

PROCEEDINGS OF THE XVI INTERNATIONAL NUMISMATIC CONGRESS,
11–16.09.2022, WARSAW, VOL. I: GREEK NUMISMATICS

WARSAW STUDIES IN ARCHAEOLOGY

VOLUME 10

Coordinating Editor

Dorota Dzierzbicka, *Polish Centre of Mediterranean Archaeology, University of Warsaw*

Editorial Board

Faculty of Archaeology, University of Warsaw

Bartosz Kontny

Arkadiusz Soltysiak

Agata Ulanowska

Miłosz Giersz

Polish Centre of Mediterranean Archaeology, University of Warsaw

Artur Obłuski

Grzegorz Majcherek

Francisco J. Nunez

Henryk Paner

External Board Members

Julia Budka, *Ludwig-Maximilians-Universität*

Jaś Elsner, *University of Oxford*

Adam Izdebski, *Max Planck Institute for the Science of Human History*

Jan Klapště, *Univerzita Karlova*

Gabriel Prieto, *University of Florida*

Dieter Quast, *Leibniz-Zentrum für Archäologie*

Thorsten Uthmeier, *Friedrich-Alexander-University of Erlangen-Nürnberg*

Published volumes in this series are listed at the back of the book.

Proceedings of the XVI International Numismatic Congress, 11–16.09.2022, Warsaw, Vol. I: Greek Numismatics

Edited by

JAROSŁAW BODZEK,
ALEKSANDER BURSCHE, AND
ANNA ZAPOLSKA

BREPOLS

Vol. 1
Subeditor: Barbara Zając
Volume coordinator: Dariusz Jasek
Graphic designer: Ireneusz Jakubczyk
Proof-reading of English: Aeddan Shaw

© 2025 Brepols Publishers n.v., Turnhout, Belgium

This is an open access publication made available under a CC BY-NC 4.0 International Licence: <https://creativecommons.org/licenses/by-nc/4.0/>.
No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, for commercial purposes, without the prior permission of the publisher, or as expressly permitted by law, by licence or under terms agreed with the appropriate reprographics rights organization.

D/2025/0095/72
ISBN 978-2-503-61656-8
e-ISBN 978-2-503-61657-5
DOI 10.1484/M.WSA-EB.5.143933

ISSN 2953-1802
e-ISSN 2953-1810

Printed in the EU on acid-free paper

Table of Contents

List of Illustrations	11
Introduction	29
Jarosław BODZEK, Aleksander BURSCHÉ, and Anna ZAPOLSKA	
1. Hermes con petaso	33
Analisi diacronica e diatopica di un lemma del <i>Lexicon Iconographicum Numismaticae</i> Ivan CAPARELLI and Benedetto CARROCCIO	
2. Minting to Accommodate the Building Process	43
John MOORING	
3. For Good Measure	53
The Control of Measuring Instruments in the Ancient Greek Market Louise WILLOCX	
4. The Online Die Study Database of the ERC ‘SILVER’ Project	59
Caroline CARRIER	
5. Eine digitale Forschungsinfrastruktur für antike Münzen	63
Neue Entwicklungen im Projekt <i>Corpus Nummorum</i> Ulrike PETER, Jan ADAMIK-KÖSTER, Angela BERTHOLD, Claus FRANKE, Sebastian GAMPE, Andrea GORYS, Vladimir STOLBA, Karsten TOLLE, and Bernhard WEISSER	
6. Comparative Elemental Analyses of Original and Counterfeit Ancient Coins	69
Some Examples from Bulgaria Marina DOYCHINOVA-ILCHEV	
7. A New Catalogue for the Ancient Iberian Coinages: <monedaiberica.org>	77
Pere Pau RIPOLLÈS, Juan Francisco ONIELFA, Alejandro PEÑA, and Manuel GOZALBES	
8. Le premier chalque de la Marseille grecque	85
Jean-Albert CHEVILLON	
9. The Coinage of Larinum and the Frentani	91
Reviewing the Evidence Valentino PIVA	
10. The Coinage of Thurioi and its Contexts	103
A Die Study Marc Philipp WAHL	
11. The Early Double-Relief Coinage of Croton	113
Stefanie BAARS	

12. Il <i>sakkos</i> come elemento identificativo dello status delle figure femminili	123
Un caso da Locri	
Marianna SPINELLI	
13. Ritrovamenti monetali dall'antica Medma, oggi Rosarno (RC, Italia)	131
Giorgia GARGANO	
14. Cenni di epigrafia monetale in Sicilia	137
Contesti e tipologie	
Sara QUARTARONE	
15. Alaisa/Halaesa (Sicily)	145
The Ancient Site and its Monetary Profile up to the Augustan Period	
Mariangela PUGLISI	
16. The Historical Fight Between the Athenian 'Owl' and the Sicilian 'Lizard' on Kamarina's Bronze Coins	155
Maria CALTABIANO CACCAMO	
17. Figura femenina portando llave en la moneda de Entela (440–430 a.C.)	159
Análisis y significado	
José Miguel PUEBLA MORÓN	
18. The Bronze Coinage of Hieronymus	165
Posthumous Series, Parallel Mintings, and Organizational Changes	
Benedetto CARROCCIO	
19. Coin Circulation in Lipari (Sicily) from the Greek to the Roman Period	173
Ludovica DI MASI	
20. Le monete di Cossyra e la lingua delle monetazioni locali del Mediterraneo occidentale dopo la conquista romana	189
Martin ZIEGERT	
21. The Hoard of Cala Tramontana in Pantelleria (Trapani, Sicily)	195
Preliminary Observations	
Lavinia SOLE	
22. Ancient Coins and Hoards from the Carevi Kuli Settlement, Strumica	207
Sanja BITRAK	
23. The Drachms of Dyrrhachium and Apollonia	219
Witness to the Rise and Fall of the Power of the Dacians	
Silviu Istrate PURECE	
24. Numismatic Evidence from Ancient Cassandreia at Chalcidice, Northern Greece	225
Eleni K. KLINAKI and Antonia G. NIKOLAKOPOULOU	
25. Archaeological, Historical, and Technological (XRF Analysis) Aspects of Early Silver Coins and Coin Hoards from Southwestern Thrace	237
Nina HADZHIEVA	
26. The Hemidrachms of the Thracian Chersonese and Their Political Environment	249
Julia TZVETKOVA	

27. Money and the Odrysian Rulers	259
Paying the <i>patrios phoros</i> Selene E. PSOMA	
28. The Demeter Coinages of Byzantium and Chalcedon	265
A Reassessment Constantin MARINESCU	
29. The Palaiopolis 1995 Hoard from Corcyra	277
A Preliminary Report Georgia TSOUVALA, Lee L. BRICE, and Goulielma-Kyriaki AVGERINOY	
30. The Silver Coinages of Achaian and Aitolian Federal States	283
Catherine GRANDJEAN, Maryse BLET-LEMARQUAND, and Eleni PAPAETHYMIY	
31. 'Put Money in thy Purse'	297
Presence and Circulation of the Ptolemaic Coins in the Peloponnese Alessandro CAVAGNA	
32. Cretan Coinage	305
Insularity and Connectivity Giorgia CAPRA	
33. Politics and War on Cretan Gold Coinage (Fourth–Third Century BC)	317
Federico CARBONE and Vassiliki E. STEFANAKI	
34. The Coinage of Ancient Aptera	327
Manolis MARINAKIS	
35. The Coinage of Lyttos/Crete	337
Some Iconography & Distribution Patterns Katerina PANAGOPOULOU	
36. Coin Types in Georgia and the Graeco-Roman World	351
Natia PHIPHIA	
37. Flan Fabrication and Minting Preparation for Copper-Alloy Coins in Antiquity	361
Numismatic and Historical Aspects Jean HOURMOUZADIS and Nikolai ILIEFF	
38. Production Characteristics of Archaic Drachms Depicting the Gorgoneion and Problems with their Attribution to Parion	371
Ed SNIBLE	
39. A New Obol of Hippias of Athens	381
Koray KONUK	
40. Tisna in Aiolis and its Coinage	387
Dinçer Savaş LENGIER	
41. Hellenistic Weights and Measures in Western Asia Minor (Propontis, Troas, and Aeolis)	393
Thomas LEBLANC	

42. The Coinage of Erythrai and <i>Historia Numorum Online</i>	397
Ersin BAKIŞ	
43. FΑΑFET and KVKAΛIM	403
Wolfgang FISCHER-BOSSERT	
44. Les monnaies hellénistiques de bronze d’Acmonea (Phrygie)	411
Barbara HILTMANN	
45. History and Coinage in Lycia	423
An Overview	
Wilhelm MÜSELER †	
46. Ptolemaic Coins in Southwestern Asia Minor	439
New Attributions and Suggestions	
Ömer TATAR	
47. Archaic and Classical Coinage of Cilicia	447
An Overview	
Jarosław BODZEK	
48. Der lykaonische Wolf	465
Kleinsilber aus Laranda	
Katharina MARTIN	
49. Hoards in Ancient Anatolia c. 630–30 BC	479
A Statistical Overview	
Leah LAZAR	
50. Numismatic Data on the Status of Artaxata (Artashat) During the Reign of the Artaxiad Dynasty of Armenia	491
Sergii LYTOVCHENKO	
51. Database Challenges for <i>Sylloge Nummorum Parthicorum</i> (SNP) Volumes 2 & 4	499
Chris HOPKINS	
52. The Coinage of the Characenian Kings Attambelos IV and V of Mesene (AD 54/55–73/74)	509
A Tribute to Ernest Babelon	
Patrick PASMANS	
53. A Brief Look at Coinage in Khuzistan from Alexander the Great to the End of the Sasanians	513
Michael STAL	
54. Coins of the Bactrian and Indo-Greek Rulers (BIGR)	519
A New Typology for Graeco-Bactrian and Indo-Greek Coins	
Gunnar R. DUMKE and Simon GLENN	
55. Coin Finds from Barikot	525
New Evidence for Monetary Circulation in the Indo-Iranian Borderlands	
Ehsan SHAVAREBI	
56. The Coinage of Pratishthana-Purisa, a City State in Ancient Punjab	535
Karan SINGH	

57. A Preliminary Analysis of the Metal Content of Gupta Gold Coins	543
Pankaj TANDON	
58. The Metrological Survey of Ptolemaic Bronze Coins	549
A Progress Report	
Daniel WOLF	
59. A Small Personal Touch	555
Some Trends in Graffiti on Carthaginian Gold Coins	
Jérémy ARTRU	

List of Illustrations

Introduction — *Jarosław Bodzek, Aleksander Bursche, and Anna Zapolska*

Figure 1.	Congress medal; struck, silver plated with some gilding, diameter 70 mm.	31
Figure 2.	Congress 50 zlp coin; struck, silver, diameter 50 mm.	31

1. Hermes con petaso — *Ivan Caparelli and Benedetto Carroccio*

Figura 1.1.		36
1.	Kyzikos, Mysia, 550–474 a.C., EL Hecte, 2.61 g. Asta Ponterio & Associates 155, 6 Novembre 2010, lotto 7016.	36
2.	Aenus, Thracia, 431–429 a.C., AR Diobolo, 1.24 g. Asta Nomos AG 6, 20 Novembre 2016, lotto 255.	36
3.	Pheneos, Arcadia, 370–340 a.C., AR Obolo, 0.85 g. Asta Roma Numismatics Ltd. 12, 29 Settembre 2016, lotto 140.	36
4.	Metapontum, Lucania, 275–250 a.C., AE, 2.12 g. Asta Auktionshaus H.D. Rauch GmbH 86, 12 Maggio 2010, lotto 120.	36
5.	Hipponium, Bruttium, 380–350 a.C., AE, 4.75 g. Asta elettronica Classical Numismatic Group 139, 10 Maggio 2006, lotto 43.	36
6.	Hipponium, Bruttium, 330–325 a.C., AE, 7.24 g. Asta Ars Classica 0, 13 Maggio 2004, lotto 1215.	
7.	Ameselon, Sicilia, 343–339 a.C., AE Hexas, 3.32 g. Asta Classical Numismatic Group – Triton V, 15 Gennaio 2002, lotto 144.	36
8.	Calactae, Sicilia, 205–190 a.C., AE Sestante, 1.97 g. Asta elettronica Roma Numismatics Ltd. 27, 28 Maggio 2016, lotto 40.	36
9.	Catana, Sicilia, 200 a.C., AE, 9.49 g. Asta elettronica Classical Numismatic Group 207, 25 Marzo 2009, lotto 40.	36
10.	Lega Euboica, Eubea, 150 a.C. circa, AE, 2.22 g. Asta Numismatik Lanz Munchen 111, 25 Novembre 2002, lotto 112.	36
Figura 1.2.	Distribuzione diatopica del tipo.	38
Figura 1.3.	Distribuzione diacronica.	38
Figura 1.4.	Distribuzione geografica, V sec. a.C., Grecia e Asia minore.	39
Figura 1.5.	Distribuzione geografica, IV sec. a.C., Grecia e Asia minore.	39
Figura 1.6.	Distribuzione geografica, Sicilia, III sec. a.C.	40

2. Minting to Accommodate the Building Process — *John Mooring*

Table 2.1.	Building projects including reference to the (modern) calculation of costs.	49
------------	---	----

4. The Online Die Study Database of the ERC ‘SILVER’ Project — *Caroline Carrier*

Figure 4.1.	Example of a die study web page.	61
-------------	----------------------------------	----

5. Eine digitale Forschungsinfrastruktur für antike Münzen — *Ulrike Peter, Jan Adamik-Köster, Angela Berthold, Claus Franke, Sebastian Gampe, Andrea Gorys, Vladimir Stolba, Karsten Tolle, and Bernhard Weisser*

Abbildung 5.1.	Digitale Forschungsinfrastruktur von < https://data.corpus-nummorum.eu/ >.	67
Abbildung 5.2.	Die inzwischen dreisprachige (Deutsch, Englisch und Bulgarisch) standardisierte Erfassung der Typen von < https://data.corpus-nummorum.eu/ >.	67

6. Comparative Elemental Analyses of Original and Counterfeit Ancient Coins — Marina Doychinova-Ilchev

Figures 6.1–6.3.	Authentic Coins of Apollonia Pontica, Sofia, Regional History Museum Sofia. Fifth–fourth century BC.	73
Figures 6.4–6.7.	Counterfeited Coins of Apollonia Pontica, Sofia, Regional History Museum Sofia. Fifth–fourth century BC.	73
Table 6.1.	Manufacturing Technology.	74
Table 6.2.	Elemental Composition of Analyzed Counterfeited and Authentic Coins.	74
Table 6.3.	Elemental Composition.	74

7. A New Catalogue for the Ancient Iberian Coinages: <monedaiberica.org> — Pere Pau Ripollès, Juan Francisco Onielfa, Alejandro Peña, and Manuel Gozalbes

Figure 7.1.	The Ancient peoples and mints of the Iberian Peninsula between the sixth and first centuries BC. Over fifty mints with unknown location are not marked.	81
Figure 7.2.	The mint of Kaistaka in the catalogue section of monedaiberica.org. The production is arranged hierarchically and the coins are displayed with relative sizes.	82
Figure 7.3.	Bilbilis coin type with three variants according to their different legends.	83

8. Le premier chalque de la Marseille grecque — Jean-Albert Chevillon

Figure 8.1.	Les spécimens 368 et 369.	88
Figure 8.2.	Les <i>Kentish Primary Series</i> et le chalque ‘au taureau’ de Massalia.	88
Figure 8.3.	L’hémidrachme et les <i>flat linear potins</i> .	88
Figure 8.4.	Les <i>Kentish Primary Series</i> (1 et 2) et les <i>flat linear potins</i> (3 et 4).	88
Figure 8.5.	L’hémidrachme (1 et 3) et le chalque ‘au taureau’ de Massalia (2 et 4).	88

9. The Coinage of Larinum and the Frentani — Valentino Piva

Figure 9.1.	Bronze coin of the Frentani (HN Italy, no. 621). Head of Mercury l., <i>frentrei</i> /Pegasus flying l.; below, usually, symbol; in exergue, <i>frentrei</i> (Inv. 118207112, Pov. 1875 Prokesch-Osten).	98
Figure 9.2.	Coins of the Frentani.	98
Figure 9.3.	Bronze coin from Larinum, first series (HN Italy, no. 622). Head of Apollo l., laureate; at l. ΔAPINΩN/Man-faced bull; crowned by Victory (Gaeta, private collection).	98
Figure 9.4.	Bronze coin from Larinum, second series (Sardella 2009 = HN Italy, no. 2659). Head of Minerva r., wearing crested Corinthian helmet/Warrior standing l. with spear and shield wearing crested Corinthian helmet; l., LAD(I)NEI (250 BC).	98
Figure 9.5.	Bronze coin from Larinum, second series (HN Italy, no. 623). Head of Minerva l., wearing crested Corinthian helmet/Horse galloping r.; above, star of sixteen rays; below, LADINEI (from Rotello).	98
Figure 9.6.	Bronze coin from Larinum, second series (HN Italy, no. 624). Head of Minerva r. wearing crested Corinthian helmet/Thunderbolt; above, LADINOD.	98
Table 9.1.	The coins found in the cella of the temple of Vacri (square 5, layer E ₅).	95

10. The Coinage of Thurioi and its Contexts — Marc Philipp Wahl

Figure 10.1.	Early Stater of Thurioi, Δ-group (year 4), c. 443–436 BC. Münzkabinett, Staatliche Museen zu Berlin – Stiftung Preußischer Kulturbesitz, 18281218.	106
Figure 10.2.	Stater of the second period, signed by Molossos, c. 380/370–355 BC. Münzkabinett, Staatliche Museen zu Berlin – Stiftung Preußischer Kulturbesitz, 18225418.	106
Figure 10.3.	Distater of Thurioi, c. 380/370–355 BC. Münzkabinett, Staatliche Museen zu Berlin – Stiftung Preußischer Kulturbesitz, 18214766.	106
Figure 10.4.	Stater of the third period, c. 340–320 BC. Nomos Auction 11 (9 October 2015), no. 18.	106
Figure 10.5.	Reduced Stater, fourth period, after c. 280/272 BC. Goldberg Auction 91 (7 June 2016), no. 1709.	106
Figure 10.6.	Heavy bronze coin, mint official ΔAMΩN, second half of fourth century (?). Noble Auction 111 (5 April 2016), no. 4453.	106
Figure 10.7.	Bronze coin of Thurioi depicting Apollon and Tripod, after c. 280/272 BC. Künker Auction 133 (11 October 2007), no. 7055.	106

Figure 10.8.	Bronze coin of Thurioi depicting Herakles and a bull, after c. 280/272 BC. Reiss-Engelhorn Museen Mannheim, inv. 998:8564.	106
Figure 10.9.	Early Stater of Thurioi, c. 435–425 BC. Münzkabinett, Staatliche Museen zu Berlin – Stiftung Preußischer Kulturbesitz, 18226321.	106
Figure 10.10.	Stater of Velia, before c. 425 BC. NAC Auction 116 (1 October 2019), no. 30.	106
Figure 10.11.	Stater of Thurioi, c. last quarter of fourth century BC (?). Münzkabinett, Staatliche Museen zu Berlin – Stiftung Preußischer Kulturbesitz, 18281327.	106
Figure 10.12.	Stater of Herakleia, fourth century BC. Triton Auction 23 (14 January 2020), no. 37.	106
Figure 10.13.	Stater of Thuroi, c. 415–400 BC. De Nederlandsche Bank, inv. GR-00674.	106
Figure 10.14.	Stater of Neapolis, c. 420–400 BC. NAC Auction 116 (1 October 2019), no. 5.	106
Figure 10.15.	Coin hoards containing coins from Thurioi.	108
Figure 10.16.	Coin hoards containing coins from Rhegion.	109
Figure 10.17.	Coin hoards containing coins from Herakleia.	110

11. The Early Double-Relief Coinage of Croton — *Stefanie Baars*

Figure 11.1.	Croton. Stater, AR, 7.82 g, 30 mm, 12 h. Münzkabinett der Staatlichen Museen zu Berlin, 18215959, 1906 Löbbecke.	118
Figure 11.2.	Croton. Stater, AR, 7.79 g, 19 mm, 3 h. Münzkabinett der Staatlichen Museen zu Berlin, 18258106, 1906 Löbbecke.	118
Figure 11.3.	Croton. Stater, AR, 7.94 g, 17 mm, 5 h. Münzkabinett der Staatlichen Museen zu Berlin, 18258428, 1906 Löbbecke.	118
Figure 11.4.	Croton. Stater, AR, 7.81 g, 22 mm, 11 h. Münzkabinett der Staatlichen Museen zu Berlin, 18258253, 1906 Löbbecke.	118
Figure 11.5.	Croton. Stater, AR, 7.77 g, 18 mm, 1 h. Münzkabinett der Staatlichen Museen zu Berlin, 18259399, 1873 Fox.	118
Figure 11.6.1.	Croton. Stater, AR, 8.10 g, 20 mm, 8 h. Wien, Münzkabinett, Kunsthistorisches Museum, GR 5444.	118
Figure 11.6.2.	Croton. Stater, AR, 7.98 g, 15–19 mm, 11 h. Münzkabinett der Staatlichen Museen zu Berlin, 18258108, 1864/28670.16.	118
Figure 11.7.	Croton. Stater, AR, 7.91 g, 19 mm, 9 h. Münzkabinett der Staatlichen Museen zu Berlin, 18258051, 1906 Löbbecke.	118
Figure 11.8.	Croton. Stater, AR, 7.86 g, 21 mm, 8 h. Münzkabinett der Staatlichen Museen zu Berlin, 18214782, 1885/158.	118
Table 11.1.	Overview of hoards with early double-relief coins of Croton.	115

12. Il *sakkos* come elemento identificativo dello status delle figure femminili — *Marianna Spinelli*

Figura 12.1.	Moneta di Locri.	128
Figura 12.2.	Anello in bronzo da Locri.	128
Figura 12.3, 12.4, 12.5.	Esempi di <i>sakkos</i> , <i>sphendone</i> e <i>kekryphalos</i> .	128
Figura 12.6.	Pinax da Locri.	128
Figura 12.7.	Pinax da Locri.	128
Figura 12.8.	Pinax da Locri.	128
Figura 12.9.	Trono Ludovisi (Locri).	128
Figura 12.10.	Dea di Taranto.	128
Figura 12.11.	Arule da Taranto.	128
Figura 12.12.	Unguentario da Rodi.	128
Figura 12.13.	Ryhton del Pittore di Duride.	128
Figura 12.14.	Lekythos del Pittore Icarus.	128
Figura 12.15.	Lekythos del Pittore Icarus.	128
Figura 12.16.	Moneta di Phokaia.	128
Figura 12.17.	Moneta di Knidos.	128
Figura 12.18.	Moneta di Prokonnesos.	128
Figura 12.19.	Moneta di Phalanna.	128
Figura 12.20.	Moneta di Corinto.	128

Figura 12.21.	Moneta di Siracusa.	128
14. Cenni di epigrafia monetale in Sicilia — Sara Quartarone		
Figura 14.1.	Tipologie di legende monetali in lingua greca e latina della Sicilia.	142
Figura 14.2.	SNG ANS 474–476. Sicilia, Siracusa. Emidracma in bronzo, (D/) ZEYΣ EAEY ΘEΠIOΣ, testa di Zeus Eleutherios con corona d'alloro a d., (R/) ΣYPAKO ΣIΩN, fulmine verticale alato e chicco d'orzo a s., c. 339–334 a.C.	142
Figura 14.3.	SNG ANS 1040. Sicilia, Siracusa. Moneta in argento da 12 litre, (D/) testa di Atena con elmo corinzio a s., (R/) ΣYPAKOΣIΩN, Artemide stante che scocca una freccia e cane balzante ai suoi piedi a s., nel campo EA, 214–212 a.C.	142
15. Alaisa/Halaesa (Sicily) — Mariangela Puglisi		
Figure 15.1.	Map of ancient mints of Sicily and location of Alaisa/Halaesa.	150
Figure 15.2.	Bronze coin from the mint of Syracuse, Hiero II (Inv. HAL-M 18/2): 6.41 g, 19 mm).	150
Figure 15.3.	Bronze coin from the mint of Rhegium (Inv. HAL-M 19/7: 7.04 g, 24–26 mm).	150
Figure 15.4.	Bronze coin from the mint of Syracuse, Hiero II (Inv. HAL-F 19/18: 5.84 g; 19 mm).	150
Figure 15.5.	Bronze coin from the mint of Messana, Mamertines (Inv. HAL-F 18/5: 9.07 g; 22 mm).	150
Figure 15.6.	Bronze coin from the mint of Catane (Inv. HAL-F 18/4: 3.30 g; 15 mm).	150
Figure 15.7.	Bronze coin from the mint of Halaesa (Inv. HAL-F 18/2: 3.04 g; 19–20 mm).	150
Figure 15.8.	Bronze coin from the mint of Halaesa (Inv. HAL-F 19/20: 4.62 g; 18–22.5 mm).	150
Figure 15.9.	Bronze coin from the mint of Halaesa (Inv. HAL-F 18/12: 5.39 g; 17–19 mm).	150
Figure 15.10.	Roman Republican denarius, 85 BC, Lucius Iulius Bursio (Inv. HAL-F 18/3: 3.82 g; 20 mm).	150
18. The Bronze Coinage of Hieronymus — Benedetto Carroccio		
Figure 18.1.	Ex Leu 13, 27 May 2023 n. 33.	170
Figure 18.2.	Syracuse inv. 77185.	170
Figure 18.3.	Syracuse inv. 77173.	170
Figure 18.4.	Agathocles, ex C.N.G. 35, 13 August 2001 n. 63696.	170
Figure 18.5.	Gelon II, Syracuse inv. 5718.	170
Figure 18.6.	Ex Vcoins 317, 10 November 2015 n. 57.	170
Figure 18.7.	Ex Carroccio 2004, tav. XXXVI A26.	170
Figure 18.8.	Ex C.N.G. el. 250, 23 February 2011 n. 15.	170
Figure 18.9.	Syracuse inv. 77199.	170
Figure 18.10.	Ex Vcoins numiscorner (May 2023).	170
Figure 18.11.	Syracuse inv. 77231.	170
Figure 18.12.	Syracuse inv. 77211.	170
Figure 18.13.	Ex C.N.G. 59, 2002 n. 6.	170
19. Coin Circulation in Lipari (Sicily) from the Greek to the Roman Period — Ludovica Di Masi		
Figure 19.1.1.	Map of the city from Bacci et al. 2009, 19.	178
Figure 19.1.2.	Provenance of the coins from the territory of Lipari.	178
Figure 19.2.1.	Chronological quantitative distribution of the coins in the Greek time.	179
Figure 19.2.2.	Mints attested in Lipari in the Greek time.	179
Figure 19.3.1.	Chronological quantitative distribution of the coins in the Roman Imperial time.	180
Figure 19.3.2.	Mints attested in Lipari in the Roman Imperial time.	181
Figure 19.4.1.	Lipara, Uncia, 0.702 g, 13.6 mm. Museo Archeologico 'L. Bernabò Brea' di Lipari.	182
Figure 19.4.2.	Lipara, Hemilitron, 2.804 g, 18.3 mm. Museo Archeologico 'L. Bernabò Brea' di Lipari.	182
Figure 19.4.3.	Lipara, Tetras, 1.959 g, 15.4 mm. Museo Archeologico 'L. Bernabò Brea' di Lipari.	182
Figure 19.4.4.	Lipara, Hemilitron, 1.359 g, 14 mm. Museo Archeologico 'L. Bernabò Brea' di Lipari.	182
Figure 19.4.5.	Tauromenion, Litra, 6.566 g, 22 mm. Museo Archeologico 'L. Bernabò Brea' di Lipari.	182
Figure 19.4.6.	Carthage, AE, 3.940 g, 19.8 mm. Museo Archeologico 'L. Bernabò Brea' di Lipari.	182
Figure 19.4.7.	Rhegium, AE, 5.679 g, 19 mm. Museo Archeologico 'L. Bernabò Brea' di Lipari.	182
Figure 19.4.8.	Lipara, AE, 3.588 g, 17.4 mm. Museo Archeologico 'L. Bernabò Brea' di Lipari.	182
Figure 19.4.9.	Syracusae, AE, 5.323 g, 18.6 mm. Museo Archeologico 'L. Bernabò Brea' di Lipari.	182
Figure 19.4.10.	Capua, AE, 8.364 g, 19 mm. Museo Archeologico 'L. Bernabò Brea' di Lipari.	182

Figure 19.4.11.	Messana, Pentonkion, 8.330 g, 26 mm. Museo Archeologico 'L. Bernabò Brea' di Lipari.	182
Figure 19.4.12.	Messana, Hemilitron, 8.037 g, 23 mm. Museo Archeologico 'L. Bernabò Brea' di Lipari.	182
Figure 19.4.13.	Leontini?, AE, 0.881 g, 10.5 mm. Museo Archeologico 'L. Bernabò Brea' di Lipari.	182
Figure 19.4.14.	Alontion, AE, 8.17 g, 20 mm. Museo Archeologico 'L. Bernabò Brea' di Lipari.	182
Figure 19.4.15.	Alontion, AE, 5.818 g, 17 mm. Museo Archeologico 'L. Bernabò Brea' di Lipari.	182
Figure 19.4.16.	Tyndaris, AE, 1.398 g, 18.3 mm. Museo Archeologico 'L. Bernabò Brea' di Lipari.	184
Figure 19.4.17.	Halaesa, AE, 5.229 g, 18 mm. Museo Archeologico 'L. Bernabò Brea' di Lipari.	184
Figure 19.4.18.	Halaesa, Tetras, 1.9333 g, 17.9 mm. Museo Archeologico 'L. Bernabò Brea' di Lipari.	184
Figure 19.4.19.	Lipara, AE, 6.625 g, 19.5 mm. Museo Archeologico 'L. Bernabò Brea' di Lipari.	184
Figure 19.4.20.	Sicilian mint, As, 9.518 g, 29–16 mm. Museo Archeologico 'L. Bernabò Brea' di Lipari.	184
Figure 19.4.21.	Augustus, As, 9.711 g, 32 mm. Museo Archeologico 'L. Bernabò Brea' di Lipari.	184
Figure 19.4.22.	Tiberius, As, 8.720 g, 26 mm. Museo Archeologico 'L. Bernabò Brea' di Lipari.	184
Figure 19.4.23.	Vespasian, Dupondius, 13.107 g, 27.5 mm.	184
Figure 19.4.24.	Hadrian, As, 8.571 g, 25 mm. Museo Archeologico 'L. Bernabò Brea' di Lipari.	184
Figure 19.4.25.	Antoninus Pius, Sestertius, 20.951 g, 30.5 mm. Museo Archeologico 'L. Bernabò Brea' di Lipari.	184
Figure 19.4.26.	Marcus Aurelius, Sestertius, 18.920 g, 30 mm. Museo Archeologico 'L. Bernabò Brea' di Lipari.	184
Figure 19.4.27.	Commodus, As, 8.293 g, 23 mm. Museo Archeologico 'L. Bernabò Brea' di Lipari.	184
Figure 19.4.28.	Severus Alexander, As, 9.532 g, 24 mm. Museo Archeologico 'L. Bernabò Brea' di Lipari.	184
Figure 19.4.29.	Gordian III, Sestertius, 17.644 g, 28 mm. Museo Archeologico 'L. Bernabò Brea' di Lipari.	184
Figure 19.4.30.	Claudius II, Antoninianus, 1.620 g, 17.5 mm. Museo Archeologico 'L. Bernabò Brea' di Lipari.	184
Figure 19.4.31.	Aurelian, Antoninianus, 1.513 g, 17.9 mm. Museo Archeologico 'L. Bernabò Brea' di Lipari.	186
Figure 19.4.32.	Constantine I, Folles, 3.638 g, 19.5 mm. Museo Archeologico 'L. Bernabò Brea' di Lipari.	186
Figure 19.4.33.	Constantine I, Folles, 2.832 g, 18.5 mm. Museo Archeologico 'L. Bernabò Brea' di Lipari.	186
Figure 19.4.34.	Constantine I, Folles, 1.594 g, 15.4 mm. Museo Archeologico 'L. Bernabò Brea' di Lipari.	186
Figure 19.4.35.	Constans, AE4, 2.110 g, 17 mm. Museo Archeologico 'L. Bernabò Brea' di Lipari.	186
Figure 19.4.36.	Constans, AE4, 2.180 g, 18 mm. Museo Archeologico 'L. Bernabò Brea' di Lipari.	186
Figure 19.4.37.	Jovian, AE3, 0.933 g, 17 mm. Museo Archeologico 'L. Bernabò Brea' di Lipari.	186
Figure 19.4.38.	Valentinian I, AE3, 2.154 g, 11.1 mm. Museo Archeologico 'L. Bernabò Brea' di Lipari.	186
Figure 19.4.39.	Arcadius, AE4, 0.875 g, 18 mm. Museo Archeologico 'L. Bernabò Brea' di Lipari.	186
Figure 19.4.40.	Valentinian III, AE, 1.342 g, 14.2 mm. Museo Archeologico 'L. Bernabò Brea' di Lipari.	186

21. The Hoard of Cala Tramontana in Pantelleria (Trapani, Sicily) — *Lavinia Sole*

Figure 21.1.	Pantelleria. Aerophotogrammetric satellite image.	200
Figure 21.2.	Table of the variants of head of Kore/horse's head series with symbols.	200
Figure 21.3.	Sardinia (260–240 BC). Large bronze with head of Kore/horse's head and two ears of corn.	200
Figure 21.4.	Table of the variants of head of Kore/horse's head series with letters.	200
Figure 21.5.	Sardinia (260–240 BC). Large bronze with head of Kore/horse's head; behind, nun; in front, 'alef.	200
Figure 21.6.	Table of the variants of head of Kore/horse's head series with symbols and letters.	202
Figure 21.7.	Sardinia (260–240 BC). Large bronze with head of Kore; behind, pellet in crescent/horse's head; in front, mem.	202
Figure 21.8.	Sardinia (260–240 BC). Large bronze with head of Kore/horse's head with flan cut deeply.	202
Figure 21.9.	Sardinia (260–240 BC). Large bronze with head of Kore/horse's head with trace of a pin fixing the die.	202
Figure 21.10.	Pantelleria, Cala Tramontana with indication of the archaeological sites: in red the 'site 2' from which the hoard comes.	202

22. Ancient Coins and Hoards from the Carevi Kuli Settlement, Strumica — *Sanja Bitrak*

Figure 22.1.	View of the Carevi Kuli site, Strumica.	210
Figure 22.2.	Maroneia, AE, c. 400–350 BC, 3.02 g.	210
Figure 22.3.	Amyntas III, AE, 381–369 BC, 4.26 g.	210
Figure 22.4.	Alexander III, AE, c. 336–323 BC, 5.29 g.	210

Figure 22.5.	Perseus, AE, 179–168 BC, 6.62 g.	210
Figure 22.6.	Thessalonica, AE, 187–168 BC, 6.61 g.	210
Figure 22.7.	Amphipolis, AE, 187–168 BC, 3.75 g.	210
Figure 22.8.	L. Fulcinus, AE, 168–166 BC, 8.49 g.	210
Figure 22.10.	Caligula, 2 Assaria, Thessalonica, AD 37–41, 10.04 g.	210
Figure 22.11.	Philippi, AE, first century AD, 3.44 g.	210
Figure 22.12.	Trajan, Denomination II, Stobi, AD 98–99, 7.55 g.	210
Figure 22.13.	Hadrian, AE, Thessalonica, AD 117–138, 9.69 g.	210
Figure 22.14.	Pseudo-autonomous coin from the time of Gordian III, AE, Beroea, AD 238–244, 10.89 g.	210
Figure 22.9.	Hoard IV with 29 coins of the Macedonian cities, burial with cremation from Hellenistic period ‘Južen rid’, Carevi Kuli, Strumica.	212
Figure 22.15.	Hadrian, Denarius, Rome, AD 125–128, 3.16 g.	212
Figure 22.16.	Licinius I, Nummus (AE ₃), Thessalonica, AD 312–315, 4.36 g.	212
Figure 22.17.	Coins of the Classical and the Hellenistic periods from the Carevi Kuli site.	212
Figure 22.18.	Presence of Roman Imperial and Roman Provincial coins at the Carevi Kuli site.	212
Figure 22.19.	Map of Belasic region.	214
Table 22.1.	Hoards from second and first century BC.	214
Table 22.2.	Review of the identified and elaborated coins from the Roman Imperial period.	215
Table 22.3.	Review of the identified and elaborated coins from the Late Roman period.	215
Table 22.4.	Hoards from the third to the fifth century AD.	216
23. The Drachms of Dyrrhachium and Apollonia — <i>Silviu Istrate Purece</i>		
Figure 23.1.	Miercurea Sibiului hoard’s finding context (four coin groups: 399, 339A, 339 B, 339 C) .	222
Figure 23.2.	Tălmăcel hoard.	222
Table 23.1	Roman republican denarii from the Miercurea Sibiului hoard.	220
24. Numismatic Evidence from Ancient Cassandreia at Chalcidice, Northern Greece — <i>Eleni K. Klinaki and Antonia G. Nikolakopoulou</i>		
Figure 24.1.	The distribution of coins by issuing authorities of Hellenistic Cassandreia.	231
Figure 24.2.	The hoard ‘Nea Potidaea 2011B’.	231
Figure 24.3.	‘Apollo’ bronzes overstruck on Ptolemy Ceraunus’ coins.	232
Figure 24.4.	Obverse dies of ‘Apollo’ bronzes, first group.	232
Figure 24.5.	Obverse dies of ‘Apollo’ bronzes, second group.	232
Figure 24.6.	Obverse dies of ‘Apollo’ bronzes with idealistic figures.	232
Figure 24.7.	Obverse dies of ‘Apollo’ bronzes with realistic figures.	232
Figure 24.8.	Reverse dies of ‘Apollo’ bronzes.	232
25. Archaeological, Historical, and Technological (XRF Analysis) Aspects of Early Silver Coins and Coin Hoards from Southwestern Thrace — <i>Nina Hadzhieva</i>		
Figure 25.1.	‘Skrebatno – I’ (IGCH 720). Elemental composition and ratio between elements.	241
Figure 25.2.	‘Skrebatno – II’ (CCCHBulg IV). Elemental composition and ratio between elements.	242
Figure 25.3.	‘Skrebatno – II’ (CCCHBulg IV). Elemental composition and ratio between elements of the examined four coins (Fourre).	242
Figure 25.4.	Analyzed coins from coin hoard ‘Skrebatno – I’. IGCH 720, pp. 94–104.	243
Figure 25.5.	Analyzed coins from coin hoard ‘Skrebatno – II’. CCCHBulg IV, pp. 104–14.	244
Table 25.1.	‘Skrebatno – I’ (IGCH 720). Elemental composition (in mass %) of the examined twenty-five coins.	245
Table 25.2.	‘Skrebatno – II’ (CCCHBulg IV). Elemental composition (in mass %) of the examined twenty-five coins.	246
26. The Hemidrachms of the Thracian Chersonese and Their Political Environment — <i>Julia Tzvetkova</i>		
Figure 26.1.	Distribution map of the coin hoards with hemidrachms of the Thracian Chersonese.	253
Figure 26.2.	Distribution charts of the symbols on coins of the Thracian Chersonese.	254
Figure 26.3.	Monograms on coins of the Thracian Chersonese.	254
Figure 26.4.	Distribution charts of the monogram types on coins of the Thracian Chersonese.	255

Figure 26.5.	Map of the coin volume in the fourth century hoards from Thrace, after IGCH.	256
28. The Demeter Coinages of Byzantium and Chalcedon — Constantin Marinescu		
Figure 28.1a.	Demeter of Byzantium issued by magistrate Thrasimedeos. American Numismatic Society, New York. ANS 1966.75.60.	272
Figure 28.1b.	Demeter of Chalcedon with two controls but no magistrate name. Münzkabinett, Staatliche Museen zu Berlin, 18282006.	272
Figure 28.2a.	Demeter of Byzantium issued by magistrate Athanaionos. American Numismatic Society, New York. ANS 1954.39.1.	272
Figure 28.2b.	Lysimachus tetradrachm of Byzantium with identical control to that on Demeter in Fig. 28.2a. Baldwin's Auctions Ltd., Dmitry Markov Coins & Medals, et al., New York Sale XXIII, lot 7.	272
Figure 28.3a.	Demeter of Byzantium issued by magistrate Olympiodoros. Gorny & Mosch 216, lot 2197.	272
Figure 28.3b.	Lysimachus tetradrachm of Byzantium with similar control to that on Demeter in Fig. 28.3a.	272
Figure 28.3c.	Demeter of Byzantium issued by magistrate Olympiodoros. Stack's (15 January 2007), lot 4068.	272
Figure 28.3d.	Lysimachus tetradrachm of Byzantium with similar control to that on Demeter in Fig. 28.3c. Roma Numismatics, E-Sale 1, lot 151.	272
Figure 28.3e.	Demeter of Byzantium (small denomination) issued by magistrate Olympiodoros. American Numismatic Society, New York. ANS 1966.75.62.	272
Figure 28.3f.	Lysimachus tetradrachm of Byzantium with related control to that on Demeter in Fig. 28.3e. American Numismatic Society, New York. ANS 1944.100.81476.	272
Figure 28.4.	Alexander tetradrachm with Byzantium countermark with control related to coins in Figs 28.3a–28.3b. Roman Numismatics, E-Sale 66, lot 9 (ex Stancomb Collection).	274
Figure 28.5a.	Demeter of Chalcedon with two controls. British Museum, London. Image from SNG Black Sea, plate V, 133.	274
Figure 28.5b.	Lysimachus tetradrachm with one control of Demeter in Fig. 28.5a. Classical Numismatic Group 27 (29 September 1993), lot 481.	274
Figure 28.6a.	Lysimachus tetradrachm of Byzantium with control using a lunate sigma. National Numismatic Collection, De Nederlandsche Bank, Amsterdam. Inv. GR-02319.	274
Figure 28.6b.	Lysimachus drachm of Alexander type with countermark using the same control as the tetradrachm in Fig. 28.6a. American Numismatic Society, New York. ANS 1944.100.85801.	274
Figure 28.7.	Lysimachus tetradrachm of Byzantium countermarked by Chalcedon. Bibliothèque nationale de France, Paris. Inv. Y21587 (= Corpus Nummorum 26630).	274
Figure 28.8.	Dated Alexander tetradrachm of Aradus countermarked by Byzantium. Private collection.	274
30. The Silver Coinages of Achaian and Aitolian Federal States — Catherine Grandjean, Maryse Blet-Lemarquand, and Eleni Papaefthymiou		
Figure 30.1.	Achaian <i>Koinon</i> , Period 2 (Early Group), Megalopolis, 14.5 mm; 2.37 g; 8 h, CNG, Electronic Auction 392, 1/3/2017, lot 223. Agrinion 471.	288
Figure 30.2.	Achaian <i>Koinon</i> , Periods 1 (Early) and 2 (Late): metal quality characterized by the silver and copper contents, in per cent.	288
Figure 30.3.	Achaian <i>Koinon</i> , Periods 1 (Early) and 2 (Late), Boiotian <i>Koinon</i> and Athenian coins: silver 'stocks' characterized by the bismuth versus the gold contents, in per cent.	288
Figure 30.4.	Achaian <i>Koinon</i> , Period 3, Sparta, 13.5 mm; 2.17 g; 10 h. Auction LHS 96, 8–9 May 2006, Coins of Peloponnesus. The BCD Collection, 862.	290
Figure 30.5.	Silver contents for the Final Group of the Achaian <i>Koinon</i> silver coins.	290
Figure 30.6.	Bi/Ag ratios against Au/Ag ratios for the Final Achaian <i>Koinon</i> coins, compared with contemporaneous civic issues and with first century BC coins.	290
Figure 30.7.	Bi/Ag ratios against Au/Ag ratios for the Final Achaian <i>Koinon</i> coins and for civic coins (KOINON project data) compared with Mark Antony's legionary denarii, 32 BC (data from Butcher and Ponting 2014).	292
Figure 30.8.	<i>Nomos</i> 24, 22 May 2022, lot 90, 16 mm, 2.52 g, 6 h.	292
Figure 30.9.	Achaian and Aitolian <i>Koina</i> : metal quality characterized by the silver contents, in per cent.	294
Figure 30.10.	Achaian and Aitolian <i>Koina</i> : silver 'stocks' characterized by the bismuth versus the gold contents, in per cent.	294

Table 30.1.	Metrological study carried out for 1283 Achaian <i>Koinon</i> silver coins.	285
Table 30.2.	Silver contents of the Achaian <i>Koinon</i> silver coins in per cent.	285
Table 30.3.	Metrological study carried out for the Final Group of the Achaian <i>Koinon</i> silver coins.	286
Table 30.4.	Silver and copper contents for the Final Group of the Achaian <i>Koinon</i> silver coins in per cent.	286
31. 'Put Money in thy Purse' — Alessandro Cavagna		
Figure 31.1.	Sv. 997ε/Lorber B404.	301
Figure 31.2.	Sv. 999ιδ/Lorber B406.	301
Figure 31.3.	Sv. 1000μ/Lorber B407.	301
32. Cretan Coinage — Giorgia Capra		
Figure 32.1.	Coins in Cretan hoards – Fourth century BC (hoards IGCH 1, IGCH 54, IGCH 104, CH IX 85, CH X 31, CH X 32, IGCH 86, IGCH 109).	311
Figure 32.2.	Coins in Cretan hoards – Third century BC (hoards IGCH 151, IGCH 152, IGCH 153, IGCH 154, CH IX 163, CH IX 164, CH IX 165).	311
Figure 32.3.	Average number of mints per hoard.	312
Figure 32.4.	Coins in Cretan hoards – Second century BC (hoards CH VIII 349, IGCH 227, IGCH 252, IGCH 253, IGCH 254, IGCH 299, IGCH 300, IGCH 318, CH VIII 565).	312
Figure 32.5.	Coins in Cretan hoards – First century BC (hoards IGCH-330, CH X 162, IGCH-331, IGCH-332, IGCH-338, IGCH-350, IGCH-352).	313
Figure 32.6.	Map of Cretan coin hoards.	313
Figure 32.7.	Map of Cretan mints.	314
Table 32.1.	Cretan hoards: sixth–first century BC.	310
33. Politics and War on Cretan Gold Coinage (Fourth–Third Century BC) — Federico Carbone and Vassiliki E. Stefanaki		
Figure 33.1.	Hyrtakina/Lisos, gold obol. Bibliothèque nationale de France, département Monnaies, médailles et antiques, L 2545.	322
Figure 33.2.	Hyrtakina and Lisos?, silver obol. J. Elsen & ses Fils, Auction 94, December 15, 2007, lot 228.	322
Figure 33.3.	Gortyn, gold stater. Bibliothèque nationale de France, département Monnaies, médailles et antiques, FG 314.	322
Figure 33.4.	Gortyn, silver drachm. Gorny & Mosch, Giessener Münzhandlung, Auction 236, March 7, 2016, lot 208.	322
Figure 33.5.	Gortyn, silver triobol. Künker, Auction 136, March 10, 2008, <i>Antike Münzen der Insel Kreta, Die Sammlung Dr Burkhard Traeger</i> , lot 90.	322
Figure 33.6.	Gortyn, silver didrachm. The New York Sale, Auction 27, January 4, 2012, <i>The Prospero Collection of Ancient Greek Coins</i> , lot 403.	322
Figure 33.7.	Gortyn, gold half-stater. Classical Numismatic Group, Triton XIX, January 5, 2016, lot 2042.	322
Figure 33.8.	Gortyn, bronze coin. Bibliothèque nationale de France, département Monnaies, médailles et antiques, 1966.453.	322
Figure 33.9.	Gortyn, bronze coin. Numismatik Naumann, Auction 61, January 7, 2018, lot 119.	322
34. The Coinage of Ancient Aptera — Manolis Marinakis		
Figure 34.1.	Type 1a. Obv. Head of Artemis r./R. Ptolioikos. AR, 11.28 g.	332
Figure 34.2.	Type 1b. Obv. Head of Artemis r./R. Ptolioikos. AR, 11.37 g.	332
Figure 34.3.	Type 1c. Obv. Head of Artemis r./R. Ptolioikos. AR, 10.92 g.	332
Figure 34.4.	Type 2. Obv. Artemis head r./R. Bow. AR, 2.63 g.	332
Figure 34.5.	Type 3. Obv. Artemis head r./R. Seated Apollo. AR, 2.74 g.	332
Figure 34.6.	Type 4. Obv. Artemis head r./R. Warrior. AR, 2.70 g.	332
Figure 34.7.	Type 5. Obv. Apollo head r./R. Warrior standing. AR, 9.30 g.	332
Figure 34.8.	Type 6. Obv. Zeus head r./R. Hermes. AR, 2.41 g.	332
Figure 34.9.	Type 1a. Obv. Head of Artemis r. R. Bow. AE, 1.87 g.	334
Figure 34.10.	Type 1b. Obv. Head of Artemis r./R. Bow and arrow. AE, 1.93 g.	334

Figure 34.11.	Type 2. Obv. Head of Artemis r./R. Bee. AE, 2.05 g.	334
Figure 34.12.	Type 3. Obv. Head of Artemis r./R. Dove. AE, 2.12 g.	334
Figure 34.13.	Type 4a. Obv. Head of Artemis with diadem r./R. Torch. AE, 2.42 g.	334
Figure 34.14.	Type 4b. Obv. Similar head of Artemis l. R. Torch. AE, 5.73 g.	334
Figure 34.15.	Type 4c. Obv. Similar head l./R. Torch and arrow. AE, 2.26 g.	334
Figure 34.16.	Type 5. Obv. Head of Artemis with stephane r./R. 3 crossed torches. AE, 2.35 g.	334
Figure 34.17.	Type 6. Obv. Head of Artemis with stephane r./R. Lyre. AE, 2.34 g.	334
Figure 34.18.	Type 7. Obv. Similar head r./R. Monogram. AE, 2.30 g.	334
Figure 34.19.	Type 8. Obv. Head of goddess with polos r. (Hera?)/R. Bee. AE, 2.27 g.	334
Figure 34.20.	Type 9. Obv. As above./R. Monogram. AE, 3.54 g.	334
Figure 34.21.	Type 10. Obv. Head of goddess with polos r. (Hera?)/R. Warrior advancing r., holding spear and shield. Inscription ΑΠΤΑΡΑ over the polos. AE, 4.06 g.	334
Figure 34.22.	Type 10. Obv. Head of goddess r./R. Warrior advancing r., holding spear and shield. AE, 2.99 g.	334
Figure 34.23.	Type 11. Obv. Apollo head with long hair r./R. Warrior standing frontally. AE, 2.68 g.	334
Figure 34.24.	Type 12. Obv. Apollo head r./R. Lyre. AE, 2.18 g.	334
Figure 34.25.	Type 13. Obv. Apollo head r./R. Bow. AE.	334
Figure 34.26.	Type 14. Obv. Apollo head r./R. Torch. AE, 1.31 g.	334
Figure 34.27.	Type 15. Obv. Athena head r./R. Torch. AE, 4.16 g.	334

35. The Coinage of Lyttos/Crete — *Katerina Panagopoulou*

Figure 35.1.		344
1.	Lyttos, AR Stater.	344
2.	Lyttos, AR Stater, 11.3 g, 22.34 mm, 9 h.	344
3.	Lyttos, AR Stater, 300/270 BC, 10.78 g.	344
4.	Lyttos, AR Stater, 330/300 BC.	344
5.	Lyttos, AR Stater, 10.26 g, 24.5 mm, 11 h.	344
6.	Lyttos, Silver Stater, 330/300 BC.	344
7.	Lyttos, Silver Stater, 450–300 BC.	344
8.	Lyttos, AR Stater, 10.7 g, 25.28 mm, 9 h.	344
9.	Lyttos, AR Stater, 10.3 g, 23.86 mm, 12 h.	344
10.	Lyttos, AR Stater, 300/270 BC, 10.78 g.	344
11.	Lyttos, AR Tetradrachm, 2.80 g, 28.55 mm.	344
12.	Lyttos, AE, 250/221 BC, 5.17 g.	344
13.	Lyttos, AE, 15.3 mm.	344
14.	Lyttos, AE, 250/221 BC, 5.17 g, 25 mm.	344
15.	Lyttos, AE, 125–100 BC, 2.47 g.	344
16.	Lyttos, Bronze, Gaius Caligula, 37–41 BC and Germanicus, 6.87 g, 21 mm.	344
Figure 35.2.		346
17.	Praissos, AR Stater, 11.56 g.	346
18.	Chersonessos, AE, 3.30 g, 18 mm.	346
19.	Knossos, AE, 40/30 BC, 11.46 g, 22 mm.	346
20.	Sikyon, AR Stater, 12.09 g, 31 mm.	346
21.	Elis, AR Stater, 4.75 g, 17 mm, 12 h.	346
22.	Hierapytna, 11.27 g, 20 mm, 8 h.	346
23.	Aitolian League 323–300 BC, 2.64 g, 17 mm, 6 h.	346
24.	Lyttos, AE.	346
25.	Phokis, AR Obol, 0.92 g, 3 h.	346
26.	Phokis, AR Obol, 0.64 g, 8 h.	346
27.	Phokis, AR Obol, 1.0 g, 9 h.	346
28.	Phokis, AR Obol, 0.93 g, 7 h.	346
29.	The Kalydonian Boar Hunt on the François vase – upper neck frieze.	346
30.	Chersonessos, Bronze, 250 BC.	346
Table 35.1.	Lyttos: coin hoards with silver and with bronze coins.	343

36. Coin Types in Georgia and the Graeco-Roman World — Natia Phiphia

Figure 36.1.	Second type hemidrachm. Simon Janashia Museum of Georgia – QF. (Main Fund of the Georgian Coins, Numismatic Collection, Simon Janashia Museum of Georgia) N° 4024.	358
Figure 36.2.	Second type didrachm. Simon Janashia Museum of Georgia – QF. (Main Fund of the Georgian Coins, Numismatic Collection, Simon Janashia Museum of Georgia) N° 1.	358
Figure 36.3.	The so-called hemitetartemorion. Simon Janashia Museum of Georgia – GF. (Fund of Treasury, Numismatic Collection, Simon Janashia Museum of Georgia) N° 18798.	358
Figure 36.4.	First type didrachm. Simon Janashia Museum of Georgia – QF. (Main Fund of the Georgian Coins, Numismatic Collection, Simon Janashia Museum of Georgia) N° 1629.	358
Figure 36.5.	First type hemidrachm. Simon Janashia Museum of Georgia – GF. (Fund of Treasury, Numismatic Collection, Simon Janashia Museum of Georgia) N° 4810.	358
Figure 36.6.	The so-called tetradrachm. Simon Janashia Museum of Georgia – QF. (Main Fund of the Georgian Coins, Numismatic Collection, Simon Janashia Museum of Georgia) N° 3.	358
Figure 36.7.	Municipal copper coin of Dioscurias. Simon Janashia Museum of Georgia – QF. (Main Fund of the Georgian Coins, Numismatic Collection, Simon Janashia Museum of Georgia) N° 4030.	358

37. Flan Fabrication and Minting Preparation for Copper-Alloy Coins in Antiquity — Jean Hourmouziadis and Nikolai Ilieff

Figure 37.1.	Mint-Poleis of the Pontic Kingdom.	364
Figure 37.2.	Hand-Saw Traces – Coin & Experiment.	364
Figure 37.3.	Hand-Saw Marks Coin Types – Identification Statistics.	365
Figure 37.4.	Hand-Saw Marks Mints – Identification Statistics.	365
Figure 37.5.	Mithradates VI Military Expeditions – Minting Technology Transfer & Dating.	366
Figure 37.6.	Hand-Sawed Flans – Bithynian Kingdom 230–149 BC.	366
Figure 37.7.	Mints and Hand-Sawed Flans – Roman Province Pontus–Bithynia.	367
Figure 37.8.	Machine-Saw Grooves – Roman Provincial Flans.	367
Figure 37.9.	Machine-Saw Grooves – Comparison with Modern Experiment.	368
Figure 37.10.	Roman East – Mints Using Machine-Sawed Flans.	368

38. Production Characteristics of Archaic Drachms Depicting the Gorgoneion and Problems with their Attribution to Parion — Ed Snible

Figure 38.1.	Weight of 54 eBay specimens recorded by Coryssa.	376
Figure 38.2.	Number of examples by weight.	376
Figure 38.3.	Composite image by the author.	376
Figure 38.4.	Composite image by the author.	378
Figure 38.5.	Composite image by the author.	378
Figure 38.6.	The 3.93 g. 1975.218.5.	378
Figure 38.7.	Composite image by the author.	378

39. A New Obol of Hippias of Athens — Koray Konuk

Figure 39.1.	Obols of Hippias.	385
Figure 39.2.	A satellite image of the location of Sigeion and the entrance of the Hellespont.	385

40. Tisna in Aiolis and its Coinage — Dinçer Savaş Lenger

Figure 40.1.	The first series of Tisna bronzes.	390
Figure 40.3.	The third series Tisna bronzes.	390
Figure 40.2.	The second series Tisna bronzes.	390
Figure 40.4.	The fourth series Tisna bronzes.	390

42. The Coinage of Erythrai and Historia Numorum Online — Ersin Bakış

Figure 42.1.	General view of Ildırı Village/Erythrai.	400
Figure 42.2.	EL Hemistater of Erythrai.	400
Figure 42.3.	Silver coin types of Erythrai of the Classical Period.	400
Figure 42.4.	Earliest bronze coins of Erythrai.	400

Figure 42.5.	Various obverses of Hellenistic Period Erythrai coinage.	400
43. FAΛFET and KVKAΛIM — Wolfgang Fischer-Bossert		
Figure 43.1.	EL Trité (KVKAΛIM), private collection – 4.678 g, width 13 mm.	406
Figure 43.2.	EL Trité (KVKAΛIM), Selçuk Müze, inv. 98–43–94 – 4.758 g, width 12 mm.	406
Figure 43.3.	EL Hecte (KVKAΛIM), New York, American Numismatic Society 1960.139.27 – 2.35 g, width 9.5 mm.	406
Figure 43.4.	EL Hecte (FAΛFET), London, British Museum 1840.1215.39 – 2.39 g, width 10 mm.	406
Figure 43.5.	EL Hecte (KVKAΛIM), Oxford, Ashmolean Museum – 2.41 g, width 9.5 mm.	406
Figure 43.6.	Die-links I.	406
Figure 43.7.	Die-links II.	406
44. Les monnaies hellénistiques de bronze d'Acmonea (Phrygie) — Barbara Hiltmann		
Figure 44.1.	Carte de la Phrygie centrale et du sud.	418
Figure 44.2.	Type 1 : Av. Buste d'Athéna à dr., portant l'égide et un casque attique avec huppe ; Rv. AKMON(ΕΩΝ) au-dessus ; ΘΕΟΔΟΤΟ(Σ)/ΙΕΡΟΚΛΕΟ(Σ) au-dessous ; Aigle volant, de face, les ailes déployées, au-dessus d'un foudre ; deux étoiles de part et d'autre.	418
Figure 44.3.	Type 2 : Av. Tête de Zeus à dr., lauré ou couronné de chêne ; Rv. AKMON à dr., Τ(Ι) ΜΟΘΕ/ΜΗΤΡΟ à g. ; Asclépios debout de face, portant un himation sur ses hanches et sur l'épaule g., reposant son bras g. sur un bâton en forme de serpent.	418
Figure 44.4.	Type 3 : Av. Tête de Cybèle ou de la déesse de la Cité à dr., tourelée et voilée ; Rv. (Α) ΚΜΟΝ à dr., ΤΙΜΟΘΕΟ/ΜΕΝΕΛΑΟ à g. ; Artémis portant un long chiton et avançant à dr., tenant un arc de la main g. et tirant de la main dr. une flèche de son carquois, sur l'épaule ; derrière elle, un cerf.	418
Figure 44.5.	Type 1 d'Apamée : Av. Buste d'Athéna à dr., avec une égide et un casque corinthien ; Rv. ΑΠΙΑΜΕΩΝ au-dessus ; nom du monétaire au-dessous ; Aigle volant à dr., au-dessus d'un motif en forme de méandre ; au-dessus, étoile ; de chaque côté, une étoile surmontée d'un pilos.	418
Figure 44.6.	Type 2 d'Apamée : Tête de Zeus à dr., lauré ou couronné de chêne ; Rv. ΑΠΙΑΜΕΩΝ à dr. ; nom du monétaire à g. ; Statue de culte de l'Artémis Anaitis.	418
Figure 44.7.	Type 3 d'Apamée : Av. Buste d'Artémis à dr. portant une couronne tourelée ; Rv. ΑΠΙΑΜΕΩΝ à dr. ; nom du monétaire à g. ; Marsyas avançant à dr. au-dessus d'un motif en forme de méandre, jouant de la double-flûte.	418
Figure 44.8.	Type 4 d'Apamée : Av. Tête laurée de Zeus à dr., grènetis ; Rv. ΑΠΙΑΜΕΩΝ à dr. ; nom du monétaire à g. Casque à cimier sur un motif en forme de Méandre.	418
Figure 44.9.	Contremarque en forme de tête de Janus sur un exemplaire du Type 1.	418
Tableau 44.1.	Système des dénominations hellénistiques d'Apamée.	420
Tableau 44.2.	Proposition du système des dénominations hellénistiques d'Acmonea.	420
Tableau 44.3.	Répartition des noms de personnes sur les monnaies hellénistiques d'Acmonea.	420
45. History and Coinage in Lycia — Wilhelm Müseler †		
Figure 45.1.	Phaselis, Stater c. 520/480 BC, 10.63 g, Heipp-Tamer 1993, Tf. I/10 = Müseler 2016, IX/3.	430
Figure 45.2.	Phoinike, Stater c. 480 BC, 9.58 g, SNG Keckman II, 425.	430
Figure 45.3.	Aperlai, Stater c. 480 BC, 9.91 g, Müseler 2016, III/48.	430
Figure 45.4.	Phellos/Antiphellos, Stater c. 480 BC, 9.97 g, Babelon, Traité II/2, 197 (BN btv1b853465ob).	430
Figure 45.5.	Patara, Stater c. 460 BC, 8.04 g, BMC 112 (BM 1844.0700.12).	430
Figure 45.6.	Kuprlli, Stater c. 480/470 BC, Zagaba (?), 10.84 g, Babelon, Traité II/2, 253 (BN btv1b8534687c).	430
Figure 45.7.	Kuprlli, Stater c. 470/450 BC, Limyra, 9.87 g, Müseler 2016, IV/17.	430
Figure 45.8.	Kuprlli, Stater c. 460/440 BC, Kandyba (?), 8.23 g, Müseler 2016, IV/38.	430
Figure 45.9.	Kuprlli, Stater c. 460/440 BC, Xanthos, 8.45 g, SNG v. Aulock 4155 (BM 1979.0101.739).	430
Figure 45.10.	Kuprlli, Third stater (Tetrobol) c. 460/440 BC, Tymnessos (?), 3.01 g, SNG v. Aulock 4153 = Müseler 2016, IV/23.	430
Figure 45.11.	Kheriga, Stater c. 440/430 BC, Tymnessos, 8.48 g, SNG Cop Suppl 441.	430
Figure 45.12.	Kherēi, Stater after 429 BC, Xanthos, 8.48 g, Müseler 2016, VI/38.	430

Figure 45.13.	Ddeneweale, Stater c. 400 BC, Xanthos, 8.51 g, Hurter 1979, 7 = Möseler 2016, VI/69.	430
Figure 45.14.	Erbina, Stater c. 400/395 BC, Telmessos, 8.39 g, Babelon, <i>Traité</i> II/2, 385 (Auction Leu Winterthur 6, 2019, 232).	430
Figure 45.15.	Wekhssere II, Stater c. 395 BC, Zagaba, 9.89 g, Olçay and Mørholm 1971, 1 = Möseler 2016, VII/1.	430
Figure 45.16.	Mithrapata, Stater c. 390/370 BC, Phellos, 9.73 g, Olçay and Mørholm 1971, 44 = Möseler 2016, VII/69.	430
Figure 45.17.	Wekhssere II, Stater c. 395/380 BC, Tlos, 8.52 g, Hurter 1979, 4 = Möseler 2016, VII/11.	430
Figure 45.18.	Wekhssere II, Stater c. 395/380 BC, Patara, 8.11 g, Möseler 2016, VII/49.	430
Figure 45.19.	Wekhssere II, Stater c. 395/380 BC, Xanthos, 8.10 g, Möseler 2016, VII/32.	430
Figure 45.20.	Mithrapata (?), Stater c. 380/370 BC, Patara, 8.71 g, Hurter 1979, 32 = Möseler 2016, VII/54.	430
Figure 45.21.	Perikle, Stater c. 370/360 BC, Phellos, 9.89 g, Möseler 2016, VIII/35.	430
Figure 45.22.	Satrap Tissaphernes, Stater 400/395 BC, Xanthos, 8.42 g, Hurter 1979, 6 = SNG Cop Suppl 460.	432
Figure 45.23.	Satrap Autophradates, Stater c. 361 BC, uncertain mint (Araxa?), 8.39 g, Kagan 2021, 28, 13.	432
Figure 45.24.	Satrap Maussollos of Caria (?), Sixth stater (Diobol) after 360 BC, Xanthos, 1.60 g, Möseler 2016, VIII/61.	432
Figure 45.25.	Phaselis, Stater 246/221 BC, Magistrate Nikanor, 9.84 g, Heipp-Tamer 1993, 156 (BN btv1b8524150b).	432
Figure 45.26.	Phaselis, Tetradrachm (Alexandreian) year 9 (213/212 BC) with Seleucid c/m, 16.30 g, Heipp-Tamer 1993, 211 (Möseler 2016, IX,17).	432
Figure 45.27.	Phaselis, Stater 167/130 BC, Magistrate Artemidoros, 11.04 g, Heipp-Tamer 1993, 337 var. (Möseler 2016, IX,22).	432
Figure 45.28.	Telmessos, Bronze before 197 BC, 4.15 g, Möseler 2016, X/15.	432
Figure 45.29.	Telmessos, Bronze 196/189 BC, 2.33 g, Möseler 2016, X/16.	432
Figure 45.30.	Red. Drachm of Rhodian type 188/167 BC with c/m Chimaera on obverse, 2.33 g, Auction M&M Deutschland 20, 2006, 87.	432
Figure 45.31.	Red. Drachm of Rhodian type with c/m Kithara on obverse, 2.15 g, SNG Keckman I, 594. See also Ashton 1987.	432
Figure 45.32.	'Lycian League', Bronze before 167 BC, uncertain mint (Xanthos?), 3.86 g, Troxell 1982, 1 (Auction Peus 368, 2001, 321).	432
Figure 45.33.	Lycian League, Drachm 167/81 BC, Xanthos, 2.81 g, Troxell 1982, 5 (Möseler 2016, XI/1).	432
Figure 45.34.	Lycian League, Drachm 167/81 BC, Tlos, 2.63 g, Troxell 1982, 12 (Möseler 2016, XI/6).	432
Figure 45.35.	(Lycian League) Drachm 167/81 BC, Olympos, 2.32 g, Troxell 1982, 42 (Möseler 2016, XI/22).	432
Figure 45.36.	Lycian League, Hemidrachm 44/18 BC, Masikytos district, 1.70 g.	432
Figure 45.37.	Lycian League, Bronze 27 BC/AD 40, Telmessos and Kragos district, 11.29 g, Troxell 1982, 180 (Möseler 2016, XI/56).	434
Figure 45.38.	Lycian League (Augustus), Drachm 27 BC/AD 40, Tlos and Kragos district, 3.51 g, Troxell 1982, 114 (Auction G&M 155, 2007, 222).	434
Figure 45.39.	Claudius, Drachm after 43 AD, Patara (?), 2.78 g, RPC I 3335 (Auction G&M 155, 2007, 426).	434
Figure 45.40.	Traianus, Drachm AD 98/103, Patara (?), 3.51 g, RPC III 2676 (Auction Roma E 84, 2021, 426).	434
Figure 45.41.	Gordianus III, Bronze AD 241/243, Arykanda, 17.48 g, RPC VII. 2 2290 (Auction Leu Winterthur 10, 2021, 2276).	434
Figure 45.42.	Sabinia Tranquillina, Bronze AD 241/243, Arykanda, RPC VII. 2 2295 (Auction Künker 288, 2017, 787).	434
Figure 45.43.	Mints in the Lycia.	434
47. Archaic and Classical Coinage of Cilicia — Jarosław Bodzek		
Figure 47.1.	Map of Cilicia with mints operating in the fifth and fourth centuries.	454
Figure 47.2.	Nagidus, AR, stater.	454
Figure 47.3.	Nagidus, AR, stater.	454
Figure 47.4.	Nagidus, AR, stater.	454
Figure 47.5.	Nagidus, AR, stater.	454

Figure 47.6.	Nagidus, Pharnabazus (413–373), AR, stater.	454
Figure 47.7.	Nagidus, AR, twelfth stater/obol.	454
Figure 47.8.	Nagidus, AR, twelfth stater/obol.	454
Figure 47.9.	Celenderis, AR, stater.	454
Figure 47.10.	Celenderis, AR, stater.	454
Figure 47.11.	Celenderis, AR, third stater/tetrobol.	454
Figure 47.12.	Celenderis, AR, twelfth stater/obol.	454
Figure 47.13.	Celenderis, AR, stater.	454
Figure 47.14.	Holmoi, AR, stater.	456
Figure 47.15.	Holmoi, AR, third stater/tetrobol.	456
Figure 47.16.	Holmoi, AR, twelfth stater/obol.	456
Figure 47.17.	Holmoi, AR, stater.	456
Figure 47.18.	Holmoi, AR, twelfth stater/obol.	456
Figure 47.19.	Ura, AR, third stater/tetrobol.	456
Figure 47.20.	Ura, AR, stater.	456
Figure 47.21.	Ura, AR, stater.	456
Figure 47.22.	Ura, AR, stater.	456
Figure 47.23.	Ura, AR, third stater/tetrobol.	456
Figure 47.24.	Soloi, AR, stater.	456
Figure 47.25.	Soloi, AR, stater.	456
Figure 47.26.	Soloi, AR, third stater/tetrobol.	456
Figure 47.27.	Soloi, AR, stater.	456
Figure 47.28.	Soloi, AR, stater.	456
Figure 47.29.	Soloi, AR, twelfth stater/obol.	456
Figure 47.30.	Soloi, AR, stater.	456
Figure 47.31.	Soloi, AR, stater.	456
Figure 47.32.	Soloi, AR, hemiobol.	456
Figure 47.33.	Anchiale, AR, stater.	456
Figure 47.34.	Anchiale, AR, twelfth stater/obol.	456
Figure 47.35.	Anchiale, AR, stater.	456
Figure 47.36.	Ba'ana, AR, stater.	456
Figure 47.37.	Tarsus, AR, stater.	456
Figure 47.38.	Tarsus, AR, hemiobol.	456
Figure 47.39.	Tarsus, AR, stater.	456
Figure 47.40.	Tarsus, AR, stater.	456
Figure 47.41.	Tarsus, AR, third stater/tetrobol.	456
Figure 47.42.	Tarsus, AR, stater.	456
Figure 47.43.	Tarsus, AR, stater.	456
Figure 47.44.	Tarsus, AR, stater.	456
Figure 47.45.	Tarsus, AR, third stater/tetrobol.	456
Figure 47.46.	Tarsus, AR, stater.	456
Figure 47.47.	Tarsus, AR, stater.	458
Figure 47.48.	Tarsus, AR, third stater/tetrobol.	458
Figure 47.49.	Tarsus, AR, stater.	458
Figure 47.50.	Tarsus, AR, stater.	458
Figure 47.51.	Tarsus, AR, stater.	458
Figure 47.52.	Tarsus, AR, third stater/tetrobol.	458
Figure 47.53.	Tarsus, AR, stater.	458
Figure 47.54.	Tarsus, AR, stater.	458
Figure 47.55.	Tarsus, AR, stater.	458
Figure 47.56.	Mallus, AR, stater.	458
Figure 47.57.	Mallus, AR, third stater/tetrobol.	458
Figure 47.58.	Mallus, AR, stater.	458
Figure 47.59.	Mallus, AR, drachm.	458
Figure 47.60.	Mallus, AR, twelfth stater/obol.	458

Figure 47.61.	Mallus, AR, stater.	458
Figure 47.62.	Mallus, AR, stater.	458
Figure 47.63.	Mallus, AR, twelfth stater/obol.	458
Figure 47.64.	Mallus, AR, stater.	458
Figure 47.65.	Mallus, AR, stater.	458
Figure 47.66.	Mallus, AR, stater.	458
Figure 47.67.	Issus, AR, stater.	458
Figure 47.68.	Issus, AR, sixteenth stater/obol.	458
Figure 47.69.	Issus, AR, stater.	458
Figure 47.70.	Issus, AR, stater.	458
Figure 47.71.	Issus, AR, stater.	458
Figure 47.72.	Issus, AR, stater.	458
Figure 47.73.	Cilicia, Unceratin mint, AR, obol.	458
Figure 47.74.	Cilicia, Unceratin mint, AR, tetartemorion.	458
Figure 47.75.	Cilicia, Unceratin mint, AR, hemiobol.	458
Figure 47.75.	Cilicia, Unceratin mint, AR, tetartemorion.	458
Figure 47.76.	Cilicia, Unceratin mint, AR, obol.	458
Figure 47.77.	Cilicia, Unceratin mint, AR, obol.	458
Figure 47.78.	Tiribazus (392–380), Tarsus, AR, stater.	460
Figure 47.79.	Tiribazus (392–380), Soloi, AR, stater.	460
Figure 47.80.	Tiribazus (392–380), Mallus, AR, stater.	460
Figure 47.81.	Tiribazus (392–380), Issus, AR, stater.	460
Figure 47.82.	Tiribazus (392–380), Tarsus, AR, obol.	460
Figure 47.83.	Tiribazus (392–380), Tarsus, AR, obol.	460
Figure 47.84.	Tiribazus (392–380), Tarsus, AR, stater.	460
Figure 47.85.	Tiribazus (392–380), Soloi, AR, stater.	460
Figure 47.86.	Tiribazus (392–380), Mallus, AR, stater.	460
Figure 47.87.	Tiribazus (392–380), Nagidus, AR, stater.	460
Figure 47.88.	Pharnabazus (413–373), Tarsus, AR, stater.	460
Figure 47.89.	Pharnabazus (413–373), Tarsus, AR, stater.	460
Figure 47.90.	Pharnabazus (413–373), Tarsus, AR, stater.	460
Figure 47.91.	Pharnabazus (413–373), Tarsus, AR, obol.	460
Figure 47.92.	Tarkumuwa (369–361), Tarsus, AR, stater.	460
Figure 47.93.	Tarkumuwa (369–361), Tarsus, AR, stater.	460
Figure 47.94.	Tarkumuwa (369–361), Tarsus, AR, stater.	460
Figure 47.95.	Tarkumuwa (369–361), Tarsus, AR, obol.	460
Figure 47.96.	Tarkumuwa (369–361), Tarsus, AR, obol.	460
Figure 47.97.	Tarkumuwa (369–361), Tarsus, AR, obol.	460
Figure 47.98.	Mazaeus (361–344), Tarsus, AR, stater.	460
Figure 47.99.	Mazaeus (361–344), Tarsus, AR, stater.	460
Figure 47.100.	Mazaeus (361–344), Tarsus, AR, stater.	460
Figure 47.101.	Mazaeus (361–344), Tarsus, AR, obol.	460
Figure 47.102.	Mazaeus (361–344), Tarsus, AR, stater.	460
Figure 47.103.	Balacrus (333–323), Tarsus, AR, stater.	460
Figure 47.104.	Balacrus (333–323), Tarsus, AR, stater.	460
Figure 47.105.	Balacrus (333–323), Tarsus, AR, obol.	460
Figure 47.106.	Alexander the Great, Tarsus, AV, stater.	460
Figure 47.107.	Alexander the Great, Tarsus, AR, tetradrachm.	460
Figure 47.108.	Alexander the Great, Tarsus, AE, tetrachalkous.	460

48. Der lykaonische Wolf — Katharina Martin

Abbildung 48.1.	Obol aus Laranda: Baal im doppelten Perlkreis/Wolfsprotome mit Mondsichel in eckiger Rahmung, BnF 41794679/SNG Paris (France 2) Nr. 446 [M 1:1 und 3:1].	472
Abbildung 48.2.	Obol aus Laranda: Baal/Wolfsprotome mit Mondsichel, beide n. l. © Münzkabinett Berlin, Objekt Nummer 18293806 [M 1:1 und 3:1].	472

Abbildung 48.3.	Obol aus Laranda: Männlicher Kopf/Wolfsprotome, Münzsammlung der Universität Münster, M 3620 [M 1:1 und 3:1].	472
Abbildung 48.4.	Obol aus Laranda: Kopf des Herakles/Wolfsprotome mit Stern, CNG, E-Auction 179 (02.01.2008) Nr. 95 [M 1:1 und 3:1].	472
Abbildung 48.5.	Obol aus Laranda: Kopf des Perseus/Wolfsprotome mit ΛAPAN, Monogramm ΠAP und Stern. Gorny & Mosch, Auktion 229 (10.03.2015) Nr. 1376 [M 1:1 und 3:1].	472
Abbildung 48.6.	Obol aus Laranda: Gestaffelte männliche Köpfe/Wolfsprotome mit ΛAPAN, Monogramm ΠAP und Stern, Peus, Auktion 431 (27.04.2022) Nr. 3281 [M 1:1 und 3:1].	474
Abbildung 48.7.	Hemiobol aus Laranda: Männlicher Kopf n. l./Wolfskopf n.r. mit Mondsichel, Zeus Numismatics, Web-Auktion 20 (12.12.2021) Nr. 80 [M 1:1 und 3:1].	474
Abbildung 48.8.	Bronze aus Tarsos: Maximinus Thrax/Apollon Lykeios (= Typ RPC VI Temp. Nr. 7103), Peus, Auktion 412 (24.04.2014) Nr. 299 [M 1:1].	474
Abbildung 48.9.	Bronze aus Laranda: Philipus iunior/Wolf mit menschlicher Hand in der Schnauze (= Typ RPC VIII unassigned ID 2206) [M 1:1]. Leu, Web-Auktion 20 (16.07.2022) Nr. 2043.	474
Abbildung 48.10.	Stater des Tarkumuwa/Datames, geprägt in Tarsos (Kilikien), Martin von Wagner Museum der Universität Würzburg, Inv. Ka 1327 = H 6694 [M 1:1].	474
Abbildung 48.11.	Stater des Mazaïos, geprägt in Tarsos (Kilikien), Münzkabinett Winterthur, Inv. G 4669 [M 1:1].	474
Abbildung 48.12.	Drachme des kappadokischen Königs Ariarathes I., geprägt in Gaziura (Bithynien). Leu, Web-Auktion 6 (9.12.2018) Nr. 316 [M 1:1].	474
Tabelle 48.1.	Typen der Laranda-Obolen.	471

49. Hoards in Ancient Anatolia c. 630–30 BC — Leah Lazar

Figure 49.1.	Reference map of the Anatolian region with ancient and modern place names.	482
Figure 49.2.	Bar plot with dates of 430 hoards by quarter-century (with dates on x-axis and numbers of hoards on y-axis).	483
Figure 49.3.	Map with locations of 429 hoards.	484
Figure 49.4.	Map with locations of sixth-century BC hoards.	484
Figure 49.5.	Map with locations of fifth-century BC hoards.	485
Figure 49.6.	Map with locations of fourth-century BC hoards.	485
Figure 49.7.	Map with locations of third-century BC hoards.	486
Figure 49.8.	Map with locations of second-century BC hoards.	486
Figure 49.9.	Map with locations of first-century BC hoards before c. 30 BC.	487
Figure 49.10.	Pie chart dividing 621 hoards by metal content.	487
Figure 49.11.	Bar plot of 430 hoards by date (in quarter-century groups) and metal content (with dates on x-axis and numbers of hoards on y-axis).	487
Figure 49.12.	Map showing locations of 429 hoards and metal content.	488
Figure 49.13.	Scatter plot depicting 575 hoards by date (x-axis) and number of coins (y-axis).	488

51. Database Challenges for *Sylloge Nummorum Parthicorum* (SNP) Volumes 2 & 4 — Chris Hopkins

Figure 51.1.	Web scraping. Typical group from trade.	504
Figure 51.2.	Web scraping. Extracted single photos.	504
Figure 51.3.	Letterforms not available in standard fonts.	505
Figure 51.4.	Catalogue text.	506
Figure 51.5.	Coin image plate with die link connections.	507
Table 51.1.	Image count.	500
Table 51.2.	The SNP Type Reference. Note the obverse always begins with a Roman numeral and the reverse starts with an Arabic number.	501
Table 51.3.	The SNP Sequence Reference.	502

52. The Coinage of the Characenean Kings Attambelos IV and V of Mesene (AD 54/55–73/74) — Patrick Pasmans

Figure 52.1.	Bronze tetradrachm, 369 SE, 25.7 mm, 14.09 g.	511
Figure 52.3.	Bronze tetradrachm, 384 SE, 27.0 mm, 14.69 g.	511
Figure 52.2.	Bronze tetradrachm, imitation, 366 SE, 27.0 × 23.4 mm, 14.12 g.	511
Figure 52.4.	Bronze drachm, 306 PE, 15.8 mm, 3.50 g.	511

53. A Brief Look at Coinage in Khuzistan from Alexander the Great to the End of the Sasanians — Michael Stal

Figure 53.1.	Tetradrachm of Kamnaskires III and Anzaze. 16.51 g, 27 mm. Auction XI (7 April 2016), Lot Nr. 511.	516
Figure 53.2.	Tetradrachm of Kamnaskires-Orodes. 14.82 g, 28 mm. Electronic Auction 348 (8 April 2015), Lot Nr. 401.	516

54. Coins of the Bactrian and Indo-Greek Rulers (BIGR) — Gunnar R. Dumke and Simon Glenn

Table 54.1.	Comparison of number of types between Graeco-Bactrian and Indo-Greek numismatic typologies.	521
-------------	---	-----

55. Coin Finds from Barikot — Ehsan Shavarebi

Figure 55.1.	Barikot, urban area (BKG 11), view from northwest.	531
Figure 55.2.	Barikot, apsidal temple (BKG 16), aerial view.	531
Figure 55.3.	Mauryan punch-marked coin. AR, 3.28 g, 17 mm. Found at Barikot, Inv. No. 1596. Mingora, Swat Museum.	532
Figure 55.4.	Post-Mauryan local issue of Taxila-Gandhara. AE, 11.97 g, 26 mm. Found at Barikot, Inv. No. BKG 4035. Mingora, Swat Museum.	532
Figure 55.5.	Indo-Greek coin: Menander I Soter. AR, 2.32 g, 17 mm. Found at Barikot, Inv. No. BKG 3482. Mingora, Swat Museum.	532
Figure 55.6.	Indo-Scythian coin: Azes [II]. AE, 12.42 g, 29 mm. Found at Barikot, Inv. No. BKG 1708. Mingora, Swat Museum.	532
Figure 55.7.	Kushan coin: Kanishka I. AE, 4.38 g, 18 mm. Found at Barikot, Inv. No. BKG 8730. Mingora, Swat Museum.	532
Figure 55.8.	Kushano-Sasanian coin: Shapur II. 3.45 g, 19 mm. Found at Barikot, Inv. No. BKG 3999. Mingora, Swat Museum.	532
Figure 55.9.	Small copper coin of Gandhara-Uddiyana. AE, 2.86 g, 16 mm. Found at Barikot, Inv. No. BKG 2898. Mingora, Swat Museum.	532
Figure 55.10.	Kidarite coin: Kidara. AR, 3.72 g, 28 mm. Found at Barikot, Inv. No. BKG 8680. Mingora, Swat Museum.	532
Figure 55.11.	Alkhan coin: Raja Lakhana Udayaditya. BI, 3.30 g, 27 mm. Found at Barikot, Inv. No. BKG 8677. Mingora, Swat Museum.	532
Figure 55.12.	Turk Shahi coin: Tagin Khorasan Shah. AR, 3.69 g, 29 mm. Found at Barikot, Inv. No. BKG 5019. Mingora, Swat Museum.	532
Figure 55.13.	Hindu Shahi coin: Sri Vakka Deva. BI, 2.83 g, 19 mm. Found at Barikot, Inv. No. BKG 3311. Mingora, Swat Museum.	532
Figure 55.14.	Ghaznavid coin: Khusraw Malik (?). AE, 0.85 g, 13 mm. Found at Barikot, Inv. No. BKG 8675. Mingora, Swat Museum.	532
Table 55.1.	Overview of coin finds from excavations at Barikot (1984–2022).	527

56. The Coinage of Pratishthana-Purisa, a City State in Ancient Punjab — Karan Singh

Figure 56.1.	Type I – Horse type, Lead coin, 2.35 g (Handa 2016, 5).	540
Figure 56.2.	Type II – Heavy tree type. Bronze coin, 6.92 g (Bopearachchi 2001, 22).	540
Figure 56.3.	Type III – Deity type. Lead coin, 2.21 g (Kulkarni 2006, no. 2; Pieper 2021, no. 1666).	540
Figure 56.4.	Type IV – Horse-rider type. Lead coin, 2.36 g (Pieper 2021, no. 1667).	540
Figure 56.5.	Type V – Elephant type. Lead coin, 3.06 g (unpublished).	540
Figure 56.6.	Type VI – Lion, deity and deer type. Lead coin, 1.85 g (unpublished).	540
Figure 56.7.	Type VII – Elephant, lion and deer type. Lead coin, 2.10 g (unpublished).	540
Figure 56.8.	Type VIII – Gaja-Lakshmi type. Lead coin, 2.74 g (unpublished).	540
Figure 56.9.	Type IX – Multi-symbol type. Lead coin, 3.97 g (unpublished).	540
Figure 56.10.	Type X – Yakshi, lion and hill type. Lead coin, c. 3 g (Pieper 2021, no. 1668).	540
Figure 56.11.	Type XI – <i>Bahudhañake</i> type. Lead coin, 1.14 g (unpublished).	542
Figure 56.12.	Type XII – Uninscribed type. Lead fraction, 0.44 g (unpublished).	542
Figure 56.13.	Copper coin of Agacha <i>janapada</i> , with Brahmi legend <i>agodaka agacha janapadasa</i> on reverse (unpublished).	542

Figure 56.14.	Yaudheya copper coin, with Brahmi legend <i>yaudheyanam bahudhañake</i> on obverse (Pieper 5422021, no. 1600).	542
Table 56.1.	List of coins of Pratishthana-Purisa.	537
Table 56.2.	Comparison of coins of Pratishthana-Purisa with Agacha <i>janapada</i> .	537
57. A Preliminary Analysis of the Metal Content of Gupta Gold Coins — Pankaj Tandon		
Figure 57.1.	Average percentage gold content, by king.	547
Figure 57.2.	Actual gold content (g), by king.	547
Figure 57.3.	Actual gold content (g), by king, suvarṇas normalized by 0.75 copper and silver.	547
Figure 57.4.	The relationship between copper and silver content.	548
58. The Metrological Survey of Ptolemaic Bronze Coins — Daniel Wolf		
Figure 58.1.	One litra bronze issue of Hieron II of Syracuse, imitating Ptolemaic bronzes minted on Sicily during the reign of Ptolemy II Philadelphus, circa 266–264 BC. Actual diameter is about 28 mm.	553
Figure 58.2.	Upper – The pentachalkon type's value is marked by the aplustre symbol on the reverses, in the field to the left of the standing open-wing eagle. This example has secondary symbols beneath the aplustre as well. Not to scale. Actual diameter about 18 mm. Lower – The eikosachalkon (20 chalkoi) denomination types depict Zeus Ammon on the obverse and an eagle facing left on the reverse with a cornucopia in the crook of its open wing. Not to scale. Actual diameter about 36 mm.	553
Table 58.1.	Suggested evolution of three similar series of four denominations with Zeus, Demeter, Heracles, and Alexander obverse designs.	552
59. A Small Personal Touch — Jérémy Artru		
Figure 59.1.	Distribution of the Carthaginian gold coins with graffiti depending on the location of the graffiti.	559
Figure 59.2.	Distribution of the Carthaginian gold coins with graffiti based on the Jenkins and Lewis 1963 groups. Percentages (a) vs total numbers (b).	559
Figure 59.3.	The different types of graffiti identified on Carthaginian gold coins. a) group V, photo Gorny & Mosch, auction 141, 197; b) group VII, photo courtesy of the Bibliothèque nationale de France Paris, FG 119; c) group X, photo Gemini, Auction I, 61; d) group V, photo Gorny & Mosch, Auction 249, 391; e) group X, photo NAC, Spring Sale 2020, 173; f) group V, photo J. Artru, courtesy of the Museo archeologico Paolo Orsi, Siracusa, s.n.	560
Figure 59.4.	Carthaginian gold coins with a single letter graffito between the horse's legs. a) group V, photo © Trustees of the British Museum; b) group V, photo Gorny & Mosch, auction 249, 391; c) group V, photo Roma Numismatics, eSale 45, 156; d) group V, photo Katz, eAuction 33, 26; e) group V, photo Bertolami Fine Arts, eAuction 64, 354; f) group V, photo Gitbud & Naumann, auction 21, 331.	560
Figure 59.5.	Carthaginian gold coins with a set of letters graffito above the horse. a) and b) group V, photo J. Artru, courtesy of the Museo archeologico Paolo Orsi, Siracusa, s.n. and no. 55500; c) group VI, photo Gorny & Mosch, auction 245, 1396.	560
Table 59.1.	Groups of gold and gold-silver alloy coins of Carthage considered in the study.	556

21. The Hoard of Cala Tramontana in Pantelleria (Trapani, Sicily)

*Preliminary Observations**

▼ **ABSTRACT** A hoard, still unpublished, was found in 2011 in the waters of Cala Tramontana, along the northeastern coast of the island of Pantelleria. It consists of over 3000 Punic bronze coins belonging to the Sardinian series with a head of Kore/horse's head (260–240 BC). This contribution will present some reflections on the composition of the hoard and some observations on the archaeological context and on the information offered by historical sources, in order to advance interpretative hypotheses regarding the nature of the hoard and the causes of abandonment.

▼ **KEYWORDS** Sardinian-Punic coinage, Cala Tramontana, Pantelleria, Cossyra, Sicily

The hoard that is the subject of this study was found in the summer of 2011 at Cala Tramontana (Fig. 21.1), a cove along the northeastern coast of the island of Pantelleria, known in the sources as Cossyra. The hoard is still unpublished, except for eighteen coins published by Aldina Cutroni Tusa and Rossella Lasi immediately after the discovery.¹

This paper will therefore present the first data from the study pertaining to the composition of the hoard, the characteristics of the coins, and the context of their discovery, as well as some reflections on the nature, function, and causes of the abandonment of the hoard. The peculiarity of the hoard lies in the uniform

composition of its contents, as it consists of 3233 coins, all belonging to the Punic series of the Sardinian mint with the head of Kore/Horse's head of a large module of the type SNG Cop 192–201. It corresponds to series IA of Forteleoni's (1961) classification, to whom we owe the first subdivision of Sardinian-Punic issues into seven series. It is an issue that scholars agree on assigning to Sardinia under the authority of Carthage, partly on the basis of the distribution of finds, which are concentrated in Sardinia and more rarely documented elsewhere, so that the find from Cala Tramontana takes on the character of exceptionality.²

* This work was financed by the European Union – NextGenerationEU – MUR D.M. funds. 737/2021 – research project Nummi Digitali towards Europe.

¹ Cutroni Tusa and Lasi 2012, 231–44. A brief summary on the hoard in La Rocca and Mammina 2016, 246–47. The full publication of the hoard is being completed by the author.

² The reference studies for Punic coin production from Sardinia and, in particular, for the large module Head of Kore/Horse's head series are Forteleoni 1961, 21–24, 28–35, 41–49; Manfredi 1987, 22–23, 26–29; Visonà 1992, 124; Manfredi 1995, 52–53; 216–17; Manfredi and Francisi 1996, 32–37; Visonà 1998, 3–6, 10–11; Manfredi 2000, 18–20; Manfredi 2006, 280–81; a recent summary

Lavinia Sole Senior Research Fellow of Numismatics (ARCH-01/B), University of Palermo, Italy; lavinia.sole@unipa.it

Proceedings of the XVI International Numismatic Congress, 11–16.09.2022, Warsaw, Vol. I: Greek Numismatics, ed. by Jarosław Bodzek, Aleksander Bursche, and Anna Zapolska, WSA, 10 (Turnhout, 2025), pp. 195–205.

This is an open access chapter made available under a CC BY-NC 4.0 International Licence.

BREPOLS PUBLISHERS

DOI 10.1484/M.WSA-EB.5.144873

Like almost all the coins in this series, the coins from the hoard also have simplified types, of poor and coarse style, which are, however, almost always legible despite the erosive action of the weathering agents. On most of them, the types are accompanied by letters of the Punic alphabet and by symbols that are combined in various ways, offering thirty-nine variants. We find coins characterized by symbols on the obverse or reverse, or both on the obverse and reverse (Figs 21.2–21.3), by letters on the reverse (Figs 21.4–21.5), by symbols on the obverse and letters on the reverse or by letters and symbols on the reverse (Figs 21.6–21.7). Among these variants, some are rare or have never previously been attested.³

In any case, the combinations and the number of known coins confirm that a substantial number of dies were used in the minting of this series.

It is now generally accepted that the large-module Kore's head/horse's head coins were minted after the small-module series with the same types (SNG Cop 154–78: IB series),⁴ dated between 300/290 and 260 BC and based on a standard of 5/5.5 g that would represent the unit.⁵ The large series, on the other hand, would have been issued between 260 and 240 BC, as inferred from the coin finds, but also from the high volume and poor style, likely connected to Carthage's war effort during the First Punic War. The increase in weight, to 14/16 g, would also seem related to the issuing authority's need for coins of higher intrinsic value to make war payments (Manfredi 1995, 217).

In keeping with the style, the minting technique appears to be equally shoddy and hasty. Analysis of the specimens in the hoard confirmed that the series

was struck on open-cast flans, whose runners were not cut very carefully: in fact, they often protruded or were cut so deeply as to compromise the integrity of the flan (Fig. 21.8); moreover, some coins have a circular protuberance in the centre that partially conceals the image and seems to be the trace of a minting pin to make the minting procedure quicker, which, perhaps, had to take place under precarious conditions, to adapt to the climate and times of war (Fig. 21.9). To economize on metal, many coins are overstruck upon specimens of different varieties which perhaps were gradually withdrawn from circulation.

The substantial number of specimens struck, and the large amount of metal used, resulted in the prolonged use of this numerary and its reuse as an undertype, both for the minting of the later Sardinian-Punic series, such as the one with a horse with head reverted (SNG Cop 216–18 = III series) and the one with a horse and palm (IVA series),⁶ both for the minting of coins not belonging to the Sardinian territory. I refer, for example, to the bronze issues with veiled head of Isis/three corn ears SNG Cop 226–32, issued between 241 and 238 BC by Libyan mercenaries in north Africa, exclusively overstriking a large Sardinian series with a horse's head.⁷

The analysis of the discovery context of the hoard needs a brief introduction about the island of Pantelleria, which, due to its volcanic origin, was never a particularly favourable area for human settlement.⁸ The rugged and jagged coastline, lacking wide and deep inlets, the lack of potable water sources (Ovid. *Fast.* III. 567), and the exposure to sea currents and the Mistral (NW) and Sirocco (SE) winds made the quality of life difficult and the frequency of landings dangerous. However, the settlements enjoyed continuous development from the second half of the eighth century BC until the mid-imperial age, as the volcanic nature of the soil made it fertile and the location in the centre of the Sicilian Channel, a day's sail from Cape Bon and rom Lilybaeum (Ps. Skylax, *Periplos*, 110–11; Strab. II. 5. 19; VI. 2. 11; XVII. 3. 16), gave the island a strategic military and commercial position, making it a visual reference point for long-distance routes. In the third century BC, the period in which the coins under our

in Mandatori 2020. About the topographical distribution of this issue, see Manfredi and Francisi 1996, 42–43, Visonà 1998, 12 note 36, and Manfredi 2000, 18–19.

3 For example, the symbol of the three ears of corn, the letters *gimel*, *het*, *samek*, the combinations *sprig/sprig*, *star/corn ears*, '*alef/pe*', '*alef/symbol*'. Since this is preliminary data, the number of variants may vary.

4 The seriation with Roman numerals, isolated or associated with letters of the alphabet, always refers to the classification of Forteleoni 1961.

5 The IB series comprised two issues: one, minted often on a bullet flan, with a head adorned with a pendant necklace and convex neck truncation, probably of Sicilian or Carthaginian production, and the other, minted on an open-cast flan, with a head adorned with a plain necklace and concave neck truncation, struck in Sardinia and stylistically similar to the corresponding large IA series (Visonà 1992, 124; 1998, 10–11). This subdivision is confirmed by metal analysis (Frey-Kupper and Barrandon 2003, 516). According to Forteleoni (1961, 35), the IA series represented the unit and the IB series the relative fraction (1/3), while later the IA series was interpreted as the major nominal (triple) of the basic unit identifiable in the IB series, based on the 5.70–5.40 g Persian-Asia Minor standard (Manfredi 1987, 19–20; 1995, 217).

6 On this subject, see Manfredi 1987, 22–23; 1990, 119–20, 97–118, nn. 20–25 (horse with head reverted), nn. 26–28 (horse and palm).

7 On this subject, Visonà 1992, 125–26; 2010, 67. See also Manfredi 1990, 39, 46–47, 73–80, with cat. 48–71 n. 13, whose specimens are attributed to an African or Sardinian mint. Indeed, Visonà (1992, 126) clearly states that 'unlike the coins of the north African rebels, which are overstruck and were produced in relatively small quantity, the Sardinian issues comprise a new coinage and were minted on a large scale ...'.

8 On the geomorphological framework, history, and topography of the island, see Schäfer 2015a, 87–111; 2019, 216–17.

examination are framed, moreover, the island was an important base for Carthage in controlling the Sicilian Channel and remained so almost continuously until its annexation by the Roman province of Sicily in 217 BC (Polyb. *Hist.* II. 96. 12–13), since the previous Roman conquest in 255 BC, mentioned in the sources (Polyb. *Hist.* I. 36; Zon. *Hep. Hist.* VIII. 4; VIII. 14), was actually an ephemeral, short-lived episode, as is proven by the absence of traces of destruction relating to the mid-third century BC.⁹

The stratigraphic excavation, conducted by the Soprintendenza of the Sea and the University of Sassari between 2005 and 2011 for the recovery of the hoard and associated archaeological materials, has offered valuable information which permits certain hypotheses to be advanced about the historical and functional interpretation of the hoard and the chronological definition of the date of burial.¹⁰ The hoard was located 100 m away from the shoreline of Cala Tramontana, separated by the promontory of Punta Tracino and the Faraglione from the adjoining inlet of Cala Levante. The twin bays are part of the few coves on the island that, except in extreme cases, can offer shelter to a small number of boats in any weather or sea conditions, because Cala Tramontana is sheltered from southerly winds and Cala Levante from northerly winds (Abelli 2012b, 87).

Specifically, the discovery context, referred to as 'context A' by the discoverers, included two archaeological deposits, falling in the middle of the sandy plateau of the bay. The first one ('site 1') was located at a depth of 18 m, while the second one ('site 2'), from which the hoard came, was only 50 m away from the previous one, and lay at a depth of 13 m (Fig. 21.10).

The material recovered from both sites has almost the same composition: wooden elements are absent, while materials attributable to the remains of the cargo of a ship carrying almost exclusively amphorae containing liquid, semi-liquid, or solid food and a few other ceramics, which can be interpreted as the crew's tableware, prevail. Predominant are amphorae of Carthaginian and/or Tunisian production, among which specimens of type T — 7.2.1.1. of the Ramon classification prevail, followed by Greco-Italic amphorae, almost all belonging to types MGS V–VI and MGS VI

of the Wandermersch classification (1994). The few other ceramics include black-glazed pottery, blacktop red cooking ware of Carthaginian production, and Pantellerian ware. The coins, which were part of 'site 2', lay scattered in an area of about 4 × 4 m and were associated with three copper nails, likely belonging to the perishable material chest in which they were contained, and four lead ingots with a trapezoidal cross-section, one of which was inscribed HANNIBAL, while, a short distance away from them were a lithic anchor and a tree trunk without its branches. The other lithic and metal objects, all from 'site 1', appear to be related to life onboard ship.

The composition of the finds thus suggests that the cargo belonged to a Punic ship, likely engaged in warlike operations, and that it was used to transport supplies of provisions within amphorae, together a military chest with three thousand coins, and artefacts for onboard life, including a few lead ingots, perhaps for possible repairs.¹¹

As for the chronology of the context, the most recent materials point to the period between the second half of the third and the beginning of the second century BC. However, if the lack of specific archaeological indicators characterizing the second century BC would seem to rule out the possibility of dating it beyond the end of the third century BC, the Roman conquest of Sardinia in 238 BC makes the presence of Sardinian coins in the Sicilian Channel in subsequent years unlikely, since, from 238 BC onward, the Carthaginians oriented their military interests toward the Iberian Peninsula. It follows that a plausible dating for the discovery context could be roughly the period between 250 and 238 BC.

Before venturing some reflections about the causes that determined the formation of the two deposits and the burial of the hoard, it should be premised that, in the absence of explicit historical reasons, it currently seems unlikely that the coins were destined for Pantelleria, not least because large Sardinian-Punic issues with a horse's head are not part of the numery attested on the island, except in very low percentages.¹²

In view of the failure to find the wooden parts of the ship, Leonardo Abelli hypothesized that the fact that the materials and coins lay in the depths of Cala Tramontana was the result of a 'jettison at sea' by the crew seeking to lighten the vessel and allow it to put to sea more quickly because of an imminent danger: in this specific case, the threat would have been the Roman

9 V. Schäfer 2015b, 837. According to the sources, in 255 BC, a Roman fleet, heading to north Africa to rescue survivors of the expedition of Atilius Regulus, was caught in a storm and, being diverted to Cossyra, sacked the Island and entrusted a garrison to it. In 254 BC the Carthaginians recaptured the island without much effort.

10 On the archaeological context of discovery, see Abelli 2012a, 147–57; 2016, 179–84; for the materials found at the two sites, see Baldassarri 2012, 191–211 (amphorae and pottery) and Abelli and Baldassarri 2012, 227–29 (lead objects).

11 Abelli 2012a, 155 also excludes the possibility that the cargo can be referred to a merchant ship. Lead ingots in small numbers, attributed to ship's equipment for repairs, come from the wrecks of Capo Testa B and Lavezzi A (Bigagli 2002, 163, 175).

12 In this regard, Visonà 2010, 153 and Frey-Kupper 2015, 460, fig. 4.

fleet that would later occupy Pantelleria in 255 BC. In this case, according to the archaeologist, the Punic ship would have been stationed on the island, because it was waiting to sail to Sicily for the purpose of supplying besieged cities and financing pro-Carthaginian factions (Abelli 2012c, 285–86). In fact, even if one wants to consider the hypothesis plausible, it is not understandable why the payments planned for the pro-Carthaginian factions in Sicily should have involved the use of bronze coins minted in Sardinia, considering that, during the course of the conflict, Carthage had allocated precious currency minted under its control in the Punic mints still operating in Sicily to these operations.

The absence of wooden traces of the ship is also not a factor that can rule out other causes for the formation of the archaeological and monetary deposit, such as, for example, a shipwreck, since other wrecks found precisely in Pantelleria along the coastal seabed often only preserve very limited parts of the wooden hull due to the actions of the strong currents that accelerate its deterioration.¹³

In choosing to evaluate other hypotheses as well to reconstruct the dynamics that led to the burial of the hoard, taking into account the dating of the contextual materials in the third quarter of the third century BC, I thought it appropriate to focus on the events related to the Libyan war that broke out in north Africa between 241 and 238 BC, of which the first book of Polybius' work offers a detailed account, meticulously analysed by Luigi Loreto (1995) and by Dexter Hoyos (2007).¹⁴ As is well known, after the peace of 241 BC that ended the First Punic War, Carthage was forced to demobilize its army in Sicily, consisting of more than 20,000 mercenaries of various origins. The soldiers were transferred from Eryx to Lilybaeum and, from here, at intervals, to Carthage, both in anticipation of redeployment in the short term and to provide payment of arrears (Polyb. *Hist.* 1. 68. 8). The operations took place during the months of June–July 241 BC, according to Polybius, who, moreover, points out that the mercenaries were paid 'immediate expenses' (1. 69. 1, 3, 8), i.e. emergencies, and were provided with subsistence goods (1. 68. 5), then proceeding to a series of negotiations for the reduction of the remaining sums (1. 67. 1). These negotiations continued until the beginning of October in Tunis, where the discontented soldiers had chosen to camp (1. 67. 13; 1. 69. 1) and where, according to Polybius, an agreement was finally reached (1. 68. 8–11)

to accommodate the mercenaries' economic demands. The commander of operations, Gisco, therefore, after 'bringing money from the sea' (1. 69. 1), paid salaries (1. 69. 3–8). However, conflict erupted anyway between the end of 241 and the beginning of 240 BC, because, according to Loreto's interpretation (1995, 191–92), the commanders of the various mercenary contingents, who had acted as intermediaries during the payment, probably withheld the sums disbursed by Gisco in order to incite the soldiers to mutiny and gain personal advantage.

Polybius' account suggests that Carthage was unlikely to have been able to pay off its debts to the mercenaries using precious coinage, as its financial commitments to Rome for the payment of war indemnity did not permit this. Thus, it cannot be ruled out that the Carthaginian government provided for urgent payments, such as those concerning the rebels in north Africa, with bronze coinage from other territories, such as, for example, Sardinia, which, at the end of the First Punic War, represented a stronghold for Carthage and was only two days and one/two night's sail from the African city (Ps. Skylax, *Periplos*, VII)¹⁵, as well as Lilybaeum, where the army had been assembled for evacuation in batches. The issues that the rebel mercenaries in north Africa minted by reusing the flans of the large Sardinian series, and of which they would therefore likely have come into possession as a result of payments from the Carthaginian government, would represent confirmation of this.

It would not therefore be unreasonable to assume that the wreck of Cala Tramontana was one of the ships described by Polybius that 'brought money from sea' to pander to mercenary demands, already during the quartering in western Sicily.

It is probable that the crossing took place during the period of demobilization of the armed forces from Sicily to Africa and that the ship, in support of the logistics for the staggered transfer of the armies, had loaded a hoard of coins formed in Sardinia and then had travelled the Lilybaeum–Carthage route within the Sicilian channel (Arnaud 2005, 160–61, n. 15), which involved deep-sea navigation, during which Cossyra constituted an important visual reference point.

This stretch of sea, regularly dominated by winds blowing from the northwest and characterized by accelerating currents, concealed pitfalls even in seasons of good weather, since, at the intersection of two weather

13 For example, see the wrecks of Gadir (Chioffi and Tusa 2006, 67–68) and Scauri (La Rocca 2016, 175 with bibl. prec.).

14 Major studies on the Libyan war in north Africa include, in addition to Loreto 1995 and Hoyos 2007, Zucca 2004, 93–94, Spanu and Zucca 2012, 258–61.

15 Sardinia was an important base for Carthage during the First Punic War (Zon. *Hep. Hist.* VIII. 10. 1; Polyb. *Hist.* 1. 20. 7, 56. 2) and likely assumed greater prominence immediately after the war's conclusion (241 BC), when Carthage was forced to withdraw from Sicily, and before the Roman occupation in 238 BC.

systems, weather conditions often underwent sudden evolutions, with abrupt and violent changes in the direction of the winds, as documented in the sources.¹⁶ So it is likely that the ship, overwhelmed by a storm, had been dragged towards Pantelleria, sinking with its cargo, which never reached its destination.

¹⁶ On the weather-marine conditions of the stretch of sea between Sardinia, Africa, and the Sicilian channel, see Arnaud 2005, 160, 164, 232; Medas 2005, 582–85; La Rocca 2012, 68–69. Polybius (1. 37) describes, for example, the terrible storm in the Sicilian channel that surprised the Roman fleet which set sail to rescue the survivors of the defeat of Marcus Atilius Regulus, encamped at Aspis. The storm dragged the ships towards the island of Cossyra which, on that occasion, was occupied by the Romans (255 BC).

Figure 21.1. Pantelleria. Aerophotogrammetric satellite image. Author's reworking of the Google Earth image.

Figure 21.2. Table of the variants of head of Kore/horse's head series with symbols. Table by author.

Figure 21.3. Sardinia (260–240 BC). Large bronze with head of Kore/horse's head and two ears of corn. Courtesy of the Soprintendenza del Mare, Regione Siciliana.

Figure 21.4. Table of the variants of head of Kore/horse's head series with letters. Table by author.

Figure 21.5. Sardinia (260–240 BC). Large bronze with head of Kore/horse's head; behind, nun; in front, 'alef. Courtesy of the Soprintendenza del Mare, Regione Siciliana.

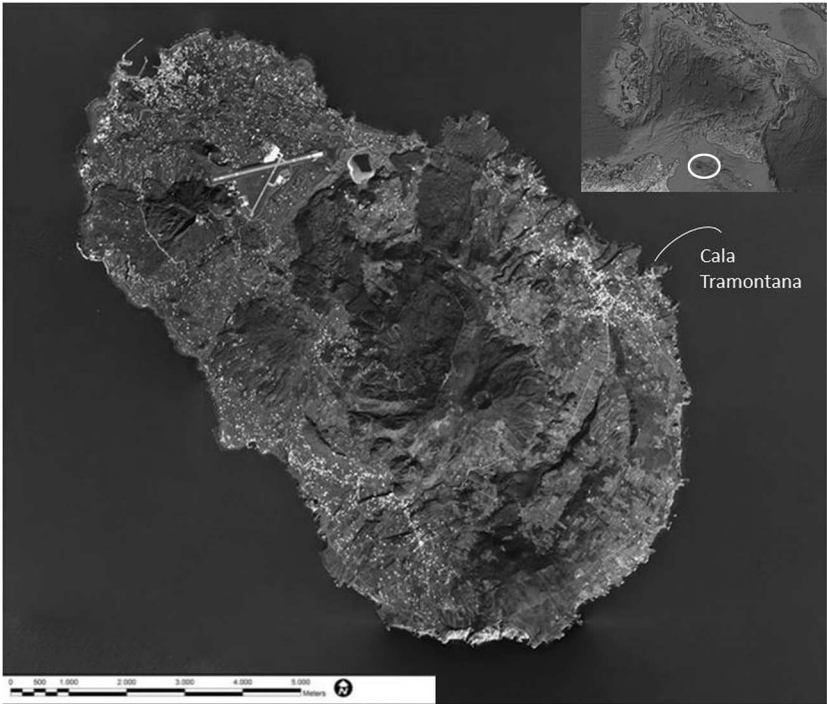


Fig. 1

Dritto	Rovescio
Disco solare entro crescente lunare	
Disco solare entro crescente lunare	2 Spighe
Disco solare entro crescente lunare	Caduceo
Rametto con due foglie	Rametto
Stella	Caduceo
	Caduceo
	Caduceo + 2 globetti
	2 Caducei
	2 Caducei + Stella
	Globetto
	2 Globetti
	3 Globetti a triangolo
	Palma
	2 Spighe
	3 Spighe
	Stella
	Stella + Caduceo
	Stella + Spiga

Fig. 2

Dritto	Rovescio
	'alef
	'alef + pe'
	'alef + mem
	gimel ?
	het ?
	kaf
	lamed
	mem
	nun + 'alef
	samek ?
	'ayin
	taw

Fig. 4



Fig. 3



Fig. 5

Figure 21.6. Table of the variants of head of Kore/horse's head series with symbols and letters. Table by author.

Figure 21.7. Sardinia (260–240 BC). Large bronze with head of Kore; behind, pellet in crescent/horse's head; in front, mem. Courtesy of the Soprintendenza del Mare, Regione Siciliana.

Figure 21.8. Sardinia (260–240 BC). Large bronze with head of Kore/horse's head with flan cut deeply. Courtesy of the Soprintendenza del Mare, Regione Siciliana.

Figure 21.9. Sardinia (260–240 BC). Large bronze with head of Kore/horse's head with trace of a pin fixing the die. Courtesy of the Soprintendenza del Mare, Regione Siciliana.

Figure 21.10. Pantelleria, Cala Tramontana with indication of the archaeological sites: in red the 'site 2' from which the hoard comes. Figure from Abelli 2012a, p. 148, fig. 1.

Dritto	Rovescio
Disco solare entro crescente lunare	'alef
Disco solare entro crescente lunare	mem
Globetto	mem
	'alef + caduceo
	'alef + 2 caducei
	'alef ? + stella
	mem + caduceo
	mem + spiga
	mem + stella

Fig. 6

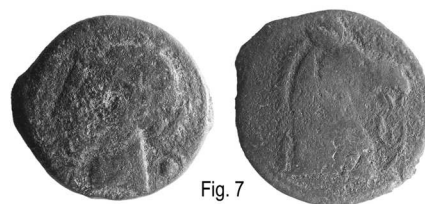


Fig. 7



Fig. 8

Fig. 9

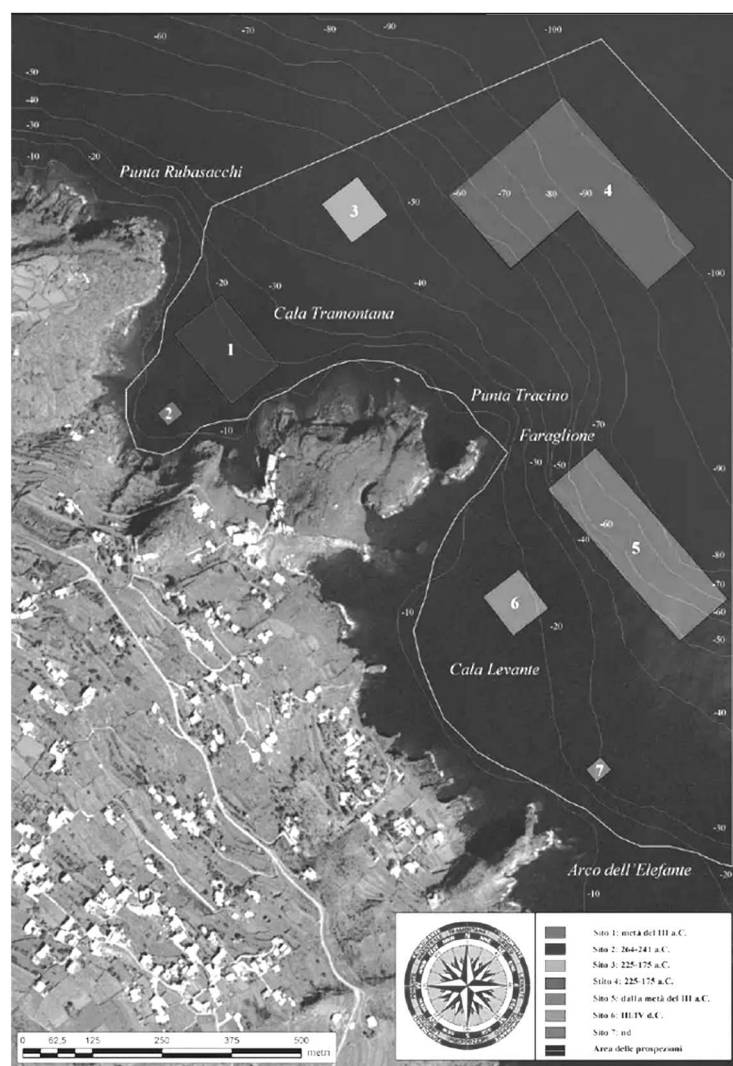


Fig. 10

Works Cited

- Abelli, Leonardo. 2012a. 'Le indagini archeologiche subacquee a Cala Tramontana e a Cala Levante', in *Archeologia subacquea a Pantelleria '... de Cossurensibus et Poenis navalem egit ...'*, ed. by Leonardo Abelli, *Ricerche maior*, 3 (Bologna: Ante Quem), pp. 147–62
- . 2012b. 'Pantelleria nelle rotte del Canale di Sicilia: porti, approdi e siti sommersi', in *Archeologia subacquea a Pantelleria '... de Cossurensibus et Poenis navalem egit ...'*, ed. by Leonardo Abelli, *Ricerche maior*, 3 (Bologna: Ante Quem), pp. 73–94
- . 2012c. 'La conquista romana di Pantelleria alla luce delle ultime ricerche: "... de Cossurensibus et Poenis navalem egit ..."', in *Archeologia subacquea a Pantelleria '... de Cossurensibus et Poenis navalem egit ...'*, ed. by Leonardo Abelli, *Ricerche maior*, 3 (Bologna: Ante Quem), pp. 283–87
- . 2016. 'Pantelleria tra Africa e Sicilia durante le guerre puniche', in *Mirabilia Maris: tesori dai mari di Sicilia*, ed. by Floriana Agneto, Adriana Fresina, Francesca Oliveri, Fabrizio Sgroi, and Sebastiano Tusa (Palermo: Regione Siciliana), pp. 179–84
- Abelli, Leonardo, and Roberta Baldassarri. 2012. 'Gli anelli e i lingotti in piombo', in *Archeologia subacquea a Pantelleria '... de Cossurensibus et Poenis navalem egit ...'*, ed. by Leonardo Abelli, *Ricerche maior*, 3 (Bologna: Ante Quem), pp. 227–29
- Arnaud, Pascal. 2005. *Les routes de la navigation antique: itinéraires en Méditerranée*, Collection des Hespérides (Paris: Errance)
- Baldassarri, Roberta. 2012. 'Le anfore da trasporto e la ceramica', in *Archeologia subacquea a Pantelleria '... de Cossurensibus et Poenis navalem egit ...'*, ed. by Leonardo Abelli, *Ricerche maior*, 3 (Bologna: Ante Quem), pp. 191–211
- Bigagli, Carlotta. 2002. 'Il commercio del piombo iberico lungo le rotte attestate nel bacino occidentale del Mediterraneo', *Empúries*, 53: 155–94
- Chioffi, Marco, and Sebastiano Tusa. 2006. 'Il relitto di Gadir e l'evidenza punica nel mare', in *Pantelleria Punica: saggi critici sui dati archeologici e riflessioni storiche per una nuova generazione di ricerca*, ed. by Enrico Acquaro and Barbara Cerasetti, *Studi e scavi*, 15 (Bologna: Ante Quem), pp. 63–112
- Cutroni Tusa, Aldina, and Rossella Lasi. 2012. 'Il ritrovamento monetale di Cala Tramontana', in *Archeologia subacquea a Pantelleria '... de Cossurensibus et Poenis navalem egit ...'*, ed. by Leonardo Abelli, *Ricerche maior*, 3 (Bologna: Ante Quem), pp. 231–44
- Forteleoni, Lorenzo. 1961. *Le emissioni monetali della Sardegna punica* (Sassari: Gallizzi)
- Frey-Kupper, Suzanne. 2015. 'L'evidenza numismatica relativa alla fase PUN III del saggio I. Campagna di scavo (2005): cronologia, considerazioni sul gruppo stilistico "capigliatura a mo' di spaghetti" e la serie di monete puniche da Pantelleria (2002–2009)', in *Cossyra I: Die Ergebnisse der Grabungen auf der Akropolis von Pantelleria / S. Teresa. Der Sakralbereich*, Teil 1, ed. by Thomas Schäfer, Karin Schmidt, and Massimo Osanna, *Tübinger archäologische Forschungen*, 10 (Rahden, Westf.: Leidorf), pp. 457–63
- Frey-Kupper, Suzanne, and Jean Noël Barrandon. 2003. 'Analisi metallurgiche di monete antiche in bronzo circolanti nella Sicilia occidentale', in *Quarte giornate internazionali di studi sull'area Erima: Erice, 1–4 dicembre 2000*, ed. by Alessandro Corretti (Pisa: Gibellina), pp. 507–36
- Hoyos, Dexter. 2007. *Truceless War. Carthage's Fight for Survival, 241 to 237 BC*, *History of Warfare*, 45 (Leiden: Brill) <<https://doi.org/10.1163/ej.9789004160767.i-294>>
- La Rocca, Roberto. 2012. 'La navigazione antica nel canale di Sicilia: condizioni, tecniche e direttrici', in *Archeologia subacquea a Pantelleria '... de Cossurensibus et Poenis navalem egit ...'*, ed. by Leonardo Abelli, *Ricerche maior*, 3 (Bologna: Ante Quem), pp. 63–72
- . 2016. 'Archeologia subacquea a Pantelleria', in *Mirabilia Maris: tesori dai mari di Sicilia*, ed. by Floriana Agneto, Adriana Fresina, Francesca Oliveri, Fabrizio Sgroi, and Sebastiano Tusa (Palermo: Regione Siciliana), pp. 173–78
- La Rocca, Roberto, and Giuseppina Mammina. 2016. 'Le monete di Cala Tramontana a Pantelleria (TP)', in *Mirabilia Maris: tesori dai mari di Sicilia*, ed. by Floriana Agneto, Adriana Fresina, Francesca Oliveri, Fabrizio Sgroi, and Sebastiano Tusa (Palermo: Regione Siciliana), pp. 246–47
- Loreto, Luigi. 1995. *La grande insurrezione libica contro Cartagine del 242–237 a.C.: una storia politica e militare*, *Publications de l'École française de Rome*, 211 (Rome: École française de Rome)
- Mandatori, Gianluca. 2020. 'La monetización púnica en Cederña: emisiones, cronologías y distribución', in *Un viaje entre el Oriente y el Occidente del Mediterráneo / A Journey between East and West in the Mediterranean: Actas IX Congreso Internacional de estudios Fenicios y Púnicos / Proceedings International Congress of Phoenician and Punic Studies*, 11, ed. by Sebastián Celestino Pérez and Esther Rodríguez González, *Mytra*, 5 (Mérida: Instituto de Arqueología-Mérida), pp. 121–28
- Manfredi, Lorenza I. 1987. *Le monete della Sardegna Punica* (Sassari: Chiarella)

- . 1990. *Riconiazione ed errori di conio nel mondo Punico*, Rivista di studi fenici, 18 (Rome: Consiglio Nazionale Delle Ricerche)
- . 1995. *Monete puniche dalle collezioni italiane. Repertorio epigrafico e numismatico delle leggende puniche*, Bollettino di numismatica, Monografia, 63 (Rome: Libreria dello Stato)
- . 2000. 'Produzione e circolazione delle monete puniche nel sud dell'Italia e nelle isole del Mediterraneo occidentale (Sicilia e Sardegna)', in *Los Cartagineses y la Monetización del Mediterráneo occidental: atti della Tavola Rotonda* (Madrid, 1999), ed. by Maria P. Garcia Bellido and Laurent Callegarin, *Anejos de Archivo español de arqueología*, 22 (Madrid: Velázquez), pp. 11–22
- . 2006. 'Le monete puniche nel Mediterraneo antico: produzione, coniazione, circolazione', *Mediterranea*, 3: 257–98
- Manfredi, Lorenza I., and Maria T. Francis. 1996. 'Le monete puniche in Sardegna. Nuovi dati e riletture', in *Nuove ricerche puniche in Sardegna*, ed. by Giovanna Pisano, *Studia punica*, 11 (Rome: Università degli studi di Roma 'Tor Vergata'), pp. 31–78
- Mastino, Attilio, and Raimondo Zucca. 1991. 'La Sardegna nelle rotte mediterranee in età romana', in *Idea e realtà del viaggio: il viaggio nel mondo antico*, ed. by Giorgio Camassa and Silvana Fasce (Genova: ECIG), pp. 191–259
- Medas, Stefano. 2005. 'La navigazione di Posidonio dall'Iberia all'Italia e le rotte d'altura nel Mediterraneo occidentale in età romana', in *Mayurqa*, 30: 577–609
- Schäfer, Thomas. 2015a. 'Topographie, Geschichte und Forschungsgeschichte', in *Cossyra I: Die Ergebnisse der Grabungen auf der Akropolis von Pantelleria / S. Teresa. Der Sakralbereich*, Teil 1, ed. by Thomas Schäfer, Karin Schmidt, and Massimo Osanna, *Tübinger archäologische Forschungen*, 10 (Rahden, Westf.: Leidorf), pp. 87–111
- . 2015b. 'Conclusioni generali', in *Cossyra I: Die Ergebnisse der Grabungen auf der Akropolis von Pantelleria / S. Teresa. Der Sakralbereich*, Teil 2, ed. by Thomas Schäfer, Karin Schmidt, and Massimo Osanna, *Tübinger archäologische Forschungen*, 10 (Rahden, Westf.: Verlag Marie Leidorf GmbH), pp. 829–45
- . 2019. 'V.4.2. Cossyra – Pantelleria', in *Carthago: il mito immortale*, ed. by Alfonsina Russo, Francesca Guarneri, Paolo Xella, and José Angel Zamora López (Milano: Electa), pp. 216–17
- SNG Cop = Gilbert K. Jenkins. 1969. *Sylloge Nummorum Graecorum: The Royal Collection of Coins and Medals, Danish National Museum*, XLII: *North Africa: Syrtica – Mauretania* (Copenhagen: Einar Munksgaard)
- Soro, Laura. 2023. 'Tra Nord Africa e Sardegna. Testimonianze della navigazione d'altura', *Cartagine. Studi e Ricerche*, 8: 1–18
- Spanu, Pier Giorgio, and Raimondo Zucca. 2012. 'La Sardegna nel III secolo a.C.', in *Archeologia subacquea a Pantelleria '... de Cossurensibus et Poenis navalem egit ...'*, ed. by Leonardo Abelli, *Ricerche maior*, 3 (Bologna: Ante Quem), pp. 255–71
- Visonà, Paolo. 1992. 'Carthaginian Bronze Coinage in Sardinia', in *Studia Phoenicia*, IX: *numismatique et historie économique phénicienne et puniques: actes du colloque tenu à Louvain-la-Neuve, 13–16 mai 1987*, ed. by Tony Hackens and Ghislaine Moucharte, *Numismatica Lovaniensia*, 9 (Louvain-la-Neuve: Université Catholique de Louvain), pp. 121–32
- . 1998. 'Carthaginian Coinage in Perspective', *American Journal of Numismatics*, 10: 1–27
- . 2010. 'Unusual Carthaginian Billon of the First Punic War and of the Libyan Revolt', *The Numismatic Chronicle*, 170: 63–71
- Zucca, Raimondo. 2004. 'Le monete puniche di zecca sarda di Son Salomò, Ciutadella (Minorca) e il riflesso della guerra dei mercenari in Sardegna e nelle Baleari', *Mayurqa*, 29: 85–96