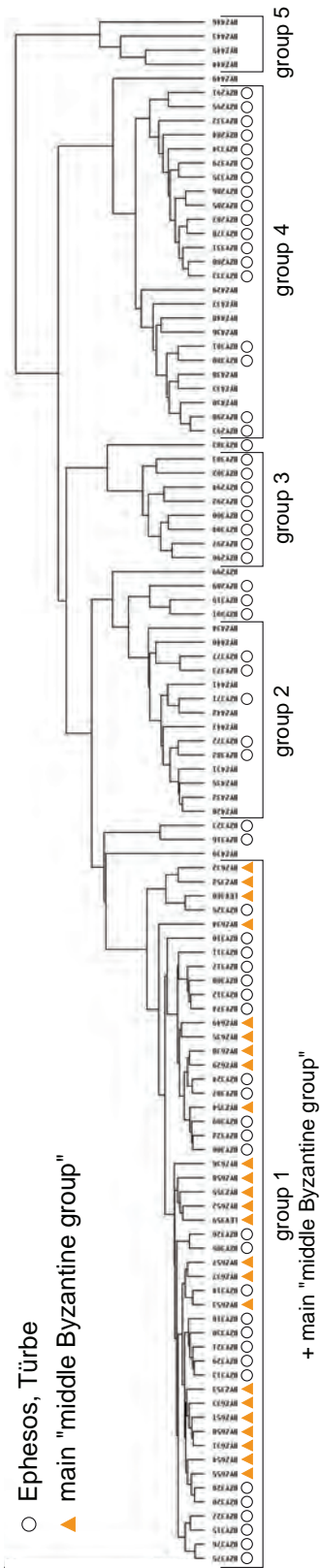


Fig. 2 Classification according to chemical compositions of ceramics from the Türbe and the Artemision excavations, together with comparative material corresponding to the main middle Byzantine production (Waksman – von Wartburg 2006) (S. Y. Waksman)

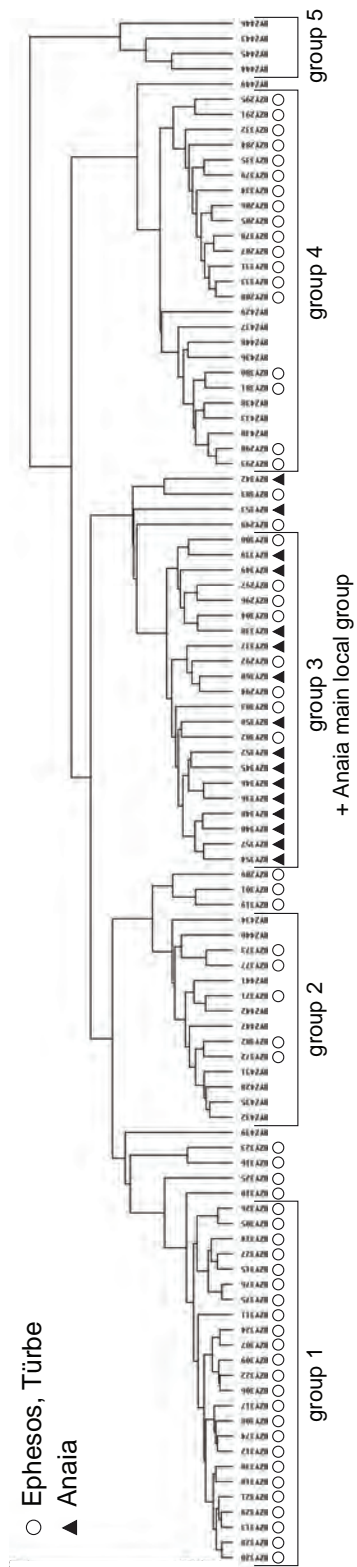


Fig. 3 Classification according to chemical compositions of ceramics from the Türbe and the Artemision excavations, together with comparative material from Anaia (Waksman 2013) (S. Y. Waksman)

Tab. 1 List of samples analyzed from the Türbe excavations, with indication of the excavations context, of the correspondence with the catalogue entries (J. Vroom – E. Findik this volume) and of the chemical group (S. Y. Waksman)

Lyon lab. no.	Ephesos inventory number [J. Vroom's number and code]	Short description after Vroom – Findik this volume	Catalogue entry	Chemical group
BZY284	Tur2010 S06 77 406, n.1, G9	overfired waster	219	4
BZY285	Tur2010 S05.1 78 306, n.2, G9	overfired waster	217	4
BZY286	Tur2010 S05.1 78 306, n.3, G9	overfired waster	218	4
BZY287	Tur2010 S05.1 78 306, n.4, PSg10	polychrome sgraffito	82	4
BZY288	Tur2010 S05.1 78 306, n.5, PSg5	polychrome sgraffito		4
BZY289	Tur2010 S06 77 406, n.6, PSg10	polychrome sgraffito		
BZY291	Tur2010 S07 103 468, n.8, MSg5a	monochrome sgraffito, yellow glaze		4
BZY292	Tur2010 S06 77 406, n.9, PSg3	polychrome sgraffito		3
BZY293	Tur2010 S04 37 155, n.10, PSg3	polychrome sgraffito		4
BZY294	Tur2010 S010 160 601, n.11, MSg10	monochrome sgraffito, green glaze	60	3
BZY295	Tur2010 S01 134 532, n.12, MSg8	monochrome sgraffito, yellow glaze	68	4
BZY296	Tur2010 S07 42 204, n.13, MSg12	monochrome sgraffito, green glaze	67	3
BZY297	Tur2010 S09 150 372, n.14, MSg13	monochrome sgraffito, yellow glaze		3
BZY298	Tur2010 S09 150 372, n.15, MSg13	monochrome sgraffito, yellow glaze, external green glaze		4
BZY299	Tur2010 S06 77 379, n.16, MSg9	monochrome sgraffito, brown glaze		
BZY300	Tur2010 S011 164 638, n.17, MSg9	monochrome sgraffito, brown glaze		3
BZY301	Tur2010 S07 85 340, n.18, MSg9	monochrome sgraffito, brown glaze		
BZY302	Tur2010 S08 161 608, n.19, MSg9	monochrome sgraffito, brown glaze	64	3
BZY303	Tur2010 S07 103 468, n.20, MSg9	monochrome sgraffito, brown glaze	65	3
BZY304	Tur2010 S08 161 608, n.21, MSg9	monochrome sgraffito, brown glaze	63	3
BZY305	Tur2010 S02.1 141 541, n.22, MPI	slip-painted ware		1
BZY306	Tur2010 S04.1 90 344, n.23, MPI	slip-painted ware		1
BZY307	Tur2010 S04.1 83 323, n.24, MPI	slip-painted ware		1
BZY308	Tur2010 S09 138 610, n.25, MPI	slip-painted ware		1
BZY309	Tur2010 S02.1 138 519, n.26, MPI	slip-painted ware		1
BZY310	Tur2010 S05.1 72 286, n.27, MPI	slip-painted ware	9	1
BZY311	Tur2010 S09 165 632, n.28, MSg1	monochrome sgraffito, "Fine sgraffito" type		1
BZY312	Tur2010 S06 77 379, n.29, MSg1	monochrome sgraffito, "Fine sgraffito" type		1
BZY313	Tur2009 S01 5 20, n.30, MSg1	monochrome sgraffito, "Fine sgraffito" type		1
BZY314	Tur2010 S06 77 379, n.31, MSg1	monochrome sgraffito, "Fine sgraffito" type		1
BZY315	Tur2010 S08 163 615, n.32, MSg1	monochrome sgraffito, "Fine sgraffito" type		1



Tab. 1 (cont.) List of samples analyzed from the Turbe excavations, with indication of the excavations context, of the correspondence with the catalogue entries (J. Vroom – E. Findik this volume) and of the chemical group (S. Y. Waksman)

Lyon lab. no.	Ephesos inventory number [J. Vroom's number and code]	Short description after Vroom – Findik this volume	Catalogue entry	Chemical group
BZY316	Tur2010 S07 85 340, n.33, MSg1	monochrome fine sgraffito, green glaze		
BZY317	Tur2009 S06 77 379, n.34, PP1	painted ware, "Green and Brown painted" type		1
BZY318	Tur2010 S02.1 138 519, n.35, PP1	painted ware, "Green and Brown painted" type		1
BZY319	Tur2010 S09 166 644, n.36, PP1	painted ware, "Green and Brown painted" type		
BZY320	Tur2010 S04.1 96 383, n.37, PP1	painted ware, "Green and Brown painted" type		1
BZY321	Tur2010 S04.1 94 365, n.38, PP1	painted ware, "Green and Brown painted" type	21	1
BZY322	Tur2010 S04.1 83 323, n.39, PP1	painted ware, "Green and Brown painted" type		1
BZY323	Tur2010 S04 37 155, n.40, PSg3	polychrome sgraffito	76	
BZY324	Tur2010 S09 166 644, n.41, MSg3	incised sgraffito, "Aegean Ware" type		1
BZY325	Tur2010 S09 166 644, n.42, MSg3	incised sgraffito, "Aegean Ware" type	54	1
BZY326	Tur2010 S05.1 70 279, n.43, MSg3	incised sgraffito, "Aegean Ware" type	56	1
BZY327	Tur2010 S02.1 140 534, n.44, MSg3	incised sgraffito, "Aegean Ware" type, green glaze		1
BZY328	Tur2010 S01 134 532, n.45, MSg3	incised sgraffito, "Aegean Ware" type	53	1
BZY329	Tur2010 S05.1 70 279, n.46, MSg3	incised sgraffito, "Aegean Ware" type		1
BZY330	Tur2010 S05.1 72 286, n.47, MSg3	incised sgraffito, "Aegean Ware" type, green glaze	55	1
BZY331	Tur2010 S06 77/114 460, n.48, MSg3	monochrome sgraffito, yellow glaze	66	4
BZY332	Tur2010 S05.1 71 301, n.49, V1	tripod stilt	212	4
BZY333	Tur2010 S05.1 78 306, n.50, V1	tripod stilt		4
BZY334	Tur2010 S05.1 71 301, n.51, V4	clayey material		4
BZY335	Tur2010 S05.1 78 306, n.52, V4	clayey material		4
BZY371	EAT 2010, S06 77/114 443	turquoise glazed ware		2
BZY372	EAT 2010, S07 49/229	polychrome sgraffito	93	2
BZY373	Turbe/Artemision, SE 22/98-17, sondage 1	moulded green-turquoise glazed ware	144	2
BZY374	Tur2009 S01 22/100, 40.34	painted ware, "Green and Brown painted" type	29	1
BZY375	EAT 2010, S04-1 84/332, 32	painted ware, "Green and Brown painted" type		1
BZY376	EAT 2010, S04-1 104/388	painted ware, "Green and Brown painted" type		1
BZY377	Turbe/Artemision, SE 20/95-1, 1	biscuit-fired ware	108	2
BZY378	Tur2010 S05.1 71 301	biscuit-fired ware		4
BZY379	EAT 2010, S02.1 139/529	polychrome sgraffito	81	4
BZY380	EAT 2010, S09 157 394, 426	plain glazed ware, brown glaze	113	4
BZY381	EAT 2010, S06 77/406, 376	painted ware		4
BZY382	EAT 2010, S01-114, 366	painted ware		
BZY383	EAT 2010, S02 19/206, 18	plain glazed ware, yellow glaze		2

Tab. 2 Chemical compositions of samples from the Türbe excavations and from the Artemision (Sauer – Waksman 2005), ranked as in the dendrogram shown in fig. 7. Comparative data are indicated for the main Middle Byzantine production (Waksman – von Wartburg 2006) and for Anaia's local production (Waksman 2013). – Major and minor elements are given in oxides weight %, trace elements in parts per million (ppm); m: mean,  $\sigma$ : standard deviation, n: number of samples. Elements between brackets are indicative; data with an asterisk were not used in the calculation of m and  $\sigma$ . (S. Y. Waksman)

Lab no.	CaO	Fe <sub>2</sub> O <sub>3</sub>	TiO <sub>2</sub>	K <sub>2</sub> O	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	MgO	MnO	(Na <sub>2</sub> O)	(P <sub>2</sub> O <sub>5</sub> )	Zr	Sr	Rb	Zn	Cr	Ni	(La)	Ba	V	(Ce)
group 1																				
BZY375	4,98	7,23	0,866	3,64	59,54	19,53	2,36	0,1165	1,32	0,17	186	107	151	99	149	101	40	617	134	110
BZY376	5,05	7,31	0,862	3,59	59,44	19,51	2,37	0,1175	1,30	0,16	180	107	149	102	144	96	24	631	129	104
BZY315	4,40	7,25	0,868	3,62	59,97	19,44	2,36	0,1224	1,56	0,19	189	107	145	100	145	89	36	615	134	92
BZY327	4,91	7,01	0,853	3,60	60,30	19,04	2,34	0,1158	1,43	0,19	190	105	144	99	141	101	35	603	124	91
BZY314	4,49	7,25	0,872	3,70	59,77	19,63	2,30	0,1177	1,45	0,21	180	111	146	94	139	94	24	650	142	84
BZY305	3,89	7,31	0,847	3,62	60,98	19,35	2,26	0,1170	1,26	0,16	176	95	150	100	148	105	37	584	137	67
BZY326	4,44	7,32	0,856	3,65	59,97	19,56	2,36	0,1151	1,34	0,17	175	103	149	100	145	94	24	640	131	69
BZY320	4,58	7,34	0,856	3,71	59,65	19,76	2,35	0,1157	1,20	0,18	180	103	150	105	153	113	47	623	132	89
BZY328	4,93	7,40	0,852	3,70	58,94	19,71	2,45	0,1203	1,38	0,19	174	107	148	101	146	106	24	625	133	89
BZY313	5,19	7,51	0,863	3,73	58,17	20,15	2,41	0,1198	1,39	0,22	175	107	155	102	148	109	24	644	143	88
BZY329	4,72	7,49	0,868	3,77	58,99	19,99	2,39	0,1177	1,28	0,17	175	109	154	102	149	97	24	652	134	88
BZY321	5,00	7,72	0,866	3,79	58,23	20,32	2,40	0,1197	1,19	0,16	177	102	155	110	146	95	32	641	135	85
BZY318	4,95	7,60	0,862	3,82	58,39	20,09	2,44	0,1245	1,30	0,18	173	107	151	99	145	109	40	620	150	83
BZY330	4,67	7,65	0,859	3,89	58,66	20,29	2,35	0,1200	1,14	0,15	170	109	156	102	153	100	46	648	140	76
BZY312	4,79	7,76	0,877	3,91	57,91	20,63	2,40	0,1216	1,21	0,18	168	107	162	103	154	111	57	663	144	105
BZY374	5,06	7,72	0,875	3,76	57,84	20,41	2,53	0,1247	1,26	0,20	169	106	160	106	155	112	24	686	148	95
BZY308	5,48	7,77	0,857	3,87	57,42	20,43	2,40	0,1249	1,18	0,22	162	101	158	106	156	109	48	668	133	98
BZY317	4,80	7,58	0,884	3,84	58,28	20,34	2,36	0,1227	1,33	0,25	177	106	156	107	155	93	40	674	134	104
BZY306	5,00	7,79	0,877	3,91	57,55	20,73	2,43	0,1239	1,16	0,18	162	101	155	111	150	108	33	690	126	86
BZY322	5,09	7,71	0,864	3,84	57,76	20,47	2,53	0,1215	1,26	0,15	165	105	157	109	156	114	35	656	130	80
BZY309	5,60	7,68	0,865	3,87	57,09	20,59	2,42	0,1240	1,17	0,20	161	108	156	113	152	101	45	682	138	80
BZY307	4,82	8,00	0,861	3,95	57,25	20,96	2,56	0,1257	1,07	0,19	154	99	162	107	158	118	24	672	141	81
BZY324	5,03	7,95	0,872	4,01	56,93	21,11	2,47	0,1218	1,07	0,21	160	108	164	106	155	103	38	693	146	76
BZY311	4,98	8,13	0,875	4,06	56,39	21,29	2,46	0,1263	1,28	0,19	154	103	163	106	149	112	50	682	153	96
m	4,87	7,56	0,865	3,79	58,56	20,14	2,40	0,1207	1,27	0,19	172	105	154	104	150	104	35	648	137	88
$\sigma$	0,35	0,28	0,009	0,13	1,20	0,59	0,07	0,0035	0,12	0,02	10	4	6	5	5	8	10	30	8	11



Tab. 2 (cont.) Chemical compositions of samples from the Túrbe excavations and from the Artemision (Sauer – Waksman 2005), ranked as in the dendrogram shown in fig. 7. Comparative data are indicated for the main Middle Byzantine production (Waksman – von Wartburg 2006) and for Anania's local production (Waksman 2013). – Major and minor elements are given in oxides weight %, trace elements in parts per million (ppm); m: mean,  $\sigma$ : standard deviation, n: number of samples. Elements between brackets are indicative; data with an asterisk were not used in the calculation of m and  $\sigma$ . (S. Y. Waksman)

Lab no.	CaO	Fe <sub>2</sub> O <sub>3</sub>	TiO <sub>2</sub>	K <sub>2</sub> O	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	MgO	MnO	(Na <sub>2</sub> O)	(P <sub>2</sub> O <sub>5</sub> )	Zr	Sr	Rb	Zn	Cr	Ni	(La)	Ba	V	(Ce)
marginal to group 1																				
BZY310	5,23	7,78	0,869	3,83	57,39	20,65	2,43	0,1287	1,21	0,19	164	101	159	111	223	168	39	688	127	87
BZY325	5,86	6,65	0,842	3,37	60,82	18,16	2,32	0,1117	1,41	0,19	218	117	135	94	149	93	57	596	113	92
unclassified																				
BZY316	10,51	8,36	0,957	3,03	56,13	17,83	1,84	0,1496	0,64	0,33	182	159	132	112	263	224	24	602	135	78
BZY323	9,19	7,99	0,935	3,13	56,87	18,08	2,57	0,1319	0,61	0,26	184	179	140	105	295	244	24	469	150	79
BZY439	4,70	7,47	0,980	3,23	61,19	17,56	2,89	0,0894	1,40	0,27	248	226	137	111	155	192	55	661	131	108
group 2 = group b 2005																				
BYZ432	3,78	8,39	0,961	3,90	56,27	20,68	4,03	0,0986	1,35	0,24	180	261	183	124	209	291	62	738	142	122
BYZ435	4,72	8,37	0,934	4,25	54,97	20,74	3,99	0,1015	1,29	0,29	169	275	183	125	218	294	59	724	136	119
BYZ428	4,24	8,58	0,977	3,90	54,81	21,35	4,22	0,0967	1,35	0,21	169	275	195	124	208	280	61	723	140	125
BYZ431	4,22	8,59	0,973	4,00	54,98	21,03	4,19	0,1001	1,34	0,27	175	262	188	140	220	301	54	795	138	124
BZY372	3,17	8,46	0,974	4,04	56,39	21,33	3,77	0,0963	1,24	0,26	171	254	184	114	201	234	54	712	138	125
BZY382	3,46	8,67	1,010	4,10	55,10	21,79	3,90	0,1043	1,19	0,22	178	280	186	126	191	205	63	724	149	123
BYZ447	6,14	8,15	0,960	3,93	54,36	20,74	3,53	0,0926	1,31	0,24	180	279	171	121	196	208	63	764	134	116
BZY371	4,41	8,36	0,927	3,79	56,44	20,12	4,21	0,1006	1,07	0,19	173	251	170	115	225	280	55	654	143	108
BYZ442	4,01	8,33	0,968	3,59	57,70	19,69	3,93	0,0928	1,22	0,23	177	252	171	119	214	319	55	677	135	115
BYZ441	4,95	8,33	0,915	3,88	55,57	20,25	3,84	0,1043	1,45	0,47	162	228	162	129	199	277	53	756	142	121
BZY373	3,14	8,16	0,981	3,86	57,81	20,57	3,52	0,0911	1,35	0,22	188	251	175	115	172	198	51	710	149	128
BZY377	2,49	8,20	0,999	4,04	57,22	21,57	3,40	0,0956	1,46	0,22	193	268	183	118	158	156	88	708	148	129
BYZ440	3,32	8,29	1,024	4,21	55,53	21,98	3,58	0,0929	1,49	0,23	195	340	196	125	159	182	62	835	137	127
BYZ434	3,42	9,01	1,013	4,40	54,29	22,38	3,35	0,1113	1,46	0,28	170	248	199	138	204	229	52	778	138	119
m	3,96	8,42	0,973	3,99	55,82	21,02	3,82	0,0985	1,33	0,26	177	266	182	124	198	247	59	736	141	122
$\sigma$	0,89	0,22	0,031	0,20	1,13	0,73	0,29	0,0055	0,11	0,07	9	25	11	8	21	49	9	45	5	6

Tab. 2 (cont.) Chemical compositions of samples from the Türbe excavations and from the Artemision (Sauer – Waksman 2005), ranked as in the dendrogram shown in fig. 7. Comparative data are indicated for the main Middle Byzantine production (Waksman – von Wartburg 2006) and for Anania's local production (Waksman 2013). – Major and minor elements are given in oxides weight %, trace elements in parts per million (ppm); m: mean,  $\sigma$ : standard deviation, n: number of samples. Elements between brackets are indicative; data with an asterisk were not used in the calculation of m and  $\sigma$ . (S. Y. Waksman)

Lab no.	CaO	Fe <sub>2</sub> O <sub>3</sub>	TiO <sub>2</sub>	K <sub>2</sub> O	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	MgO	MnO	(Na <sub>2</sub> O)	(P <sub>2</sub> O <sub>5</sub> )	Zr	Sr	Rb	Zn	Cr	Ni	(La)	Ba	V	(Ce)
marginal to group 2																				
BZY319	4,27	8,37	0,918	4,46	54,42	21,18	4,87	0,0981	0,91	0,24	174	315	182	131	148	95	66	857	145	110
BZY301	5,53	8,37	0,891	4,22	54,36	20,63	4,62	0,0946	0,80	0,25	175	263	171	132	145	104	53	835	128	126
BZY289	6,36	7,89	0,876	4,21	55,60	19,89	3,49	0,1055	1,02	0,27	187	287	163	119	129	87	51	857	141	91
BZY299	5,58	9,83	0,891	3,73	52,23	21,44	4,57	0,1348	0,88	0,30	198	191	160	137	264	212	62	639	177	109
group 3																				
BZY296	11,28	8,50	0,737	3,27	51,89	18,85	3,93	0,1507	0,33	0,81	158	277	143	137	288	315	36	549	133	81
BZY297	12,18	8,68	0,745	3,15	50,54	19,74	3,89	0,1379	0,18	0,53	155	286	148	128	274	265	24	538	137	97
BZY304	12,75	8,39	0,741	3,09	50,23	19,01	4,60	0,1639	0,31	0,45	167	264	148	123	277	274	37	565	137	95
BZY300	14,08	8,20	0,711	2,81	50,59	18,25	4,24	0,1660	0,25	0,49	148	251	135	118	289	286	24	487	126	85
BZY292	9,22	8,70	0,795	3,19	52,58	20,17	3,75	0,1470	0,32	0,57	165	234	152	120	310	257	43	446	157	93
BZY294	10,07	9,23	0,787	2,96	51,60	19,90	4,45	0,1449	0,21	0,41	157	223	150	138	329	340	40	476	167	93
BZY303	10,90	8,22	0,758	3,49	51,46	19,86	3,89	0,1419	0,53	0,37	169	264	170	112	241	210	35	533	126	86
BZY302	9,24	9,34	0,803	3,40	50,30	21,70	4,24	0,1521	0,20	0,36	165	271	172	130	271	245	46	451	140	68
m	11,22	8,66	0,760	3,17	51,15	19,69	4,12	0,1506	0,29	0,50	161	259	152	126	285	274	36	506	140	87
$\sigma$	1,72	0,43	0,032	0,22	0,86	1,04	0,30	0,0100	0,11	0,15	7	21	13	9	26	41	8	46	15	10
BZY383	13,40	6,36	0,719	3,26	53,59	16,44	4,63	0,1167	0,95	0,31	170	240	151	93	200	166	36	579	108	85

Tab. 2 (cont.) Chemical compositions of samples from the Türbe excavations and from the Artemision (Sauer – Waksman 2005), ranked as in the dendrogram shown in fig. 7. Comparative data are indicated for the main Middle Byzantine production (Waksman – von Wartburg 2006) and for Anaia's local production (Waksman 2013). – Major and minor elements are given in oxides weight %, trace elements in parts per million (ppm); m: mean,  $\sigma$ : standard deviation, n: number of samples. Elements between brackets are indicative; data with an asterisk were not used in the calculation of m and  $\sigma$ . (S. Y. Waksman)

Lab no.	CaO	Fe <sub>2</sub> O <sub>3</sub>	TiO <sub>2</sub>	K <sub>2</sub> O	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	MgO	MnO	(Na <sub>2</sub> O)	(P <sub>2</sub> O <sub>5</sub> )	Zr	Sr	Rb	Zn	Cr	Ni	(La)	Ba	V	(Ce)
group 4 = group c 2005																				
BZY293	1,46	11,45	1,024	4,28	52,24	24,04	3,39	0,1386	1,27	0,29	237	162	174	158	169	97	54	830	200	149
BZY298	1,63	11,60	1,018	4,39	52,07	24,08	3,54	0,1377	0,95	0,32	235	169	172	155	167	94	58	816	200	138
BZY430	1,45	11,05	1,036	4,19	52,55	24,07	3,36	0,1312	1,43	0,26	235	168	178	154	164	108	72	916	203	143
BZY433	2,39	10,64	1,031	4,30	52,65	23,48	3,30	0,1299	1,51	0,30	258	168	182	144	167	106	77	932	194	139
BZY438	1,44	11,05	1,049	4,33	52,60	24,20	3,25	0,1142	1,42	0,27	257	169	185	158	159	98	71	929	194	142
BZY381	1,19	10,62	1,029	4,37	53,63	23,24	3,52	0,1261	1,72	0,24	244	163	173	147	169	91	77	796	197	141
BZY380	1,15	10,54	1,027	4,19	54,26	23,05	3,70	0,1082	1,38	0,24	248	162	172	146	188	112	73	798	211	139
BZY436	1,48	10,96	1,039	4,39	52,58	23,83	3,52	0,0902	1,46	0,30	252	168	176	154	179	126	80	922	203	141
BZY448	2,03	11,15	1,013	4,14	52,01	23,62	3,77	0,1159	1,36	0,47	239	208	180	156	222	144	76	998	215	134
BZY437	1,46	11,56	1,032	4,40	51,25	24,04	4,08	0,1457	1,46	0,29	236	157	181	161	218	156	76	875	218	153
BZY429	1,35	11,07	1,019	4,14	51,25	24,48	3,29	0,1297	1,33	0,27	212	149	*134	149	161	88	70	898	201	154
BZY288	1,46	11,28	1,012	4,00	53,24	23,22	4,08	0,1647	1,01	0,28	210	157	161	145	220	144	63	760	195	116
BZY333	1,54	11,17	1,007	4,00	53,30	23,11	4,08	0,1517	1,06	0,29	214	155	162	150	215	150	72	746	200	116
BZY331	1,40	11,11	1,016	4,19	53,40	23,11	3,87	0,1613	1,17	0,31	217	162	163	143	196	121	52	777	188	125
BZY287	1,59	11,16	1,005	4,01	53,11	23,12	4,15	0,1456	1,08	0,28	204	154	160	146	226	167	71	723	204	129
BZY378	1,25	11,16	1,032	3,98	53,28	23,42	4,06	0,1510	1,14	0,29	207	152	168	150	207	148	70	746	207	134
BZY285	1,55	10,77	0,996	4,09	53,65	22,55	4,44	0,1561	1,09	0,27	220	153	159	152	246	152	64	729	197	121
BZY286	1,60	10,68	0,990	4,34	53,28	22,46	4,44	0,1589	1,41	0,26	224	151	159	145	242	160	66	717	209	129
BZY334	1,66	10,81	0,980	4,13	53,19	23,00	3,98	0,1306	1,52	0,29	203	161	160	153	201	136	63	731	197	127
BZY335	2,80	11,03	0,988	4,04	52,50	22,77	4,21	0,1567	0,99	0,27	207	163	158	150	224	153	55	742	189	145
BZY379	1,45	11,07	1,019	3,94	53,37	23,14	4,13	0,1562	1,16	0,26	206	155	162	145	216	149	55	756	203	162
BZY284	1,46	10,84	1,000	4,59	53,14	23,03	3,76	0,1683	1,37	0,27	225	162	159	145	198	115	57	784	195	139
BZY332	1,75	10,88	0,969	4,86	53,36	22,31	4,02	0,1426	1,21	0,26	200	164	164	139	212	148	72	754	203	126
BZY291	1,65	12,71	1,045	4,09	51,09	23,91	3,68	0,1578	1,10	0,30	183	157	176	156	164	105	62	828	202	130
BZY295	1,14	12,22	1,002	3,99	52,88	23,33	3,55	0,1350	1,20	0,31	182	152	169	159	166	103	76	757	187	129
m	1,57	11,14	1,015	4,21	52,80	23,38	3,81	0,1402	1,27	0,29	222	162	169	150	196	127	67	810	200	136
$\sigma$	0,42	2,13	0,194	0,82	10,02	4,46	0,77	0,0304	0,28	0,06	45	30	33	28	43	32	14	164	38	27

Tab. 2 (cont.) Chemical compositions of samples from the Türbe excavations and from the Artemision (Sauer – Waksman 2005), ranked as in the dendrogram shown in fig. 7. Comparative data are indicated for the main Middle Byzantine production (Waksman – von Wartburg 2006) and for Anaia's local production (Waksman 2013). – Major and minor elements are given in oxides weight %, trace elements in parts per million (ppm); m: mean,  $\sigma$ : standard deviation, n: number of samples. Elements between brackets are indicative; data with an asterisk were not used in the calculation of m and  $\sigma$ . (S. Y. Waksman)

Lab no.	CaO	Fe <sub>2</sub> O <sub>3</sub>	TiO <sub>2</sub>	K <sub>2</sub> O	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	MgO	MnO	(Na <sub>2</sub> O)	(P <sub>2</sub> O <sub>5</sub> )	Zr	Sr	Rb	Zn	Cr	Ni	(La)	Ba	V	(Ce)
BYZ449	1,64	9,85	1,101	3,63	56,28	22,19	2,96	0,1000	1,44	0,28	255	149	148	132	169	118	67	670	196	124
group 5 = group d 2005																				
BYZ445	1,98	8,74	1,050	2,27	61,23	18,37	3,59	0,1192	1,69	0,74	222	115	103	104	446	332	37	426	169	76
BYZ444	1,75	9,17	0,999	2,27	60,58	18,44	4,29	0,1590	1,54	0,56	204	81	98	97	429	409	42	463	162	83
BYZ443	2,15	9,43	1,082	1,62	61,42	18,81	3,22	0,0878	1,85	0,13	214	119	85	79	387	331	39	344	181	79
BYZ446	0,89	8,75	1,057	2,43	63,14	20,15	2,17	0,1126	0,91	0,19	271	70	125	105	290	272	50	401	153	105
comparative data: main "Middle Byzantine production" (n = 24, Waksman – von Wartburg 2006)																				
m	5,16	7,19	0,850	3,81	58,78	19,65	2,46	0,1148	1,49	0,17	182	121	146	103	143	108	41	661	138	82
$\sigma$	0,57	0,37	0,013	0,17	1,33	0,78	0,12	0,0039	0,15	0,02	16	18	9	6	7	6	3	39	8	4
comparative data: Anaia, local production, main group (n = 16, Waksman 2013)																				
m	11,64	8,56	0,758	3,12	50,34	19,85	4,57	0,1486	0,37	0,36	155	263	162	122	275	244	47	490	151	103
$\sigma$	1,76	0,53	0,032	0,25	0,91	1,16	0,59	0,0172	0,09	0,16	5	36	13	11	28	27	10	45	12	11

## 5. CONCLUDING REMARKS

The Türbe excavations provided information about the Byzantine and Turkish periods of Ephesos/Ayasuluk. Chemical analyses confirm the presence of several categories of ceramic imports belonging to the main ›Middle Byzantine production‹ from Chalkis that were widespread in the Mediterranean and date back to the 12<sup>th</sup> and 13<sup>th</sup> centuries<sup>42</sup>. Ephesos is part of the distribution area of this production, together with several other Western Anatolian sites such as Pergamon<sup>43</sup> and the nearby castle of Anaia/Kadikalesi, where it is present in significant quantities. Pottery was also manufactured in Anaia. Anaia's products were diffused not only at a regional level, as shown here through examples found in Ephesos, but also reached the Crusader states as seen by its noticeable presence in Saint-Jean-d'Acre<sup>44</sup>.

Ceramic production in Ephesos is documented in the Türbe excavations through the discovery of rubefied layers, kiln furniture and wasters<sup>45</sup>. Several local groups, *stricto* or *lato sensu*, showing different chemical features, may be identified. These groups do not differ from those previously defined in a preliminary study of the Artemision material<sup>46</sup>. The present study complements the previous chemical characterization and further illustrates the local/regional manufacture of various types of table wares, from coarsely potted plain glazed to more ›sophisticated‹ ceramics of ›Islamic‹ types (turquoise glazed and moulded wares). The latter would correspond to the introduction in the repertoire of new stylistic and technological traditions, a phenomenon which would have occurred at the Beylik period in other Western Anatolian sites as well, such as Miletos<sup>47</sup> and, possibly, Sardis<sup>48</sup>. In Ephesos, the association of turquoise glaze or moulded decoration with low-calcareous pastes, instead of calcareous ones, suggests an adaptation of the initial pottery traditions, as may be observed for example in Syria.

The high degree of fragmentation of the sherds in the Türbe excavations on the one hand, and the fluvial disturbances of the stratigraphy on the other hand, made it difficult to reconstruct the typo-chronological features of the local repertoire. Some connections could be made with the better preserved material from the Artemision, but were limited within our sampling. It is hoped that further sampling and analyses of ceramics coming from other excavations in Ephesos/Ayasuluk (›Tribüne‹ [= Odeion in the Artemision], İsa Bey Hamam, etc.) will make it possible for us to give further insight into these questions.

Sylvie Yona Waksman, in collaboration with Marie-Myriam Carytsiotis

<sup>42</sup> Sanders 2003b; Waksman et al. 2014.

<sup>43</sup> Waksman – Spieser 1997: ›Fine sgraffito group‹.

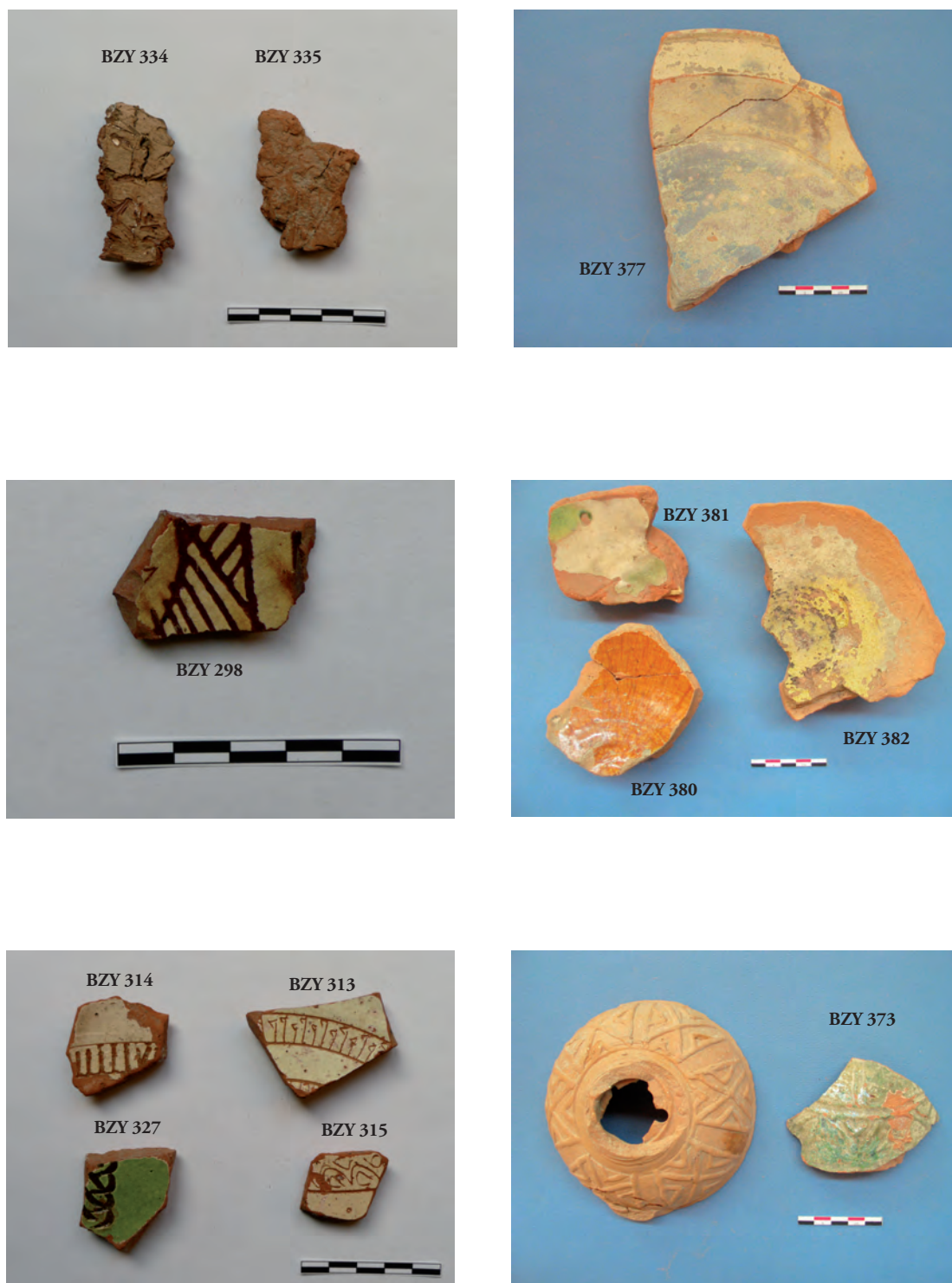
<sup>44</sup> Waksman 2013.

<sup>45</sup> G. Parrer, in this volume.

<sup>46</sup> Sauer – Waksman 2005.

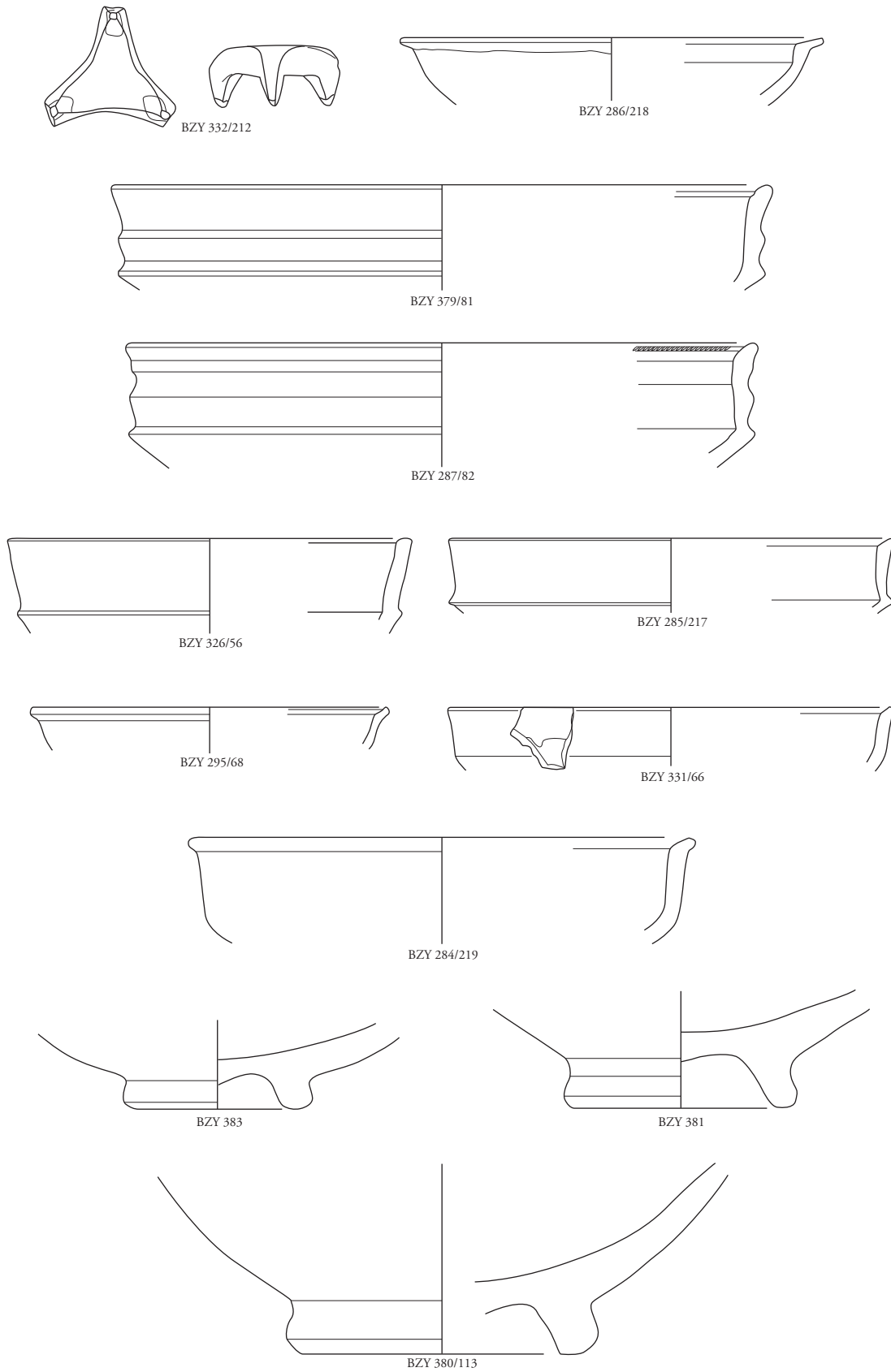
<sup>47</sup> Böhlendorf-Arslan 2008.

<sup>48</sup> Scott – Kamilli 1981.



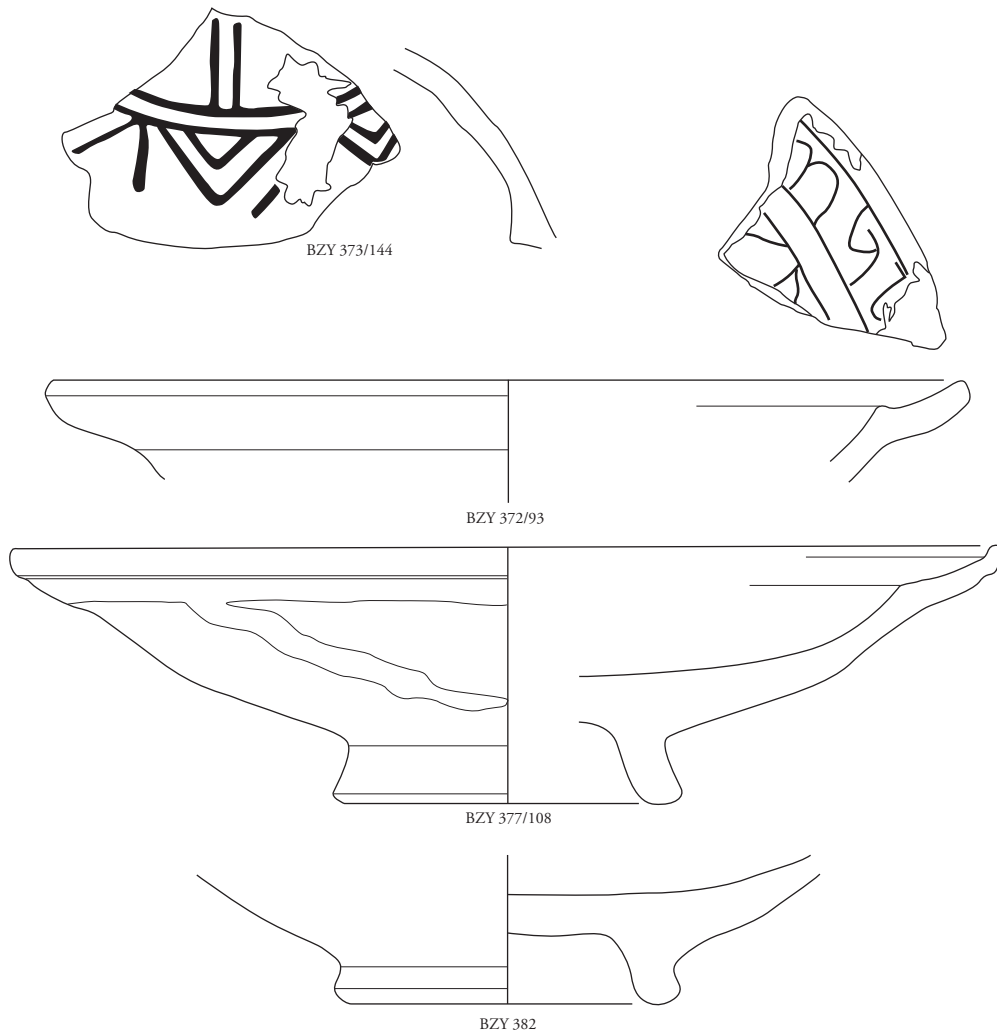
Pl. 1 Examples of samples analyzed: possible local references: clayey material (BZY 334–335) and biscuit fired waster (?) (BZY 377); samples shown to be local *stricto sensu*: Sgraffito Ware (BZY 298), coarsely pot-  
 ted Plain Glazed Ware (BZY 380–382), or *lato sensu*: moulded wares in the Islamic tradition (BZY 373);  
 imported wares of ›Fine Sgraffito‹ and ›Aegean Ware‹ types (BZY 313–315, BZY 327), shown to belong  
 to the main ›Middle Byzantine production‹ (Waksman – von Wartburg 2006; Waksman et al. 2014) (Photos  
 © S. Y. Waksman – M.-M. Carytsiotis)





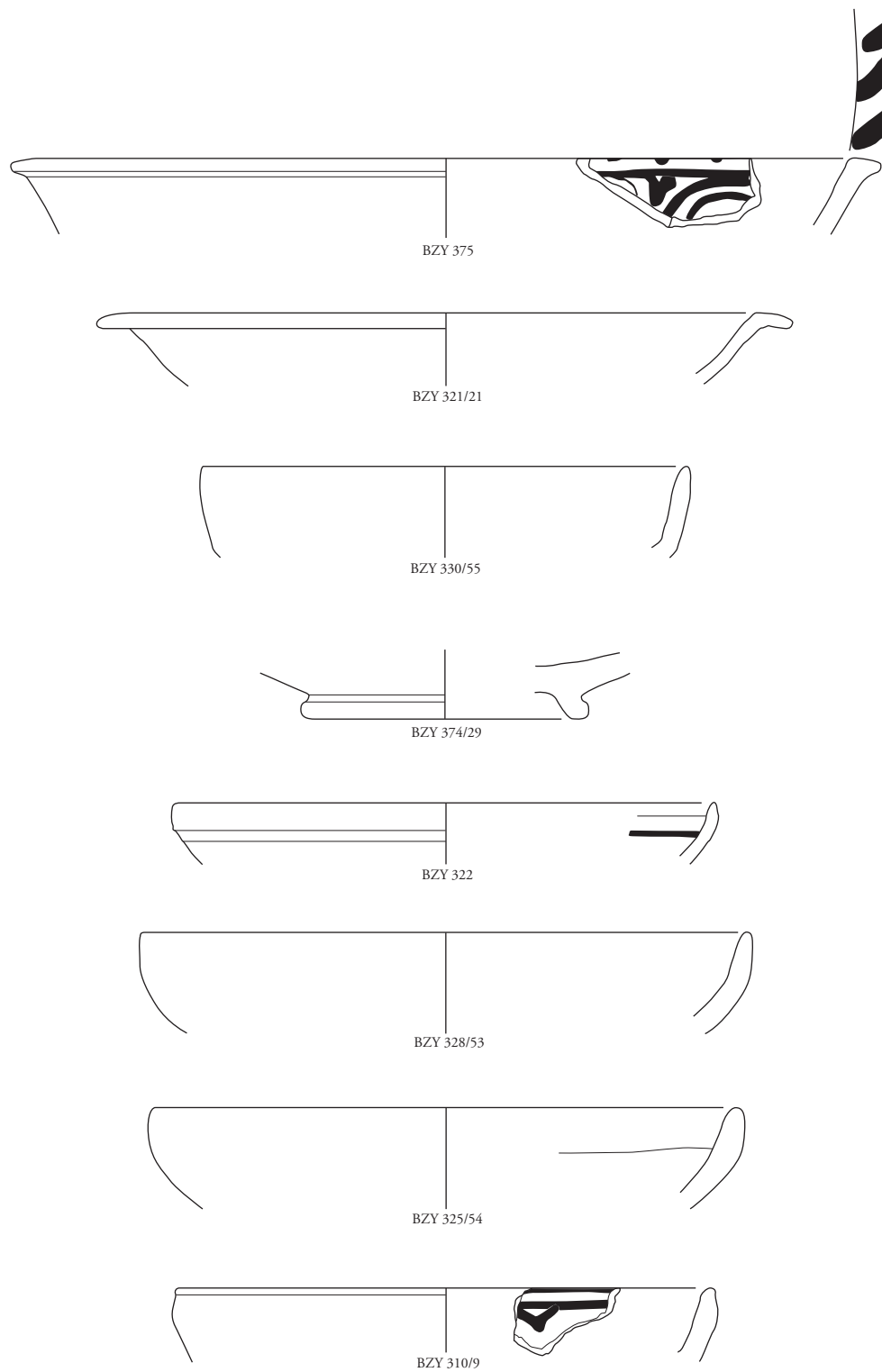
Pl. 2 Ceramics analyzed, classified by chemical groups

Chemical group 4: local production *stricto sensu* (Sauer – Waksman 2005: local group c); Lyon laboratory no./cat. no. (J. Vroom – E. Findik this volume) are indicated (Drawings OeAI Archive Vienna, layout S. Y. Waksman, © OeAI)

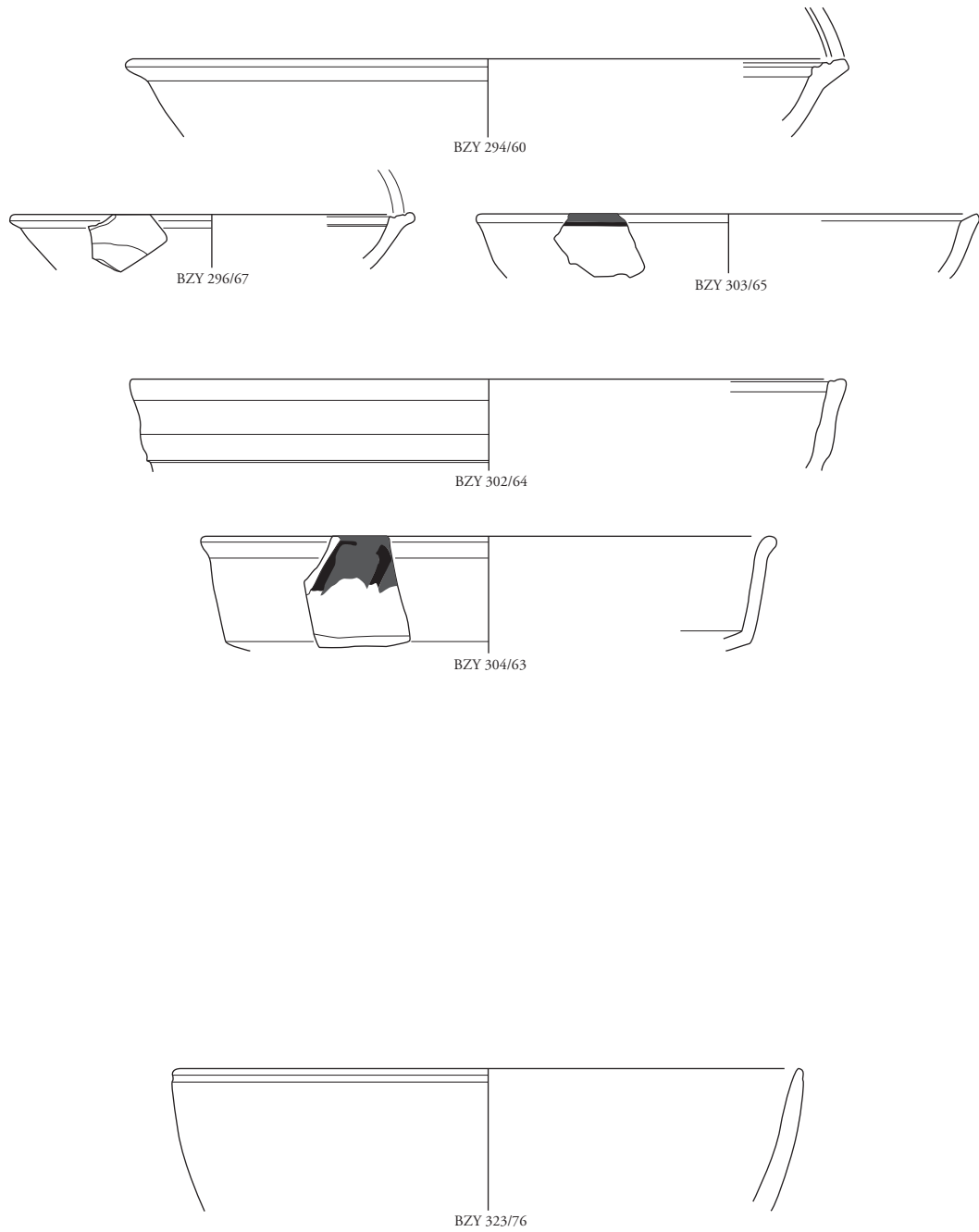


Pl. 3 Ceramics analyzed, classified by chemical groups  
 Chemical group 2: local production *lato sensu* (Sauer – Waksman 2005: local group b); Lyon laboratory no./cat. no. (J. Vroom – E. Findik this volume) are indicated (Drawings OeAI Archive Vienna, layout S. Y. Waksman, © OeAI)





Pl. 4 Ceramics analyzed, classified by chemical groups  
 Chemical group 1: main ›Middle Byzantine production‹; Lyon laboratory no./cat. no. (J. Vroom – E. Findik this volume) are indicated (Drawings OeAI Archive Vienna, layout S. Y. Waksman, © OeAI)



Pl. 5 Ceramics analyzed, classified by chemical groups.  
 Top, chemical group 3: Anaia Wares; bottom, unclassified sample BZY 323; Lyon laboratory no./cat. no. (J. Vroom – E. Findik this volume) are indicated (Drawings OeAI Archive Vienna, layout S. Y. Waksman, © OeAI)



## BIBLIOGRAFIE

Zusätzlich zu den vom Österreichischen Archäologischen Institut empfohlenen Abkürzungen (s. <<http://www.oeai.at>>) werden hier folgende verwendet:

- Ackerknecht 1963 E. H. Ackerknecht, *Geschichte und Geographie der wichtigsten Krankheiten* (Stuttgart 1963).
- Acsádi – Nemeskéri 1970 G. Acsádi – J. Nemeskéri, *History of human life span and mortality*, Akadémiai Kiadó (Budapest 1970).
- Adam 1994 J.-P. Adam, *Roman Building* (London 1994).
- Adler 1998 C.-P. Adler, *Knochenkrankheiten. Diagnostik makroskopischer, histologischer und radiologischer Strukturveränderungen des Skeletts* (Berlin 1998).
- Ahunbay 2005 M. Ahunbay, *Bizans Yapım Teknikleri, Geçmişten Geleceğe Anadolu'da Malzeme ve Mimarlık Sempozyumu, 4–5 Temmuz 2005* (Istanbul 2005) 68–78.
- Akane et al. 1991 A. Akane – H. Shiono – K. Matsubara – Y. Nakahori – S. Seki – S. Nagafuchi – M. Yamada – Y. Nakagome, *Sex identification of forensic specimens by polymerase chain-reaction (pcr) – 2 alternative methods*, *Forensic Science International* 49, 1991, 81–88.
- Akın 1965 L. Akın, *Bizans Keramiği, Ayasofya Müzesi Yıllığı* 6, 1965, 83–96.
- Akın 1968 H. Akın, *Aydinoğulları Tarihi Hakkında Bir Araştırma* (Ankara 1968).
- Alâeddin 2001 Alâeddin'in Lambası. Anadolu'da Selçuklu Çağı Sanatı ve Alâeddin Keykubâd / Aladdin's Lamp. Sultan Alâeddin Keykubâd and the Art of the Anatolian Seljuks Age (Istanbul 2001).
- Alexandrescu-Dersca 1942 M.-M. Alexandrescu-Dersca, *La campagne de Timur en Anatolie (1402)* (Bucharest 1942).
- Altun 1988 A. Altun, *Ortaçağ Türk Mimarisinin Anahatları İçin Bir Özet* (Istanbul 1988).
- Anderson et al. 1981 S. Anderson – A. T. Bankier – B. G. Barrell – M. H. L. de Bruijn – A. R. Coulson, *Sequence and organization of the human mitochondrial genome*, *Nature* 290, 1981, 457–465.
- Angel 1964 J. Angel, *Osteoporosis: Thalassaemia?*, *American Journal of Physical Anthropology* 22, 1964, 369–373.
- Angel 1966 J. Angel, *Porotic hyperostosis, anemias, malaras, and marshes in the prehistoric eastern Mediterranean*, *Science* 153, 1966, 760–763.
- Antonaras 2010 A. C. Antonaras, *Early Christian and Byzantine glass vessels: Forms and uses*, in: F. Daim – J. Drauschke (eds.), *Byzanz – das Römerreich im Mittelalter. Welt der Ideen, Welt der Dinge, Monographien des Römisch-Germanischen Zentralmuseums in Mainz* 84, 1 (Mainz 2010) 383–430.
- Arel 1970 A. Arel, *Batı Anadolu'dan Birkaç Yapının Tarihlendirilmesi ve XV. Yüzyıl Osmanlı Mimarisi Hakkında, Anadolu Sanatı Araştırmaları II* (Istanbul 1970) 82–96.
- Arık 1985 M. O. Arık, *Turkish Art and Architecture, Seljuk, Interregnum and Ottoman Empire Periods* (Ankara 1985).
- Arık 2004 M. O. Arık, *Alanya Kalesi Çalışmaları 2003, Anadolu Akdenizi Arkeoloji Haberleri* 2, 2004, 1–5.
- Arıkan 1990 Z. Arıkan, *XIV–XVI. Yüzyıllarda Ayasuluğ*, *Belleten* 54/209, 1990, 121–177.
- Armstrong – Hatcher – Tite 1997 P. Armstrong – H. Hatcher – M. Tite, *Changes in Byzantine glazing technology from the ninth to the thirteenth centuries*, in: *La céramique médiévale en Méditerranée. Actes du 6<sup>e</sup> congrès, Aix-en-Provence* (Aix-en-Provence 1997) 225–229.
- Arndt et al. 2003 A. Arndt – W. van Neer – B. Hellemans – J. Robben – F. Volckaert – M. Waelkens, *Roman trade relationships at Sagalassos (Turkey) elucidated by ancient DNA of fish remains*, *JASc* 30, 2003, 1095–1105.
- Arseven 1970 C. E. Arseven, *Türk Sanatı* (Istanbul 1970).
- Artuk – Artuk 1974 İ. Artuk – C. Artuk, *İstanbul Arkeoloji Müzeleri Teşhirdeki İslami Sikkeler Kataloğu* (Istanbul 1974).
- Aschoff – Koch 1919 L. Aschoff – W. Koch, *Skorbut. Eine pathologisch-anatomische Studie* (Jena 1919).
- Aslanapa 1965 O. Aslanapa, *Türkische Fliesen und Keramik in Anatolien* (Istanbul 1965).
- Aslanapa 1990 O. Aslanapa, *Türk Sanatı* (Ankara 1990).
- Aslanapa – Yetkin – Altun 1989 O. Aslanapa – S. Yetkin – A. Altun, *The Iznik Tile Kiln Excavations (The Second Round; 1981–1988)* (Istanbul 1989).

- Aufderheide – Rodríguez-Martín 1998  
Avisar – Stern 2005  
Avisar 2009  
Babuín – Nakas 2011  
Bach 1965  
Bakirer 2009  
Baldus 2006  
Bammer 1984  
Bammer 1993  
Bammer 1997  
Bammer 1999  
Bammer 2008  
Barsanti 1988  
Bartosiewicz 2005  
Bates 1971  
Bautier 1970  
Baykara 1990  
Beilke-Voigt 2004  
Beilke-Voigt 2010  
Bekker 1835  
Beksaç 2005  
Bell 1916  
Bellibaş – Ladstätter – Kürüm 2013  
Bellinger 1938  
Benndorf 1898  
Benndorf 1906a  
Benndorf 1906b  
Ben-Tor – Rosenthal 1978
- A. C. Aufderheide – C. Rodríguez-Martín, *The Cambridge Encyclopedia of Human Pathology* (Cambridge 1998).  
M. Avisar – E. J. Stern, *Pottery of the Crusader, Ayyubid, and Mamluk Periods in Israel*, IAA Reports 26 (Jerusalem 2005).  
M. Avisar, *Ottoman pottery assemblages from excavations in Israel*, in: B. J. Walker (ed.), *Reflections of Empire. Archaeological and Ethnographic Studies on the Pottery of the Ottoman Levant* (Boston 2009) 7–14.  
A. Babuín – Y. Nakas, *Byzantine ship graffiti from the church of Prophitis Elias in Thessaloniki*, *Skyllis* 11, 2011, 8–17.  
H. Bach, *Zur Berechnung der Körperhöhe aus den langen Gliedmaßen weiblicher Skelette*, *Anthropologischer Anzeiger* 20, 1965, 12–21.  
Ö. Bakirer, *Glass from the Seljuk Palace at Alanya*, in: E. Laffı (ed.), *Late Antique/Early Byzantine Glass in the Eastern Mediterranean. Colloquia Anatolica et Aegea, Acta Congressus Internationalis Smyrnenensis 2* (Izmir 2009) 199–212.  
H. R. Baldus, *Fundmünzen aus den Jahren 1962–1998*, *Didyma* 3, 3. Ergebnisse der Ausgrabungen und Untersuchungen seit dem Jahre 1962 (Mainz 2006).  
A. Bammer, *Das Heiligtum der Artemis von Ephesos* (Graz 1984).  
A. Bammer, *Die Geschichte des Sekos im Artemision von Ephesos*, *ÖJh* 62, 1993, Beibl. 137–168.  
A. Bammer, *Artemision – Präsentation des Ruinengeländes*, in: S. Karwiese und Mitarbeiter, *Ephesos, ÖJh* 66, 1997, Grabungen 1996, 48.  
A. Bammer, *Die Kirche im Artemision von Ephesos*, in: R. Pillinger – O. Kresten – F. Krinzinger – E. Russo (eds.), *Efeso paleocristiana e bizantina, AForsch 3 = DenkschrWien* 282 (Vienna 1999) 86–88.  
A. Bammer, *Die Kirche im Artemision*, in: U. Muss (ed.), *Die Archäologie der ephesischen Artemis. Gestalt und Ritual eines Heiligtums* (Vienna 2008) 285–288.  
C. Barsanti, *Scultura anatolica di epoca mediobizantina*, in: C. Barsanti – A. Guiglia Guidobaldi – A. Iacobini (eds.), *Atti della Giornata di Studi »Storia dell'Arte e della Cultura Artistica Bizantina«*. Roma, 4. Dicembre 1986, *Milion. Studi e ricerche d'arte bizantina* 1 (Rome 1988) 275–306.  
L. Bartosiewicz, *Animal Remains from the Excavations of Horum Hoyuk, Southeast Anatolia, Turkey*, in: H. Buitenhuis – A. M. Choyke – L. Martin – L. Bartosiewicz – M. Mashkour (eds.), *Archaeozoology of the Near East VI. Proceedings of the sixth International Symposium on the Archaeozoology of Southwestern Asia and Adjacent Areas*, *ARC Publicaties* 123 (Groningen 2005) 150–162.  
G. E. Bates, *Byzantine Coins, Archaeological Exploration of Sardis, Monograph 1* (Cambridge, MA 1971).  
R. H. Bautier, *Une Géographie des Courants Commerciaux Orient-Occident au Début du XIV<sup>e</sup> Siècle (vers 1315?)*, in: M. Mollat (ed.), *Sociétés et Compagnies de Commerce en Orient et dans L'Océan Indien* (Paris 1970) 311–320.  
T. Baykara, *Aydinoğlu Gazi Umur Paşa* (Ankara 1990).  
I. Beilke-Voigt, *Kinderdefizite und Kinderfriedhöfe – Zur Sonderstellung des Kindes im Bestattungsritual anhand archäologischer und ethnologischer Quellen*, *Ethnographisch-Archäologische Zeitschrift* 45, 2004, 271–295.  
I. Beilke-Voigt, *Kaum gelebt und schon begraben. Zu den Siedlungsbestattungen von Kleinstkindern in vor- und römischer Zeit*, *MAG* 140, 2010, 101–140.  
I. Bekker (ed.), *Georgii Pachymeris de Michaelae et Andronico Palaeologis libri tredecim* (Bonn 1835).  
E. Beksaç, *Adramytteion/Ören 2001 Kazısı*, *KST* 24, 1, 2005, 85–94.  
H. W. Bell, *Sardis 11, Coins, Part 1: 1910–1914* (Leiden 1916).  
E. S. Bellibaş – S. Ladstätter – M. Kürüm, *Sığla Türbesi (İzmir – Selçuk) ve restorasyonu yaklaşımları*, in: M. Ersan – M. Şeker – C. Kanat, *Aydinoğulları Tarihi, Uluslararası Batı Anadolu Beylikleri Tarih Kültür ve Medeniyeti Sempozyumu I* (Ankara 2013) 275–307.  
A. R. Bellinger, *Coins from Jerash, 1928–1934* (New York 1938).  
O. Benndorf, *Vorläufige Berichte über die Grabungen von Ephesos I*, *ÖJh* 1, 1898, Beibl. 53–72.  
O. Benndorf (ed.), *Forschungen in Ephesos, FiE 1* (Vienna 1906).  
O. Benndorf, *Ortskunde und Stadtgeschichte*, in: O. Benndorf (ed.), *Forschungen in Ephesos, FiE 1* (Vienna 1906) 9–110.  
A. Ben-Tor – R. Rosenthal, *The first season of excavations at Tel Yoqne'am, 1977: Preliminary report*, *IEJ* 28, 1978, 57–85.

- Berthon – Mashkour 2008 R. Berthon – M. Mashkour, Animal Remains from Tilbesar Excavations, Southeast Anatolia, Turkey, *Anatolia Antiqua* 16, 2008, 23–51.
- Berthon unpubl. R. Berthon, Animal Remains from Medieval Ziyaret Tepe (unpubl. manuscript).
- Berti 2012 F. Berti, Grave goods from the Necropolis in the Agora of Iasos, in: B. Böhlendorf-Arslan – A. Ricci (eds.), *Byzantine Small Finds in Archaeological Contexts*, Byzas 15 (Istanbul 2012) 187–211.
- Bezczeky 2005 T. Bezczeky, Late Roman amphorae, in: F. Krinzinger (ed.), *Spätantike und mittelalterliche Keramik aus Ephesos*, *AForsch* 13 = *DenkschrWien* 332 (Vienna 2005) 203–229.
- Bezczeky 2013 T. Bezczeky, The Amphorae of Roman Ephesus, *FiE* 15, 1 (Vienna 2013).
- Bilici 1998 S. Bilici, Antalya ve Bodrum Müzelerindeki Champlévé Dekorlu Bizans Seramikleri, *Adalya* 2, 1989, 223–234.
- Bilici 1999/2000 S. Bilici, Anadolu'dan Ege Tipinde Sualtı Buluntusu Bir Grup Bizans Seramiği, *Adalya* 4, 1999/2000, 259–280.
- Bilici 2001 S. Bilici, Alanya Tersanesi Seramik Buluntuları, in: V. Ortaçağ ve Türk Dönemi Kazı ve Araştırmaları Sempozyumu. *Bildiriler*, 19–20 Nisan 2001 (Ankara 2001) 107–132.
- Bilici 2003 S. Bilici, Digenes Akritas: Bodrum Müzesi'nden Figürlü Bir Bizans Kâsesi, *Sanat Tarihi Dergisi* 12, 2003, 41–54.
- Bjørnstad – Røed 2010 G. Bjørnstad – K. H. Røed, Museum specimens reveal changes in the population structure of northern Fennoscandian domestic reindeer in the past one hundred years, *Animal Genetics* 41, 2010, 281–285.
- Blackman – Redford 2005 M. J. Blackman – S. Redford, Neutron activation analysis of Medieval ceramics from Kinet, Turkey, especially Port Saint Symeon Ware, *AncNearEastSt* 62, 2005, 83–186.
- Boas 1999 A. J. Boas, *Crusader Archaeology. The Material Culture of the Latin East* (London 1999).
- Boessneck – von den Driesch 1975 J. Boessneck – A. von den Driesch, Tierknochenfunde vom Korucutepe bei Elazig in Ostanatolien, in: M. N. van Loon (ed.), *Korucutepe 1. Studies in ancient civilization* (Amsterdam 1975) 1–220.
- Boessneck – von den Driesch 1983 J. Boessneck – A. von den Driesch, Tierknochenfunde aus Didyma, *AA* 1983, 611–651.
- Boessneck – von den Driesch 1985 J. Boessneck – A. von den Driesch, Knochenfunde aus Zisternen in Pergamon (Munich 1985).
- Böhlendorf 1997 B. Böhlendorf, Die glasierte byzantinische Keramik des Beşik-tepe (Troas), *StTroica* 7, 1997, 363–444.
- Böhlendorf 1998 B. Böhlendorf, Ein byzantinisches Gräberfeld in Troia/Ilion, *StTroica* 8, 1998, 263–273.
- Böhlendorf-Arslan 2004 B. Böhlendorf-Arslan, Glasierte byzantinische Keramik aus der Türkei (Istanbul 2004).
- Böhlendorf-Arslan 2007 B. Böhlendorf-Arslan, Beylikler Döneminde Milet'te Seramik Üretimi, in: H. Karpuz – O. Eravşar (eds.), *Konya Kitabı X, Rüçhan Arık – M. Oluş Arık'a Armağan* (Konya 2007) 87–98.
- Böhlendorf-Arslan 2008 B. Böhlendorf-Arslan, Keramikproduktion im byzantinischen und türkischen Milet, *IstMitt* 58, 2008, 371–407.
- Bone 2000 H. Bone, *The Administration of Umayyad Syria: The Evidence of the Copper Coins* (unpubl. Diss. Princeton, NJ 2000).
- Bramanti 2008 B. Bramanti, Ancient DNA: genetic analysis of aDNA from sixteen skeletons of the Vedrovice collection, *Anthropologie* 46, 2008, 153–160.
- Breitinger 1937 E. Breitinger, Zur Berechnung der Körperhöhe aus den langen Gliedmaßenknochen, *Anthropologischer Anzeiger* 14, 1937, 249–274.
- Broca 1875 P. Broca, Instructions craniologiques et craniométriques, *Bulletins et Mémoires de la Société d'Anthropologie de Paris* 2, 1875, 1–103.
- Brockhoff 1905 W. Brockhoff, *Studien zur Geschichte der Stadt Ephesos. Vom IV. nachchristlichen Jahrhundert bis zu ihrem Untergang in der ersten Hälfte des XV. Jahrhunderts* (Diss. University of Jena 1905).
- Brothwell 1981 D. R. Brothwell, *Digging up Bones. The excavation, treatment and study of human skeletal remains*. British Museum, *Natural History* 3 (London 1981).
- Brückner 1997 H. Brückner, Geoarchäologische Forschungen in der Westtürkei – das Beispiel Ephesos, *Passauer Schriften zur Geographie* 15, 1997, 39–51.
- Brückner – Kraft – Kayan 2008 H. Brückner – J. C. Kraft – İ. Kayan, Vom Meer umspült, vom Fluss begraben – zur Paläogeographie des Artemisions, in: U. Muss (ed.), *Die Archäologie der ephesischen Artemis. Gestalt und Ritual eines Heiligtums* (Vienna 2008) 21–31.
- Bryer 1993 A. Bryer, The Historian's Digenes Akrites, in: R. Beaton – D. Ricks (eds.), *Digenes Akrites: New Approaches to Byzantine Heroic Poetry* (Aldershot 1993) 93–102.
- Bulut 1998 L. Bulut, Selçuk (Ayasuluk) Kazılarında Ele Geçen İslam Devri Seramikleri, in: Birin-

- ci Uluslararası Geçmişten Günümüze Selçuk Sempozyumu, 4–6 Eylül 1997 (Selçuk 1998) 343–355.
- Burkhardt – Fischer 1970 L. Burkhardt – H. Fischer, *Pathologische Anatomie des Schädels* (Berlin 1970).
- Burns 2013 K. R. Burns, *Forensic Anthropology Training Manual* 3 (Boston 2013).
- Buttrey et al. 1981 T. V. Buttrey – A. Johnston – K. M. MacKenzie – M. L. Bates, *Greek, Roman and Islamic Coins from Sardis, Archaeological Exploration of Sardis 7* (Cambridge, MA 1981).
- Büyükkolancı – Öztaşkin 2012 M. Büyükkolancı – G. K. Öztaşkin, Selçuk-Efes Müzesi'nde sergilenen St. Jean kilisesi'ne ait korkuluk levhaları ve templon arşitravları, *Pamukkale Üniversitesi Sosyal Bilimler Enstitüsü Dergisi* 7, 2012, 39–49.
- Büyükkolancı 1995 M. Büyükkolancı, *Johannesbasilika und Festung auf dem Ayasuluk*, in: P. Scherrer (ed.), *Ephesos. Der neue Führer* (Vienna 1995) 192–196.
- Büyükkolancı 2010a M. Büyükkolancı, 2008 Yılı Ayasuluk Tepesi ve St. Jean Anıtı kazı ve onarım çalışmaları, *KST* 31, 2010, 131–144.
- Büyükkolancı 2010b M. Büyükkolancı, Ayasuluk'ta yeni bulunan kale köşkü ve hamamı, in: *Proceedings of the XIII<sup>th</sup> symposium of Medieval and Turkish period excavations and art historical researches*, 14–16 October 2009 (Istanbul 2010) 143–154.
- Büyükkolancı 2011a M. Büyükkolancı, Efes Artemis Tapınağı kilise işlevi kazandı mı?, in: C. Jäger-Klein – A. Kolbitsch (eds.), *Fabrica et ratiocinatio in Architektur, Bauforschung und Denkmalpflege. Festschrift Friedmund Hueber* (Vienna 2011) 347–358.
- Büyükkolancı 2011b M. Büyükkolancı, 2009 Yılı Ayasuluk Tepesi ve St. Jean Anıtı kazı ve onarım çalışmaları, *KST* 32, 2011, 82–90.
- Büyükkolancı 2012 M. Büyükkolancı, 2010 Yılı Ayasuluk Tepesi ve St. Jean Anıtı kazı ve onarım çalışmaları, *KST* 33, 2012, 565–585.
- Cabona – Gardini – Pizzolo 1986 D. Cabona – A. Gardini – O. Pizzolo, *Nuovi dati sulla circolazione delle ceramiche mediterranee dallo scavo di Palazzo Ducale a Genova (secc. XII–XIV). La Ceramica medievale nel Mediterraneo occidentale. Congresso Internazionale dell'Università degli Studi di Siena, Siena-Faenza Ottobre 1984 (Florence 1986) 453–482.*
- Çakmak 1998 Ş. Çakmak, Selçuk Tüberleri, in: *Birinci Uluslararası Geçmişten Günümüze Selçuk Sempozyumu Bildirileri, Selçuk 4–6 Eylül 1997 (Izmir 1998) 375–384.*
- Canav Özgümüş 2009 Ü. Canav Özgümüş, Late Roman/Early Byzantine glass from the Marmaray rescue excavations at Sirkeci, Istanbul, in: E. Laflı (ed.), *Late Antique/Early Byzantine Glass in the Eastern Mediterranean (Izmir 2009) 17–26.*
- Canby 1997 S. Canby, *Islamic ceramics from Ephesus, University Lectures in Islamic Studies 1 (London 1997) 11–34.*
- Caneva et al. 2004 I. Caneva – G. Köroğlu – K. Köroğlu – T. Özyayın, 2003 Yılı Yumuktepe Höyüğü Kazıları, *KST* 26, 2, 2004, 203–214.
- Cantay 2002 G. Cantay, *Anadolu Türk Beylikleri Sanatı*, in: H. C. Güzel – K. Çiçek – S. Koca (eds.), *Türkler Ansiklopedisi VIII (Ankara 2002–2006) 15–29.*
- Carboni – Whitehouse 2001 S. Carboni – D. Whitehouse, *Glass of the Sultans (New York 2001).*
- Carli-Thiele 1996 P. Carli-Thiele, *Spuren von Mangelkrankungen an steinzeitlichen Kinderskeleten, Fortschritte in der Paläopathologie und Osteoarchäologie 1 (Göttingen 1996).*
- Černý – Komenda 1980 M. Černý – S. Komenda, *Sexual Diagnosis by the Measurements of Humerus and Femur. Sborník prací, Pedagogická fakulta Univerzita Palackého v Olomouci – Biologie 2 (Olmütz 1980) 147–167.*
- Černý 1971 M. Černý, *Určování pohlaví podle postkraniálního skeletu*, in: E. Vlček (ed.), *Symposium o určování stáří a pohlaví jedince podle kostry. Národní muzeum v Praze (Prague 1971) 46–62.*
- Christensen – Passalacqua – Bartelink 2014 A. M. Christensen – N. V. Passalacqua – E. J. Bartelink, *Forensic Anthropology. Current Methods and Practice (Oxford 2014).*
- Cimbuleva 1980 J. Cimbuleva, *Vases à glaçure en argile blanche de Nessèbre (IX–XII siècles), Nessèbre 2 (Sofia 1980) 202–253.*
- Comas et al. 2004 D. Comas – S. Plaza – R. S. Wells – N. Yuldaseva – O. Lao – F. Calafell – J. Bertranpetit, *Admixture, migrations, and dispersals in Central Asia: evidence from maternal DNA lineages, European Journal of Human Genetics 12, 2004, 495–504.*
- Çömezoğlu 2010 Ö. Çömezoğlu, *Myra-Demre Aziz Nikolaos kilisesi'nde on ikinci ve üçüncü yüzyıl cam buluntarı*, in: A. Ödekan – E. Akyürek – N. Necipoğlu (eds.), *On İkinci ve On üçüncü Yüzellarda Bizans Dünyasında Değişim / Change in the Byzantine World in the Twelfth and Thirteenth Centuries (Istanbul 2010) 505–509.*
- Cook 1972 M. A. Cook, *Population Pressure in Rural Anatolia, 1450–1600 (London 1972).*
- Cormack 1990 R. Cormack, *The temple as the Cathedral*, in: C. Roueché – K. T. Erim (eds.), *Aphrodisias Papers, JRA Suppl. 1 (Ann Arbor 1990) 75–88.*



- Çoruhlu 2005 T. Çoruhlu, 2004 Yılı Ören (Adramytteion Antik Kenti) Kazı Çalışmaları, KST 27, 1, 2005, 229–240.
- Çoruhlu 2006 T. Çoruhlu, Ören (Adramytteion Antik Kenti) 2005 Yılı Kazı Çalışmaları, KST 28, 1, 2006, 479–500.
- Coşkun Hazinedar 2013 T. Coşkun Hazinedar, Kadikalesi'nde Cam Üretimi / Glass production in Kadikalesi, in: Z. Mercangöz (ed.), Bizanslı Ustular – Latin Patronlar / Byzantine Craftsmen – Latin Patrons (Istanbul 2013) 125–134.
- Crane 1987 H. Crane, Some archaeological notes on Turkish Sardis, *Muqarnas* 4, 1987, 43–58.
- Crane 1988 H. Crane, Traditional pottery making in the Sardis region of western Turkey, *Muqarnas* 5, 1988, 9–20.
- Crane 2002 H. Crane, Anadolu Beylik Döneminde Mimari ve Himaye, in: H. C. Güzel – K. Çiçek – S. Koca (eds.), *Türkler Ansiklopedisi VIII* (Ankara 2002–2006) 30–37.
- Crouch 2004 D. P. Crouch, *Geology and Settlement. Greco-Roman Pattern* (Oxford 2004).
- Czurda-Ruth 2007 B. Czurda-Ruth, *Hanghaus 1 in Ephesos. Die Gläser*, *FiE* 8, 7 (Vienna 2007).
- Damianidis 2012 K. A. Damianidis, Byzantine Ship Graffiti in the Kilise Mescidi of Amasra, in: N. Günsenin (ed.), *Between Continents. Proceedings of the Twelfth Symposium on Boat and Ship Archaeology, Istanbul 2009* (Istanbul 2012) 135–139.
- Danışmanı 2005 Y. Danışmanı (ed.), *Alanya Gemileri (Ships). Ortaçağ Kalesinde Gemi Graffiti* (Ship Graffiti in The Medieval Castle) (Antalya 2005).
- Davidson 1940 G. R. Davidson, A Medieval glass factory at Corinth, *AJA* 44, 1940, 297–327.
- Davidson 1952 G. R. Davidson, The minor objects, *Corinth* 12 (Princeton, NJ 1952).
- Defremey – Sanguinetti 1854 C. Defremey – B. R. Sanguinetti (eds. and trans.), *Voyages d'ibn Batoutah II* (Paris 1854).
- Degasperi 2013 A. Degasperi, Die Marienkirche in Ephesos. Die Bauskulptur aus frühchristlicher und byzantinischer Zeit, *ErghÖJh* 14 (Vienna 2013).
- Delaville le Roulx 1913 J. Delaville le Roulx, *Les Hospitaliers à Rhodes jusqu'à la mort de Philibert de Naillac (1310–1421)* (Paris 1913).
- Dell'Era 2012 F. Dell'Era, Small finds from Zeytinli Bahçe – Birecik (Urfa), in: B. Böhlendorf-Arsalan – A. Ricci (eds.), *Byzantine Small Finds in Archaeological Contexts, Byzas 15* (Istanbul 2012) 393–406.
- Demaitre 2008 L. Demaitre, *Leprosy in Premodern Medicine: A Malady of the Whole Body* (Baltimore 2008).
- Deniz – Payne 1982 E. Deniz – S. Payne, Eruption and Wear in the Mandibular Dentition as a Guide to Ageing Turkish Angora Goats, in: B. Wilson – C. Grigson – S. Payne (eds.), *Ageing and sexing animal bones from archaeological sites*, *BAR* 109 (Oxford 1982) 155–205.
- Deycks 1851 F. Deycks (ed.), *Ludolphi, rectoris ecclesiae parochialis in Suchem, De itinere terrae sanctae liber* (Stuttgart 1851).
- di Benedetto et al. 2001 G. di Benedetto – A. Ergüven – M. Stenico – L. Castri – G. Bertorelle – I. Togan – G. Barbujani, DNA diversity and population admixture in Anatolia, *American Journal of Physical Anthropology* 115, 2001, 144–156.
- DOC III P. Grierson, *Catalogue of the Byzantine Coins in the Dumbarton Oaks Collection and in the Whittemore Collection III* (Washington, D.C. 1973).
- Doğer 1996 L. Doğer, Yeşil ve kahverengi boya dekorlu Bizans sırlı seramikleri, *Antik & Dekor* 35, 1996, 196–197.
- Doğer 1998 L. Doğer, İzmir Arkeoloji Müzesi Koleksiyonları'ndaki Sualtı Buluntusu Slip Teknikli Bizans Seramikleri, *Adalya* 3, 1998, 179–194.
- Doğer 1999 L. Doğer, Kufi Yazı Taklidi Motiflerle Bezeli Sgraffito ve Kazıma Sgraffito Teknikli Bizans Seramikleri, *Antik & Dekor* 55, 1999, 148–151.
- Doğer 2000 L. Doğer, İzmir Arkeoloji Müzesi Bizans Sırlı Seramik Koleksiyonu, *Tepekule Tarih* 1, 2000, 62–70.
- Doğer 2004 L. Doğer, Anaia-Kuşadası Kadikalesi kazısı 2002 yılı Bizans dönemi seramik buluntularının ön değerlendirmesi, *Sanat Tarihi Dergisi* 13/1, 2004, 1–31.
- Doğer 2006 L. Doğer, Manyas-Ergili-Hisar-tepe'deki (Eski Daskyleion) Bizans Kalesi ve Seramik Buluntuları, in: Hayat Erkanal'a Armağan Kültürerin Yansıması / *Studies in Honor of Hayat Erkanal. Cultural Reflections* (Istanbul 2005) 265–273.
- Doğer 2010 L. Doğer, On İkinci ve On Üçüncü Yüzyıllarda Bizans Sırlı Seramik Sanatında Form ve üslup Değişimlerine Ait Bazı Gözlemler, in: A. Ödekan – E. Akyürek – N. Necipoğlu (eds.), *On İkinci ve On Üçüncü Yüzyıllarda Bizans Dünyasında Değişim / Change in the Byzantine World in the Twelfth and Thirteenth Centuries* (Istanbul 2010) 511–520.
- Doğer 2012 L. Doğer, Daskyleion II. Hisar-tepe / Daskyleion kazısı Bizans seramikleri (Istanbul 2012).



- Donkow 2004 I. Donkow, The Ephesus excavations 1863–1874, in the light of the Ottoman legislation on antiquities, *AntSt* 54, 2004, 109–117.
- Efgenidou 1982 D. Efgenidou, Les poteries de St. Nikolaos Tranos de Thessalonique (in Modern Greek), *Anthropologika* 3, 1982, 23–39.
- Eggeling 1973 W. J. Eggeling, Beiträge zur Kulturgeographie des Küçük-Menderes-Gebietes (Diss. Ruhr-University Bochum 1973).
- Eisma 1978 D. Eisma, Stream deposition and erosion by the eastern shore of the Aegean, in: W. C. Brice (ed.), *The environmental history of the Near and the Middle East since the last Ice Age* (London 1978) 67–81.
- Eliakis – Eliakis – Iordanidis 1966 D. Eliakis – E. Eliakis – P. J. Iordanidis, Détermination de la taille d'après la mensuration des os longs, *Annales de médecine légale, criminologie, police scientifique et toxicologie* 46, 1966, 403–421.
- El-Najjar – McWilliams 1978 M. Y. El-Najjar – K. R. McWilliams, *Forensic Anthropology* (Springfield, IL 1978).
- Ender 2000 C. Ender, Karesi, Saruhan, Aydın ve Menteşe Beylikleri Paraları (Istanbul 2000).
- Engelmann 1994 J. Engelmann, Ephesos und die Johannesakten, *ZPE* 103, 1994, 297–302.
- Ertuğrul 1995 S. K. Ertuğrul, Anadolu'da Aydınöğulları Dönemi Mimarisi (İÜ Sosyal Bilimler Enstitüsü, Basılmamış Sanat Tarihi Doktora Tezi, İstanbul 1995).
- Eskici – Kabaoglu 2011 B. Eskici – C. Kabaoglu, Balat İlyas Bey Külliyesi Koruma ve Onarım Çalışmaları, in: M. Baha Tanman – L. Kayhan Elbirlik (eds.), *Balat İlyas Bey Külliyesi* (Istanbul 2011) 235–250.
- Eskici – Şener et al. 2011 B. Eskici – Y. S. Şener et al., İlyas Bey Külliyesi Yapılarına Ait Özgün Malzemelerin Korunmasına Yönelik Araştırma ve Uygulama Çalışmaları, in: M. Baha Tanman – L. Kayhan Elbirlik (eds.), *Balat İlyas Bey Külliyesi* (Istanbul 2011) 187–198.
- Evans 1936 A. Evans (ed.), *La Pratica della Mercatura* (Cambridge, MA 1936).
- Fabrizii-Reuer 2001 S. Fabrizii-Reuer, Die Skelettfunde aus dem Artemision von Ephesos, in: U. Muss (ed.), *Der Kosmos der Artemis von Ephesos*, *SoSchrÖAI* 37 (Vienna 2001) 45–48.
- Failler 1996 A. Failler, Éphèse fut-elle prise en 1304 par les Turcs de Sasan?, *REByz* 54, 1996, 245–248.
- Falkener 1862 E. Falkener, *Ephesus, and the Temple of Diana* (London 1862).
- Fazekas – Kósa 1978 I. G. Fazekas – F. Kósa, *Forensic Fetal Osteology* (Budapest 1978).
- Ferembach – Schwidetzky – Stloukal 1979 D. Ferembach – I. Schwidetzky – M. Stloukal, Empfählungen für die Alters- und Geschlechtsdiagnose am Skelett, *Homo* 30, 1979, Anhang 1–32.
- FiE 4, 2 Das Cömeterium der Sieben Schläfer, *FiE* 4, 2 (Vienna 1937).
- Fındık 2007 E. F. Fındık, Myra-Demre Aziz Nikolaos Kilisesi Kazılarında Osmanlı Dönemi Seramik Cam ve Diğer Buluntular, in: *SERES'07 IV. Uluslararası Katılımlı Seramik, Cam, Emaye, Sır ve Boya Semineri*, 27–29 Kasım 2007 (Eskişehir 2007) 728–748.
- Fındık 2010 E. F. Fındık, Myra-Demre Aziz Nikolaos Kilisesi'nde On İkinci ve On Üçüncü Yüzyıl Sırlı Seramik, in: A. Ödekan – E. Akyürek – N. Necipoğlu (eds.), *On İkinci ve On Üçüncü Yüzyıllarda Bizans Dünyasında Değişim / Change in the Byzantine World in the Twelfth and Thirteenth Centuries* (Istanbul 2010) 521–528.
- Fındık 2013a E. F. Fındık, 2012 Yılı Efes, Ayasuluk Tepesi ve St. Jean Anıtı Kazıları Depo Çalışmalarından İlk Gözlemler, *Yeni Bir Keşif: Ayasuluk'ta Cam Atölyesi, Seleucia ad Calycadnum* 3 (Mersin 2013) 31–48.
- Fındık 2013b E. F. Fındık, Demre-Myra Aziz Nikolaos Kilisesi Kazılarında Bulunan Ortaçağ Sırlı Seramikleri (1989–2009), Hacettepe Üniversitesi, Sosyal Bilimler Enstitüsü (Yayınlanmamış Doktora Tezi) (Ankara 2013).
- Fiorillo 2005 R. Fiorillo, *La tavola dei d'Angiò. Analisi archeologica di una spazzatura reale. Castello di Lagopesole (1266–1315)* (Florence 2005).
- Flecker 1942 H. Flecker, Time of appearance and fusion of ossification centers as observed by roentgenographic methods, *American Journal of roentgenology, radium therapy and nuclear medicine* 47.1, 1942, 97–159.
- Flohr 2007 S. Flohr, *Paläopathologische Untersuchungen zu Erkrankungen der Cavitas tympani und der angrenzenden pneumatischen Räume im frühen Mittelalter* (Diss. University Frankfurt 2007).
- Florkowski – Kozłowski 1994 A. Florkowski – T. Kozłowski, Ocena wieku szkieletowego dzieci na podstawie wielkości kości, *Przegląd Antropologiczny* 57/1–2, 1994, 71–86.
- Forstenpointner – Gaggli 1998 G. Forstenpointner – G. Gaggli, Archäozoologische Untersuchungen an Tierresten aus Limyra, *ÖJh* 67, 1998, 419–426.
- Foss 1979 C. Foss, *Ephesus after Antiquity: A Late Antique, Byzantine and Turkish City* (Cambridge 1979).
- François – Ersoy 2011 V. François – A. Ersoy, Fragments d'histoire: la vaisselle de terre dans une maison de Smyrne au XVIII<sup>e</sup> s., *BCH* 135, 2011, 377–419.

- François 1997 V. François, Les ateliers de céramique byzantine de Nicée/Iznik et leur production (X<sup>e</sup>–début XIV<sup>e</sup> siècle), *BCH* 121, 1997, 411–441.
- François 2001 V. François, Elements pour l'histoire ottomane d'Aphrodisias: La vaiselle de terre, *Anatolia Antiqua* 9, 2001, 147–190.
- Frantz 1938 A. Frantz, Middle Byzantine Pottery in Athens, *Hesperia* 7, 2, 1938, 429–466.
- Frantz 1941 A. Frantz, Akritas and Dragon, *Hesperia* 10, 1941, 9–13.
- Gabrieli 2009 S. R. Gabrieli, Stability and change in Ottoman coarse wares in Cyprus, in: B. J. Walker (ed.), *Reflections of Empire. Archaeological and Ethnographic Studies on the Pottery of the Ottoman Levant* (Boston 2009) 67–77.
- Gaitzsch 2005 W. Gaitzsch, Eisenfunde aus Pergamon. Geräte, Werkzeuge und Waffen, *PF* 14 (Berlin 2005).
- Galik et al. 2010 A. Galik – S. Zohmann – G. E. Weissengruber – G. Forstenpointner, Die Tierreste aus dem Schachtbrunnen und der Nische des Präfurniums, in: Ş. Pfeiffer-Taş (ed.), *Funde und Befunde aus dem Schachtbrunnen im Hamam III in Ayasuluk/Ephesos*, *AForsch* 16 = *DenkschrWien* 389 (Vienna 2010) 77–100.
- Gamba et al. 2012 C. Gamba – M. Tirado – M. F. Deguilloux – M. H. Pemonge – P. Utrilla – M. Edo – M. Molist – R. Rasteiro – L. Chikhi – E. Arroyo-Pardo, Ancient DNA from an Early Neolithic Iberian population supports a pioneer colonization by first farmers, *Molecular Ecology* 21, 2012, 45–56.
- Gejvall 1960 N. G. Gejvall, Westerhus. Medieval Population and Church in the Light of Skeletal Remains, *Kungliga Vitterhets Historie och Antikvitets Akademien* (Lund 1960).
- Gilbert – McKern 1973 B. M. Gilbert – T. W. McKern, A Method for Aging the Female Os Pubis, *American Journal of Physical Anthropology* 38, 1, 1973, 31–38.
- Ginouvés – Martin 1985 R. Ginouvés – R. Martin, *Dictionnaire méthodique de l'architecture grecque et romaine I* (Rome 1985).
- Goffman 1990 D. Goffman, *Izmir and the Levantine World, 1550–1650* (Seattle 1990).
- Gök Gürhan 2010 S. Gök Gürhan, Beylikler Dönemi'ne Ait Sgraffito Teknikli ve Tek Renk Sırlı kaplar (Manisa Gülgün Hatun Hamamı Buluntuları), *Sanat Tarihi Dergisi* 17, 2, 2008 (2010) 59–83.
- Gök Gürhan 2011 S. Gök Gürhan, Bir seramik Definesinin Öyküsü, *Saruhanoglu Beyliği'nin Mirası Manisa Gülgün Hatun Hamamı Seramikleri* (Manisa 2011).
- Gök Gürhan 2012 S. Gök Gürhan, Ceramics Unearthed During the Excavation and Cleaning Work Conducted at the İlyas Bey Complex in 2007 and 2008, in: M. B. Tanman – L. Kayhan Elbilik (eds.), *Balat İlyas Bey Complex. History, Architecture, Restoration / Balat İlyas Bey Kulliyesi. Tarih, Mimarı Restorasyon* (Istanbul 2012) 301–332.
- Grabar 1976 A. Grabar, *Sculptures byzantines du moyen âge 2. XI<sup>e</sup>–XIV<sup>e</sup> siècle* (Paris 1976).
- Greco 1958 B. Greco (ed.), *Ducae Historia Turcobyzantina (1341–1462)* (Bucharest 1958).
- Gresky 2006 J. Gresky, *Ätiologie und Epidemiologie der Erkrankungen des Craniums bei der Population des bajuwarischen Gräberfeldes von Harting (Oberpfalz)* (Diss. med. Georg-August University Göttingen 2006).
- Grierson 1957 P. Grierson, The Coin List of Pegolotti, in: *Studi in onore di Armando Saponi* (Milan 1957) 485–492.
- Grossbauer – Habacher 1941 J. Grossbauer – F. Habacher, *Der Huf- und Klauenbeschlag* 7 (Vienna 1941).
- Großkopf 2004 B. Großkopf, *Leichenbrand. Biologisches und kulturhistorisches Quellenmaterial zur Rekonstruktion vor- und frühgeschichtlicher Populationen und ihrer Funeralpraktiken* (Diss. phil. University of Leipzig 2004).
- Grotefend 1852 E. L. Grotefend, Die Edelherrn von Boldensele oder Boldensen, *Zeitschrift des historischen Vereins für Niedersachsen* 1852, 209–286.
- Grove 2001 A. T. Grove, The ›Little Ice Age‹ and its geomorphological consequences in Mediterranean Europe, *Climatic Change* 48, 2001, 121–135.
- Grupe et al. 2004 G. Grupe – K. Christiansen – I. Schröder – U. Wittwer-Backofen, *Anthropologie: Ein einführendes Lehrbuch* (Berlin 2004).
- Guba et al. 2011 Z. Guba – E. Hadadi – A. Major – T. Furka – E. Juhász – J. Koós – K. Nagy – T. Zeke, HVS-I polymorphism screening of ancient human mitochondrial DNA provides evidence for N9a discontinuity and East Asian haplogroups in the Neolithic Hungary, *Journal of Human Genetics* 56, 2011, 784–796.
- Güldalı 1979 N. Güldalı, *Geomorphologie der Türkei: Erläuterungen zur geomorphologischen Übersichtskarte der Türkei 1:2000000, Beihefte TAVO* (Wiesbaden 1979).
- Haak et al. 2005 W. Haak – P. Forster – B. Bramanti – S. Matsumura – G. Brandt – M. Tänzer – R. Vilems – C. Renfrew – D. Gronenborn – K. W. Alt – J. Burger, Ancient DNA from the first European farmers in 7500-Year-Old Neolithic sites, *Science* 310, 2005, 1016–1018.

- Habermehl 1975 K.-H. Habermehl, Die Altersbestimmung bei Haus- und Labortieren <sup>2</sup>(Berlin 1975).
- Hagelberg – Sykes – Hedges 1989 E. Hagelberg – B. Sykes – R. Hedges, Ancient bone DNA amplified, *Nature* 342, 1989, 484–485.
- Harden 1966 D. B. Harden, Some glass fragments, mainly of the 12<sup>th</sup>–13<sup>th</sup> century A.D., from Northern Apulia, *JGS* 8, 1966, 70–79.
- Harrison – Fıratlı 1967 R. M. Harrison – N. Fıratlı, Excavations at Saraçhane in İstanbul: Fourth Preliminary Report, *DOP* 21, 1967, 195–216.
- Hayes 1975 J. W. Hayes, Roman and pre-Roman glass in the Royal Ontario Museum. A catalogue (Toronto 1975).
- Hayes 1992 J. W. Hayes, Excavations at Saraçhane in Istanbul 2. The Pottery (Princeton, NJ 1992).
- Hayes 1995 J. W. Hayes, A late Byzantine and Early Ottoman assemblage from the lower city in Troia, *StTroica* 5, 1995, 197–210.
- Herrmann et al. 1990 B. Herrmann – G. Grupe – S. Hummel – H. Piepenbrink – H. Schutkowski, Prähistorische Anthropologie. Leitfaden der Feld- und Labormethoden (Berlin 1990).
- Hershkovitz – Edelson 1991 I. Hershkovitz – G. Edelson, The first identified case of thalassemia?, *Human Evolution* 6, 1991, 49–54.
- Hershkovitz et al. 1991 I. Hershkovitz – B. Levi – J. Hiss – B. Arensburg, Medicoritual trephinations in modern Israel, *American Journal of Forensic Medicine and Pathology* 12, 3, 1991, 194–199.
- Higuchi et al. 1984 R. Higuchi – B. Bowman – M. Freiburger – O. A. Ryder – A. C. Wilson, DNA sequences from the quagga, an extinct member of the horse family, *Nature* 213, 1984, 282–284.
- Hofreiter et al. 2001 M. Hofreiter – D. Serre – H. N. Poinar – M. Kuch – S. Pääbo, Ancient DNA, *Nature Reviews Genetics* 2, 2001, 353–359.
- Hogarth 1908 D. G. Hogarth, Excavations at Ephesus. The Archaic Artemisia (London 1908).
- Hongo 1997 H. Hongo, Patterns of Animal Husbandry, Environment and Ethnicity in Central Anatolia in the Ottoman Empire Period: Faunal Remains from Islamic Layers at Kaman-Kalehöyük, *Japan Review* 8, 1997, 275–307.
- Hütteroth – Höhfeld 2002 W.-D. Hütteroth – V. Höhfeld, Türkei: Geographie, Geschichte, Wirtschaft, Politik (Darmstadt 2002).
- Hunt 1994 E. S. Hunt, Medieval Super-companies. A study of the Peruzzi company of Florence (Cambridge 1994).
- Ilisch 1993 L. Ilisch, Die islamischen Münzen. Die Münzen des europäischen Mittelalters, in: H. Voegtli, Die Fundmünzen aus der Stadtgrabung von Pergamon, *PF* 8 (Berlin 1993) 13–15.
- İnanan 2010 F. İnanan, Anaia-Kadikalesi: A New Zeuxippus Ware Production Centre, in: E. Doksanaltı – E. Aslan (eds.), Proceedings of the International Symposium »Trade and Production Through the Ages«, Konya, 25–28 November 2008 (Konya 2010) 115–128.
- İnanan 2013 F. İnanan, Zeuksippus Tipi Seramikler ve Kuşadası/Anaia Örnekeleri / Zeuxippus type ceramics and samples from Kadikalesi/Anaia, Kuşadası, in: Z. Mercangöz (ed.), Bizanslı Ustular – Latin Patronlar / Byzantine Craftsmen – Latin Patrons (Istanbul 2013) 59–76.
- İnanan 2015 F. İnanan, Kadikalesi Zeuxippus Ailesi Seramiklerinin Tipolojisi, *Seleucia ad Calycadnum* 5 (Mersin 2015) 153–183.
- IvE Inschriften von Ephesos Ia–VII 2, *IK* 11, 1–17, 4 (Bonn 1979–1984).
- Iorga 1899 N. Iorga (ed.), Notes et extraits pour servir à l'histoire des croisades au XV<sup>e</sup> siècle (Paris 1899).
- Jacobs 2014 I. Jacobs, Temples and civic representation in the Theodosian period, in: S. Birk – T. Myrup Kristensen – B. Poulsen (eds.), Using images in Late Antiquity (Oxford 2014) 132–149.
- Jacoby 1984 D. Jacoby, The Rise of a New Emporium in the Eastern Mediterranean: Famagusta in the Late Thirteenth Century, in: Μελέται και ύπομνήματα (Ίδρυμα Αρχιεπισκόπου Μακαρίου Γ', Τμήμα επιστημονικῶν ἐρευνῶν) 1 (Nicosia 1984) 145–179.
- Jahresbericht ÖAI 1998 F. Krinzinger und Mitarbeiter, Österreichisches Archäologisches Institut. Jahresbericht 1998, *ÖJh* 68, 1999, 12–46.
- Jahresbericht ÖAI 1999 Jahresbericht 1999 des Österreichischen Archäologischen Instituts, *ÖJh* 69, 2000, 363–397; Ephesos: 371–382.
- Jahresbericht ÖAI 2000 Jahresbericht 2000 des Österreichischen Archäologischen Instituts, *ÖJh* 70, 2001, 245–284; Ephesos: 254–270.
- Jahresbericht ÖAI 2002 Jahresbericht 2002 des Österreichischen Archäologischen Instituts, *ÖJh* 72, 2003, 289–349; Ephesos: 302–322.
- Jahresbericht ÖAI 2010 Wissenschaftlicher Jahresbericht des Österreichischen Archäologischen Instituts 2010 (Vienna 2010) <<http://www.oelai.at>> (10. 7. 2015).

- Jahresbericht ÖAI 2011 Wissenschaftlicher Jahresbericht des Österreichischen Archäologischen Instituts 2011 (Vienna 2011) <<http://www.oelai.at>> (10. 7. 2015).
- Jahresbericht ÖAI 2012 Wissenschaftlicher Jahresbericht des Österreichischen Archäologischen Instituts 2012 (Vienna 2012) <<http://www.oelai.at>> (10. 7. 2015).
- Jahresbericht ÖAI 2013 Wissenschaftlicher Jahresbericht des Österreichischen Archäologischen Instituts 2013 (Vienna 2013) <<http://www.oelai.at>> (10. 7. 2015).
- Jahresbericht ÖAI 2014 Wissenschaftlicher Jahresbericht des Österreichischen Archäologischen Instituts 2014 (Vienna 2014) <<http://www.oelai.at>> (10. 7. 2015).
- Japp 2010 S. Japp, Byzantinische Feinkeramik aus Pergamon, in: F. Daim – J. Drauschke (eds.), Byzanz – das Römerreich im Mittelalter. Schauplätze, Monographien des Römisch-Germanischen Zentralmuseums in Mainz 84, 2, 2 (Mainz 2010) 863–875.
- Johnston 1962 F. E. Johnston, Growth of the long bones of infant and young children at Indian Knoll, *Human Biology* 23, 1962, 66–81.
- Johnston – Slane – Vroom 2014 A. Johnston – K. Slane – J. Vroom, Kythera forty years on: The pottery from historical Kastri revisited, *BSA* 109, 2014, 1–62.
- Jungklaus 2010 B. Jungklaus, Die Krankheitsbelastung der mittelalterlichen und frühneuzeitlichen Kinderpopulation von Talsdorf (Ldk. Märkisch-Oderland). Ergebnisse der osteologischen-paläopathologischen Untersuchung (Diss. rer. nat. Freie Universität Berlin 2010).
- Kabaklarlı 1998 N. Kabaklarlı, Mangır. Osmanlı İmparatorluğu Bakır Paraları / Copper Coins of Ottoman Empire 1299–1808 (Uşak 1998).
- Kabaklarlı 2007 N. Kabaklarlı, Aydınoğlu Cüneyd'in Çelebi Mehmed'e Bağlı Kalarak Darbettirdiği Mangırlar, *Anadolu Nümitmatik Bülteni* 3, 2007, 8–9.
- Kalanlar 2007 »Kalanlar« 12. ve 13. Yüzyıllarda Türkiye'de Bizans / »The Remnants« 12<sup>th</sup> and 13<sup>th</sup> Centuries Byzantine Objects in Turkey (Istanbul 2007).
- Kanitz 1997 E. Kanitz, Una iglesia cristiana sobre el solar del templo pagano de Artemis en Efeso. Preámbulos y problemática, *Antigüedad y Cristianismo* 14, 1997, 435–456.
- Kanz – Grossschmidt 2010 F. Kanz – K. Grossschmidt, Tatort Hamam? Die menschlichen Bestattungen im Schachtbrunnen, in: Ş. Pfeiffer-Taş (ed.), Funde und Befunde aus dem Schachtbrunnen im Hamam III in Ayasuluk/Ephesos. Eine schamanistische Bestattung des 15. Jahrhunderts, *AForsch* 16 = *DenkschrWien* 389 (Vienna 2010) 101–111.
- Kanz et al. 2014 F. Kanz – S. Pfeiffer-Taş – G. Forstenpointner – A. Galik – G. Weissengruber – K. Grossschmidt – D. U. Risser, Investigations on human and animal remains from a medieval shaft well in Ayasuluk/Ephesos (Turkey), *Anthropologischer Anzeiger* 71/4, 2014, 429–445.
- Karwiese 1980 S. Karwiese, Münzliste, in: H. Vetters, Ephesos. Vorläufiger Grabungsbericht 1978, *AnzWien* 116, 1980, 131–132.
- Karwiese 1989 S. Karwiese, Die Marienkirche in Ephesos. Erster vorläufiger Grabungsbericht 1984–1986, *DenkschrWien* 200 (Vienna 1989).
- Karwiese 2003 S. Karwiese, Liste der Fundmünzen aus den Grabungen im Hanghaus 1 von Ephesos 1960 bis 1998, in: C. Lang-Auinger (ed.), Hanghaus 1 in Ephesos. Funde und Ausstattung, *FiE* 8, 4 (Vienna 2003) 340–355.
- Karwiese 2007 S. Karwiese, Die Fundmünzen von Basilika, Sockelbau und Staatsmarkt, in: V. Mitsopoulos-Leon – C. Lang-Auinger (eds.), Die Basilika am Staatsmarkt in Ephesos 2. Funde klassischer bis römischer Zeit, *FiE* 9, 2, 3 (Vienna 2007) 187–204.
- Kastritsis 2007 D. Kastritsis, The sons of Bayezid: Empire Building and Representation in the Ottoman Civil War of 1402–1413 (Leiden 2007).
- Kayan 1999 İ. Kayan, Holocene stratigraphy and geomorphological evolution of the Aegean coastal plains of Anatolia, *Quaternary Science Reviews* 18, 1999, 541–548.
- Keil – Hörmann 1951 J. Keil – H. Hörmann, Die Johanneskirche, *FiE* 4, 3 (Vienna 1951).
- Keil – Premerstein 1914 J. Keil – A. v. Premerstein, Bericht über eine dritte Reise in Lydien und den angrenzenden Gebieten Ioniens, *DenkschrWien* 57, 1 (Vienna 1914).
- Keil 1922–1924 J. Keil, Zur Topographie und Geschichte von Ephesos, *ÖJh* 21/22, 1922–1924, 96–112.
- Keil 1935 J. Keil, XVIII. Vorläufiger Bericht über die Ausgrabungen in Ephesos, *ÖJh* 29, 1935, Beibl. 105–151.
- Keil 1937 J. Keil, XIX. Vorläufiger Bericht über die Ausgrabungen in Ephesos, *ÖJh* 30, 1937, Beibl. 173–214.
- Kerschner – Prochaska 2011 M. Kerschner – W. Prochaska, Die Tempel und Altäre der Artemis in Ephesos und ihre Baumaterialien, *ÖJh* 80, 2011, 73–153.
- Kerschner 1996 M. Kerschner, Perirrhanterien und Becken, *Alt-Ägina* 2, 4 (Mainz 1996).
- Kerschner 1997 M. Kerschner, Ein stratifizierter Opferkomplex des 7. Jh.s v. Chr. aus dem Artemision von Ephesos, *ÖJh* 66, 1997, Beibl. 85–226.

- Kerschner 2015 M. Kerschner, Der Ursprung des Artemisions von Ephesos als Naturheiligtum. Naturmale als kultische Bezugspunkte in den großen Heiligtümern Ioniens, in: K. Sporn – S. Ladstätter – M. Kerschner (eds.), *Natur – Kult – Raum. Akten des internationalen Kolloquiums Paris-Lodron-Universität Salzburg*, 20.–22. Jänner 2012, *SoSchrÖAI* 51 (Vienna 2015) 187–243.
- Kirbihler – Zabrana 2014 F. Kirbihler – L. Zabrana, Archäologische, epigrafische und numismatische Zeugnisse für den Kaiserkult im Artemision von Ephesos. Der Kult der Dea Roma und des Divus Iulius unter dem Triumvirat, *ÖJh* 83, 2014, 101–131.
- Kızıltan 1958 A. Kızıltan, *Anadolu Beyliklerinde Cami ve Mescitler* (Istanbul 1958).
- Knoll 1932 F. Knoll, Baubeschreibung, in: E. Reisch – F. Knoll – J. Keil, *Die Marienkirche in Ephesos*, *FiE* 4, 1 (Vienna 1932) 17–78.
- Knussmann 1988 R. Knussmann (ed.), *Anthropologie. Handbuch der vergleichenden Biologie des Menschen I. 1. Wesen und Methoden der Anthropologie* (Stuttgart 1988).
- Kolay 1999 İ. A. Kolay, *Batı Anadolu 14. Yüzyıl Beylikler Mimarisinde Yapım Teknikleri* (Ankara 1999).
- König 2000 K. G. König, *Karies und Parodontopathien* (Stuttgart 2000).
- Kraft – Kayan – Brückner 2001 J. C. Kraft – İ. Kayan – H. Brückner, The geological and paleogeographical environs of the Artemision, in: U. Muss (ed.), *Der Kosmos der Artemis von Ephesos*, *SoSchrÖAI* 37 (Vienna 2001) 123–133.
- Kraft et al. 2007 J. C. Kraft – H. Brückner – İ. Kayan – H. Engelmann, The geographies of ancient Ephesus and the Artemision in Anatolia, *Geoarchaeology* 22/1, 2007, 121–149.
- Krause – Mishler 2000 C. L. Krause – C. Mishler, 2005 Standard Catalog of World Coins. Eighteenth Century 1701–1800 <sup>3</sup>(without place of publ. 2000).
- Krause – Mishler 2004a C. L. Krause – C. Mishler, Standard Catalog of World Coins. 1801–1900 <sup>4</sup>(without place of publ. 2004).
- Krause – Mishler 2004b C. L. Krause – C. Mishler, 2005 Standard Catalog of World Coins. 1901–Present (without place of publ. 2004).
- Kretschmer 1977 E. Kretschmer, *Körperbau und Charakter: Untersuchungen zum Konstitutionsproblem und zur Lehre von den Temperamenten* <sup>26</sup>(Berlin 1977).
- Kreutz – Verhoff 2002 K. Kreutz – M. A. Verhoff, *Forensische Anthropologie* (Berlin 2002).
- Kreutz 1997 K. Kreutz, *Ätiologie und Epidemiologie von Erkrankungen des Kindesalters bei der bajuwarischen Population von Straubing (Niederbayern) I* (Göttingen 1997).
- Krickl – Pfeiffer-Taş 2002 A. Krickl – Ş. Pfeiffer-Taş, Zur Nutzungs- und Zerstörungsgeschichte des sogenannten İsa Bey Hamamı, *ÖJh* 71, 2002, 221–236.
- Krinzinger 2005 F. Krinzinger (ed.), *Spätantike und mittelalterliche Keramik aus Ephesos*, *AForsch* 13 = *DenkschrWien* 332 (Vienna 2005).
- Kuban 1962 D. Kuban, *Anadolu Gezilerinden İzlenimler – Bir Batı Anadolu Gezisi* (Istanbul 1962).
- Kuban 1982 D. Kuban, *Türk ve İslam Sanatı Üzerine Denemeler* (Istanbul 1982).
- Kuban 2007 D. Kuban, *Osmanlı Mimarisi* (Istanbul 2007).
- Kuban 2009 D. Kuban, *Çağlar Boyunca Türkiye Sanatının Anahatları* (Istanbul 2009).
- Külzer 2011 A. Külzer, Ephesos in byzantinischer Zeit: ein historischer Überblick, in: F. Daim – S. Ladstätter (eds.), *Ephesos in byzantinischer Zeit* (Mainz 2011) 31–49.
- Kussinger 1988 S. Kussinger, *Tierknochenfunde vom Lidar Höyük in Südostanatolien* (Grabungen 1979–86) (unpubl. Diss. University of Munich 1988).
- Ladstätter 2009 S. Ladstätter (ed.), *Neue Forschungen zur Kuretenstraße von Ephesos. Akten des Symposiums für Hilke Thür vom 13. Dezember 2006 an der Österreichischen Akademie der Wissenschaften*, *AForsch* 15 = *DenkschrWien* 382 (Vienna 2009).
- Ladstätter 2010 S. Ladstätter, Ephesos in byzantinischer Zeit. Das letzte Kapitel einer antiken Großstadt, in: F. Daim – J. Drauschke (eds.), *Byzanz – das Römerreich im Mittelalter. Pracht und Alltag eines Weltreiches*, *Monographien des Römisch-Germanischen Zentralmuseums in Mainz* 84, 2, 2 (Mainz 2010) 493–519.
- Laiou 1972 A. E. Laiou, *Constantinople and the Latins: The Foreign Policy of Andronicus II, 1282–1328* (Cambridge, MA 1972).
- Lamm 1930 C. J. Lamm, *Mittelalterliche Gläser und Steinschnittarbeiten aus dem nahen Osten*, *Forschungen zur islamischen Kunst* 5 (Berlin 1930).
- Lemerle 1957 P. Lemerle, *L'émirat d'Aydin, Byzance et l'Occident: Recherches sur »La geste d'Umur pacha«* (Paris 1957).
- Liata E. D. Liata, *Ta νομίσματα του Βενετοκρατούμενου και Τουρκοκρατούμενου Ελληνικού χώρου (15ος–18ος αι.)*, in: *Η Ιστορική Διαδρομή της Νομισματικής Μονάδας στην Ελλάδα* (Athens 2002) 85–96.
- Liko 2010 H. Liko, *Keramikauswertung*, in: A. Pülz (ed.), *Das sog. Lukasgrab in Ephesos*, *FiE* 4, 4 (Vienna 2010) 186–344.



- Lock 1990 P. Lock, D.G. Hogarth (1862–1927): »... A Specialist in the Science of Archaeology«, BSA 85, 1990, 175–200.
- Lovejoy – Meindl – Przybeck 1985 C. O. Lovejoy – R. S. Meindl – T. R. Przybeck, Chronological Metamorphosis of the Auricular Surface of Ilium: A new Method for the Determination of Adult Skeletal age at Death, *American Journal of Physical Anthropology* 68.1, 1985, 15–28.
- Lowry 1992 H. W. Lowry, The Ottoman Tahrir Defterleri as a Source for Social and Economic History: Pitfalls and Limitations, in: H. W. Lowry, *Studies in Deftology: Ottoman Society in the Fifteenth and Sixteenth Centuries* (Istanbul 1992) 3–18.
- LRBC P. V. Hill – J. P. C. Kent – R. A. G. Carson, *Late Roman Bronze Coinage* (London 1965).
- Lymberopoulou 2007 A. Lymberopoulou, »Fish on a dish« and its table companions in fourteenth century wall-paintings on Venetian-dominated Crete, in: L. Brubaker – K. Linardou (eds.), *Eat, drink, and be merry* (Luke 12:19) – food and wine in Byzantium, *Papers of the 37<sup>th</sup> annual Spring Symposium of Byzantine Studies, in honour of Professor A. A. M. Bryer, Publications, Society for the Promotion of Byzantine Studies* 13 (Aldershot 2007) 223–232.
- Maat 1986 G. J. R. Maat, Features of malnutrition, their significance and epidemiology in prehistoric anthropology, in: B. Herrmann (ed.), *Innovative Trends in der Prähistorischen Anthropologie, Mitteilungen der Berliner Gesellschaft für Anthropologie, Ethnologie und Urgeschichte* 7, 1986, 157–164.
- Magdalino – Ladstätter (in print/in Druck) P. Magdalino – S. Ladstätter (eds.), *Ephesus from Late Antiquity to the Later Middle Ages, AncNearEastSt Suppl.* 47 (in print/in Druck).
- Malloy 2004 A. G. Malloy – I. F. Preston – A. J. Seltman, *Coins of the Crusader States 1098–1291* <sup>2</sup>(Conneticut 2004).
- Malmström et al. 2009 H. Malmström – M. T. P. Gilbert – M. G. Thomas – M. Brandström – J. Storå – P. Molnar – P. K. Andersen – C. Bendixen – C. Holmlund – E. Willerslev – A. Götherström, Ancient DNA reveals lack of continuity between Neolithic hunter-gatherers and contemporary Scandinavians, *Current Biology* 19, 2009, 1758–1762.
- Mania 2006 U. Mania, Eine neue Werkstatt früher türkischer Keramik – Miletware aus Pergamon, *IstMitt* 56, 2006, 475–501.
- Martin – Saller 1957 R. Martin – K. Saller, *Lehrbuch der Anthropologie in systematischer Darstellung* <sup>3</sup>(Stuttgart 1957).
- Martin 1965 R. Martin, *Manuel d'architecture grecque I* (Paris 1965).
- Mason 1989 R. Mason, The Medici-Lazara Map of Alanya, *AnSt* 39, 1989, 85–105.
- Matthes 2011 C. Matthes, Magische Rituale als Volksmedizin: Der Glaube neben dem Glauben, in: M. Untermann (ed.), *Religiosität in Mittelalter und Neuzeit* (Paderborn 2011) 237–250.
- Mays – Brickley – Ives 2006 S. Mays – M. Brickley – R. Ives, Skeletal Manifestations of Rickets in Infants and Young Children in a Historic Population from England, *American Journal of Physical Anthropology* 129, 2006, 362–374.
- McKern – Stewart 1957 T. W. McKern – T. D. Stewart, *Skeletal Age Changes in Young American Males. Quatermaster Research and Development Center, US Army, Technical Report EP – 45* (Natick 1957).
- Meadow 1999 R. Meadow, The use of size index scaling techniques for research on archaeozoological collections from the Middle East, in: C. Becker – H. Manhart – J. Peters – J. Schibler (eds.), *Historia animalium ex ossibus. Festschrift Angela den Driesch, Internationale Archäologie. Studia honoraria* 8 (Rahden/Westf. 1999) 285–300.
- Megaw 1971 A. H. S. Megaw, Excavations at Saranda Kolones, Paphos. Preliminary report on the 1966–67 and 1970–71 seasons, *RDAC* 1971, 117–146.
- Megaw 1975 A. H. S. Megaw, An Early Thirteenth Century Aegean Glazed Ware, in: G. Robertson (ed.), *Studies in Memory of David Talbot Rice* (Edinburgh 1975) 34–45.
- Melikoff-Sayar 1954 I. Melikoff-Sayar (ed.), *Le Destan d'Umur Pacha* (Dusturname-i Enveri) (Paris 1954).
- Mercangöz 2010 Z. Mercangöz, Kommerkion ve Emporion Olarak Anaia'nın Değişken Tarihisel Yazgısı, in: *Changes in the Byzantine World in the twelfth and thirteenth Centuries, First International Sevgi Gönül Byzantine Studies Symposium* (Istanbul 2010) 279–292.
- Mercangöz 2013a Z. Mercangöz (ed.), *Bizanslı Ustular – Latin Patronlar / Byzantine Craftsmen – Latin Patrons* (Istanbul 2013).
- Mercangöz 2013b Z. Mercangöz, Introduction, in: Z. Mercangöz (ed.), *Bizanslı Ustular – Latin Patronlar / Byzantine Craftsmen – Latin Patrons* (Istanbul 2013) 13–23.
- Mercangöz 2013c Z. Mercangöz, Kuşadası, Kadıkalesi'nde Geç Bizans Çağı Ticari Üretimlerine İlişkin Arkeolojik Bulgular / Archaeological finds on Late Byzantine commercial productions at Kadıkalesi, Kuşadası, in: Z. Mercangöz (ed.), *Bizanslı Ustular – Latin Patronlar / Byzantine Craftsmen – Latin Patrons* (Istanbul 2013) 25–58.

- Mercangöz 2013d Z. Mercangöz, Kadikalesi/Anaia Ticari Üretimini Latin Patronları / Latin patrons of commercial production in Kadikalesi/Anaia, in: Z. Mercangöz (ed.), *Bizanslı Ustular – Latin Patronlar / Byzantine Craftsmen – Latin Patrons* (Istanbul 2013) 161–174.
- Mesquida Garcia 2002 M. Mesquida Garcia, La céramique à reflets métalliques de Paterna, in: *Le calife, le prince et le potier. Les faïences à reflets métalliques* (Paris 2002) 198–213.
- MIB 1973 W. Hahn, *Moneta Imperii Byzantini I. Von Anastasius bis Justinianus I. (491–565). Einschließlich der ostgotischen und vandalischen Prägungen*, DenkschrWien 109 (Vienna 1973).
- MIB 1975 W. Hahn, *Moneta Imperii Byzantini II. Von Justinus II. bis Phocas (565–610). Einschließlich der Prägungen der Heraclius-Revolution*, DenkschrWien 119 (Vienna 1975).
- MIB 1981 W. Hahn, *Moneta Imperii Byzantini III. Von Heraclius bis Leo III./Alleinregierung (610–720)*, DenkschrWien 148 (Vienna 1981).
- Miles 1962 G. C. Miles, *The Islamic Coins*, Agora 9 (Princeton, NJ 1962).
- Milne 1925 J. G. Milne, *J. T. Wood's Coins from Ephesos*, NumChron 1925, 385–391.
- Mimaroglu 2013 S. Mimaroglu, Kadikalesi/Anaia Geç Bizans Dönemi Ticari Amphoraları / Late Byzantine commercial amphorae in Kadikalesi/Anaia, in: Z. Mercangöz (ed.), *Bizanslı Ustular – Latin Patronlar / Byzantine Craftsmen – Latin Patrons* (Istanbul 2013) 113–124.
- MIR 2000 R. Göbl (†), *Die Münzprägung der Kaiser Valerianus I., Gallienus, Saloninus (253–268), Regalianus (260) und Macrianus, Quietus (260–262)*, DenkschrWien 286 (Vienna 2000).
- Mittermayer 1993 C. H. Mittermayer, *Oralpathologie. Erkrankungen der Mundregion* (Stuttgart 1993).
- Møller-Christensen 1961 V. Møller-Christensen, *Bone changes in leprosy*. Munksgaard (Copenhagen 1961).
- Møller-Christensen 1965 V. Møller-Christensen, *New knowledge of leprosy through paleopathology*, International Journal of Leprosy 33, 1965, 603–610.
- Moore 1995 S. Moore, *Table Knives and Forks* (Gosport, Hampshire 1995).
- Morgan 1942 C. Morgan, *The Byzantine Pottery, Corinth 11* (Cambridge, MA 1942).
- Morrill – Rickords – Schafstall 2008 B. H. Morrill – L. F. Rickords – H. J. Schafstall, *Sequence length polymorphisms within primate amelogenin and amelogenin-like genes: usefulness in sex determination*, American Journal of Primatology 70, 2008, 976–985.
- Morrisson 1993 C. Morisson, *Die byzantinischen Münzen*, in: H. Voegtli, *Die Fundmünzen der Stadtgrabung von Pergamon*, PF 8 (Berlin 1993) 8–13.
- Muss 1998 U. Muss, *Artemision*, in: S. Karwiese und Mitarbeiter, *Ephesos, ÖJh 67, 1998, Grabungen 1997*, 39–40.
- Muss 2001a U. Muss, *Die Architektur des Altares. Die Werkstücke des Unter- und Obergeschosses*, in: U. Muss – A. Bammer, *Der Altar des Artemisions von Ephesos*, FiE 12, 2 (Vienna 2001) 45–56.
- Muss 2001b U. Muss, *Die Fundamente*, in: U. Muss – A. Bammer, *Der Altar des Artemisions von Ephesos*, FiE 12, 2 (Vienna 2001) 34–42.
- Nasidze et al. 2004 I. Nasidze – E. Y. S. Ling – D. Quinque – I. Dupanloup – R. Cordaux – S. Rychkov – O. Naumova – O. Zhukova – N. Sarraf-Zadegan – G. A. Naderi – S. Asgary – S. Sardas – D. D. Farhus – T. Sarkisian – C. Asadov – A. Kerimov – M. Stoneking, *Mitochondrial DNA and Y-chromosome variation in Caucasus*, Annals of Human Genetics 68, 2004, 205–221.
- Nathan – Haas 1966 H. Nathan – N. Haas, ›Cribra orbitalia‹. A bone condition of the orbit of unknown nature, Israel Journal of Medical Science 2, 2, 1966, 171–191.
- Naumann 2007 R. Naumann, *Eski Anadolu Mimarlığı* (Ankara 1970).
- Nemeskéri – Harsányi – Acsádi 1960 J. Nemeskéri – L. Harsányi – G. Acsádi, *Methoden zur Diagnose des Lebensalters von Skelettfunden*, Anthropologischer Anzeiger 24, 1960, 70–95.
- Nesbitt – Oikonomides 1996 J. Nesbitt – N. Oikonomides (eds.), *Catalogue of Byzantine Seals at Dumbarton Oaks and in the Fogg Museum of Art, III. West, Northwest, and Central Asia Minor and the Orient* (Washington, D.C. 1996).
- Niemann 1906 G. Niemann, *Die seldschukischen Bauwerke in Ajasuluk*, in: O. Benndorf (ed.), *Forschungen in Ephesos*, FiE 1 (Vienna 1906) 111–131.
- Noddle 1974 B. Noddle, *Ages of Epiphyseal Closure in Feral and Domestic Goats and Ages of Dental Eruption*, JASc 1, 1974, 195–204.
- Noppeney – Nüllen 2010 T. Noppeney – H. Nüllen, *Varikose: Diagnostik – Therapie – Begutachtung* (Heidelberg 2010).
- Notopoulos 1964 J. A. Notopoulos, *Akritan iconography on Byzantine pottery*, Hesperia 33, 1964, 108–133.
- Nováček 2005 J. Nováček, *Zaniklý kostel ve Winnefeldu. Anthropologicko-archeologický výzkum* (Diss. Masaryk-University Brno 2005).

- Nováček – Scheelen – Schulz (in preparation/  
in Vorbereitung) J. Nováček – K. Scheelen – M. Schultz, Cives Metropolis Asiae. Die anthropologische und paläopathologische Untersuchung römerzeitlicher Kollektivgräber aus dem Grabhaus 1/08 in der Hafennekropole von Ephesos, in: M. Steskal, Die Hafennekropole in Ephesos, FiE 16, 1 (in preparation/in Vorbereitung).
- Novotný 1985 V. Novotný, Determination of sex from the talus and calcaneus, Scripta Medica Brno 58, 1985, 437.
- Ölçer 1986 C. Ölçer, Selcuk (Efeso), Il tesors venuto alla luce durante gli scavi della Chiesa di S. Giovanni, BNumRoma 6/7, 1986, 299–304.
- Öney 1989 G. Öney, Beylikler Devri Sanatı XIV.–XV. Yüzyıl (1300–1453) (Ankara 1989).
- Önkal 1991 H. Önkal, Tire Türbeleri (Ankara 1991).
- Özkul Fındık 2001 N. Özkul Fındık, İznik Roma Tiyatrosu Kazı Buluntarı (1980–1995) Arasındaki Osmanlı Seramikleri (Ankara 2001).
- Ohnesorg 2007 A. Ohnesorg, Der Kroisos-Tempel. Neue Forschungen zum archaischen Dipteros der Artemis von Ephesos, FiE 12, 4 (Vienna 2007).
- Okyar et. al. 2011 F. Okyar – A. Kara – S. Turan – A. Issı – M. Yayingöl – D. Ünal – M. Doğan – Ş. Pfeiffer-Taş, A Study on Medieval Pottery from a Ceramic Kiln Remains in Ayasuluk/Ephesus: Compositional and Microstructural Data, AnzWien 146, 2011, 155–178.
- Olivier 1960 G. Olivier, Practique anthropologique. Vigot Frères (Paris 1960).
- Olivier et al. 1978 G. Olivier – C. Aaron – G. Fully – G. Tissier, New estimations of stature and cranial capacity in modern man, Journal of Human Evolution 7, 1978, 513–534.
- Omura 2011 S. Omura, Kaman-Kalehöyük Excavations in Central Anatolia, in: S. R. Steadman (ed.), The Oxford handbook of ancient Anatolia. 10,000–323 B.C.E (Oxford 2011) 1099–1110.
- Oral Çakmakçı – İnanan 2009 Z. Oral Çakmakçı – F. İnanan, Ortaçağ Bizans Günlük Yaşamı ve Üretim Faaliyetleri Açısından Kuşadası Kadıkalesi Buluntularının Ön Değerlendirilmesi, Ege Ü. Sanat Tarihi Dergisi 18.1, 2009, 50–72.
- Oral Çakmakçı 2013 Z. Oral Çakmakçı, Anaia Camcılığının Geç Bizans Cam Dünyasındaki Yeri / The place of the Anaian glass production in the Late Byzantine glassworld, in: Z. Mercangöz (ed.), Bizanslı Ustalar – Latin Patronlar / Byzantine Craftsmen – Latin Patrons (Istanbul 2013) 135–152.
- Orlando et al. 2013 L. Orlando – G. Gin hac – G. J. Zhang et al., Recalibrating Equus evolution using the genome sequence of an early Middle Pleistocene horse, Nature 499, 2013, 74–78.
- Ortner 2003 D. J. Ortner, Identification of Pathological Conditions in Human Skeletal Remains (San Diego, CA 2003).
- Otoni et al. 2011 C. Otoni – F. X. Ricaut – N. Vanderheyden – N. Brucato – M. Waelkens – R. Decorte, Mitochondrial analysis of a Byzantine population reveals the differential impact of multiple historical events in South Anatolia, European Journal of Human Genetics 19, 2011, 571–576.
- Pakben 1987 N. D. Pakben, Ayasuluk: Beylikler Dönemi Anıtları Araştırması, Koruma ve Restorasyon Önerileri (DEÜ Fen Bilimleri Enstitüsü Yayınlanmamış Y. Lisans Tezi, İzmir 1987).
- Pamuk 2000 Ş. Pamuk, A Monetary History of the Ottoman Empire (Cambridge 2000).
- Papanikola-Bakirtzi 1999 D. Papanikola-Bakirtzi, Byzantine Glazed Ceramics. The Art of Sgraffito (Athens 1999).
- Papanikola-Bakirtzi et al. 1999 D. Papanikola-Bakirtzi – F. N. Mavrikiou – Ch. Bakirtzis, Byzantine Glazed Pottery in the Benaki Museum (Athens 1999).
- Parman 1980 E. Parman, Ayasuluk'da Bulunan Sırlı Bizans Seramikleri, Bedrettin Cömert'e Armağan (Ankara 1980) 321–340.
- Parman 1989 E. Parman, The pottery from St. John's Basilica at Ephesos, in: V. Déroche – J.-M. Spieser (eds.), Recherches sur la céramique byzantine, BCH Suppl. 18 (Athens 1989) 277–289.
- Patitucci Uggeri 2003 S. Patitucci Uggeri, Zeuxippus Ware: Novità da Kyme eoilica (Turchia), in: Ch. Bakirtzis (ed.), VII<sup>e</sup> Congrès international sur la céramique médiévale en Méditerranée (Athens 2003) 81–90.
- Payne 1987 S. Payne, Reference Codes for Wear States in the Mandibular Cheek Teeth of Sheep and Goats, JASc 14, 1987, 609–614.
- Peacock – Williams 1986 D. P. S. Peacock – D. F. Williams, Amphorae and the Roman Economy (London 1986).
- Pearson 1899 K. Pearson, On the reconstruction of stature of prehistoric races. Mathematic contributions to the theory of evolution, Philosophical Transactions of the Royal Society A. 192, 1899, 169–244.
- Pérez-Arantegui et al. 1995 J. Pérez-Arantegui – G. Querré – A. Kaczmarczyk – M. Bernus-Taylor, Chemical characterization of Islamic glazed ceramics from northern Syria by Particle Induced



- X-Ray Emission (PIXE), in: *The Ceramics Cultural Heritage*, Techna Srl (Faenza 1995) 475–482.
- Perizonius – Pot 1981 W. R. K. Perizonius – T. Pot, Diachronic dental research on human skeletal remains excavated in the Netherlands, I: Dorestad's cemetery on ›the Heul‹, *Berichten van de Rijksdienst voor het Oudheidkundig Bodemonderzoek* 31, 1981, 369–413.
- Pernice 1932 E. Pernice, Hellenistische Tische, Zisternenmündungen, Beckenuntersätze, Altäre und Truhen, *Die Hellenistische Kunst in Pompeji V* (Berlin 1932).
- Peschlow 1977/1978 U. Peschlow, Byzantinische Keramik aus Istanbul. Ein Fundkomplex bei der Irenenkirche, *IstMitt* 27/28, 1977/1978, 363–414.
- Peschlow 1984 U. Peschlow, Zur byzantinischen Keramik. Vorläufige Bemerkungen zu ausgewählten Stücken, in: *Beşik-Tepe. Vorbericht über die Ergebnisse der Grabung von 1982*, AA 1984, 183–186.
- Pfeiffer-Taş 2001 Ş. Pfeiffer-Taş, Der historisch-archäologische Hintergrund zum Münzschatz des Aydınoğlu İsa Bey, *ÖJh* 70, 2001, 117–134.
- Pfeiffer-Taş 2010a Ş. Pfeiffer-Taş, Funde und Befunde aus dem Schachtbrunnen im Hamam III in Ayasuluk/Ephesos, *AForsch* 16 = *DenkschrWien* 389 (Vienna 2010).
- Pfeiffer-Taş 2010b S. Pfeiffer-Taş, Keramik aus dem 14. und 15. Jahrhundert aus dem Schachtbrunnen und aus der Sondage vor dem Präfürnium, in: S. Pfeiffer-Taş (ed.), *Funde und Befunde aus dem Schachtbrunnen im Hamam III in Ayasuluk/Ephesos*, *AForsch* 16 = *DenkschrWien* 389 (Vienna 2010) 35–66.
- Pfeiffer-Taş 2011 Ş. Pfeiffer-Taş, Reste einer Keramikwerkstatt aus dem 14. Jh. in Ayasuluk/Ephesos, *AnzWien* 146, 1, 2011, 91–175.
- Pfisterer – Ladstätter 2010 M. Pfisterer – S. Ladstätter, Die Fundmünzen aus der WE 1, in: F. Krinzinger (ed.), *Hanghaus 2 in Ephesos. Die Wohneinheiten 1 und 2. Baubefund, Ausstattung, Funde*, *FiE* 8, 8 (Vienna 2010) 280–285.
- Pfisterer 2005 M. Pfisterer, Münzen, in: H. Thür, *Hanghaus 2 in Ephesos. Die Wohneinheit 4. Baubefund, Ausstattung, Funde*, *FiE* 8, 6 (Vienna 2005) 359–362.
- Pfisterer 2008 M. Pfisterer, Münzen, in: M. Steskal – M. La Torre, *Das Vediumgymnasium in Ephesos. Archäologie und Baubefund*, *FiE* 14, 1 (Vienna 2008) 208–211.
- Phenice 1969 T. W. Phenice, A Newly Developed Visual Method Of Sexing The Os Pubis, *American Journal of Physical Anthropology* 30, 1969, 297–302.
- Philothéou – Michailidou 1986 G. Philothéou – M. Michailidou, Byzantine Plates from the Kastellorizo Wreck, *ADelt* 41, 1986 (1990) 271–330.
- Philothéou – Michailidou 1989 G. Philothéou – M. Michailidou, Plats byzantins provenant d'une épave près de Kastellorizo, in: V. Déroche – J.-M. Spieser (eds.), *Recherches sur la céramique byzantine*, *BCH Suppl.* 18 (Athens 1989) 173–176.
- Picon 1984 M. Picon, Le traitement des données d'analyse, *Pact* 10, 1984, 379–399.
- Picon 1993 M. Picon, L'analyse chimique des céramiques: bilan et perspectives, in: S. Santoro (ed.), *Archeometria della ceramica: Problemi di metodo* (Bologna 1993) 3–25.
- Picon – Thiriot – Vallauri 1995 M. Picon – J. Thiriot – L. Vallauri, Techniques, évolutions et mutations, in: *Le vert et le brun. De Kairouan à Avignon, céramiques du X<sup>e</sup> au XV<sup>e</sup> siècle*, *Musées de Marseille* (Marseille 1995) 41–50.
- Pilin 1982 A. Pilin, Možnosti určení věku podle zubů, *Soudní lékařství* 27, 2, 1982, 1–10.
- Pimpl 1997 H. Pimpl, *Perirhanteria und Louteria* (Berlin 1997).
- Pinkwart – Stammnitz 1984 D. Pinkwart – W. Stammnitz, *Peristylhäuser westlich der Unteren Agora*, *AvP* 14 (Berlin 1984).
- Plattner (in preparation/  
in Vorbereitung)  
Plattner 2003 G. A. Plattner, Ein archaisches ionisches Kapitell von der Türbe im Artemision von Ephesos (in preparation/in Vorbereitung).  
G. A. Plattner, *Ephesische Kapitelle des 1. und 2. Jhs. n. Chr. Form und Funktion kaiserzeitlicher Architekturdekoration in Kleinasien* (unpubl. Diss. University of Vienna 2003).
- Plattner 2008 G. A. Plattner, Bauornamentik, in: M. Steskal – M. La Torre, *Das Vediumgymnasium in Ephesos. Archäologie und Baubefund*, *FiE* 14, 1 (Vienna 2008) 275–282.
- Polyzoi 2009 V. Polyzoi (ed.), *Man & Tools. Aspects of Labour in the Pre-Industrial World* (Athens 2009).
- Popović 1989 M. Popović, Importation et production locale de céramique à Ras (fin XI<sup>e</sup>–début XIII<sup>e</sup> siècle), in: V. Déroche – J.-M. Spieser (eds.), *Recherches sur la céramique byzantine*, *BCH Suppl.* 18 (Athens 1989) 119–130.
- Pringle 1977 D. Pringle, *La ceramica dell'area sud del convent di S. Silvestro a Genova*, *Archeologia Medievale* 4, 1977, 100–160.
- Pülz 2011 A. Pülz, Das Stadtbild von Ephesos in byzantinischer Zeit, in: F. Daim – S. Ladstätter (eds.), *Ephesos in byzantinischer Zeit* (Mainz 2011) 51–81.

- Rathmayr 2010 E. Rathmayr, Eisenfunde aus dem Brunnen im Hamam III, in: Ş. Pfeiffer-Taş (ed.), Funde und Befunde aus dem Schachtbrunnen im Hamam III in Ayasuluk/Ephesos. Eine schamanistische Bestattung des 15. Jahrhunderts, *AForsch* 16 = *DenkschrWien* 389 (Vienna 2010) 73–75.
- Redford 1998 S. Redford (ed.), *The Archaeology of the Frontier in the Medieval Near East: Excavations at Gritille, Turkey*, Archaeological Institute of America, Monographs New Series 3 (Philadelphia 1998).
- Redford 2007 S. Redford, *The Kible Wall of the Kargı Hanı, Adalya 10*, 2007, 351–367.
- Redford et al. 2001 S. Redford – S. Ikram – E. Parr – T. Beach, *Excavations at Medieval Kinet Turkey: A Preliminary Report*, *AncNearEastSt* 38, 2001, 58–138.
- Reuer – Fabrizii-Reuer 1990 E. Reuer – S. Fabrizii-Reuer, Some medieval inhabitants of coastal Asia Minor. Excavations at Selçuk – Ephesos, *Rivista di Antropologia* 68, 1990, 363–368.
- Ricaud – Waelkens 2008 F. X. Ricaud – M. Waelkens, Cranial discrete traits in a Byzantine population and eastern Mediterranean population movements, *Human Biology* 80, 2008, 535–564.
- Richards et al. 2000 M. Richards – V. Macaulay – E. Hickey – E. Vega – B. Sykes, Tracing European founder lineages in the Near Eastern mtDNA pool, *American Journal of Human Genetics* 67, 2000, 1251–1276.
- Roderick 1980 B. Roderick, *Folk Poetry of Modern Greece* (Cambridge 1980).
- Rohn – Barnes – Sanders 2009 A. H. Rohn – E. Barnes – G. D. R. Sanders, An Early Ottoman Cemetery at Ancient Corinth, *Hesperia* 78, 2009, 501–615.
- Rösing 1975 F. W. Rösing, *Die fränkische Bevölkerung von Mannheim-Vogelstang (6.–7. Jahrhundert) und die merowingerzeitlichen Germanengruppen Europas* (Diss. rer. nat. University of Hamburg 1975).
- Rösing 1988 F. W. Rösing, Körperhöhenrekonstruktion aus Skelettmaßen, in: R. Knussmann (ed.), *Anthropologie. Handbuch der vergleichenden Biologie des Menschen I, 1. Wesen und Methoden der Anthropologie* (Stuttgart 1988) 586–600.
- Roueché 1989 C. Roueché, *Aphrodisias in Late Antiquity*, JRS monograph series 5 (London 1989).
- Roumelis 2007 N. Roumelis, *The Palaeopathology of Kirchberg. Evidence of Deficiency, Inflammatory and Tumorous Diseases in a Medieval Rural Population in Hessia, Germany*. Osteoarchaeological Research Laboratory (Stockholm University 2007).
- Rousseau – Guintard – Abadie-Reynal 2008 G. Rousseau – C. Guintard – C. Abadie-Reynal, *La gestion des animaux à Zeugma (Turquie). Étude des restes fauniques du chantier 9 (époques hellénistique, romaine, byzantine et islamique)*, *Revue de Médecine Vétérinaire* 159, 2008, 251–275.
- Rudolf 1989 E. Rudolf, *Attische Sarkophage aus Ephesos*, *DenkschrWien* 209 (Vienna 1989).
- Ruggieri – Turillo 2011 V. Ruggieri – M. Turillo, *La scultura bizantina ad Antiochia di Pisidia*, *Orientalia Christiana Analecta* (Rome 2011).
- Saiki et al. 1985 R. Saiki – S. Scharf – F. Faloona – K. Mullis – G. Horn – H. Erlich – N. Arnheim, Enzymatic amplification of beta-globin genomic sequences and restriction site analysis for diagnosis of sickle cell anemia, *Science* 230, 1985, 1350–1354.
- Saint Sabas the Younger 1898 »Life of St. Sabas the Younger«, *Analekta Ierosolimitikes Stahnologias* 5, 1898, 190–359.
- Saldern 1980 A. v. Saldern, *Ancient and Byzantine Glass from Sardis*, Archaeological Exploration of Sardis, Monographs 6 (Harvard 1980).
- Sanders 1999 G. D. R. Sanders, Corinth workshop production, in: D. Papanikola-Bakirtzi (ed.), *Byzantine Glazed Ceramics. The Art of Sgraffito* (Athens 1999) 159–164.
- Sanders 2000 G. D. R. Sanders, *New Relative and Absolute Chronologies for 9<sup>th</sup> to 13<sup>th</sup> Century Glazed Wares at Corinth: Methodology and Social Conclusions*, in: K. Belke – F. Hild et al. (eds.), *Byzanz als Raum. Zu Methoden und Inhalten der historischen Geographie des östlichen Mittelmeerraumes* (Vienna 2000) 153–173.
- Sanders 2003a G. D. R. Sanders, An overview of the new chronology for 9<sup>th</sup> to 13<sup>th</sup> century pottery at Corinth, in: C. Bakirtzis (ed.), *VII<sup>e</sup> Congrès international sur la céramique médiévale en Méditerranée* (Athens 2003) 35–44.
- Sanders 2003b G. D. R. Sanders, Recent Developments in the Chronology of Byzantine Corinth, in: C. K. Williams II – N. Bookidis (eds.), *Corinth, The Centenary: 1896–1996*, *Corinth 20* (Princeton, NJ 2003) 385–399.
- Sarnowsky 1991–1992 J. Sarnowsky, *Die Johanniter und Smyrna 1344–1402*, *RömQSchr* 86, 1991, 215–251; *RömQSchr* 87, 1992, 47–98.
- Sarre 1935 F. Sarre, *Die Keramik der islamischen Zeit von Milet*, in: K. Wulzinger – P. Wittek – F. Sarre (eds.), *Das Islamische Milet*, *Milet 3, 4* (Berlin 1935) 68–88.
- Sauer – Waksman 2005 R. Sauer – S. Y. Waksman, Laboratory investigations of selected medieval sherds from the Artemision in Ephesos, in: F. Krinzinger (ed.), *Spätantike und mittelalterliche Keramik aus Ephesos*, *AForsch* 13 = *DenkschrWien* 332 (Vienna 2005) 51–66.

- Sazanov 1997 A. Sazanov, Les amphores de l'antiquité tardive et du Moyen Age: Continuité ou rupture? Le cas de la Mer Noire, in: G. Démians d'Archimbaud (ed.), La céramique médiévale en Méditerranée. Actes du VI<sup>e</sup> congrès de l'AIECM 2, Aix-en-Provence 13–18 novembre 1995 (Aix-en-Provence 1997) 87–102.
- Sazmovar 1975 V. Sazmovar, Possibilities of Evaluating Alveolus Resorption with Regard to the Age of the Osteologic Material, *Cripta Medica Brno* 48/3–4, 1975, 293–297.
- Schachinger (in print/  
in Druck) U. Schachinger, Die Münzen aus dem Theater von Ephesos, in: P. Ruggendorfer – F. Krinzinger (eds.), Das Theater von Ephesos. Archäologischer Befund und Chronologien, *FiE* (in print/in Druck).
- Schäfer 1992 T. Schäfer, Ägina, Aphaia-Tempel. XV. Becken und Ständer aus Marmor und Kalkstein, *AA* 1992, 7–37.
- Scheuer – Black 2000 L. Scheuer – S. Black, Developmental Juvenile Osteology (San Diego 2000).
- Scheuer – Musgrave –  
Evans 1980 L. Scheuer – J. H. Musgrave – S. P. Evans, The estimation of late fetal and perinatal age from limb bone length by linear and logarithmic regression, *Annals of Human Biology* 7, 1980, 165–257.
- Schindel 2009 N. Schindel, Die Fundmünzen von der Kuretenstraße 2005 und 2006. Numismatische und historische Auswertung, in: S. Ladstätter (ed.), Neue Forschungen zur Kuretenstraße von Ephesos. Akten des Symposiums für Hilke Thür vom 13. Dezember 2006 an der Österreichischen Akademie der Wissenschaften, *AForsch 15 = DenkschrWien* 382 (Vienna 2009) 171–245.
- Schindel (in print/in Druck) N. Schindel, Countermarks on Umayyad Post-Reform Copper Coins, *Israel Numismatic Research* (in print/in Druck).
- Schindel – Hollunder 2011 N. Schindel – M. Hollunder, Eine Partie osmanischer Akçes des Sultans Murad II., *Mitteilungen des Instituts für Numismatik und Geldgeschichte Wien* 54, 2011, 31–37.
- Schindel – Pfeiffer-Taş 2010 N. Schindel – Ş. Pfeiffer-Taş, Numismatischer Teil. Murad III. bis Ahmed I, in: R. H. Ünal – F. Krinzinger – M. Alram – Ş. Pfeiffer-Taş (eds.), Der Münzschatz von Beçin 1, *AForsch 17 = DenkschrWien* 396 (Vienna 2010) 134–389.
- Schönberg et al. 2011 A. Schönberg – C. Theunert – M. Li – M. Stoneking – I. Nasidze, High-throughput sequencing of complete human mtDNA genomes from the Caucasus and West Asia: high diversity and demographic inferences, *European Journal of Human Genetics* 19, 2011, 988–994.
- Schopen – Bekker 1828–1855 L. Schopen – I. Bekker (eds.), *Byzantina Historia I–III* (Bonn 1828–1855).
- Schreiner 1994 P. Schreiner, *Byzanz, Oldenburg – Grundriß der Geschichte* 22<sup>2</sup>(Munich 1994).
- Schulte – Spranger 1985 F. J. Schulte – J. Spranger, *Lehrbuch der Kinderheilkunde* (Stuttgart 1985).
- Schultz 1979 M. Schultz, Zeichen akuter und chronischer Entzündungen des Mittelohres an frühgeschichtlichem Skelettmaterial, *Hals – Nase – Ohren* 27, 1979, 77–85.
- Schultz 1982 M. Schultz, Umwelt und Krankheit des vor- und frühgeschichtlichen Menschen, in: *Kindlers Enzyklopädie Der Mensch II* (Munich 1982) 259–312.
- Schultz 1986a M. Schultz, Die mikroskopische Untersuchung prähistorischer Skelettfunde. Anwendung und Aussagemöglichkeiten der differentialdiagnostischen Untersuchung in der Paläopathologie, *Archäologie und Museum* 6 (Liestal, Kanton Baselland 1986).
- Schultz 1986b M. Schultz, Der Gesundheitszustand der frühmittelalterlichen Bevölkerung von Boğazkale – Hattuşa, *AST* 4, 1986, 401–409.
- Schultz 1988 M. Schultz, Paläopathologische Diagnostik, in: R. Knussmann (ed.), *Anthropologie: Handbuch der vergleichenden Biologie des Menschen I 1. Wesen und Methoden der Anthropologie* (Stuttgart 1988) 480–496.
- Schultz 1989 M. Schultz, Ergebnisse osteologischer Untersuchungen an mittelalterlichen Kinderskeletten unter besonderer Berücksichtigung anatolischer Populationen, *Anthropologischer Anzeiger* 47, 1, 1989, 39–50.
- Schultz 1990 M. Schultz, Erkrankungen des Kindesalters bei der frühbronzezeitlichen Population vom İkitztepe (Türkei), in: F. M. Andraschko – W.-R. Teegen (eds.), *Gedenkschrift Jürgen Driehaus* (Mainz 1990) 83–90.
- Schultz 1993a M. Schultz, Spuren unspezifischer Entzündungen an prähistorischen und historischen Schädeln. Ein Beitrag zur Paläopathologie, in: B. Kaufmann (ed.), *Anthropologische Beiträge 4A und 4B*. Anthropologisches Forschungsinstitut Aesch. Anthropologische Gesellschaft Basel (Basel 1993) 1–84.
- Schultz 1993b M. Schultz, Initial Stages of Systemic Bone Disease, in: G. Grupe – A. N. Garland (eds.), *Histology of Ancient Human Bone* (Berlin 1993).
- Schultz 2001 M. Schultz, Krankheit und Tod im Kindesalter bei bronzezeitlichen Populationen, in: A. Lippert – M. Schultz – S. Shennan – M. Teschler-Nicola (eds.), *Mensch und Umwelt während des Neolithikums und der Frühbronzezeit in Mitteleuropa. Ergebnisse interdisziplinärer Zusammenarbeit zwischen Archäologie, Klimatologie, Biologie und*

- Medizin. Internationaler Workshop vom 9.–12. November 1995, Institut für Ur- und Frühgeschichte der Universität Wien (Rahden/Westf. 2001) 287–305.
- Schultz 2011 M. Schultz, Paläobiographik, in: G. Jüttemann (ed.), Biographische Diagnostik (Berlin 2011) 222–236.
- Schultz – Schmidt-Schultz 2004 M. Schultz – T. H. Schmidt-Schultz, »Der Bogenschütze von Pergamon« – Die paläopathologisch-biographische Rekonstruktion einer interessanten spätbyzantinischen Bestattung, *IstMitt* 54, 2004, 243–256.
- Schultz – Schmidt-Schultz – Gresky (in preparation/ in Vorbereitung) M. Schultz – T. H. Schmidt-Schultz – J. Gresky, Anthropologische und paläopathologische Auswertung der Skeletüberreste aus Liu-Shui (Volksrepublik China) (in preparation/ in Vorbereitung).
- Schultz – Teschler-Nicola 1987 M. Schultz – M. Teschler-Nicola, Ein Hydrocephalus aus der mittelneolithischen Kreisgrabenanlage von Kamegg, Niederösterreich. Ein Beitrag zur Ätiologie kindlicher Schädelkrankungen, *Annalen des Naturhistorischen Museums Wien* 88, 1987, 223–251.
- Schultz – Walker 2013 M. Schultz – R. Walker, Report on the Mummy of Djau, Governor of Upper Egyptian Provinces 8 and 12 (6<sup>th</sup> Dynasty), in: N. Kanawati (ed.), *Deir El-Gebrawi III. The Southern Cliff. The Tomb of Djau/Shemai and Djau*, The Australian Centre for Egyptology Reports 32, 2013, 64–78.
- Schutkowski 1990 H. Schutkowski, Zur Geschlechtsdiagnose von Kinderskeletten. Morphognostische, metrische und diskriminanzanalytische Untersuchungen (Diss. rer. nat. University of Göttingen 1990).
- Schutkowski 1993 H. Schutkowski, Sex Determination of Infant and Juvenile Skeletons I. Morphognostic Features, *American Journal of Physical Anthropology* 90, 2, 1993, 199–205.
- Schwartz 1995 J. H. Schwartz, *Skeleton keys* (New York 1995).
- Schwarz 2008 M. V. Schwarz, *Giottus Pictor, II: Giottos Werke* (Vienna 2008).
- Schwarzer 2009a H. Schwarzer, Spätantike und byzantinische Glasfunde aus Alexandria Troas, in: E. Lafli (ed.), *Late Antique/Early Byzantine Glass in the Eastern Mediterranean* (Izmir 2009) 67–84.
- Schwarzer 2009b H. Schwarzer, Spätantike, byzantinische und islamische Glasfunde aus Pergamon, in: E. Lafli (ed.), *Late Antique/Early Byzantine Glass in the Eastern Mediterranean* (Izmir 2009) 85–109.
- Schwenzer – Ehrenfeld 2008 N. Schwenzer – M. Ehrenfeld, *Mund-Kiefer-Gesichtschirurgie* (Stuttgart 2008).
- Schwörer 1975 I. Schwörer, *Die Skelettentwicklung des Menschen. Lehrtafel* (Stuttgart 1975).
- Scott – Kamilli 1981 J. A. Scott – D. C. Kamilli, Late Byzantine glazed pottery from Sardis, in: *Actes du XV<sup>e</sup> Congrès International des Etudes Byzantines II* (Athens 1981) 679–696.
- Sear D. R. Sear, *Byzantine Coins and their values* <sup>2</sup>(London 1987).
- Seibt 1979 W. Seibt, Drei byzantinische Bleisiegel aus Ephesos, *LNV* 1, 1979, 145–154.
- Şimşek 1996 C. Şimşek, III. Dönem Hierapolis Roma Hamamı Kazısı, in: VI. Müze Kurtarma Kazıları Semineri (Ankara 1996) 221–242.
- Şimşek 1997 C. Şimşek, Dönem Hierapolis Roma Hamamı Kazısı, in: VII. Müze Kurtarma Kazıları Semineri (Ankara 1997) 1–27.
- Singh – Singh 1972 S. P. Singh – S. Singh, The sexing of adult femora – Demarking points for Varanasi Zone, *Journal of the Indian Academy of Forensic Sciences* 7, 1972, 20–30.
- Sjøvold 1988 T. Sjøvold, Geschlechtsdiagnose am Skelett, in: R. Knussmann (ed.), *Anthropologie: Handbuch der vergleichenden Biologie des Menschen I 1. Wesen und Methoden der Anthropologie* (Stuttgart 1988) 444–478.
- Sjøvold 1990 T. Sjøvold, Estimation of stature from long bones utilizing the line of organic correlation, *Human Evolution* 5.5, 1990, 431–447.
- Skoglund et al. 2012 P. Skoglund – H. Malmström – M. Raghavan – J. Storå – P. Hall – E. Willerslev – M. T. P. Gilbert – A. Götherström – M. Jakobsson, Origins and genetic legacy of Neolithic farmers and hunter-gatherers in Europe, *Science* 336, 2012, 466–469.
- SNG ANS *Sylloge Nummorum Graecorum. The Collection of the American Numismatic Society 5: Sicily III (Syracuse – Siceliotas)* (New York 1988).
- SNG Cop *Sylloge Nummorum Graecorum. The Royal Collection of Coins and Medals, Danish National Museum 24: Ionia III (Smyrna – Teos. Islands)* (Copenhagen 1946).
- Soldevilla – Bruguera – Mallol 2011 F. Soldevilla – J. Bruguera – M. T. F. Mallol (eds.), *Les quatre grans Cròniques III: Crònica de Ramon Muntaner* (Barcelona 2011).
- Sotiriou 1921/1922 G. Sotiriou, *Ανασκαφαί του Βυζαντινού ναού του Ιωάννου του Θεολόγου εν Έφεσσω* (in Modern Greek), *ADelt* 7, 1921/1922 (1924) 89–226.
- Sözen 1970 M. Sözen, *Anadolu Medreseleri-Selçuklular ve Beylikler Devri* (Istanbul 1970).
- Spieser 1996 J.-M. Spieser, *Die byzantinische Keramik aus der Stadtgrabung von Pergamon*, PF 9 (Berlin 1996).

- Srećković 2000 S. Srećković, *Akches 2. Mehmed II Fatih – Selim I Yavuz, 848–926 AH* (Belgrade 2000).
- Srećković 2002 S. Srećković, *Ottoman Mints and Coins* (Belgrade 2002).
- Steele 1976 D. G. Steele, The estimation of sex on the basis of the talus and calcaneus, *American Journal of Physical Anthropology* 45, 1976, 581–588.
- Stein 1998 G. J. Stein, Medieval Pastoral Production Systems at Gritille, in: S. Redford (ed.), *The Archaeology of the Frontier in the Medieval Near East: Excavations at Gritille, Turkey*, Archaeological Institute of America, Monographs New Series 3 (Philadelphia 1998) 181–208.
- Steinbock 1976 R. T. Steinbock, *Paleopathological Diagnosis and Interpretation* (Springfield, IL 1976).
- Stern – Waksman 2003 E. J. Stern – S. Y. Waksman, Pottery from recent excavations in Crusader Acre: typological and analytical study, in: C. Bakirtzis (ed.), *Actes du VII<sup>e</sup> Congrès International sur la Céramique Médiévale en Méditerranée, Thessalonique, 11–16 octobre 1999* (Athens 2003) 167–180.
- Stern 2012 E. J. Stern, Akko I. The 1991–1998 Excavations. The Crusader-Period Pottery, *Israel Antiquities Authority Reports* 51 (Jerusalem 2012).
- Stevenson 1947 R. B. K. Stevenson, The Pottery, in: G. Brett – W. J. Macaulay – R. B. K. Stevenson (eds.), *The Great Palace of the Byzantine Emperors, First Report* (London 1947) 31–63.
- Stewart 1979 T. D. Stewart, *Essentials of Forensic Anthropology* (Springfield, IL 1979).
- Steyger 1911 R. Steyger, *Ueber die Pachymeningitis tuberculosa* (Diss. med. Ludwig-Maximilians-University Munich 1911).
- Stloukal – Hanáková 1978 M. Stloukal – H. Hanáková, Die Länge der Längsknochen altslawischer Bevölkerungen unter besonderer Berücksichtigung von Wachstumsfragen, *Homo* 29, 1, 1978, 53–69.
- Stloukal et al. 1999 M. Stloukal – M. Dobisíková – V. Kuželka – P. Stránská – P. Velmínský – L. Vyhnánek – K. Zvara, *Anthropologie. Příručka pro studium kostry*. Národní muzeum (Prague 1999).
- Stock 2010 F. Stock, *Paläogeographische und geoarchäologische Studien zum holozänen Küstenwandel im Umfeld der antiken Stadt Ephesos, Westtürkei* (unpubl. Dipl. University of Cologne 2010).
- Stock et al. 2014 F. Stock – M. Kerschner – J. C. Kraft – A. Pint – P. Frenzel – H. Brückner, The palaeogeographies of Ephesos (Turkey), its harbours and the Artemision – a geoarchaeological reconstruction for the timespan 1500 – 300 BC, *Zeitschrift für Geomorphologie (Annals of Geomorphology)* 58, 2014, Suppl. 2, 33–66.
- Stöß 1990 H. Stöß, *Pathologische Anatomie der Osteogenesis imperfecta* (Stuttgart 1990).
- Strocka 2011 V. M. Strocka, Ephesische Spolien, in: C. Jäger-Klein – A. Kolbitsch (eds.), *Fabrica et ratiocinatio in Architektur, Bauforschung und Denkmalpflege. Festschrift Friedmund Hueber* (Vienna 2011) 291–297.
- Szilvássy 1980 J. Szilvássy, Age determination on the sternal articular faces of the clavícula, *Journal of Human Evolution* 9, 1980, 609–610.
- Szilvássy 1988 J. Szilvássy, Altersdiagnose am Skelett, in: R. Knussmann (ed.), *Anthropologie. Handbuch der vergleichenden Biologie des Menschen* (Stuttgart 1988) 421–443.
- Talbot Rice 1958 D. Talbot Rice, The Byzantine Pottery, in: D. Talbot Rice (ed.), *The Great Palace of the Byzantine Emperors. Second Report* (Edinburgh 1958) 110–113.
- Talloon – Vercauteren 2011 P. Talloon – L. Vercauteren, The Fate of the Temples in late Antique Anatolia, in: L. Lavan – M. Mulryan (eds.), *The Archaeology of Late Antique ›Paganism‹*, *Late Antique Archaeology* 7 (Leiden 2011) 347–387.
- Tanman 2011 M. B. Tanman, İlyas Bey Camii'ne İlişkin Bazı Düşünceler, in: M. Baha Tanman – L. Kayhan Elbirlik (eds.), *Balat İlyas Bey Külliyesi* (Istanbul 2011) 87–92.
- Tanyeli 1987 U. Tanyeli, *Anadolu-Türk Kentinde Fiziksel Yapının Evrim Süreci (11.–15. yy)* (Diss. İTÜ Fen Bilimleri Enstitüsü İstanbul 1987).
- Telci 2010 C. Telci, *Ayasuluğ. Ücra Yerde ve Deniz Kenarında, İhtiyatlı Mahalde Bir Şehir* (Istanbul 2010).
- Thompson 1954 M. Thompson, *Coins from the Roman through the Venetian period*, *Agora* 2 (Princeton, NJ 1954).
- Thür 1989 H. Thür, *Das Hadrianstor in Ephesos*, *FiE* 11, 1 (Vienna 1989).
- Todd 1920 T. W. Todd, Age changes in the pubic bone. I. The male white pubis, *American Journal of Physical Anthropology* 3, 1920, 285–334.
- Todd 1921 T. W. Todd, Age changes in the Pubic Bone. III. The Pubis of the White Female, *American Journal of Physical Anthropology* 4, 1, 1921, 26–40.
- Tonghini 1994 C. Tonghini, The fine wares of Ayyubid Syria, in: E. J. Grube (ed.), *Cobalt and Lustre. The First Centuries of Islamic Pottery* (London 1994) 249–293.



- Torraca 2009 G. Torraca, *Lectures on Materials Science for Architectural Conservation* (Los Angeles 2009).
- Trotter – Gleser 1952 M. Trotter – G. C. Gleser, Estimation of stature from long bones of American Whites and Negroes, *American Journal of Physical Anthropology* 10, 1952, 463–514.
- Trotter – Gleser 1977 M. Trotter – G. C. Gleser, Corrigenda to »Estimation of stature from long bones of American Whites and Negroes«, *American Journal of Physical Anthropology* 47, 1977, 355–356.
- Tsanana 2003 A. Tsanana, The glazed pottery of Byzantine Vrya, in: C. Bakirtzis (ed.), VII<sup>e</sup> Congrès international sur la céramique médiévale en Méditerranée (Athens 2003) 245–250.
- Türker 2008 A. Ç. Türker, Alanya ve Çevresi Bizans Araştırmaları: Seramik Buluntular, *AST* 26, 2, 2008 211–222.
- Türker 2009 A. Ç. Türker, Demre – Myra, Aziz Nikolaos Kilisesi Bizans Dönemi Sırsız Seramikleri / Byzantine Unglazed Pottery of Saint Nicholas Church at Demre – Myra (Antalya 2009).
- Ubelaker 1978 D. A. Ubelaker, *Human skeletal remains. Excavation, analysis, interpretation* (Chicago 1978).
- Ulrich-Bochsler 2002 S. Ulrich-Bochsler, Zur Stellung der Kinder zwischen Frühmittelalter und Neuzeit – ein exemplarischer Exkurs, in: K. W. Alt – A. Kemkes-Grottenthaler (eds.), *Kinderwelten. Anthropologie – Geschichte – Kulturvergleich* (Cologne 2002) 188–207.
- Ünal et al. 2010 R. H. Ünal – F. Krinzinger – M. Alram – Ş. Pfeiffer-Taş (eds.), *Der Münzschatz von Beçin*, *AForsch* 17 = *DenkschrWien* 396 (Vienna 2010).
- Üstündağ 2010 H. Üstündağ, Paleopathological Evidence for Social Status in a Byzantine Burial from Kuşadası, Kadıkalesi/Anaia: A Case of »Diffuse Idiopathic Skeletal Hyperostosis« (DISH), in: F. Daim – J. Drauschke (eds.), *Byzanz – das Römerreich im Mittelalter. Schauplätze, Monographien des Römisch-Germanischen Zentralmuseums in Mainz* 84, 2, 1 (Mainz 2010) 199–208.
- Vallois 1937 H. V. Vallois, La durée de la vie chez l'homme fossile, *L'Anthropologie* 47, 1937, 499–532.
- Vionis et. al. 2010 A. K. Vionis – J. Poblome – B. De Cupere – M. Waelkens, A Middle-Late Byzantine Pottery Assemblage from Sagalassos. Typo-Chronology and Sociocultural Interpretation, *Hesperia* 79, 3, 2010, 423–464.
- Voegtli 1993 H. Voegtli, Die Fundmünzen aus der Stadtgrabung von Pergamon, *PF* 8 (Berlin 1993).
- Vogt et. al. 1997 C. Vogt – A. Bouquillon – M. Dubus – G. Querré, Glazed wall tiles of Constantinople: Physical and chemical characterization, manufacturing, and decorative processes, in: H. Maguire (ed.), *Materials Analysis of Byzantine Pottery* (Washington, D.C. 1997) 51–65.
- Volkov 2006 I. V. Volkov, Amphorae from Novgorod the Great and comments on the wine trade between Byzantium and Medieval Russia, in: C. Orton (ed.), *The Pottery from Medieval Novgorod and its Region* (Abington 2006) 145–159.
- von den Driesch 1976 A. von den Driesch, *Das Vermessen von Tierknochen aus vor- und frühgeschichtlichen Siedlungen* (Munich 1976).
- von den Driesch 1999 A. von den Driesch, Archäozoologische Untersuchungen an Tierknochen aus dem dritten und ersten vorchristlichen Jahrtausend vom Beşik-Yassitepe, Westtürkei, *StTroica* 9, 1999, 439–474.
- von den Driesch – Boessneck 1984 A. von den Driesch – J. Boessneck, Vorläufiger Bericht über die Untersuchungen an Tierknochenfunden, in: M. Korfmann et al., *Beşik-Tepe. Vorbericht über die Ergebnisse der Grabung von 1982*, *AA* 1984, 186–192.
- Vroom 2003 J. Vroom, *After Antiquity. Ceramics and Society in the Aegean from the 7<sup>th</sup> to the 20<sup>th</sup> Century A.C. A Case Study from Boeotia, Central Greece*, *Archaeological studies Leiden University* 10 (Leiden 2003).
- Vroom 2005a J. Vroom, *Byzantine to Modern Pottery in the Aegean: 7<sup>th</sup> to 20<sup>th</sup> century. An Introduction and Field Guide* (Utrecht 2005; 2<sup>nd</sup> revised ed. 2014).
- Vroom 2005b J. Vroom, Medieval pottery from the Artemision in Ephesus: Imports and locally produced wares, in: F. Krinzinger (ed.), *Spätantike und mittelalterliche Keramik aus Ephesos*, *DenkschrWien* 332 = *AForsch* 13 (Vienna 2005) 17–49.
- Vroom 2006a J. Vroom, Some Byzantine pottery finds from Kaman – Kalehöyük: A first observation, *Anatolian Archaeological Studies* 15, 2006, 163–169.
- Vroom 2006b J. Vroom, Byzantine garbage and Ottoman waste, in: E. Andrikou – V. L. Aravantinos – L. Godart – A. Sacconi – J. Vroom, *Thèbes. Fouilles de la Cadmée* 2, 2. *Les tablettes en Linéaire B de la Odos Pelopidou: le context archéologique. La céramique de la Odos Pelopidou et la chronologie du Linéaire B* (Pisa 2006) 181–233.

- Vroom 2007 J. Vroom, The changing dining habits at Christ's table, in: L. Brubaker – K. Linardou (eds.), *Eat, drink, and be merry (Luke 12:19) – food and wine in Byzantium*, Papers of the 37<sup>th</sup> annual Spring Symposium of Byzantine Studies, in honour of Professor A. A. M. Bryer, Publications Society for the Promotion of Byzantine Studies 13 (Aldershot 2007) 191–222.
- Vroom 2011 J. Vroom, The Morea and its links with Southern Italy after AD 1204: Ceramics and identity, *Archeologia Medievale* 38, 2011, 409–430.
- Vroom (forthcoming a) J. Vroom, Medieval Ephesus as a production and consumption centre, in: P. Magdalino – S. Ladstätter (eds.), *Ephesus from Late Antiquity to the Later Middle Ages* (forthcoming).
- Vroom (forthcoming b) J. Vroom, Ceramics, in: P. Niewöhner (ed.), *The Archaeology of Byzantine Anatolia* (forthcoming).
- Vroom (forthcoming c) J. Vroom, The end of Byzantium: The transition in material culture from Byzantine to Ottoman times, in: M. Decker (ed.), *The Cambridge Handbook to Byzantine Archaeology* (forthcoming).
- Vryonis 1971 S. Vryonis, *The Decline of Medieval Hellenism in Asia Minor and the Process of Islamization from the Eleventh Through the Fifteenth Century* (Berkeley 1971).
- Waksman 1995 S. Y. Waksman, *Les céramiques byzantines des fouilles de Pergame. Caractérisation des productions locales et importées par analyse élémentaire par les méthodes PIXE et INAA et par pétrographie* (unpub. PhD thesis, University of Strasbourg 1995).
- Waksman 2005 S. Y. Waksman, A propos de quelques analyses élémentaires de glaces de céramiques byzantines médiévales, in: *Décor de lustre métallique et céramique glaçurée*, *Scienze e materiali del patrimonio culturale* 7, 2005, 83–89.
- Waksman 2011 S. Y. Waksman, Ceramics of the ›Serçe Limanı type‹ and Fatimid pottery production in Beirut, *Levant* 43, 2, 2011, 201–212.
- Waksman 2013 S. Y. Waksman, *Anaia Seramik Üretimlerinin Tanımlanması ve Dağılımı: Kimyasal Analiz Yoluyla Bir Ön Yaklaşım / The Identification and Diffusion of Anaia's Ceramic Products: A Preliminary Approach Using Chemical Analysis*, in: Z. Mercangöz (ed.), *Bizanslı Ustular – Latin Patronlar / Byzantine Craftsmen – Latin Patrons* (Istanbul 2013) 101–111.
- Waksman (forthcoming) S. Y. Waksman, *Underglaze painted wares from Beirut and Fustat* (forthcoming).
- Waksman et al. 2014 S. Y. Waksman – N. D. Kontogiannis – S. S. Skartsis – G. Vaxevanis, The main ›Middle Byzantine Production‹ and pottery manufacture in Thebes and Chalcis, *BSA* 109, 2014, 379–422.
- Waksman – François 2004/2005 S. Y. Waksman – V. François, Vers une redéfinition typologique et analytique des céramiques byzantines du type Zeuxippus Ware, *BCH* 128–129, 2004/2005, 629–724.
- Waksman – Spieser 1997 S. Y. Waksman – J.-M. Spieser, Byzantine ceramics excavated in Pergamon. Archaeological classification and characterization of the local and imported productions by PIXE and INAA elemental analysis, mineralogy and petrography, in: H. Maguire (ed.), *Materials Analysis of Byzantine Pottery* (Washington, D.C. 1997) 105–133.
- Waksman – von Wartburg 2006 S. Y. Waksman – M.-L. von Wartburg, ›Fine-Sgraffito Ware‹, ›Aegean Ware‹, and other wares: new evidence for a major production of Byzantine ceramics, *RDAC* 2006, 369–388.
- Waksman – Capelli – Cabella (forthcoming) S. Y. Waksman – C. Capelli – R. Cabella, *Etudes en laboratoire de céramiques de Sabra al-Mansûriya et de la région de Kairouan*, in: P. Cressier – M. Rammah (coord.), *Sabra al-Mansûriya. Capitale fatimide*, Collection de l'École française de Rome (forthcoming).
- Waksman et al. (forthcoming) S. Y. Waksman – J. Burlot – B. Böhlendorf Arslan – J. Vroom, Moulded wares production in the Early Turkish period in Western Anatolia: the case of Ephesos and Miletus, *Journal of Archaeological Science Reports* (forthcoming).
- Waldbaum 1983 J. C. Waldbaum, *Metalwork From Sardis: The Finds Through 1974*, Archaeological Exploration of Sardis, Monograph 8 (Cambridge, MA 1983).
- Walker 1956 J. Walker, *A Catalogue of the Arab-Byzantine and Post-Reform Umayyad Coins* (London 1956).
- Wallis 1891 H. Wallis, *Persian Ceramic Art in the Collection of Mr. F. DuCane Godman, F.R.S: The Thirteenth Century Lustred Vases* (London 1891).
- Wandeler – Hoeck – Keller 2007 P. Wandeler – P. E. Hoeck – L. F. Keller, Back to the future: museum specimens in population genetics, *Trends in Ecology and Evolution* 22, 2007, 634–642.
- Wapler – Crubézy – Schultz 2004 U. Wapler – E. Crubézy – M. Schultz, Is Cribra Orbitalia synonymous with Anemia? Analyzes and Interpretation of Cranial Pathology in Sudan, *American Journal of Physical Anthropology* 123, 2004, 333–339.

- Ward-Perkins 1951  
von Wartburg 2001
- Watson 2004
- Weißl 2002
- Weißl 2005
- Weninger et al. 2014
- Westphalen 1994
- Whitehouse 1991
- Whitehouse 1993
- Wiplinger – Wlach 1995
- Wittek 1967
- Wittwer-Backofen 1986
- Wohlers-Scharf 1995
- Wood 1877
- Yalman 1988
- Yang et al. 1998
- Yavuz 2005
- Yenişehirlioğlu 1983
- Yenişehirlioğlu 1989
- Yetkin 1970
- Yıldız 2014
- Zabrana 2011
- Zabrana 2014
- Zachariadou 1983
- Zacos – Veglery 1972
- J. B. Ward-Perkins, Tripolitania and the Marble Trade, *JRS* 41, 1951, 89–104.
- M.-L. von Wartburg, Types of imported table ware at Kouklia in the Ottoman period, Report of the Department of Antiquities, Cyprus, *RDAC* 2001, 361–396.
- O. Watson, Ceramics from Islamic Lands (London 2004).
- M. Weißl, Grundzüge der Bau- und Schichtenfolge im Artemision von Ephesos, *ÖJh* 71, 2002, 313–346.
- M. Weißl, Mittelalterliche Grabungsbefunde im Artemision von Ephesos, in: F. Krinzinger (ed.), Spätantike und mittelalterliche Keramik aus Ephesos, *AForsch* 13 = *DenkschrWien* 332 (Vienna 2005) 9–16.
- B. Weninger – L. Clare – F. Gerritsen – B. Horejs – R. Krauß – J. Linstädter – R. Özbal – E. J. Rohling, Neolithisation of the Aegean and southeast Europe during the 6600–6000 calBC period of rapid climate change, *Documenta Praehistorica* 41, 2014, 1–31.
- S. Westphalen, Die frühchristliche Basilika im Heraion von Samos und ihre Ausstattung, *AM* 109, 1994, 301–335.
- D. Whitehouse, Glassmaking at Corinth: A reassessment, in: D. Foy – D. Sennerquier (eds.), *Ateliers verriers de l'antiquité à la période pré-industrielle, Actes des 4<sup>èmes</sup> rencontres*, Rouen 24–25 novembre 1989 (Rouen 1991) 73–82.
- D. Whitehouse, The date of the Agora south centre workshop at Corinth, *Archeologia Medievale* 208, 1993, 659–662.
- G. Wiplinger – G. Wlach, Ephesos. 100 Jahre österreichische Forschungen (Vienna 1995).
- P. Wittek, Das Fürstentum Mentese. Studie zur Geschichte Westkleinasiens im 13.–15. Jh., *IstMitt* 2 (Istanbul 1937; <sup>2</sup>Amsterdam 1967).
- U. Wittwer-Backofen, Anthropologische Untersuchungen des byzantinischen Friedhofs Boğasköy – Hattuşa, *AST* 4, 1986, 181–399.
- T. Wohlers-Scharf, Forschungsgeschichte von Ephesos. Entdeckungen, Grabungen und Persönlichkeiten, *Europäische Hochschulschriften Reihe* 38, Bd. 54 (Frankfurt a. M. 1995).
- J. T. Wood, Discoveries at Ephesus. Including the site and remains of the Great Temple of Diana (London 1877).
- B. Yalman, Iznik Tiyatro Kazımı 1987, *KST* 10, 1988, 339–382.
- D. Y. Yang – B. Eng – J. S. Waye – J. C. Dudar – S. R. Saunders, Technical Note: Improved DNA extraction from ancient bones using silica-based spin columns, *American Journal of Physical Anthropology* 105, 1998, 539–543.
- A. T. Yavuz, Selçuklu Döneminde Malzeme ve Mimarlık İlişkisi, Geçmişten Geleceğe Anadolu'da Malzeme ve Mimarlık Sempozyumu, 4–5 Temmuz 2005 (Istanbul 2005) 79–142.
- F. Yenişehirlioğlu, Apollo Smitheus Tapınağında Çıkan Orta Çağ Sırlı Anadolu Seramikleri, *AST* 1, 1983, 175–183.
- F. Yenişehirlioğlu, La céramique glaçurée de Gülpınar, in: V. Déroche – J.-M. Spieser (eds.), *Recherches sur la céramique byzantine*, *BCH Suppl.* 18 (Athens 1989) 303–315.
- S. K. Yetkin, Türk Mimarisi (Ankara 1970).
- S. N. Yıldız, From Cairo to Ayasuluk: Hacı Paşa and the transmission of Islamic learning to Western Anatolia in the late fourteenth century, *Journal of Islamic Studies* 25, 3, 2014, 263–297.
- L. Zabrana, Vorbericht zur sogenannten Tribüne im Artemision von Ephesos – ein neues Odeion im Heiligtum der Artemis, *ÖJh* 80, 2011, 341–363.
- L. Zabrana, Das Odeion im Artemision von Ephesos (Diss. TU Berlin 2014).
- E. Zachariadou, Trade and Crusade: Venetian Crete and the Emirates of Mentese and Aydin, 1300–1415 (Venice 1983).
- G. Zacos – A. Veglery, Byzantine Lead Seals I–IV (Basel 1972).



## VERZEICHNIS DER ABKÜRZUNGEN

Zitierweise und Abkürzungen folgen den Richtlinien des Österreichischen Archäologischen Instituts <<http://www.oelai.at>>, zusätzlich werden folgende Abkürzungen verwendet:

Diam.	diameter
EAT	Ephesos-Artemision-Türbe
est.	estimated
FNr.	Fundnummer
H.	height
H <sub>abs.</sub>	absolute Höhe
IF	Interface
Ind.	Individuum
L.	length
NO	Nordosten
NW	Nordwesten
OK	Oberkante
pres.	preserved
Th.	thickness
SE	Stratigrafische Einheit
So	Sondage
SO	Südosten
SW	Südwesten
u. GOF	unter Geländeoberfläche
UK	Unterkante
W.	width

## ANSCHRIFTEN VON AUTORINNEN UND AUTOREN

Erdem Soner Bellibaş  
Eski Yeni Architecture  
Fahri Gizden Sok. No:4/2  
TR-Gayrettepe – Istanbul  
E-Mail: soner@eskiyeni.net

Dr. Gro Bjørnstad  
Department of Forensic Biology  
Norwegian Institute of Public Health  
POBox 4404 Nydalen  
N-0403 Oslo  
E-Mail: gro.bjornstad@gmail.com

Prof. Dr. Helmut Brückner  
Geographisches Institut der Universität zu Köln  
Albertus-Magnus-Platz  
D-50923 Köln  
E-Mail: h.brueckner@uni-koeln.de

Marie-Myriam Carytsiotis  
Laboratoire d'Archéologie Médiévale et Moderne en  
Méditerranée (LA3M)  
UMR 7298 – Université d'Aix-Marseille. CNRS  
5, rue du château d'Horologe  
BP 647  
F-13094 Aix-en-Provence  
E-Mail: mariemyroxane@yahoo.fr

Dr. Yaman Dalanay  
İnönü cad. 221 B/12  
TR- 35360 Izmir  
E-Mail: yamandalanay@gmail.com

Doz. Dr. Ebru Fatma Fındık  
Mustafa Kemal Üniversitesi  
Fen Edebiyat Fakültesi  
Sanat Tarihi Bölümü  
TR- Hatay  
E-Mail: effindik@mku.edu.tr

Prof. Dr. Gerhard Forstenpointner  
Institut für Anatomie, Histologie und Embryologie  
Veterinärmedizinische Universität Wien  
Veterinärplatz 1  
A-1210 Wien  
E-Mail: gerhard.forstenpointner@vetmeduni.ac.at

PD Mag. Dr. Sabine Ladstätter  
Österreichisches Archäologisches Institut  
Franz Klein-Gasse 1  
A-1190 Wien  
E-Mail: sabine.ladstaetter@oeai.at

Dr. Jan Novaček  
Institut für Anatomie und Zellbiologie und  
AG Paläopathologie  
Institut für Anatomie und Embryologie der  
Universitätsmedizin Göttingen  
Kreuzberggring 36  
D-37075 Göttingen  
E-Mail: jan.novacek@med.uni-goettingen.de

Mag. Gottfried Parrer, BSc  
Via Dessedo 46  
I-23030 Villa di Tirano (SO)  
E-Mail: gottfried.parrer@gmail.com

Mag. Dr. Georg A. Plattner  
Antikensammlung  
Kunsthistorisches Museum  
Burgring 5  
A-1010 Wien  
E-Mail: georg.plattner@khm.at

PD Mag. Dr. Ursula Schachinger  
Institut für Alte Geschichte und Altertumskunde  
Universitätsplatz 3/II  
A-8010 Graz  
E-Mail: ursula.schachinger@uni-graz.at

Kristina Scheelen M.A.  
AG Paläopathologie  
Institut für Anatomie und Embryologie der  
Universitätsmedizin Göttingen  
Kreuzberggring 36  
D-37075 Göttingen  
E-Mail: scheelen@uni-hildesheim.de

PD Mag. Dr. Nikolaus Schindel  
Arbeitsgruppe Numismatik  
Abteilung »Documenta Antiqua«  
Institut für Kulturgeschichte der Antike  
Österreichische Akademie der Wissenschaften  
Postgasse 7  
A-1010 Wien  
E-Mail: nikolaus.schindel@oeaw.ac.at

Prof. Dr. Dr. Michael Schultz  
AG Paläopathologie  
Institut für Anatomie und Embryologie der  
Universitätsmedizin Göttingen  
Kreuzberggring 36  
D-37075 Göttingen  
E-Mail: mschult1@gwdg.de

Mag. Ralf Totschnig  
ZAMG – Zentralanstalt für Meteorologie und  
Geodynamik  
Abteilung Geophysik  
Hohe Warte 38  
A-1190 Wien  
E-Mail: ralf.totschnig@zamg.ac.at

Dr. Süleyman Sirri Seren  
ZAMG – Zentralanstalt für Meteorologie und  
Geodynamik  
Abteilung für Geophysik  
Hohe Warte 38  
A-1190 Wien  
E-Mail: sirri.seren@zamg.ac.at

Prof. Dr. Joanita A. C. Vroom  
Faculty of Archaeology  
Leiden University  
P.O. Box 9514  
NL-2300 RA Leiden  
E-Mail: joanitavroom@hotmail.com

Dipl. Geogr. Dr. Friederike Stock  
Geographisches Institut der Universität zu Köln  
Albertus-Magnus-Platz  
D-50923 Köln  
E-Mail: stockf@uni-koeln.de

Dr. Sylvie Yona Waksman  
Centre National de la Recherche Scientifique  
UMR 5138 Maison de l'Orient et de la Méditerranée  
7, rue Raulin  
F-69365 Lyon cedex 7  
E-Mail: yona.waksman@mom.fr

Prof. Dr. Hans Taeuber  
Institut für Alte Geschichte und Altertumskunde,  
Papyrologie und Epigraphik  
Universität Wien  
Universitätsring 1  
A-1010 Wien  
E-Mail: hans.taeuber@univie.ac.at

Prof. Dr. Gerald E. Weissengruber  
Institut für Anatomie, Histologie und Embryologie  
Veterinärmedizinische Universität Wien  
Veterinärplatz 1  
A-1210 Wien  
E-Mail: gerald.weissengruber@vetmeduni.ac.at